ALABAMA STATE BOARD OF HEALTH
ALABAMA DEPARTMENT OF PUBLIC HEALTH
BUREAU OF ENVIRONMENTAL SERVICES
DIVISION OF COMMUNITY ENVIRONMENTAL PROTECTION
ADMINISTRATIVE CODE

CHAPTER 420-3-1
ONSITE SEWAGE TREATMENT AND DISPOSAL

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420-3-1-.01 Purpose. The purpose of this chapter is to minimize the adverse effects of the disposal of sewage on human health and the environment by establishing and enforcing requirements for the design, permitting, installation, approval, and operation of an onsite sewage and disposal system (OSS) or innovative effluent discharge system (EDS).
Author: Jimmy Coles, Matthew Conner, Thad Pittman, Ken Stephens, Bob Bright
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1, et seq.
History: New Rule: Published December 30, 2022; effective February 13, 2023.

420-3-1-.02 Responsibility. Compliance with these rules shall be the responsibility of the designer, wastewater management entity, responsible person, developer, installer, or user of the system, as applicable, with the system owner bearing ultimate responsibility to comply with the provisions of this chapter.
Author: George Allison, Jimmy Coles
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1, et seq.; 22-25B-1, et seq.
History: New Rule: Published December 30, 2022; effective February 13, 2023.

420-3-1-.03 Penalties For Violations.

(1) Any person who violates the provisions of these rules, shall, upon conviction be guilty of a misdemeanor and fined in accordance with Section 22-26-6, Code of Ala. 1975.

(2) Upon failure of a wastewater management entity to comply with this chapter, or any permit requirements, rule, order, or directive of the Alabama Department of Public Health (ADPH), the ADPH may revoke the wastewater management entity's permit, assess a civil penalty not exceeding $10,000, or both, per compliance failure or violation in accordance with Section 22-25B-4, Code of Ala. 1975. Each day a violation continues shall constitute a separate violation.
Author: George Allison, Jimmy Coles, Matthew Conner, Thad Pittman, Ken Stephens, Bob Bright

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1, et seq.
History: New Rule: Published December 30, 2022; effective February 13, 2023.

420-3-1-.04 Definitions.

(1 **ADEM** -- the Alabama Department of Environmental Management.

(2) **ADPH** -- the Alabama Department of Public Health, the administrative arm of the Board, including variations in the name such as State of Alabama Department of Public Health, State Department of Public Health, State Health Department, or Public Health Department.

(3) **Advanced Treatment (Effluent)** -- treatment that results in a minimum level of effluent quality attainable by secondary treatment as defined in 40 C.F.R. §133.102 before discharge into the environment. See Secondary Effluent Standard.

(4) **Advanced Treatment System (ATS)--** a treatment system that is capable of producing secondary treatment as defined by these rules. This term may include advanced treatment units (ATU).

(5) **Agent** -- a legally authorized representative of another person.

(6) **Aggregate or Drain Media** -- hard, clean gravel or rock that has been washed with water under pressure over a screen during or after grading to remove fine material, and that has a hardness value of three or greater on Mohs Scale of Hardness (aggregate that can scratch a copper penny without leaving any residual rock material on the coin would have a Mohs hardness of three), or other equivalent ADPH approved media, material, or device used for the subsurface distribution of effluent. Properly sized loose aggregate has a minimum size of one- quarter (1/4) inch and a maximum size of two and one-half (2-1/2) inches. The drain media, material, or device is durable and inert; will maintain its integrity and not collapse or disintegrate with time; will not generate a harmful leachate; and

will not be detrimental to the system or the environment.

(7) **ANSI** -- the American National Standards Institute.

(8) **AOWB** -- the Alabama Onsite Wastewater Board.

(9) **Approval for Use** -- the authorization issued to the responsible person to operate an 088 or EDS. This is issued by the local health department (LHD) after all conditions of these rules and permits are satisfied.

(I0) **ASTM** --ASTM International.

(11) **Average Seasonal High Extended Saturation (ASHES)** -- a zone or layer 6 or more inches thick that becomes saturated at least once during most years for a significant duration, typically 20 or more consecutive days or 30 or more cumulative days. This zone is restrictive and is approximated by the shallowest occurrence of contemporary redoximorphic features containing 2 percent or more chroma two or less (Munsell or equivalent) colors. See Table 7.

(12) **Bed** -- an EDF infiltrative surface utilizing secondary treatment with no internal trench walls that does not meet the definition of a pad. See Table 11 for sizing.

(13) **Bedrock** -- a general term for the consolidated rock that underlies the soil and other unconsolidated material or that is exposed at the surface. Practical application of the Mohs scale: When hit with a spade, a definite ring indicates a Mohs rating of three or greater. If no ring but more of a thud occurs, it indicates a rating less than three.

Hard bedrock is lmown as a lithic contact and is described as a boundary between soil and continuous, coherent, underlying material. The underlying material shall be sufficiently coherent to make hand-digging with a spade impractical. Typical hardness is three (Mohs scale), and gravel size chunks do not disperse with 15 hours shaking in water or sodium hexametaphosphate solution.

Soft bedrock is known as a paralithic contact and is similar to a lithic contact except that it is softer and can be dug with difficulty with a spade. Typical hardness is less than three (Mohs scale), and gravel size chunks will partially disperse within 15 hours shaking in water or sodium hexametaphosphate solution.

(14) **Board--** the Alabama State Board of Health, as defined by §22-2-1, Code of Ala. 1975.

(15) **Building Development** -- a change in the characteristics of a lot, tract or parcel of land, or other real property by an action including the sale of or conveyance of any interest in the land that could be expected to lead to human habitation or creation of an establishment. Such change includes, but is not limited to, clearing plant life from property, other than minimal clearing for soil and substrate evaluation; alteration to any degree of the naturally occurring topography of the property; constructing roads; installing surface drainage systems or similar facilities; providing utility services or connections within the lot, tract, or parcel of land; constructing or placing shelters or dwellings, or providing sites for the same; installing or accessing public or private water or public or private sewer systems; planning or constructing individual, or other means of sewage disposal; recording the plat of the property as a large-flow development of lots of any size in the Office of the Probate Judge; recording an easement or covenant relative to an OSS or EDS for an individual lot; filing a plot plan with the LHD; or openly or by implication advertising a lot, tract, or parcel as being for residential, overnight recreational, or establishment uses, or as being part of an existing or planned large-flow development.

(16) **Building Drain** -- the part of the lowest piping of a drainage system which receives the discharge from waste drainage pipes inside the walls or under a habitable structure and conveys it to the building sewer, ending 30 inches from the exterior wall of the structure.

(17) **Building Sewer** -- the part of a structure's drainage system which extends from the end of the building drain, and which receives the discharge of a building drain and conveys it to a public or private sewer system.

(18) **Certificate of Economic ViabWty** -- a document issued by the Alabama Public Service Commission (PSC) that

certifies the financial viability of a wastewater management entity pursuant to the requirements of §22-25B-1 et al., Code of Ala. 1975.

(19) **Cluster Wastewater System** -- see Onsite Sewage Treatment and Disposal System (OSS).

(20) **Combined Treatment and Disposal System (CTD)** -- an ATS comprised of proprietary distribution media and treatment media that is capable of meeting secondary effluent standards as defmed by these rules. See Table 11 for sizing.

(21) **Community Wastewater System** -- see Onsite Sewage Treatment and Disposal System (OSS).

(22) **Composting Toilet** -- a dry toilet that treats human waste within an aerobic, vented environment to cause decomposition of the waste by dehydration and digestion of organic matter, yielding a composted residue that is removed for sanitary disposal.

(23) **Conventional Onsite Sewage System (OSS)** -- a system for treating sewage that involves the use of a septic tank or proprietary advanced treatment unit that has been issued a Product Permit followed by non-pressurized dispersion of effluent in an effluent disposal field (EDF) such that the trench bottom and sidewalls are located completely in unaltered natural soil and the bottom of the trench is at a depth not greater than 60 inches below the unaltered natural ground surface. Such systems do not require an engineer design. A shallow placement system is a Conventional OSS. See also Shallow Placement System.

(24) **Crossover** -- a non-perforated pipe that connects one EDFpipe to another and installed as specified in these rules or in the applicable product manuals.

(25) **Design Flow** -- the flow of sewage to a system dictated by good engineering practices, comparable systems, or literature on which the design is based. This flow is generally considered to be the average daily flow that the treatment system and disposal field will receive with appropriate consideration given to maximum flow periods, equalization, and organic loading.

(26) **Developer** -- a person who engages in building development.

(27) **Drainage System (Surface)** -- a drainage ditch, drainage way, drainage structure, swale, trench, culvert, or any apparatus or method for directing the flow of water over land.

(28) **Drainage Way** -- a general term for a course or channel along which water moves in draining an area. Also, restricted to small, roughly linear, or arcuate depressions that move concentrated water at some time, and either lacks a defined channel (e.g., head slope or swale) or has a small defined channel (e.g., low order stream). See also Gully, Ravine, and Ephemeral Stream.

(29) **Drip Irrigation System** -- a system that relies on advanced treatment and filtration of the treated effluent. Final disposal occurs in the upper limits of the soil horizon and is distributed through small diameter tubes that have emitters that slowly drip the treated water into the soil.

(30) **Dwelling** -- a house, manufactured or mobile home, recreational vehicle, shelter, structure or building, or portion thereof, that is or could be expected to be occupied in whole or in part as the home, residence, or sleeping place of one or more person(s).

(31) **Effective Liquid Capacity** -- the liquid volume of a tank below the liquid level line (outlet invert).

(32) **Effluent** -- the discharge from a sewage treatment device. See Primary Effluent Standard, Secondary Effluent Standard, and Advanced Treatment.

(33) **Effluent Disposal Field (EDF)** -- a minimum area as calculated per these rules into which sewage treated to at least Primary Effluent Standards is dispersed into the soil.

(34) **Effluent Disposal Field (EDF) Pipe** -- perforated pipe or ADPH permitted equivalent placed in the EDF for the purpose of dispersing effluent.

(35) **Effluent Line** -- a watertight pipe in an OSS or EDS that conveys sewage from one component, such as a septic tank or treatment unit, to another, such as an EDF, distribution box, or header line.

(36) **Engineered OSS** -- all systems, other than those meeting the definition of Conventional OSS, that require engineer design. This includes, but is not limited to, controlled fill mound systems, advanced treatment (except proprietary advanced treatment followed by a conventional EDF), drip irrigation, low pressure pipe (LPP), non-proprietary uniform distribution, constructed wetlands, and systems with a septic tank, followed by an EDF where any portion of the EDF protrudes above the unaltered natural soil surface.

(37) **Ephemeral Stream** -- a feature that carries only stormwater in direct response to precipitation with water flowing only during and shortly after large precipitation events. An ephemeral stream may or may not have a well-defined channel, the aquatic bed is always above the water table, and stormwater run-off is the primary source of water. An ephemeral stream typically lacks the biological, hydrological, and physical characteristics commonly associated with the continuous or intermittent conveyance of water. For the purposes of these rules, an ephemeral stream is considered a drainage way. See Gully and Ravine.

(38) **Establishment** -- a facility, other than a dwelling, that generates sewage as defined by these rules.

(39) **Failure** -- a breakage, weakness, or defect that causes a malfunction in the treatment, distribution, disposal, or dispersal of effluent into the EDF, or that causes a wash-out or disruption of the EDF as evidenced by one of the following:

(a) Surfacing or ponding of effiuent (not by design) at, over, or around any component of the OSS or EDS.

(b) Backing up of sewage within a dwelling or establishment as a result of a malfunction of the OSS or EDS.

(c) The contamination of ground or surface waters by an OSS or EDS.

(40) **Flooding** -- the temporary covering of the soil surface by flowing or standing water from any source, such as streams overflowing their banks, runoff from adjacent or surrounding slopes, inflow from high tides, or any combination of sources, and of a severity that damages or prohibits the normal use of the property. The frequency of the event determines the limitation assigned to each category. See Ponding.

(a) Rare -- flooding unlikely but possible under unusual weather conditions; 1 to 5 percent chance of flooding in any ye or 1 to 5 times in 100 years.

(b) Occasional -- flooding occurs infrequently under usual weather conditions; 5 to 50 percent chance of flooding in any year or more than 5 to 50 times in 100 years (moderate limitations).

(c) Frequent -- flooding is likely to occur often under usual weather conditions; more than a 50 percent chance of flooding in any year or more than 50 times in 100 years (severe limitations).

(41) **Floodplain Easement** -- an entitlement in perpetuity allowing the holder of the easement to flood and inundate land up to a specified contour elevation.

(42) **GPD** -- gallons per day.

(43) **Gravel Field Standard EDF** -- the standard sizing of the EDF when gravel is used as the disposal medium as required by 420-3-1-.53 Gravel Field Standard EDF Sizing for Dwellings. See Table 2 and Table 3 for sizing.

(44) **Gravitational Water** -- water that moves into, through, or out of the soil under the influence of gravity. Can also be called free water.

(45) **Grease Interceptor** -- a watertight receptacle that traps grease, is located within the structure, and is integrated into the building sewer.

(46) **Grease Trap** -- a watertight tank or receptacle in which the grease present in sewage is intercepted, where a baffle wall may or may not be

present, and that meets the design and structural requirements as provided by these rules.

(47) **Gully** -- a small channel with steep sides caused by erosion and cut in unconsolidated materials by concentrated but intermittent flow of water usually during and immediately following heavy rains. A gully is an obstacle to wheeled vehicles and too deep (greater than 18inches) to be obliterated by ordinary tillage. See also Drainage Way, Ravine, and Ephemeral Stream.

(48) **High Shrink-Swell Soils** -- soils that have relatively high clay content and a dominant mineral type that causes significant swelling when wet and shrinking when dry such as montmorillonite, which is a member of the smectite family. These soils are inherently slowly or very slowly permeable. Most Vertisols and Vertie Intergrades have a high shrink-swell potential. COLEs (Coefficient of Linear Extensibility) are usually greater than or equal to 0.09.

(49) **Holding Tank** -- a water-tight, in-ground receptacle specifically manufactured for the purpose of the collection and temporary retention of sewage and that meets the design and structural requirements as provided by these rules, This term does not include self-contained sewage collection tanks on a recreational vehicle/travel trailer, or a toilet vault used in rural locations without water under pressure.

(50) **Hydric Soils** -- soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. Hydric soil determinations shall be made using the USDA-NRCS document, "Field Indicators of Hydric Soils in the United States," herein adopted by reference.

(51) **IAPMO** -- International Association of Plumbing and Mechanical Officials.

(52) **Immediate Family** -- an individual's children, including adopted children and stepchildren, brothers, sisters, spouse, parents, including adoptive parents and spouse's parents. The term also includes those in a guardian relationship and relatives that require special care because of age, siclmess, or infirmity.

(53) **Innovative Effluent Discharge System (EDS)** -- A treatment and surface discharge system that has been designed by an engineer for installation under specific site conditions.

(54) **Intermittent Stream** -- a well-defined channel that contains water for only part of the year, typically during winter and spring when the aquatic bed is below the water table. The flow may be heavily supplemented by stormwater runoff. An intermittent stream often lacks the biological and hydrological characteristics commonly associated with the conveyance of water. For the purposes of these rules, an intermittent stream is considered surface water.

(55) **International Plum.bing Code (IPC)/lntemational Private Sewage Disposal Code (IPSDC)** -- the latest version of these codes as published by the International Code Council, Inc., which is herein adopted by reference.

(56) **Landform** -- any physical, recognizable form or feature on the earth's surface having a characteristic shape and range in composition and produced by natural causes; it can span a wide range in size (e.g., dune encompasses both parabolic dune, which can be several tens-of- meters across, as well as seif dune, which can be up to 100 kilometers long). Landforms provide an empirical description of similar portions of the earth's surface.

(57) **Large-Flow Development** -- a building development on a single parcel or multiple adjacent parcels that singularly or as a group would result in 13 bedrooms or more in a dwelling or dwellings, or an establishment with a design flow of more than 1,800 gpd. Unless subject to an exception provided in these rules, a group of residences or establishments that are constructed in phases and that will share infrastructures such as roads, entrances, water lines, etc., are considered to be a Large-Flow Development. This flow is development flow and not system flow. It establishes planning requirements, and it is the combined flow in the planned development whether it is going to one or more OSS systems.

(58) **Large-Flow OSS** -- any system that has a design flow of more than 1,800 gpd but less than 15,001 gpd.

(59) **Laundry Waste** -- the liquid waste from a washing machine, laundry sink, or other receptacle used for laundering purposes. Also referred to as one type of graywater.

(60) **Local Health Department (LBD)** -- a county health department.

(61) **Lot** -- a legally described parcel of land.

(62) **Lot Modification** -- an activity that alters a lot or parcel of land in a manner which changes the natural characteristics of the land and may improve or impair a site's ability to use an OSS or EDS.

(63) **Maintenance** -- periodic actions to sustain an OSS or EDS such as pumping the tank, cleaning or replacing the filter, replacing a non-perforated component (such as solid supply lines, solid headers, and crossovers), and any type of electronic/mechanical work. Other maintenance may include activities to evaluate or improve structural integrity of the tank or lid or repairing a baffle, inlet> or outlet fixture. See Repair and Relocation.

(64) **Mine Spoil** -- the waste material consisting of earth and rock excavated from a mine and generally left or placed in no specific order. Materials usually vary greatly in size and percentages. Excessive voids between coarse fragments and over compaction of soil size materials are two of the major challenges for sewage disposal.

(65) **Minimum Vertical Separation (MVS)** -- the minimum allowable vertical separation between the bottom of the EDF and a restrictive layer or horizon.

(66) **MPI** -- Minutes per inch.

(67) **Natural Ground Surface** -- the naturally occurring surface of the earth which has not been significantly altered or disturbed by artificial means such as cutting and/or filling (does not include plowing for agricultural purposes). Except where severely eroded,

the ground surface normally begins with a dark, organic matter enriched layer (topsoil) of varying thickness followed usually with a brighter colored layer (subsoil) increasing in clay content with depth. May also be referred to as in-situ soils.

(68) **NSF** -- NSF International.

(69) **Observation Pits** -- soil inspection trenches that shall be a minimum of 3 feet wide and 60 inches deep unless hard bedrock is encountered. Pits shall be constructed in such a fashion as to be safely accessible for the evaluator, parallel to the contour, and level.

(70) **Onsite Sewage Treatment and Disposal System (OSS)** -- a system that collects, transports, treats, and provides subsurface disposal of sewage from establishments or dwellings. Subsets of this definition are:

(a) Cluster Wastewater System -- an integrated wastewater collection system or treatment system, or both, or multiple systems serving a single development or contiguous developments, which collectively have design flow of 15,000 gpd or less and is designed and permitted for discharge of the treated wastewater to a subsurface distribution system but excluding systems that discharge directly to surface waters of the state. The system must be designed by and certified by a licensed professional engineer to comply with design and permit requirements established by ADPH. The term does not include a small-flow cluster system.

(b) Small Flow Cluster Wastewater System -- A wastewater system serving four or fewer dwellings, apartment units, or other establishments whether owned by a single person or multiple persons, including individual single-user septic tank systems but excluding systems that discharge directly to the waters of the state. For permitting and planning purposes, these systems shall include the entire development and are equivalent to a Small-Flow OSS as defined by these rules.

(c) Community Wastewater System -- An integrated wastewater collection system or treatment system, or both, or multiple systems serving a single development or contiguous developments, which collectively have a design

flow of more than 15,000 gpd and is designed and permitted for discharge of the treated wastewater to a subsurface distribution system, but the term specifically excludes systems that discharge directly to surface waters of the state. The system must be designed and certified by a licensed professional engineer to comply with the design and permit requirements established by ADEM. For the purpose of these rules, a single development does not include individual lots.

(71) **Pad** -- an EDF infiltrative surface utilizing advanced treatment with proprietary distribution or uniform distribution with timed dosing. See Table 10 for sizing.

(72) **Performance Permit** -- a permit required for Large-Flow Systems and other systems where effluent monitoring is required to protect the public's health or the environment. This permit may also be referred to as an operational permit.

(73) **Permeability** -- the long-term rate at which soil will accept water.

(74) **Permeameter** -- as used in these rules, refers to a constant head borehole permeameter or constant head well permeameter designed for the in-situ measurement of saturated hydraulic conductivity (Ksat) of the unsaturated (vadose) zone. Readings should be converted to min/in using an acceptable method that is typically provided by the manufacturer.

(75) **Person** -- an individual, firm, partnership, corporation, state agency, municipal corporation, party, company, association, or other public or private legal entity.

(76) **Pit Privy** -- an enclosed, non-portable toilet, into which non-waterborne human waste is deposited to a subsurface storage chamber that is not watertight.

(77) **Pits** -- see Observation Pits.

(78) **Plat (Preliminary)** -- a to-scale layout of the proposed development prepared by a professional land surveyor showing approximate locations of lots, streets, drainage, and other improvements.

(79) **Plat (Surveyed)** -- a property drawing or map, prepared by a professional land surveyor, and drawn to a scale of 1 inch equal to no more than 100 feet. It shall be suitable for recording and depict the location and boundaries of the parcel and of all lots (if subdivided) and include all details required by the appropriate application requirements of ADPH Forms CEP-2 and CEP-3.

(80) **Plot Plan** -- a to-scale drawing prepared by a professional as defined by these rules, complying with the application requirements of ADPH Forms CEP-2 and CEP-3. This drawing shall identify the size and location of required items in these applications.

(81) **Plumbing Code** -- the local plumbing code or if no local plumbing codes exist, the IPC, IRC, or IPSDC.

(82) **Ponding** -- standing water in a depression that is removed only by percolation, evaporation, and/or transpiration and that is of sufficient size that it lasts more than 7 days, or is of sufficient size, location, or duration to adversely affect the operation of an OSS or EDS.

(83) **Primary Effluent Standard** -- effluent of a lower quality than secondary effluent usually produced by a septic tank with no further treatment. For the average household, it is usually a 30-day .average of 250 milligrams per liter (mg/1) of Biological Oxygen Demand (BOD). See also Secondary Effluent Standard and Advanced Treatment.

(84) **Private Sewer System** -- an OSS which serves dwellings or one or more establishments so long as all the dwellings/ establishments share a common owner, such as a shopping center. Compare to Public Sewer System.

(85) **Product Permit--** a permit issued by ADPH for proprietary products.

(86) **Professional Engineer (PE)** -- an individual as defined by the Alabama Board of Licensure for Professional Engineers and Land Surveyors,

(87) **Professional Geologist (PG)** -- an individual as defined by the Alabama Board of Licensure for Professional Geologists.

(88) **Professional Land Surveyor IPLS)** -- an individual as defined by the Alabama Board of Licensure for Professional Engineers and Land Surveyors.

(89) **Professional Soil Classiller (PSC)** -- an individual as defined by the Alabama Board of Registration for Professional Soil Classifiers.

(90) **Proprietary Product** -- a product owned by a private individual or corporation under a trademark or patent.

(91) **Public Health Environmental Site Specialist (PBESS)** -- a full-time employee of ADPH or an LHD who has completed the required training, testing, and certification requirements for evaluating EDF sites using soil morphology.

(92) **Public Sewer System** -- a properly permitted sewer system to which the public has access, be it privately or publicly owned. The definition includes Cluster and Comm.unity Systems as defined in§ 22-25B-1, Code of Ala.1975, and is sometimes referred to as a sanitary sewer system. Compare to Private Sewer System.

(93) **Public Water Supply** -- a water supply system that is defined and permitted by ADEM as a Public Water System.

(94) **Ravine** -- a small stream channel that is narrow, steep-sided, commonly V-shaped in cross section and larger than a gully, cut in unconsolidated materials. See also Drainage Way, Gully, and Ephemeral Stream.

(95) **Recreational Vehicle (RV)** -- a vehicle, that is self-propelled or towed which may have self-contained fixtures and facilities for collecting sewage. This term includes recreational trailers, mobile tiny houses, and campers, but excludes manufactured or mobile homes.

(96) **Recreational Vehicle (RV) Park** -- a park with more than two recreational vehicles that meets the requirements of 420-3-1-.31 Recreational Vehicle Parks.

(97) **Redoximorphic (Redox) Features** -- features formed by the processes of reduction, translocation, and/or oxidation of iron (Fe) and manganese (Mn) oxides. These features were formerly called mottles and low chroma colors. Redox features are indicators of current conditions of saturation, usually of significant duration.

(98) **Relocation** -- an action to replace an existing OSS or existing EDF/EDS when BOD or flow has changed, when requested by the applicant, or when there is an overriding environmental or health reason to require a new OSS/EDS. A replacement OSS/EDF/EDS is considered a new system and shall meet all current rules of a new OSS / EDS.

(99) **Repair** -- a corrective action taken to modify a failing portion of an existing OSS/EDS (any component) where the design parameters (BOD or flow) have not changed. Repair does not include replacement/relocation of an EDF/EDS, or any activity defined as maintenance.

(100) **Replacement Effluent Disposal Field (REDF)** -- a minimum defined and documented area, separate and apart from the EDF, set aside to be used in case the EDFmust be replaced. See Effiuent Disposal Field (EDF).

(101) **Responsible Person** -- in the case of a private dwelling, it is the property owner. In the case of a corporation, it is a principal executive officer. In the case of a partnership, it is a general partner. In the case of a sole proprietorship, it is the proprietor. In the case of a municipal, state, federal, or other public entity, it is either a principal executive officer or ranking elected official. May also be referred to as "applicant."

(102) **Restrictive Layer or Horizon (Water Movement)** -- a layer in the soil 3 or more inches thick that significantly slows the. downward movement of water or hinders acceptable treatment of effluent. A restrictive layer or horizon generally has redoximorphic features, bedrock, or soil permeability that could form a restrictive layer or horizon that would slow the downward movement of water and restrict the use of or dictate the design of an EDF.

(103) **Sanitary Sewer System** -- a public or private sewer system. See Cluster Wastewater System, Small-Flow Cluster Wastewater System, and Community Wastewater System.

(104) **Sanitary Station** -- a holding tank used for receiving sewage from motor homes or coaches, recreational vehicles, travel trailers, auto campers, or other temporary dwellings or shelters. The term may also be referred to as a dump station.

(105) **Saturation** -- a condition where the larger soil pores are full or almost full of water, having a positive or zero pressure potential. Thus, water can freely flow into an open bore hole, except in cases where certain soils are dominated by small pores.

(106) **Scarify--** to break up and loosen the surface of the soil in preparation for the application of fill material.

(107) **Secondary Emuent Standard** -- effluent that meets the standard as defined by 40 CFR §133.102 of a 30-day average of 25 milligrams per liter (mg/I) of Biological Oxygen Demand (BOD) and Total Suspended Solids (TSS), a 7-day average of 30 mg/I of BOD and TSS and 6 to 9 pH before discharge into the environment. See also Primary Effluent and Advanced Treatment.

(108) **Septage** -- the solids and liquids removed during the pumping of an OSS/EDS pre- treatment device. For the purposes of these rules, the term septage shall exclude marine sanitation and portable toilet wastes that have not been pre-treated in a manner approved by the Board.

(109) **Septic Tank** -- a tank that receives sewage, provides treatment to the primary effluent standard, and that meets the design and structural requirements provided by these rules. This does not include tanks or grease traps that are connected to a public sewer system.

(110) **Septic Tank Manufacturer** -- a person who manufactures, makes, or constructs septic tanks.

(111) **Sewage** -- for the purpose of these rules, the term refers to the following:

(a) Sewage -- waterborne waste of similar composition and strength as may be found in the typical residence or dwelling and that typically has a concentration of 250 mg/1 of BOD, Total Suspended Solids - 250 mg/1, Ammonia - 10 mg/I, and Total Phosphorus - 9 mg/1.

(b) High Strength Sewage -- waterborne waste from establishments, such as kitchen waste, that is of similar composition but of higher strength than would be found in a typical dwelling. This may be permitted at the discretion of the LHD.

(c) Graywater -- the portion of sewage generated by a water-using fixture, excluding toilet and food preparation waste from dwellings and regulated establishments. It is of similar composition but of lower strength than sewage. See Laundry Waste.

(d) Processed Septage -- waterborne waste of similar composition and strength found in a typical residence or establishment where the solids have been removed through a dewatering process.

(112) **Sewage Tank** -- any tank that receives sewage, is a component of an OSS/EDS, and meets the design and structural requirements as provided by these rules.

(113) **Shallow Placement System** -- a Conventional OSS where the trench bottom and sidewalls are located in unaltered natural soil that requires some amount of fill material above the EDF in order to provide a minimum soil cover of 12 inches.

(114) **Shoulder** -- the profile position that forms the convex, erosional surface near the top of a hillslope. If present, it comprises the transition zone from summit to backslope.

(115) **Shrink-Swell Potential** -- the relative change in soil volume to be expected with changes in moisture content. Soils that have relatively high clay content (greater than 30 percent clay) and dominant smectitic clay mineralogy shrink and swell markedly upon wetting and drying and are inherently slowly or very slowly permeable. A "high" shrink-swell potential is indicated by

a Coefficient of Linear Extensibility (COLE) of 0.06-0.09. A COLE of more than 0.09 defmes the "very high" shrink-swell class. Most Vertisols and soils in Vertie subgroups have a "high[11] or "very high" shrink-swell potential.

(116) **Single-Family Dwelling** -- a house, manufactured or mobile home, house trailer, shelter, structure or building, or portion thereof, which is occupied as a distinct and separate home, residence, or sleeping place of one or more persons.

(117) **Sinkhole** -- a natural depression formed as a result of subsurface removal of soil or rock materials and causing the formation of a collapse feature that exhibits internal drainage. The existence of a sinkhole is typically indicated by closed depression contour lines on a United States Geological Survey 7.5-minute quadrangle topographic map, or as determined by field investigation. A sinkhole begins at the outer margins of the depression, as determined at the site by a professional geologist.

(118) **Site Development Plan (SDP)** -- a process required for Large-Flow Developments that initiates early involvement of the LHD to determine suitability of a site for an OSS(s) and protection of the EDF/REDF. Instructions are outlined in ADPH Form CEP-3.

(119) **Slope (Gradient)** -- the difference in elevation between two points and is expressed as a percentage. For example, a difference in elevation of 1 meter over a horizontal distance of 100 meters is a slope of 1 percent. Slope gradient influences the retention and movement of water, the potential for soil slippage and accelerated erosion, the ease with which machinery can be used, soil-water states, and the engineering uses of the soil. Different slope positions (geomorphic components) and landform shapes handle surface and sub-surface water differently and shall be considered when locating EDF areas. Concave shaped landforms should be avoided. Drainage ways are unsuitable and shall be avoided.

(120) **Small-Flow Development** -- a building development on a single parcel or multiple adjacent parcels that singularly or as a group would result in 12 or fewer bedrooms in a dwelling or dwellings or an

establishment or establishments with an average daily design flow from all planned or projected sewage systems of 1,800 gpd or less. This flow is development flow and not system flow, The design flow establishes planning requirements, and it is the combined flow of all systems in the planned development whether it is going to one or more systems.

(121) **Small-Flow OSS** -- a system with an average daily design flow of 1,800 gpd or less, or that serves 12 bedrooms or less.

(122) **Smectitic** -- a group of clay minerals, including montmorillonite, that causes soils to exhibit a high degree of shrinking and swelling when it is the dominant clay mineral occurring in the soil.

(123) **Spa** -- a water-holding unit designed for recreational and therapeutic use that may be drained, cleaned, or refilled for each use.

(124) **State Health Officer** -- the Health Officer for the State of Alabama, as defined by §22-2-8, Code of Ala. 1975, or his or her designee.

(125) **Strip Development** -- a linear, multi-lot development where the lots front an existing publicly maintained road with established infrastructure. Lots within a strip development must meet the minimum lot sizes in Table 17, have individual OSSs (no cluster OSSs), individual access to a publicly maintained road (no shared access), and no access to an existing large- flow development except by publicly maintained road. Flag lots are excluded from this definition.

(126) **Structure** -- any site built or any manufactured building including, but not limited to, dwellings, offices, stores, establishments, manufacturing facilities, storage buildings, warehouses, barns, garages, and any other roofed area where it would be expected that sewage or high strength sewage will be generated, or that will have an impact on a system's EDF/EDS or REDF.

(127) **Summit** -- the topographically highest position of a hillslope profile with a near level (planar or only slightly convex) surface. Compare with shoulder, backslope, footslope, toeslope, and crest. A

general term for the top or highest area of a landform such as a hill, mountain, or tableland. It usually refers to a high interfluve area of relatively gentle slope that is flanked by steeper slopes, e.g., mountain fronts or tableland escarpments.

(128) **Surface Saturated Soils** -- soils that, due to their inherent wetness, cannot be used for a conventional OSS. Examples are soils in wetlands, hydric soils, and soils with less than 6 inches to ASHES.

(129) **Surface Water** -- water above the surface of the ground, including, but not limited to, waters of a bay, river, stream, watercourse, pond, lake, swamp, wetland, spring, or artesian well, located partially or wholly within the state, including the Gulf of Mexico. Generally, these features exhibit some characteristic(s) indicating a degree of permanence (i.e., a riverbank, a depression that holds water for a few days after a rain, or a wet weather spring does not qualify).

(130) **Surveyed Plat** -- see Plat (Surveyed).

(131) **Trash Trap** -- a tank required by some designs to precede an advanced treatment system that mayor may not meet non-structural septic tank specifications, depending on the requirements of the advanced treatment device manufacturer.

(132) **Uniform Distribution** -- the even and consistent dispersal of effiuent across the EDF. Such methods may be proprietary or non-proprietary.

(133) **Vertisols (and Vertie Soll Characteristics)** -- soils which contain clays dominated by high shrink-swell potential and that meet the requirements set forth by the USDA publication "Soil Taxonomy,, or have vertic characteristics as described by the same. See also Shrink-Swell Potential.

(134) **Wastewater** -- see Sewage.

(135) **Wastewater Management Entity** -- an entity that exercises sole responsibility for the operation and maintenance of one or more Cluster or Community Wastewater Systems.

(136) **Water of the State** -- subsurface or surfaced ground water, including aquifers, and surface water of a river, stream, watercourse, reservoir, pond, lake, or coast, wholly or partially within the state, natural or artificial. This does not include waters that are entirely confined and retained completely upon the property of a single individual, partnership, or corporation unless the owner or others use such waters in the conduct of interstate commerce.

(137) **Wetland** -- a transitional area between aquatic and terrestrial ecosystems that is inundated or saturated for long enough periods to produce hydric soils and support hyd.rophytic vegetation. See also Ponding.

(138) **Wet Season** -- that portion of the year receiving the highest amount of rainfall, creating the most unfavorable conditions for the proper functioning of an OSS because of soil characteristics such as, but not limited to, shrink-swell potential, perched or apparent high water table, or other such conditions. Generally, the wet season in Alabama is December 1 through April 30, but it may vary during the year in a given location.
Authors: Thad Pittman, Leigh Salter, Patricia Lindsey, Matthew Conner, Ken Stephens, Bob Bright, Natalie Parsons
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.; 22-25B-1 et seq.
History: Filed July 20, 1988. **Amended:** Filed June 19, 1992. **Repealed and New Rule:** Filed December 16, 1999; effective January 20, 2000. **Repealed and New Rule:** October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Amended:** Filed October 19, 2006; effective November 23, 2006. **Repeal and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .01 was renumbered .04 per certification published December 30, 2022; effective February 13, 2023.

GENERAL REQUIREMENTS

420-3-1-.05 Requirements For An OSS/EDS.

(1) No person shall occupy, rent, lease, sell, possess, or allow a building to be occupied as a dwelling or establishment unless said building is provided with an approved sewage disposal system.

(2) An OSS/ED8 shall be properly sited, designed, constructed, installed, operated, and maintained so that it:

(a) Does not create a public health hazard or nuisance and does not attract flies, mosquitoes, or other vectors.

(b) Does not contaminate a water of the state.

(c) Does not violate federal or state laws or regulations governing water pollution or sewage disposal.

(3) A lot or parcel on which an OSS/EDS is located or proposed shall not be altered or built upon so that the EDF/REDF/ discharge area are adversely affected, nor shall the site be improved or developed in excess of its capacity to properly treat and/or absorb effluent in the quantities and by a means provided for by these rules. The acceptability of a lot or site to support an OSS/EDS of a type and size permitted by these rules shall be determined by a site evaluation and professionally certified soil data, site conditions, daily sewage flow and characteristics, and LHD or ADPH evaluation.

(4) A lot or parcel on which an OSS/EDS is located or is to be located shall not be divided for the purpose of building development so that the lot or parcel is smaller than the permitted size without submitting a new permit application to the LHD.

(5) Only treatment and disposal equipment that are permitted or approved shall be used for an OSS/EDS.

(6) The installation of an OSS/EDS shall comply with the requirements and conditions of its permit.

(7) Any person who installs, repairs, maintains, and/or certifies installation of an 088/EDS shall be licensed by the AOWB or be exempt from such licensure pursuant to §34-2lA-l et seq., Code of Ala. 1975.

Authors: Thad Pittman, Leigh Salter, Patricia Lindsey, Matthew Conner, Ken Stephens, Bob Bright

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.; 22-25B-1, et seq.

History: Filed July 20, 1988. **Amended:** Filed June 19, 1992. **Repealed and New Rule:** Filed December 16, 1999; effective January 20, 2000. **Repealed and New Rule:** October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Repealed and New Rule:** January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .03 was renumbered .05 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.06 Permits Required For An OSS/EDS.

(1) **Permit to Install (Repair).** No person shall begin the installation or repair of an OSS/EDS, or component thereof, until the responsible person has been issued a valid Permit to Install (Repair) an Onsite Sewage System (OSS) by the LHD.

(a) When an Engineered OSS is required, no installation or construction of any part of the engineered system shall begin without installer consultation with the design engineer.

(b) ADPH may revoke a Permit to Install (Repair) if there are changes in the lot conditions, the system is not installed in accordance with the permit, or other factors affecting the permit's approval. Possible invalidating conditions include, but are not limited to, information submitted for the purpose of obtaining the permit is found to be misrepresented, materially false or inaccurate, changes to statutory provisions, acts of eminent domain, natural changes, man-made alterations, or water impoundments.

(c) The LHD shall be notified of a modification or repair to a system, pursuant to 420-3-1-.32 Repair and Relocation of an Existing OSS/EDS.

(d) Wastewater management entities required to obtain a Certificate of Economic Viability from the Alabama Public Service Commission shall have said certificate prior to any permits being issued by ADPH or the LHD.

(e) A permit may be issued for an OSS for the disposal of processed septage with the approval of a variance pursuant to 420-3-1-.70 Variance to Rules.

(2) **Performance Permits.** Performance Permits are required for a Large-Flow OSS and for other systems where ADPH, in consultation with the LHD, concludes that the Approval for Use alone is not adequate to protect the public's health or the environment.

Authors: Thad Pittman, Karen Bishop, Dillon Bullard, Matthew Conner, Ken Stephens, Bob Bright

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq; 22-25B-1, et seq.

History: Filed July 20, 1988. **Amended:** Filed June 19, 1992. **Repealed and New Rule:** Filed December 16, 1999; effective January 20, 2000. **Repealed and New Rule:** October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Amended:** Filed March 15, 2010; effective April 19, 2010. **Repealed and New Rule:** January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .05 was renumbered .06 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.07 Proprietary And Non-Proprietary Products.

(1) Proprietary Products. ADPH may issue a permit to a manufacturer of a proprietary treatment or disposal. product. These permits shall include conditions and requirements for design, installation, maintenance, and reporting that shall be adhered to by the manufacturer, designers, installers, and users of the products.

(a) The Product Permit applicant shall demonstrate to ADPH's satisfaction that the product meets the requirements of this rule, including design calculations and demonstrate the product can operate within the range of conditions specified by ADPH.

1. If a particular certification is a condition of approval and permitting, the product manufacturer shall verify this certification as specified in the Product Permit.

2. The applicant shall include a description of all system components by product name or model number that can be identified in the field.

(2) Non-Proprietary Products. ADPH recognizes that there are certain non- proprietary treatment systems that meet the requirements of this rule. Examples include, but are not limited to, constructed wetlands and sand filters. As such, ADPH may allow their use provided that the design is based on a nationally recognized manual from academia or another governmental agency.

Authors: Thad Pittman, Matthew Conner, Ken Stephens, Bob Bright

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.

History: **New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .06 was renumbered .07 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.08 OSS/EDS Installation.

(1) Except as allowed in this rule, no part of any installation shall be covered or used until the LHD is afforded an opportunity to inspect and any necessary corrections are made, An OSS/EDS shall not be used until an Approval for Use has been issued by the LHD. Any part of an OSS/EDS that has been covered prior to inspection or authorization by the LHD shall be uncovered upon direction of the LHD.

(2) Prior to the issuance of an Approval for Use, the installer shall:

(a) Install or repair the OSS/EDS pursuant to a valid Permit to Install (Repair) with any special permit conditions of approval.

(b) Agree upon an inspection time and date with the LHD's Public Health Environmentalist (PHE). The installer shall contact the PHE by 9 a.m. on the date of the inspection to verify that the system will be ready for inspection at the designated time.

1. If applicable, notify the engineer that the OSS/EDS is ready for inspection so that ADPH Form CEP-6 can be submitted per 420-3-1-.34 Certifications.

(c) Notify the LHD and professional of any problem encountered during the OSS/EDS installation or repair which may prevent the system from being installed in accordance with the Permit to Install (Repair) or applicable rules and stop installation until the problem is resolved with the LHD. When a disruption in installation will cause the installation not to be completed by the agreed-upon inspection time and/or date, a new agreed upon inspection time shall be established.

(d) Provide a completed ADPH Form CEP-5 within 3 business days of completion of the system. In the case of an intervening holiday. the completed CEP-5 shall be provided to the LHD on the LHD's first regularly scheduled business day following the holiday.

(3) The LHD may:

(a) Schedule an inspection as close as possible to the time requested by a licensed installer. This inspection time then becomes the "agreed upon system inspection time" referenced above in paragraph (2)(b).

(b) Allow a licensed installer to cover an OSS/ EDS installation or repair when resource constraints, weather conditions, or other unforeseen circumstances prevent the LHD from conducting an inspection within 30 minutes after the agreed upon inspection time.

(c) Authorize a licensed installer to install or repair a Conventional OSS outside of normal LHD business hours.
Authors: Thad Pittman, Lem Burell, Leigh Salter, Patricia Lindsey, Matthew Conner, Ken Stephens, Bob Bright
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.
History: **New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .07 was renumbered .08 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.09 Engineer Design Required.

(1) The following systems or site characteristics shall require a design by an engineer:

(a) The system has a design flow of more than 1,800 gpd of sewage. See 420-3-1-.52 Design Flow and Wastewater Concentrations.

(b) The system will serve a food establishment that is classified as a Priority Category 3 or 4 establishment by the Board's Rules for Food Establishment Sanitation, Chapter 420-3-22, Ala. Admin. Code.

(c) The system will receive high strength sewage. These systems do not have to use advanced treatment unless the design flow is over 1,800 gpd, but the field shall be sized according to 420-3-1-.55 Gravel Field Standard EDF Sizing for Establishments.

(d) The site characteristics prohibit the use of a Conventional OSS. See Table 7 and Table 18.

(e) The site characteristics set forth under 420-3-1-.51 Lot Modification – Planned and Unplanned stipulate engineer involvement.

(f) The lot is smaller than the minimums set out in 420-3-1-.10 Minimum Lot Size Requirements.

(g) Slopes over 25 percent in the EDF area.

(h) A system that does not meet the definition of a Conventional OSS.

(i) An Innovative EDS.

Authors: Thad Pittman, Matthew Conner, Ken Stephens, Bob Bright

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.

History: **New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

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420-3-1-.10 Minimum Lot Size Requirements.

(1) Any lot for which an OSS/EDS is proposed to be installed shall be large enough to accommodate the proposed development, the proposed EDF, a 100 percent REDF, or discharge area, and shall meet all setback requirements of these rules.

(a) Advanced treatment systems that are owned and operated by a wastewater management entity, government agency or cooperative and are under a Performance Permit may, with ADPH approval, elect to use one-half (1/2) of the design flow when designing the REDF, provided the REDF is evaluated with the appropriate number of tests in accordance with these rules.

(b) For dwellings or establishments on individual systems, minimum lot size requirements, based on the recording date, are set forth in Table 17. These lots shall have a total square footage available per the number of dwellings or establishments placed on them.

(c) Lot sizes may be reduced below the minimums established in Table 17 (footnotes), by utilizing an Engineered OSS in compliance with the requirements of ADPH Form CEP-2, Part B.

(2) Easements or right-of-way areas shall comply with 420-3-1-.11 Easements Required.

(3) Swamps, marshes, ponded areas, surface or subsurface drainage areas, reservoirs or impoundments, and wetlands shall not be used in computing lot size, unless the area has been modified prior to application submittal within and according to these rules and other regulatory requirements including, but not limited to, Army Corps of Engineer requirements.

(4) Frequently flooded areas shall not be used in computing required lot sizes.

(5) There are no minimum size requirements for a lot being served by a Cluster Wastewater System.

Author: Thad Pittman, Leigh Salter, Patricia Lindsey, Matthew Conner, Ken Stephens, Bob Bright

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq; 22-25B-1, et seq.

History: Filed July 20, 1988. **Amended:** Filed June 19, 1992. **Repealed and New Rule:** Filed December 16, 1999; effective January 20, 2000. **Repealed and New Rule:** October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Amended:** Filed October 19, 2006; effective November 23, 2006. **Repealed**

and New Rule: Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .09 was renumbered .10 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.11 Easements Required.

(1) Easements or rights-of-way for underground utilities, roads, streets, thoroughfares, and easements for reservoirs and impoundments, and flood zones shall not be used in computing lot size or be used for placement of any part of an OSS/ EDS. An effluent line may be installed in an easement or right-of-way for an underground utility or road when the easement holder states in writing that there is no objection to such use of the easement.

(2) Easements or rights-of-way for overhead utilities may be utilized, if there is no other means of having the lot accommodate an OSS or make a system repair. The easement holders shall state in writing that there is no objection to such use of the easement.

(3) OSSs/EDSs, including REDFs, shall be located on the same lot as the dwelling/ establishment served unless, when approved by the LHD, an easement in perpetuity is recorded in the office of the Judge of Probate of the county in which the system is located. The easement shall be recorded prior to the issuance of a Permit to Install (Repair). Terms of the easement shall be sufficient for construction, operation, and continued repair and maintenance of the OSS/EDS until the system is abandoned per 420-3-1-.24 Abandonment of a Sewage Tank.
Authors: Thad Pittman, Karen Bishop, Dillon Bullard, Leigh Salter, Patricia Lindsey, Matthew Conner, Ken Stephens, Bob Bright
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.
History: Filed July 20, 1988. **Amended:** Filed June 19, 1992. **Repealed and New Rule:** Filed December 16, 1999; effective January 20, 2000. **Repealed and New Rule:** October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Amended:** Filed October 19, 2006; effective November 23, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017.

Repealed and New Rule: Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .10 was renumbered .11 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.12 Requirements For All Permit Applications.

(1) An application for a new permit or reissuance of an existing permit shall be submitted using the following forms designated by ADPH:

(a) ADPH Form CEP-2 is used to apply for a Permit to Install for Small-Flow developments and individual Small-Flow Systems in a Large-Flow Development.

(b) The ADPH Form CEP-3, Section A is used for Large-Flow Developments, and ADPH Form CEP-3, Section Bis used for Large-Flow Systems.

(c) ADPH Form CEP-3, Section C, is used for performance permits.

(d) ADPH Form CEP-11 is used to apply for a Pre-made. Septic Tank, Grease Trap, and Holding Tank permit.

(e) ADPH Form CEP-13 is used to apply for a proprietary product permit.

(2) All applications are subject to 420-3-1-.13 Time Limitations and Permitting Actions.

(3) ADPH or the LHD may assess a fee where fee authorization exists.

Authors: Thad Pittman, Matthew Conner, Ken Stephens, Bob Bright

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq; 22-25B-1, et seq.

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Ed. Note: Previous Rule .11 was renumbered .12 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.13 Time Limitations And Permitting Actions.

(1) All ADPH applications shall be submitted to the LHD or the ADPH as applicable.

(a) The LHD or ADPH shall fulfill any request for a permit within 28 calendar days after receiving the application or notify the responsible person of the reason for failure to issue the permit. After the initial 28 days, if the application remains incomplete, the responsible person shall be allowed an additional 30 calendar days to submit a complete application, or the application review period shall expire. After an application has expired, a new application and applicable fee shall be required.

(b) If the application does not meet the requirements of this rule, it shall be denied pursuant to the Ala. Admin. Procedure Act, §41-22-1, et seq., Code of Ala. 1975.

(2) After a complete CEP-2 application is received and the review of the LHD determines that the lot is suitable for an OSS/EDS in accordance with these rules, the LHD shall issue a Permit to Install (Repair).

(a) All Permits to Install (Repair) shall be valid for a period of 5 years from the date of issuance.

(b) If the time limit in paragraph 1, above, has expired and reapplication is required, the LHD may investigate the site and determine if the lot has been modified and that site conditions remain consistent with those that existed at the time of the expired permit's issuance. Based upon this re-evaluation, the LHD may issue a Permit to Install (Repair) without additional site evaluation subject to 420-3-1-.12 Requirements for All Permit Applications. If the lot has been modified, it shall be subject to 420-3-1-.51 Lot Modification-Planned and Unplanned.

(c) When a CEP-2 application is submitted for a lot approved in a Large-Flow Development under a previous set of rules, the LHD may investigate the validity of previously submitted lot evaluation data or conditions and determine whether a Permit to Install (Repair) may be issued.

(3) If a Performance Permit is required as part of a Large-Flow Development, ADPH Form CEP-3, Section C shall be submitted.

(a) The Performance Permit shall be valid for a period of 5 years from the effective date of the permit.
Authors: Thad Pittman, Phyllis Mardis, Lem Burell, Leigh Salter, Patricia Lindsey, Matthew Conner, Ken Stephens, Bob Bright
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq; 22-25B-1, et seq.
History: Filed July 20, 1988. **Amended:** Filed June 19, 1992. **Repealed and New Rule:** Filed December 16, 1999; effective January 20, 2000. **Repealed and New Rule:** October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Amended:** Filed October 19, 2006; effective November 23, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .12 was renumbered .13 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.14 Requirements And Exceptions To Large-Flow Developments.

(1) A developer shall complete the Site Development Plan process for a Large-Flow Development in coordination with the LHD.

(2) The following activities shall not be subject to Large-Flow Development requirements:

(a) Dividing a parcel of land for the purpose of a bona fide gift.

(b) Dividing a parcel of land under the provisions of a will or under the laws of intestate succession.

(c) The sale, lease, or rental of land, provided that the sale, lease, or rental is not incidental to building development.

(d) Dividing a parcel of land under an exemption provided by §22-26-7, Code of Ala. 1975.

(e) The division of a parcel of land into lots or tracts three acres or greater in size that meet the requirements for Small-Flow OSS Development.

(f) Building development that is exclusively for the immediate family of the responsible person.

(3) At the discretion of the LHD, dividing a parcel of land for use as a strip development may not be subject to Large-Flow Development requirements.

(4) If ADPH and the LHD conclude that an existing Large-Flow OSS can accommodate additional flow, the permit may be modified accordingly, and it is not necessary for the responsible person to complete the entire Large-Flow application process. Only the additional information that will allow ADPH and the LHD to determine that the system is capable of handling the additional flow is required.

Author: Thad Pittman, Lem Burell, Matthew Conner, Ken Stephens, Bob Bright

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq; 22-25B-1, et seq.

History: Filed July 20, 1988. **Amended:** Filed June 19, 1992. **Repealed and New Rule:** Filed December 16, 1999; effective January 20, 2000. **Repealed and New Rule:** October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Amended:** Filed October 19, 2006; effective November 23, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .16 was renumbered .14 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.15 Requirements For Performance Permits.

(1) Performance Permits are required for a Large-Flow OSS, Cluster Wastewater Systems, and for other systems where

ADPH, in consultation with the LHD, concludes that additional action is needed to protect the public's health or the environment.

(2) The Performance Permit may be issued on a temporary basis when there are unresolved issues regarding design parameters for a system, such as strength of sewage, so that actual parameters can be measured after the system is installed and adjustments to the system can be made if necessary.

(3) With review and approval, ADPH may recognize standards that can be used to establish and ensure that an OSS provides a measurable level of sewage treatment in certain situations that do not lend themselves to a prescriptive method of permitting. In these situations, ADPH may select an appropriate standard to define acceptable OSS goals for specific environmentally sensitive sites. The standards that will primarily be used in review of Performance Perm.its are primary effluent standards and secondary effluent standards as defined by these rules.

(4) A Performance Permit is an authorization to operate and may contain construction and maintenance requirements, monitoring requirements, reporting requirements, and other requirements as necessacy.

(5) When a performance permit is no longer required as per these rules, ADPH may terminate the permit. At this point, the Approval for Use issued by the LHD becomes the authorization to continue to operate the OSS.

Author: Thad Pittman, Matthew Conner, Ken Stephens, Bob Bright
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq; 22-25B-1, et seq.
History: Filed July 20, 1988. **Amended:** Filed June 19, 1992. **Repealed and New Rule:** Filed December 16, 1999; effective January 20, 2000. **Repealed and New Rule:** October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .22 was renumbered .15 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.16 Wastewater Management Entities.

(1) Any person operating a Cluster Wastewater System as defined by these rules and §22-25B-1, et seq., Code of Ala. 1975, is a wastewater management entity and, as such, shall meet the requirements of this rule.

(2) Small-Flow Cluster Systems that are operated by wastewater management entities that choose to receive a Certificate of Economic Viability shall be issued a performance permit.

(3) Wastewater management entities are responsible for:

(a) Establishing procedures and guidelines for operation and management of their Cluster Systems. Such procedures and guidelines shall not conflict with Rules of the Board or §22-25B-1 et seq., Code of Ala. 1975.

(b) Performing routine system inspection, operation, and maintenance using appropriately trained or licensed personnel as required by all established and applicable statutes and rules for the type of cluster system used, or to contract for performance of these services.

(c) Managing septage handling and disposal to comply with all established and applicable statutes and rules.

(d) Obtaining easements for access to the property for maintenance or repair, when needed, or to acquire land when necessary.

(e) Complying with the conditions of certifications or conditions of operational permits as well as the applicable Rules of the Board; administrative orders; and state, federal, and local laws and regulations.

(4) ADPH is authorized to collect from the wastewater management entity a fee for review of an application for an operational permit, a fee for modification of an existing operational permit, and a fee for the renewal of an operational permit as provided in Rule 420-1-5-.08, Ala. Admin. Code, State Level Fees.

(5) Submit to ADPH a quarterly fee equal to 4 percent of its gross income.

(6) Each wastewater management entity, unless exempted pursuant to §22-258-3, Code of Ala. 1975, shall apply for and obtain a Certificate of Economic Viability from the Alabama Public Service Commission.

Author: Thad Pittman, Matthew Conner, Ken Stephens, Bob Bright
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1, et seq.; 22-25B-1, et seq.
History: New Rule: Published December 30, 2022; effective February 13, 2023.

TANKS, ADVANCED TREATMENT, AND PUMPS

420-3-1-.17 Septic Tank, Grease Trap, And Holding Tank Specifications.

(1) **Concrete Tanks.** These tanks shall be designed, constructed, and tested in accordance with the most recent American Society for Testing and Materials (ASTM) C1227 standard.

(a) Cast in-place tanks shall have a minimum wall, bottom, and lid thickness of standard.

(b) Precast concrete tanks with capacities of less than 1,200 gallons shall have a minimum lid thiclmess of 3 inches, and tanks with capacities of 1,200 gallons or more shall have a minimum lid thickness of 4 inches.

(c) Concrete tank lids shall have a minimum 6-inch by 6-inch (6-inch on centers of number 10 gauge) welded steel reinforcement or meet the current ASTM standard.

1. A lid for a tank may be monolithically poured. The lid for a tank with an effective liquid capacity of less than 1,200 gallons shall have only one section. A larger tank lid may have more than one section. In no case shall it be necessary to remove a lid or lid section in order to gain access to a tank for inspection or maintenance purposes. Where more than one lid section is used, joints between sections shall be watertight. Except for a monolithic pour or a proprietary product design, an approved water stop shall be used to affix the lid to the tank body or to seal multiple-part tank bodies.

(2) **Non Concrete Tanks.** These tanks shall be designed, constructed, and tested in accordance with the most recent IAPMO/ANSI Zl000 standard.

(3) **Risers.** Risers for tanks shall be cast/incorporated directly into tank lids or tops. Risers shall be manufactured of material-a that are compatible with the expansion and contraction of tank material and form a mechanical bond with the tank material, ensuring a watertight seal.

(a) Risers shall be located, at a minimum, over the inlet and outlet structures and shall be a minimum of 18 inches in diameter.

(b) All risers and components shall have watertight covers or lids. The cover or lid shall be designed, constructed, and maintained to prevent unauthorized access.

(c) A plastic or fiberglass access riser and cover or lid shall have third-party documentation that ultra-violet (UV) protection is molded into all components.

(4) **Traffic Rated.** Whenever vehicular traffic is anticipated to cross over a tank, traffic lids shall be installed with traffic rated risers to finished grade.

(a) Tanks and lids shall be designed in accordance with the appropriate ASTM standard for the appropriate loading.

(b) Any tank lid certified by the engineer to meet the appropriate American Association of State Highway and Transportation Officials (AASHTO) H-20 Loading Criteria may be approved by ADPH. Access inspection openings with a minimum 18-inch diameter or equivalent area opening shall be provided in the tank lid or top over the area of the inlet and outlet structures.

(5) **Tank Sizing.** The effective liquid capacity of a septic tank for a dwelling shall be based on the number of bedrooms proposed and shall, at a minimum, comply with Table 9.

(a) The effective liquid capacity of a septic tank for an establishment without advanced treatment shall be based on flow computed per 420-3-1-.52 Design Flow and Wastewater Concentrations, and shall have a minimum hydraulic detention time of 48 hours for tanks {i.e., septic tanks and grease traps), or combinations of tanks in series, In no case shall the tank effective liquid capacity be less than 1,000 gallons.

(6) **Other.** If a trash trap is requited by the OSS/EDS designer or manufacturer, the trash trap shall meet the

structural requirements of this rule. When recommended or required by the advanced treatment system manufacturer or the engineer, a sewage trash trap or septic tank preceding an advanced treatment unit shall meet the design requirement of the advanced treatment system manufacturer. The effective liquid capacity of the trash trap shall meet the advanced treatment manufacturer requirements.

(a) Septic tanks installed at individual dwellings as part of a Large-Flow Cluster System shall confopn to the construction and inspection requirements of the Minimum Construction and Testing Standards for Cluster and Community Wastewater Systems.

(b) The use of metal tanks, drums, barrels, or pipes as sewage tanks is prohibited for use with onsite sewage disposal systems.

Author: Thad Pittman, Matthew Conner, Ken Stephens, Bob Bright

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1, et seq.

History: Filed July 20, 1988. **Amended:** Filed June 19, 1992. **Amended:** Filed November 18, 1998; effective December 23, 1998. **Repealed and New Rule:** Filed December 16, 1999; effective January 20, 2000. **Repealed and New Rule:** October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Amended:** Filed October 19, 2006; effective November 23, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

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420-3-1-.18 Tank Manufacturer Inspections.

(1) An inspection shall be made upon initial application for a new tank series. At the discretion of the LHD, tanks greater than 1,500 gallons may not be required to be available for inspection at the manufacturing facility or at a staging area.

(2) The LHD or ADPH may perform periodic inspections for all tank series to determine compliance with these rules.

(a) When deemed necessary, the LHD or ADPH may make periodic inspections of larger tanks at a site specified by the LHD or ADPH.

Authors: Thad Pittman, Pam Lockett

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1, et seq.

History: Filed July 20, 1988. **Repealed and New Rule:** Filed December 16, 1999; effective January 20, 2000. **Repealed and New Rule:** October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Amended:** Filed October 19, 2006; effective November 23, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .30 was renumbered .18 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.19 Pre-made Septic Tank, Grease Trap, And Holding Tank Permits.

(1) No pre-made septic tank, grease trap, or holding tank shall be installed unless a permit for the tank series has been issued by the LHD. The permit number (series number), issued by the LHD for the specified tank, and the effective liquid capacity of the tank, shall be permanently embossed on the tank so that it is readily visible after installation and prior to covering.

(2) An out-of-state tank manufacturer shall, in coordination with ADPH and the designated LHD, establish a specific fee-based county within the state of Alabama as the county of record for business purposes. An out-of-state manufacturer shall notify the designated LHD of a specific, fixed location, readily accessible, where its tanks are available for inspection by the LHD or the ADPH.

(3) An application for a Septic Tank, Grease Trap, and Holding Tank Permit, ADPH Form CEP-11, shall be submitted for each requested permit.

(a) The submittal shall include clear and concise written instructions from the manufacturer as to the proper shipping, handling, assembly, installation, maintenance, or repair of the tank and equipment. The instructions shall clearly

identify site conditions, if any, that would prohibit tank installation or would void the manufacturer warranty.

(b) The submittal shall include a copy of any applicable tank warranty.

(c) Duplicate submittal packages shall be sent concurrently to the LHD in the county of record and to ADPH.

(d) Upon initial application for a new tank permit, the following is required:

1. For concrete tanks, the submittal shall include engineer certification that the tank meets the most recent ASTM C1227 standard.

2. For non-concrete tanks, the submittal shall include IAPMO/ ANSI Zl000 certification.

(4) A permit is not transferable from one person to another, from one tank form or tank model to another, or from one manufacturing site to another.

(5) An AOWB licensed manufacturer shall submit to the LHD an application for an annual permit by December 31 of each year. The terms and conditions of an existing permit are automatically extended pending reissuance of the permit if the manufacturer has submitted a timely and complete application.

(6) No cast in-place or otherwise constructed tank shall be installed without engineer certification.

Authors: Thad Pittman, Matthew Conner, Ken Stephens, Bob Bright

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1, et seq.

History: Filed July 20, 1988. **Repealed and New Rule:** Filed December 16, 1999; effective January 20, 2000. **Repealed and New Rule:** October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Amended:** Filed October 19, 2006; effective November 23, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .31 was renumbered .19 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.20 Tank Installation.

(1) Tanks shall be installed on a level, firm, and compacted surface such that the tank is placed both longitudinally and laterally level. A minimum layer of 2 inches of sand or gravel placed level in the tank hole is recommended for leveling purposes.

(2) Installation instructions shall be followed where specific installation instructions are provided by the tank manufacturer. All non-concrete tanks shall be accompanied by clear and concise instructions from the manufacturer for the proper installation of the tank.

(3) Risers on a tank for a dwelling may be placed above final grade but shall not be placed greater than 6 inches below final grade.

(4) Risers on a tank for an establishment shall be brought to minimum of finished grade.

(5) The inlet and outlet materials and pipe connections shall conform to the applicable section of the International Private Sewage Disposal Code.

(6) When tanks are connected in series to obtain the required capacity, a baffle wall shall remain in the last tank.

(7) A new tank that requires repair prior to being placed into use shall be repaired to meet the standards of these rules and shall be repaired as directed by the manufacturer. Repair of a tank already in use shall be coordinated with the LHD and shall meet th requirements of 420-3-1-.32 Repair and Relocation of an Existing OSS/EDS. A repaired tank shall be subjected to the same structural and water-tightness tests as required by ASTM (concrete) or IAPMO (non-concrete) tanks.

(8) The OSS/EDS owner shall be responsible for prohibiting unauthorized access to any sewage tanks by following sewage tank lid and riser manufacturer specifications.
Author: Thad Pittman, Matthew Conner, Ken Stephens, Bob Bright
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1, et seq.
History: Filed July 20, 1988. **Amended:** Filed June 19, 1992. **Repealed and New Rule:** Filed December 16, 1999; effective January 20, 2000. **Repealed and New Rule:** October 20, 2005;

effective November 24, 2005; operative March 19, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

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420-3-1-.21 Effluent Filter Specifications. All effluent filters shall comply with the most current NSF Standard 46, shall beinstalled in the septic tank on the outlet side, and shall be properly sized for the system in accordance with the filter manufacturer's recommendations. The requirement for a septic tank effluent filter may not apply to any tank that is used as a grease trap in conjunction with a septic tank or a pre-treatment or trash tank in conjunction with an advanced treatment system.
Author: Thad Pittman, Matthew Conner, Ken Stephens, Bob Bright
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1, et seq.
History: **New Rule:** Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .33 was renumbered .21 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.22 Use Of A Grease Trap.

(1) Any establishment using commercial kitchen equipment shall install a grease trap that complies with 420-3-1-.17 Septic Tank, Grease Trap, and Holding Tank Specifications. An establishment which, by the nature of its operations or the product proposed, produces little grease waste may be excluded from this requirement, as determined by the LHD.

(a) Where installation of a grease trap complying with 420-3-1-.17 Septic Tank, Grease Trap, Trash Trap, and Holding Tank Specifications, is not practical, the LHD may

consider use of other commercial grease interceptors that meet or exceed the intended grease retention and interception needs.

(2) A grease trap and its EDF shall be located as follows:

(a) In accordance with setback requirements of 420-3-1-.65 Setback and Separation Distances.

(b) At an accessible location outside the building where it may be easily inspected, pumped, and maintained.

(3) Effluent from a septic tank serving as a grease trap may bedisposed ofby one of the following:

(a) By connecting to an EDF serving only the grease trap. The amount of EDF for the grease trap shall be determined from Table 2 or Table 3,

(b) By connecting to the building sewer. Overall OSS design shall take into consideration the inclusion of grease trap efiluent in a system.

Author: Thad Pittman, Matthew Conner, Ken Stephens, Bob Bright
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1, et seq.
History: **New Rule:** Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Amended:** Filed October 19, 2006; effective November 23, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .40 was renumbered .22 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.23 Holding Tank Requirements.

(1) Applications that propose using holding tanks as a temporary substitute for an OSS shall be submitted by an engineer and shall be permitted in the same manner as an OSS.

(2) The permanent use of a holding tank for a dwelling as part of a permanent OSS is prohibited.

(a) Use of a holding tank for a system serving a dwelling or establishments on a temporary basis may be permitted by the LHD when there is an emergency situation caused by a system failure that cannot be repaired in a timely manner or when it is the LHD's determination that a holding tank is the only practical solution. The permit period shall not exceed one year.

(3) Permitting conditions shall include the following:

(a) A visual or audible alarm.

(b) A contract with a licensed sewage tank pumper to include submission of pumping records to the LHD.

(4) All pre-made holding tanks shall be permitted by the LHD according to 420-3-1-.19 Pre-made Septic-Tank, Grease Trap, and Holding Tank Permits or if a proposed tank is not a permitted tank series, it shall be inspected and certified in writing by the engineer to be structurally sound and suitable for the intended purpose.

(5) Holding tank capacity shall be calculated using the sewage flows provided by 420-3-1-.52 Design Flow and Wastewater Concentrations. The tank shall be sized to provide a capacity 25 percent larger than the projected sewage flow accumulation between scheduled pumping and as a buffer in case of weather conditions, temporary unavailability of a sewage tank pumper, or other adverse conditions.

(6) A holding tank shall be properly abandoned in compliance with 420-3-1-.24 Abandonment of a Sewage Tank, when its permitted use expires.

Authors: Thad Pittman, Matthew Conner, Ken Stephens, Bob Bright

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1, et seq.

History: **New Rule:** Filed August 25, 2003; effective September 29, 2003; operative October 1, 2003. **Repealed and New Rule:** Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .32 was renumbered .23 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.24 Abandonment Of A Sewage Tank. When the use of a sewage tank is discontinued; or when the system cannot be made to comply with these rules, the tank shall be abandoned, and its further use prohibited. An abandoned tank shall be pumped out by an AOWB-licensed pumper. An empty tank may be removed at the property owner's option, or to make room for new system components. If no replacement component is intended, the hole left by the removal of a tank shall be filled with sand or soil. An mpty tank left in· place shall be filled with sand or soil. The bottom of the tank may be ruptured.
Authors: Thad Pittman, Matthew Conner, Ken Stephens, Bob Bright
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1, et seq.
History: New Rule: Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .35 was renumbered .24 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.25 Advanced Treatment Required.

(1) The following systems, sites, and/or conditions shall require advanced treatment:

(a) Any system with a design flow of over 4,000 gpd of sewage.

(b) Any system that is producing high strength sewage of over 1,800 gpd shall treat to secondary effluent standards under a Performance Permit. If the average strength is 3,000 mg/1 Biological Oxygen Demand (BOD) or greater, ADPH may consider treating to primary effluent standards under a Performance Permit if:

1. There are no environmental or health ramifications.

2. The field shall be sized in accordance with 420-3-1-.55 Gravel Field Standard EDF Sizing for Establishments except that the treated BOD loading shall be used.

(c) Sites where depth to ASHES from the natural ground surface is less than 6 inches.

(d) Sites where depth from natural ground surface to hard bedrock is less than 12 inches.

(e) Soils with an estimated or actual percolation rate of less than 5 MPI.

(f) Soils where the estimated or actual percolation rate is greater than 240 MPI.

(g) Sites containing mine spoil at the natural ground surface to a depth of at least 48 inches within the proposed EDF area at the time of the site evaluation.

(h) When a pad or bed is used as described in 420-3-1-.59 Pad and Bed Construction Specifications.

(i) When drip irrigation is used as described in 420-3-1-.62 Drip Irrigation Requirements.

Authors: Thad Pittman, Matthew Conner, Ken Stephens, Bob Bright

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1, et seq.

History: **New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .36 was renumbered .25 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.26 Advanced Treatment System (ATS) Specifications.

(1) A person proposing to market a proprietary advanced treatment system (ATS) shall submit ADPH Form CEP-13. The application shall include the following information:

(a) Documentation that the ATS has been certified as meeting the appropriate NSF, Committee for Standardization (CEN), or the Bureau de normalisation du Quebec (BNQ) Standard.

(b) Design hydraulic loading capacity (gallons per day) and design organic loading capacity (pounds of BOD per day).

(2) An ATS shall comply with the following requirements:

(a) The conditions of a Performance Permit or be currently listed and certified by a testing organization as meeting the appropriate NSF. CEN, or BNQ standard.

(b) Be capable of producing effluent that meets secondary effluent standards as defined by these rules.
Author: Thad Pittman, Matthew Conner, Ken Stephens, Bob Bright
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1, et seq.
History: **New Rule:** Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Amended:** Filed October 19, 2006; effective November 23, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

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420-3-1-.27 OSS/EDS Requiring Pumping Of Effluent.

(1) The pump specified for an OSS/EDS shall:

(a) Be capable of passing minimum one-half (½) inch spherical solids, in the event of filter failure. However, if an engineer, for design considerations, specifies a pump that will not pass one-half (½) inch solids, adequate precautions shall be taken to prevent one-half (½) inch or larger solids from entering the pump. In this case, at a minimum, the pump system shall not be placed in the primary septic tank but shall be placed in a secondary pump chamber or in a filtered pump vault.

(b) Be capable of being submerged.

(c) Produce sufficient capacity at the calculated total dynamic head (TOH).

(d) Have a variable level on-off pump activation device that is adjustable to meet specific application requirements.

(e) Be rated for effluent service by the manufacturer.

(f) Provisions shall be made for easy removal of the pump.

(g) Have a full flow shut-off valve installed.

(h) Have a check valve to prevent reverse drainage back into the pump chamber.

(2) The discharge pipe shall comply with the following requirements:

(a) The discharge pipe shall be the same size as or larger than the pump outlet to ensure sufficient fluid velocity to carry solids (generally accepted to be 2 feet per second).

(b) Pipe materials shall be Schedule 40 PVC.

(3) The material and construction specifications for a dosing tank or pumping chamber shall:

(a) Be corrosion resistant.

(b) Be able to withstand anticipated internal and external loads.

(c) Have provisions for anti-buoyancy by design.

(d) Not allow infiltration or exfiltration.

(e) Be accessible from the surface to allow for installation and removal of the equipment, and to maintain the system.

(f) Have access covers which are lockable and heavy enough to prevent easy access or shall be equipped with tamper-proof retainers.

(g) Have adequate reserve capacity.

(4) The pumping system shall have a high water alarm which shall:

(a) Be installed on a separate electrical circuit from the pump.

(b) Be rated for the installation location.

(c) Have the ability to be tested for proper operation.

Authors: Thad Pittman, Matthew Conner, Ken Stephens
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1, et seq.
History: **New Rule:** Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .42 was renumbered .27 per certification published December 30, 2022; effective February 13, 2023.

DISPOSAL METHODS AND CRITERIA FOR SPECIAL SITES

420-3-1-.28 Pit Privies.

(1) In remote areas of the state or in certain transient or temporary locations, pit privies may be utilized. Due to their limited capacities, these systems shall be restricted to receive excreta only. Typical locations of pit privies are rural camps, seasonal recreation areas, public gatherings, and similar transient or temporary locations. Conditions that prohibit the use of a pit privy are:

(a) Water under pressure is present.

(b) Site limiting conditions (Table 7 and Table 18) and soil restrictions (ASHES < 78 inches).

(2) Pit privy construction requirements consist of the following:

(a) A pit privy shall be constructed pursuant to 420-3-1-.65 Setback and Separation Distances.

(b) The pit shall be at least three and one half (3½) feet square, 5 feet deep, and at least 18 inches above ASHES.

It shall be fitted with a restraining curb to prevent caving and contain adequate openings to allow liquids to seep into the surrounding soil. The pit shall be vented to permit escape of the gases from decomposition of waste.

(c) The pit shall be located on a mound to provide drainage of roof water away from the pit to prevent erosion, caving, or flooding.

(d) The floor shall rest on a suitable foundation to prevent settling, sagging, erosion, or caving. It shall cover the pit tightly.

(e) The seat riser shall be joined to the floor, forming a watertight and insect resistant joint. It shall be fitted with a seat and a self-closing cover.

(f) The foundation, floor, and seat riser shall be constructed of concrete or other impervious material that will not warp, crack, or develop openings for the entrance of insects or leakage of excreta.

(g) The abandonment of a pit privy shall be accomplished by filling the pit with soil or other inert material to an elevation equal to the surrounding grade.
Author: Thad Pittman, Matthew Conner, Ken Stephens, Bob Bright
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1, et seq.
History: **New Rule:** Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .43 was renumbered .28 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.29 Composting, Incinerating, And Portable Toilets.

(1) **Composting Toilets.** Composting toilets may be used to handle waste for which they are designed. If there is other sewage generated at this site that the composting toilet is not designed to handle, then an appropriate OSS shall be used.

(a) A composting toilet shall be certified by NSF or an organization that is ANSI-certified to judge compliance with the appropriate NSF Standard.

(b) The disposal of liquid from a composting toilet shall be to either a public or private sewer system.

(2) **Incinerating Toilets.** Incinerating toilets may be used to handle waste for which they are designed. If there is other sewage generated at this site that the incinerating toilet is not designed to handle, then an appropriate OSS shall be used.

(a) The design, construction, and installation of an incinerating toilet shall conform to the current ANSI Z21.61, adopted by reference. The materials, design, construction, and performance of an incinerating toilet shall conform to the appropriate NSF Standard.

(b) The disposal of liquid from an incinerating toilet shall be to either a public or private sewer system.

(3) **Portable Toilets.** Portable toilets may be used to handle waste for which they are designed.

(a) These toilets shall meet the ANSI/PSAI (Portable Sanitation Association International) Z4.3 or Z4.4 standards as appropriate.

(b) A contract with a certified pumper permitted pursuant to Chapter 420-3-6 Septage Management shall be provided for pumping. Pumping shall be at a frequency so as to prevent public nuisances or hazards.

Author: Thad Pittman, Matthew Conner, Ken Stephens, Bob Bright

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1, et seq.

History: New Rule: Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

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420-3-1-.30 Innovative EDS.

(1) An Innovative EDS may be used for dwellings, not part of a Large-Flow Development, in situations where:

(a) The site has vertic soil characteristics or a permeability of greater than 240 MPI. For the minimum number of soil tests required, see Table 19.

(b) Design flow shall not exceed 1,800 GPD per lot.

(c) Slope within the discharge area shall not exceed 12 percent.

(2) The engineer shall incorporate the following in all Innovative EDS designs:

(a) The effluent discharge shall meet additional setback requirements in Table 6 and shall not cause a public health nuisance.

(b) Ponding and run-off in the discharge area shall be prevented by evenly distributing the effluent and providing a vegetative cover. Multiple discharge areas may be utilized to meet these requirements,

(c) The sewage shall be treated to the secondacy effiuent standard or better,

(d) The effluent shall be disinfected to the NSF/ ANSI Standard 46, treated to the NSF/ ANSI Standard 350, or disinfected by other ADPH approved methods.

(e) A sampling port shall be installed after disinfection and prior to discharge.

(f) The effluent shall not escape the lot where generated.

(g) Final grading of the site shall divert storm water around the discharge area(s).

(h) Construction standards and materials shall comply with the applicable sections found in 420-3-1-.58 Gravel Field Standard Construction Specifications.

(3) No Permit to Install sha11 be issued for an Innovative EDS until after a review and concurrence by the LHD and ADPH.

(4) In the event that an existing EDS cannot be repaired or relocated and no longer meets the conditions of this rule, an OSS shall be installed.

Authors: Thad Pittman, Matthew Conner, Ken Stephens, Bob Bright

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1, et seq.

History: New Rule: Published December 30, 2022; effective February 13, 2023.

420-3-1-.31 Recreational Vehicle Parks.

(1) For purposes of regulating sewage disposal, a site may be designated a Recreational Vehicle (RV) Park by the LHD if it meets the following conditions:

(a) The RVs shall be mobile,

(b) The lots and all appurtenances and utilities, including the OSS, shall be owned and operated by a responsible person as defined by these rules.

1. The responsible person shall provide sewage treatment and disposal or a sanitary station into which RVs may discharge waste for ultimate disposal off-site. There shall be one sanitary station for wastewater disposal for every 50 vehicles that the park is designed to accommodate.

2. The location and design of a sanitary station or OSS shall be permitted by the LHD. If ultimate disposal is to be through an OSS permitted by the LHD, the designer shall take into account the chemicals that are used in RV holding tanks. The design of sanitary dump stations shall include a sanitary method of transfer from the RV to the station.

3. The design for each sanitary station shall be based on 420-3-1-.23 Holding Tank Requirements sections (4) through (7). The park shall not take in more RVs than it was designed to accommodate at any one time. The sanitary stations shall only receive sewage.

4. Except for the onboard sewage storage tank built into the RV, there shall be no other form of sewage disposal or storage in the park other than that approved by the LHD.

(2) If an RV park meets the conditions of paragraph (1) of this rule, it shall be determined to be a Small or Large-Flow Development based on flow.

(3) If lots are sold under conditions other than those described in paragraph (1) of this rule, the development shall be considered a Small or Large-Flow Development as defined by these rules, and as such, it shall meet all the requirements in these rules, including flow requirements in Table 1, and shall comply with 420-3-1-.16 Wastewater Management Entities, if applicable.

Author: Thad Pittman, Leigh Salter, Patricia Lindsey, Matthew Conner, Ken Stephens, Bob Bright

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1, et seq.

History: **New Rule:** Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Amended:** Filed October 19, 2006; effective November 23, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

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REPAIRS AND RELOCATIONS

420-3-1-.32 Repair And Relocation Of An Existing OSS/EDS.

(1) The LHD may investigate reports of a failing or an inadequate OSS/EDS. The LHD shall require the owner or responsible person to abate an unsanitacy condition caused by a failing OSS/EDS or an unpermitted surface discharge of sewage by repairing or replacing the system or components of the system as required.

(2) If the BOD or the flow has not changed, the action shall be a repair as defined by these rules.

(3) Before an existing OSS/EDS may be repaired, the responsible person shall apply for and obtain a permit to repair the OSS/EDS from the LHD.

(a) No permit is required if the work performed meets these rules' definition of maintenance.

(b) Verbal authorization to repair a conventional Small-Flow system may be given by the LHD. The verbal repair authorization shall be documented in the LHD file. However, an application for the Permit to Repair shall be submitted to the LHD within 10 days of the date that the verbal authorization was given.

(4) When evaluating the site and repairing a failing EDF discharge area, the applicable sections of these rules shall be followed as guided by the definitions of repair, relocation, and maintenance.

(5) When an OSS/EDS fails and cannot be repaired in accordance with these rules and public sewer is available (within 500 feet), connection to the public sewer shall be made and is subject to approval of appropriate officials.

(6) Repaired systems are subject to the same inspection requirements and installation documentation as new systems.

(7) An additional REDF is not required for repairs to an existing OSS.

(8) If it is determined that the original REDF is inadequate and the repair would likely be more successful if the present EDFis used for the repair, it may be done with approval of the LHD and an ADPH Professional Soil Classifier, if necessary.

(9) If the strength of waste (BOD) or the flow has increased, the actions required shall be evaluated by the LHD in accordance with applicable ADPH protocol.

(10) If a relocation is required, all applications, plans and specifications, certifications, site evaluation, and standards shall be the same as a new system.

(11) If certain components ofthe existing OSS/EDS are operationally sound, they may be incorporated into the repaired or relocated EDF or discharge area.

Authors: Thad Pittman, Lem Burell, James Congleton, Matthew Conner, Ken Stephens, Bob Bright
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1, et seq.
History: New Rule: Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .47 was renumbered .32 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.33 Evaluation Of An Existing OSS/EDS.

(1) When requested by a responsible person or a lending institution representing the seller or buyer, an evaluation of an existing OSS/ EDS may be performed by the LHD. The evaluation of an existing OSS/EDS does not express or imply any guarantee that theOSS/EDS will function satisfactorily.

(2) Evidence that an existing OSS was installed without the issuance of a Permit to Install on or after March 18, 1982, may be reason for the LHD to decline to evaluate the existing OSS. The LHD may require a professional site evaluation and application for Permit to Install (Repair) be submitted by the responsible person. The LHD may require the existing OSS to either be brought into compliance with current rules or require a new OSS.

(3) Before completing the evaluation, the responsible person or the lending institution shall provide evidence that the septic tank of an existing OSS/EDS has been pumped within the last 3 years by an AOWB licensed pumper.

(4) Similar inspection services, such as those provided by a home inspector or an AOWB licensee, shall not imply that the service was provided under authority of these rules, nor shall they imply that the system complies with these rules.
Authors: Thad Pittman, Lem Burell, Matthew Conner, Ken Stephens, Bob Bright
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1, et seq.

History: New Rule: Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

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CERTIFICATIONS AND RECORDING REQUIREMENTS

420-3-1-.34 Certifications.

(1) Prior to issuance of the Permit to Install (Repair), the soil professional or PHESS shall certify that the soil tests are true and accurate by signing the certification in ADPH Form CEP-2/3 Part C.

(2) For a permit application for Small-Flow Developments or Systems, the responsible person shall sign the certification in ADPH Form CEP-2. For a permit application for Large-Flow Developments or Systems, the responsible person shall sign the certification in ADPH Form CEP-3.

(3) For an Engineered OSS or EDS, the engineer (see 420-3-1-.09 Engineer Design Required) shall certify that the design of the system will meet applicable performance standards by signing the certifications in ADPH Form CEP-2 or CEP-3, as appropriate.

(4) For a Conventional OSS, the soil professional or the PHESS shall certify the information outlined in ADPH Form CEP-2 or CEP-3 is complete, true, and correct.

(5) Prior to issuance of the Approval for Use, the installer shall certify the installation by submitting ADPH Form CEP-5 within 3 business days of the installation.

(6) Prior to issuance of the Approval for Use, for a system designed by an engineer as required by 420-3-1-.09 Engineer Design Required, the engineer shall certify the installation by submitting ADPH Form CEP-6.
Author: Thad Pittman, Matthew Conner, Ken Stephens, Bob Bright

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1, et seq.
History: **New Rule:** Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

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420-3-1-.35 Professional Signatures And Seals. It is the responsibility of any person preparing or submitting an application to ensure that all studies, engineering reports, plans and specifications, soils reports, and other technical submittals required by state lawor these rules, are prepared according to applicable licensure laws and regulations, and that they include the professional's signature and seal as required by the applicable licensure laws.
Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1, et seq.
History: **New Rule:** Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Amended:** Filed October 19, 2006; effective November 23, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .52 was renumbered .35 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.36 Recording Requirements.

(1) The LHD shall sign a surveyed plat, if applicable, to be recorded when the appropriate ADPH application forms have been completed and approved.

(2) A plat to be recorded for lots that will have an OSS shall have one of the following statements on the plat:

(a) For lots with individual systems on each lot it shall read:

"The lot(s) on this plat are subject to approval or deletion by the (name of county) LHD. No representation is made that anyloton this plat will accommodate an Onsite Sewage System (OSS). The appropriateness of a lot for wastewater sewage treatment and disposal shall be determined when an application is submitted. If permitted, the lot approva] may contain certain conditions which restrict the use of the lot or obligate owners to special maintenance and reporting requirements, and these are on file with said health department and are made a part of this plat as if set out here on."

(b) For lots on a Cluster Wastewater System it shall say:

"The Health Department signature is for recording purposes and signifies that the Department is aware of this development and sees no obvious impediments to the planned sanitary sewer system serving the lots as it was presented."

(c) When requested, for any system not regulated by ADPH, it shall say:

"This Health Department signature is for recording purposes only."

(d) These statements may be modified at the discretion of the LHD.

(e) All the items that are required on the surveyed plat on record in the LHD do not have to be on the recorded plat so long as the statements above are on the recorded plat.

(3) The owner of any lots that contain an Engineered OSS that is notpart of a Large- Flow Development with a plat recorded after March 19, 2006, shall execute and record the covenant to run with the land (ADPH Form CEP-7) before an Approval for Use may be issued by the LHD.

(4) All required recordings shall be completed before an Approval for Use is issued by the LHD.

Author: Thad Pittman, Matthew Conner, Ken Stephens, Bob Bright

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq; 22-25B-1, et seq.

History: New Rule: Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

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SITE EVALUATION

420-3-1-.37 Site Limitation Determination.

(1) Site evaluations may be performed using percolation tests, soil mapping, soil morphology, or the unified system as described in these rules.

(2) The site evaluation shall be completed by one of the following who shall be licensed, registered, and certified in the state of Alabama: an engineer, land surveyor, geologist, or soil classifier; and in some cases, a PHESS. All sites on which an OSS/EDS is proposed shall be evaluated and rated using the following six factors:

(a) Soil permeability: see 420-3-1-.39 Soil Permeability.

(b) Depth to Average Seasonal High Extended Saturation (ASHES): see 420-3-1-.40 Soil Testing Depth Requirements and 420-3-1-.42 Soil Restriction Depth and Vertical Separation.

(c) Depth to bedrock or other restrictive layer or horizon: see 420-3-1-.40 Soil Testing Depth Requirements and 420-3-1-.42 Soil Restriction Depth and Vertical Separation.

(d) Slope and landform limitations: see 420-3-1-.38 Slope and Landform Limitations.

(e) Potential for frequent flooding: see 420-3-1-.38 Slope and Land.form Limitations.

(f) Presence of surface saturated soils: see 420-3-1-.38 Slope and Landform Limitations.

(3) The most limiting factor shall determine the suitability of the site for a Conventional OSS, Engineered OSS, or EDS.

(4) The limitation rating of each factor can be determined from Table 7 and Table 18.

(5) All soil and site conditions, site limitations, restrictive layer or horizon, and soil tests and evaluation results may be verified by ADPH.

Author: David Gray

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.

History: **New Rule:** Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Amended:** Filed October 19, 2006; effective November 23, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

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420-3-1-.38 Slope And Landform Limitations.

(1) EDF sites with slopes greater than 25 percent require an Engineer Design. EDF sites with slopes greater than 40 percent are considered unsuitable for the installation of an OSS. Table 8 shall be consulted for the required trench spacing and required amount of cover needed for a Conventional OSS.

(2) Slope limitation ratings are found in Table 18. See 420-3-1-.51 Lot Modification - Planned and Unplanned, for options for manipulating steep slopes to overcome severe or extreme ratings.

(3) Prior to any cutting and/or filling operations, refer to 420-3-1-.61 Controlled Fill Mound System, and 420-3-1-.51 Lot Modification-Planned and Unplanned.

(4) Drainage ways shall not be filled for the purpose of creating an acceptable EDF or REDF. See Drainage Way and Table 4.

(5) Sites with caves, sinkholes, and similar depressions within 300 feet of the EDF or REDF that are likely to be impacted by the sewage from the system shall be rated extreme. The LHD may consider allowing OSS components in locations less than 300 feet from these features upon receipt of a report prepared and certified by a geologist. This report shall specifically address the susceptibility of contamination of both surface and groundwater by an OSS based on the existing conditions. However, no part of the system shall be allowed within 50 feet of the rim on any sinkhole.

(6) Any site rated extreme because of wetlands, hydric soils, or ponding is considered unsuitable for an EDF except when the conditions of 420-3-1-.61 Controlled Fill Mound System, and 420-3-1-.51 Lot Modification - Planned and Unplanned, apply. Frequently flooded areas are considered unacceptable for an OSS.

(7) Sites that are in a flood easement are considered extreme and are unsuitable for an OSS/EDS.

(8) Natural and artificial landforms such as filled areas with excessive voids (including mine spoil areas) require special consideration because of the high potential for contamination.

Authors: David Gray, Boyd Rogers, Richard Smith
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.
History: **New Rule:** Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Amended:** Filed October 19, 2006; effective November 23, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

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420-3-1-.39 Soil Permeability.

(1) Permeability shall be determined as part of a site evaluation by one or more of the following methods: The percolation testing method described in 420-3-1-.43 General Percolation Procedure through 420-3-1-.46 Extended Saturation Procedure.

(a) The unified method described in 420-3-1-.47 Unified System for Site Evaluation.

(b) The soil morphology method described in 420-3-1-.48 Soil Morphology Method.

(c) The detailed soil mapping method described in 420-3-1-.49 Soil Maps.

(d) The percolation method, when used, shall be performed and certified by an engineer, land surveyor, geologist, or soil classifier, in accordance with their respective licensing board rules.

(2) Permeameter testing may be substituted for percolation tests when performed in accordance with the manufacturer's guidelines and procedures, with the exception of saturation. Saturation periods shall be the same as for percolation testing found in 420-3-1-.43 General Percolation Procedure.

(a) Permeameter tests maybe required to be performed in lieu of percolation tests in special conditions, such as in fill material, at the discretion of ADPH or the LHD.

(b) The unified soils classification method, when used, shall be performed and certified by an engineer or geologist according to 420-3-1-.47 Unified System for Site Evaluation.

(3) The soil morphology method, when used, shall be performed and certified by a soil classifier or PHESS currently employed by ADPH, according to 420-3-1-.48 Soil Morphology Method.

(4) The detailed soil mapping method, when used, shall be performed and certified by a soil classifier according to 420-3-1-.49 Soil Maps.

(5) Soil absorption rates for an EDF or discharge area shall be based on actual percolation results or assigned rates determined by using one of the other three methods of site evaluation. Although similarities exist, each method has specific procedures, soil groupings, terminology, and application ranges to be used and reported exclusively by the appropriate professional as set forth in this rule.

(6) When assigned or actual permeability (percolation) rates or other test results are in dispute, ADPH or the LHD shall determine what test results or percolation rates are used in permitting an OSS/EDS.

(7) Test results or assigned rates obtained from natural soil, along with all other evaluation factors, shall be used to determine the design and size of the system. However, test results or assigned rates in fill material may not necessarily be the only criteria for determining the type or size of an EDF. Other requirements may apply as deemed necessary by ADPH or the LHD.

(8) ADPH or the LHD may require additional observation pits, borings, or other tests as necessary, if ADPH or the LHD becomes aware that the soil or site may be significantly different from that which was reported. Other tests may include, but are not limited to, saturated hydraulic conductivity tests (such as constant head permeameters), extended saturation testing, and/ormonitoring of saturated conditions.

Authors: David Gray, Boyd Rogers, Richard Smith

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.

History: **New Rule:** Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

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420-3-1-.40 Soil Testing Depth Requirements.

(1) The correct testing depth to determine permeability shall be the least permeable horizon that is at or within 18 inches below the EDF bottom or EDS discharge area. If a restriction is present, the correct testing depth shall be the least permeable horizon that is at or within the required MVS depth below the EDF bottom. Percolation tests maybe conducted at different depths to aid in this determination. In no case shall the test depth be less than 12 inches.

(2) Sites where the EDF bottom will be installed above the natural ground surface shall be evaluated at a depth of 12 inches from the natural ground surface, prior to adding fill. See 420-3-1-.61 Controlled Fill Mound Systems.

(3) A site having more permeable soils located below slowly permeable clay layers (but not a restrictive layer or horizon, see Table 7 footnote 4), and which can still meet the required separation distance above the ASHES or other limiting layers, may be considered for an EDF. However, trench bottoms shall not exceed 60 inches below the natural surface.

(4) The LHD may require observation pits where questions arise about soil conditions or where soils are difficult to evaluate with manually operated equipment.
Authors: David Gray, John Clement, Boyd Rogers, Richard Smith
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.
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420-3-1-.41 Minimum Testing Standards And Interpretations.

(1) See Table 19 for the minimum number of tests required per site.

(2) Soil tests shall be in the proposed EDF or discharge area, and in the proposed REDF when required, except for soμ mapping which shall be performed in accordance with 420-3-1-.49 Soil Maps. The method by which each test is located shall be specified.

(3) Multiple testing locations for the same area shall be a minimum of 30 feet apart and shall be evenly spaced to represent the EDF or discharge area. Each boring and its respective percolation hole shall be 5 to 15 feet apart.

(4) When two tests are performed in the EDF and they produce significantly different results (more than 20 MPI or the extreme of another soil group), one of the following shall be done:

(a) Relocate the proposed EDF area and retest or reevaluate as necessary to confirm that the site is consistent.

(b) Calculate the amount of EDF using the highest result(s).

(c) Soil evaluators may average the test results on projects where four soil tests have been conducted. The averaged test results can be representative of the site conditions.

(5) Soil evaluators may average the restriction depth of test results on sites containing soft bedrock where four or more tests have been conducted.

(6) Observation pits are required for evaluating Large-Flow Systems, including Large-Flow Developments with an individual OSS, except where high intensity soil maps are provided.

(a) Boring diameters for soil maps shall be no less than 2.5 inches in diameter.

Author: David Gray
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.
History: **New Rule:** Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Amended:** Filed October 19, 2006; effective November 23, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .65 was renumbered .41 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.42 Soil Restriction Depth And Vertical Separation.

(1) The MVS between the deepest EDF bottoms and any noted restriction as defined by these rules shall be required. See Table 7 for specific depth requirements.

(2) The depth to the ASHES is approximated by the shallowest occurrence of contemporary redoximorphic features containing 2 percent or more chroma 2 or less (Munsell or equivalent) colors (See Table 7 footnote 4). MVS is based on chroma 2 or less colors; however, saturation often occurs above these gray colors for shorter durations indicated by the accumulation of contemporary oxides. The EDF bottoms shall be at least the same elevation or shallower than the top of this zone. If there is sufficient evidence to suspect saturation occurs even higher than any obvious redox features for a significant period, groundwater monitoring may be required for a minimum of one normal wet season.

(3) When the soil professional performing the evaluation encounters difficulty in determining the depth of the ASHES, he or she should consult with the LHD.

(4) When actual monitoring is required to make a determination of the ASHES, a proposed plan shall be submitted to the LHD and ADPH for review and approval.

(5) The LHD or ADPH reserves the right to make the final determination concerning ASHES and useable soil depth.

(6) Other soil features that may occur in or below the soil and restrict the downward movement of water or hinder treatment of effluent shall be considered a restrictive layer or horizon. These features may include, but are not limited to, the following:

(a) Bedrock layers that are tilted and variable in depth from the surface shall be treated as restrictive when the consistent mass of hard or soft bedrock exceeds 50 percent by volume.

(b) Some parent material layers with poor or massive structure and without adequate conducting pores (slowly or very slowly permeable).

(c) Fragipans or similar features with inherent dense or brittle qualities.

(d) A layer or layers of fill or mine spoil that has less than 50 percent soil size particles, or greater than 50 percent coarse fragments with 2 percent or more empty voids between fragments, or greater than 75 percent coarse fragments larger than gravel size.

(e) One or more layers of fill or mine spoil that have been compacted.

Author: David Gray, John Clement, Boyd Rogers, Richard Smith
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.
History: **New Rule:** Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

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420-3-1-.43 General Percolation Procedure.

(1) A site may be evaluated using the percolation method by first boring a hole or digging an observation pit to establish the depth of the ASHES or other restrictive layer or horizon. The test hole depth is determined by 420-3-1-.40 Soil Testing Depth Requirements. For the minimum number of tests required see Table 19.

(2) A valid percolation test shall be performed in accordance with this rule and 420-3-1-.40 Soil Testing Depth Requirements, 420-3-1-.44 Soil Boring Procedure (for Percolation Testing), and 420-3-1-.45 Percolation Test Procedure.

(3) For Small-Flow single-family dwellings, a minimum of two percolation tests shall be required for each EDF, and one percolation test shall be performed in the REDF for lots of less than 15,000 sq. ft. See Table 17 for exceptions. The test holes shall be located no closer than 30 feet apart. The test holes shall be evenly spaced to represent the EDF area.

(4) For Large-Flow systems and establishments, a minimum of two percolation tests and two borings shall be required for the initial 600 gpd. One percolation and one boring shall be required for each additional 600 gpd of flow or portion thereof thereafter. The test holes shall be evenly spaced to represent the EDF area.

(5) Percolation tests shall not be conducted in stump holes, large root channels, fractured bedrock, or in association with any other factors that might cause test results to be

non-representative of the actual site conditions. No soil additives shall be used in the percolation testing process.
Author: David Gray, Boyd Rogers, Richard Smith
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.
History: **New Rule:** Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Amended:** Filed October 19, 2006; effective November 23, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

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420-3-1-.44 Soil Boring Procedure For Percolation Testing.

(1) A minimum of two soil borings or two observation pits shall be dug from 5 to 15 feet from the anticipated percolation test location in accordance with the following:

(a) Soil borings shall be dug to a minimum depth of 48 inches to determine the restrictive horizon depth, unless prevented by bedrock or an additional 6 inches once ASHES is encountered. The soil boring or observation pit shall be deeper than the intended trench depth by the required MVS. The method by which each test is located shall be specified.

(b) The minimum diameter of soil borings shall be 2.5 inches. Soil material from a boring shall be laid out in a manner consistent with the soil's natural order. Power augers or similar equipment that uses the Archimedes screw principle shall not be used for soil evaluation.

(c) Observation pits are required for Large-Flow Developments. Pits shall be a minimum of 60 inches deep unless prevented by hard bedrock. Pits should be constructed in such a fashion as to be easily accessible for the evaluator. Pits are excluded from an organized layout of the removed soil material.

(d) The depth from the surface to the groundwater or saturated soil shall be reported if encountered.

(e) The depth from the surface to ASHES shall be reported if encountered.

(f) The depth from the surface to any other restrictive layer or horizon shall be identified and reported. See 420-3-1-.42 Soil Restriction Depth and Vertical Separation. If there is uncertainty about whether a feature qualifies as a restrictive layer or horizon, the LHD shall be consulted.

(g) The color(s) and USDA texture classes for each layer shall berecorded. Any other pertinent information about the soil or the site, including percent slope, and landform position shall be reported.

1. Soil colors shall be determined using a Munsell chart or equivalent and reported for each horizon. Soil colors may occur as:

2. Only one color.

3. One dominant color with secondary colors (mottles or redoximorphic features).

4. Several colors with approximate equal coverage (mottled}. To the extent possible, all colors should be recorded, with the dominant color first.

(h) The depth from the natural surface to the upper and lower boundaries of each layer shall be reported.

(i) All measurements shall be reported in inches.

Author: David Gray, Boyd Rogers, Richard Smith
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.
History: **New Rule:** Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Amended:** Filed October 19, 2006; effective November 23, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

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420-3-1-.45 Percolation Test Procedure.

(1) The percolation test hole shall be dug or bored to the appropriate testing depth according to 420-3-1-.40 Soil Testing Depth Requirements, but not less than 12 inches deep. The diameter of the hole shall be 4 to 8 inches (except when a permeameter is used).

(2) In order to remove any glazed or burnished spots on the walls of the test hole, the walls shall be scratched or made rough so as to provide a natural soil interface for absorption. All loose materials shall be removed from the hole. It is recommended that a 2-inch layer of coarse sand or gravel be added to the hole to protect the bottom from scouring.

(3) A percolation test hole shall be filled with clear water to a minimum depth of 12 inches over the bottom of the hole. Water shall be added to the test hole to maintain the 12-inch depth as often as necessary over a minimum period of 4 hours and preferably overnight, in order to saturate the surrounding soil.

(4) Percolation test measurements shall be made no later than 8 hours following the saturation process. The drop in the water surface shall be measured from a stable reference point at or above the surface, not inside the test hole, at 30-minute intervals until the completion of the test.

(5) After the saturation process, the testing professional shall adjust the water level to a depth of 6 inches over the bottom of the hole. From a stable reference point outside the test hole, the depth to the water surface shall be measured at 30-minute intervals for a period of 4 hours, or until a minimum of three readings have essentially the same drop. The total variation in drop between three readings shall be no more than one-eighth inch.

(6) Water shall be added as necessary to maintain the 6 inches of water above the bottom. The drop in the water elevation occurring in the last 30-minute interval shall determine the percolation rate, provided that the absorption rate has stabilized. If there is more than one- eighth inch variation in drop between the last three readings, the test shall continue to be made at additional 30-minute intervals until the rate has stabilized. The rate shall be considered stabilized when the last three readings are the same (not exceeding one-eighth inch) after the minimum 4 hours saturation period.

(7) Soils that are rated higher than moderate shrink-swell potential (plasticity index above 20 percent and a liquid limit greater than 50 percent) shall require a minimum of 24 hours of constant saturation prior to testing. See 420-3-1-.46 Extended Saturation Procedure.

(8) Additional saturation time may be required if sufficient swelling has not occurred as indicated by non-representative test results.

(9) For soils that absorb the first 6 inches of water in less than 30 minutes following saturation, measurements on the water surface shall be made at 10-minute intervals over a period of 1 hour. The drop of water surface that occurs in the final 10 minutes shall be used to compute the percolation rate. Generally, these are coarse textured soils. If this situation occurs in other soils, the test should be relocated.

(10) The percolation rate shall be reported as the number of minutes required for the water surface to drop 1 inch in the test hole after the rate is stabilized (min/inch or MPI).

(11) A copy of all field notes for each percolation test attempted shall be provided to the LHD upon request.
Author: David Gray, Boyd Rogers, Richard Smith
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.
History: **New Rule:** Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Amended:** Filed October 19, 2006; effective November 23, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

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420-3-1-.46 Extended Saturation Procedure.

(1) Certain soils, especially those with high, very high, and sometimes moderate shrink:-swell potential require extended saturation periods before percolation or permeameter testing can be done. This process is necessary to allow sufficient time for swelling to occur in these soils if dry, regardless of the season of the year. The following list of

indicators should be used as a guide to help soi1 testers identify those soils that require extended saturation prior to testing to ensure accurate test results.

(a) Soil areas identified by the USDA/NRCS county soil survey as having moderate or higher shrink-swell potential.

(b) Texture Group 4B and 4C soils.

(c) Soils with pH levels of seven or higher in some part. These soils may have vegetative indicators of a seemingly over-abundance of red cedar> red bud, green ash, Osage orange, etc.

(d) Soils having developed directly over argillaceous limestone and/or shale parent material.

(e) Soils that are compacted.

(2) The following procedures shall be met when the extended saturation procedure (ESP) is required.

(a) The LHD shall be notified at least 2 business days prior to the beginning of (including the saturation period) a simulated or actual wet-season percolation test.

(b) Percolation test holes shall be prepared according to 420-3-1-.43 General Percolation Procedure, except for the saturation period.

(c) A 12-inch column of clean water shall be maintained for at least 24 hours instead of the standard 4-hour saturation period. The regular procedures in 420-3-1-.43 General Percolation Procedure should be followed for completing the test.

(d) A log of the procedures, times, checks, and readings made during the process shall be kept and submitted with the test results to the LHD.

Author: David Gray, Boyd Rogers, Richard Smith
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.
History: **New Rule:** Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

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420-3-1-.47 Unified System For Site Evaluation.

(1) An engineer or geologist may evaluate a site using the unified system method.

(2) The percolation test method may be used in combination with this method to aid in evaluating a site.

(3) Lab analysis may be substituted for estimates at any time but is required for Texture Group 4B and 4C soils (estimated permeability more than 90 MPI). However, in the case where the results from this method conflict with an evaluation by a representative of the LHD or ADPH, ADPH evaluation results shall be final.

(a) If the design is utilizing drip irrigation at a .05 gpd/ sq. ft. loading rate, lab analysis is not required.

(b) For any other design using a soil loading rate of greater than 240 MPI, lab analysis is not required.

(4) For Small-Flow single-family dwellings, a minimum of two observation pits or two soil borings shall be required for each EDF, and one observation pit or boring shall be performed in the REDF for lots of less than 15,000 sq. ft. See Table 17 for exceptions. The pits or borings shall be located no closer than 30 feet apart. The pits or borings shall be evenly spaced to represent the EDF area.

(5) For Large-Flow systems and establishments, a minimum of two observation pits or two soil borings shall be required for the initial 600 gpd. One observation pit or boring shall be required for each additional 600 gpd of flow or portion thereof thereafter. The pits or borings shall be evenly spaced to represent the EDF area. The method by which each test is located shall be specified.

(6) Soil borings shall be dug to a minimum depth of 48 inches to determine the limiting zone depth, unless prevented by bedrock or an additional 6 inches once ASHES is encountered. The minimum diameter of the soil boring shall be 2.5 inches.

(7) When observation pits are used, they shall be a minimum of 60 inches deep unless prevented by hard bedrock and constructed in such a fashion as to be easily accessible and safe for the evaluator.

(a) The vertical section of the observation pit wall shall be picked to a width of at least 12 inches, from the ground surface to the floor of the observation pit, for observations and note-taking.

(b) The soil in the picked zone shall be moist so that the proper colors can be observed and noted. If additional moisture is needed, apply water with a spray bottle. All colors recorded shall be from moist and unmixed samples.

(8) The upper and lower depths of each layer of soil shall be recorded in inches from the surface of the ground. Each layer shall be given a numerical identification, beginning with the surface as No. 1 and numbering consecutively with depth.

(9) The color(s) and texture of each layer shall be recorded, using unified designations, starting with the surface, and continuing to the minimum required depth. Any other pertinent information about the site, including percent slope and landform position, shall be reported. From this information, the location, depth, and amount of EDF can be proposed to the LHD.

(10) Soil colors shall be determined using a Munsell chart or equivalent and reported for each layer. Soil colors may occur as:

(a) Only one color.

(b) One dominant color with secondary colors (mottles or redoximorphic features).

(c) Several colors with approximate equal coverage (mottled). To the extent possible, all colors should be recorded, with the dominant color first.

(11) The depth to the ASHES shall be determined from 420-3-1-.42 Soil Restriction Depth and Vertical Separation. EDF bottoms shall have a minimum separation distance above the ASHES or other restrictive layer, or horizon as established in Table 7. If there is uncertainty about whether a feature qualifies as a restrictive layer or horizon, the LHD shall be consulted.

(12) Once the upper and lower depths of each layer are determined and colors are noted, the permeability can be assigned for each layer. Use Table 20 to assign soil permeability classes based on the Unified System (Reference: FHA No 373, Engineering Soil Classification for Residential Development).

Author: David Gray, Boyd Rogers, Richard Smith
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.
History: **New Rule:** Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Amended:** Filed October 19, 2006; effective November 23, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

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420-3-1-.48 Soil Morphology Method.

(1) A professional soil classifier may evaluate a site using the soil morphology method.

(2) A PHESS may evaluate sites for a Conventional OSS. The PHESS shall be currently employed by ADPH1 conduct these evaluations only in counties approved by ADPH for this program, and adhere to the requirements of these rules. This applies to Small-Flow Systems only.

(3) The percolation test method may be used in combination with the soil morphology method to aid in evaluating a site.

(4) The PHESS or professional soil classifier may determine that a lab analysis is necessary. However, in the case where the results from the soil morphology method conflict with an evaluation by a representative of the LHD or ADPH, the evaluation results of ADPH shall be final.

(5) For Small-Flow single-family dwellings, a minimum of two observation pits or two soil borings shall be required for each EDF, and one observation pit and one soil boring shall be performed in the REDF for lots of less than 15,000 sq. ft. See Table 17 for exceptions. The test holes shall be located no

closer than 30 feet apart. The pits or borings shall be evenly spaced to represent.the EDF area.

(6) For Large-Flow systems and establishments, a minimum of two observation pits or two soil borings shall be required for the initial 600 gpd. One observation pit or one soil boring shall be required for each additional 600 gpd of flow or portion thereof thereafter. The pits or borings shall be evenly spaced to represent the EDF area. The method by which each test is located shall be specified.

(7) Soil borings shall be dug to a minimum depth of 48 inches to determine the limiting zone depth, unless prevented by bedrock or an additional 6 inches once ASHES is encountered. The soil boring or observation pit shall be deeper than the recommended trench depth by the required MVS. The minimum diameter of the soil boring shall be 2.5 inches.

(8) When observation pits are used, they shall be a minimum of 60 inches deep unless prevented by hard bedrock and constructed in such a fashion as to be easily accessible and safe for the evaluator.

(a) The vertical section of the observation pit wall shall be picked to a width of at least 12 inches, from the ground surlace to the floor of the observation pit, for observations and note-taking.

(b) The soil in the picked zone shall be moist so that the proper colors can be observed and noted. ff additional moisture is needed, apply water with a spray bottle. All colors recorded shall be from moist and unmixed samples.

(9) The upper and lower depths of each discernible horizon shall be recorded in inches from the surface of the ground. Each horizon shall be given a horizon designation as appropriate, Subscripts are helpful when applicable.

(10) The color(s) and USDA textural class for each horizon shall be recorded. Any other pertinent information about the soil or the site, including percent slope and landform position shall be reported. From this information, the location, depth, and size of an EDF can be proposed to the LHD.

(11) Soil colors shall be determined using a Munsell chart or equivalent and reported for each horizon. Soil colors may occur as:

(a) Only one color.

(b) One dominant color with secondary colors (mottles or redoximorphic features).

(c) Several colors with approximate equal coverage (mottled). To the extent possible, all colors should be recorded, with the dominant color first.

(12) The depth to the ASHES shall be determined by 420-3-1-.42 Soil Restriction Depth and Vertical Separation. EDF bottoms shall have a minimum separation distance above the ASHES or other restrictive layer, or horizon as established in Table 7. If there is uncertainty about whether a feature qualifies as a restrictive layer or horizon, the LHD shall be consulted.

(13) Once the upper and lower depths of each layer are determined and colors are noted, the permeability can be assigned for each horizon. Use Table 21 to assign soil permeability classes based on the USDA System.

(14) When soil borings are used to evaluate a site, a 2.5-inch minimum diameter hand operated soil bucket auger shall be used. However, a 2-inch minimum diameter soil probe may be used if the sample can be obtained with horizons in their natural condition with appropriate depths and can be left virtually intact for the LHD's inspection. If there is an indication that problems may exist which would not allow for the proper evaluation of the soil using soil borings, then observation pits or other appropriate testing methods may be required.

Authors: David Gray, Boyd Rogers, Richard Smith

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.

History: **New Rule:** Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Amended:** Filed October 19, 2006; effective November 23, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

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420-3-1-.49 Soil Maps.

(1) **Types of Soil Maps.**

(a) Preliminary maps may be made using a wide variety of scales, but not smaller than 1:24,000. They usually provide sufficient information to make decisions about further land development. Minimum size delineation is approximately 3 acres. A preliminary soil map can be obtained from the USDA NRCS published soil survey. A preliminary soil map is a required part of Part 1 of the Site Development Plan. The map may be used in Part 1 of the Site Development Plan process and can come directly from the published survey or be made by a soil classifier. It is recommended that preliminary maps from USDA NRCS published soil surveys be reviewed and checked for accuracy by a Professional Soil Classifier. The preliminary maps from USDA NRCS published surveys may not be used in the place of soil maps required for site evaluation in Part 2 of the Site Development Plan.

(b) Low intensity maps show the location and extent of soils and landscape features sufficient for most Large-Flow planning but are not site specific to such a degree that allows for individual site determinations. Base maps are 1-inch equals 300 feet scale or larger. One soil observation pit per 3 acres is the minimum. Low intensity maps are excellent planning tools for Large-Flow Development and other areas where an OSS will be used.

(c) High intensity maps are the minimum level of intensity for soil maps when used in lieu of other evaluations or tests, i.e., percolation. The map scale shall be I-inch equals 100 feet or larger. High intensity soil maps can be used for individual lots or in a Large-Flow Development. A minimum of four borings per acre is required to delineate the soils. When a grid system is not used, the boring location shall be dictated by the landscape or in a manner to best define the soils that occur. All borings shall be flagged and numbered. When a high intensity soil map is used to evaluate a site for an OSS on an individual lot, the lot comers shall be staked and flagged, and the lot lines flagged at regular intervals in wooded or uncleared areas. If necessary, the owner shall mow or otherwise clear the site to facilitate the mapping process.

(d) Extra high intensity studies are an intensive soil morphological study that is site specific. A minimum of two borings is required per site. Soil descriptions shall be provided, and the soil classified to the series level whenever

possible. Map boundaries are not necessarily required at this level of evaluation.

(2) **Requirements for Soil Maps.**

(a) Soils shall be classified according to U.S. Soil Taxonomy to the series level and map units shall generally consist of consociations. Complexes may only be used under very limited conditions when two or more dissimilar soils or soils and bedrock outcrops cannot be separated.

(b) Soil series boundaries shall be plotted on a map at a scale dictated by the intended soil mapping intensity.

(c) A high intensity soil map requires a carefully prepared base map on which the professional soil classifier shall accurately locate soil boundaries. A minimum of a 2-foot contour interval topographic base map is required for all high intensity soil maps.

(d) The minimum number of soil borings required for soil map(s) depends upon the variability of the relief and the complexity of the soils present.

(3) **Required Map Information.**

(a) A title block or caption that states the project or client name.

(b) The date of the survey.

(c) A north arrow for orientation.

(d) The scale of the map including a visual scale.

(e) The soil mapping intensity (i.e., preliminary, high intensity).

(f) The signature, stamp or seal, address, and telephone number of the professional soil classifier.

(g) A special symbols legend, if needed, defining special features identified on the survey map (i.e., springs, rock outcrops, wells, sinkholes, gullies, etc.).

(h) The method by which borings are located on the map.

(4) **Additional Information.** The information listed below shall accompany or be provided on maps in table form with detailed maps for each map unit:

(a) The name of the soil series (or closest series with similar interpretations).

(b) The percent slope or slope range class.

(c) The depth to ASHES: see footnotes below Table 7.

(d) The depth to other restrictive layer or horizon.

(e) The assigned or adjusted permeability rate and depth at which it occurs.

(f) Additional notes and information as appropriate.

(g) Soil maps shall be color-coded with green for slight, yellow for moderate, orange for severe, and red for extreme.

(5) Other. The LHD or ADPH may require or choose to allow a high intensity or extra high intensity soil map for a special study on a parcel or lot where conditions may be severe or extreme for a Conventional OSS or where an advanced treatment system is needed.

Author: David Gray, Boyd Rogers, Richard Smith
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.
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420-3-1-.50 Protection Of EDF And REDF.

(1) The primary purpose for requiring protection of the EDF and REDF is to prevent any disturbance to these areas that will affect the integrity of the soil and the performance

of the OSS, to avoid costly and untimely delays, and to identify these areas as EDFs. These areas shall be restricted from building development prior to installation of the 08S.

(a) Protection of the EDF and REDF shall be the responsibility of the property owner but may be delegated to an appropriate responsible party depending on the site location, type of system, level of development, and construction activity.

(b) Protective actions and methods may vary according to the type of building development and OSS.

(2) Large-Flow Developments shall have protective actions and methods submitted as part of the Site Development Plan. The Site Protection Plan is to be implemented once locations of EDF and REDF are determined. The EDF and REDF shall be physically protected in a manner directed by the LHD that is reasonably expected to protect the areas prior to and during construction and development activities for the Large-Flow Development. The EDF and REDF shall be designated in such a manner to communicate that these areas are for sewage disposal.

(3) Small-Flow Systems within a Large-Flow Development shall have EDF and REDF protective measures in place prior to individual lot development and/ or building or establishment construction. If protective measures implemented for the Large-Flow Development prove to be inadequate or need to be reinforced, adjustments shall be made prior to issuing a Permit to Install.

(4) Large-Flow Systems shall have protection of the EDF and REDF implemented as stated for Large-Flow Developments.

(5) Small-Flow Developments, not part of a Large-Flow Development, shall have EDF and REDF protective measures in p]ace as stated for Small-Flow Systems within a Large-Flow Development but may take into consideration factors that could require a lesser degree of protection due to property size, distance to EDF and REDF from building, or establishment construction, or other reasons as deemed appropriate for consideration by the LHD.

(6) Sites with High Intensity Soil Maps are excluded from this requirement due to the flexibility soil mapping allows. Protection of the EDF/REDF areas shall be required during the application process at the point the CEP-2 is submitted with a plot plan for the site.

Author: Tom Jensen, David Gray, Boyd Rogers, Richard Smith

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.
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420-3-1-.51 Lot Modification – Planned And Unplanned.

(1) **General Requirements.** Lot modification is the planned or unplanned changing of a lot characteristic that shall impact the EDF.

(a) Planned lot modification shall be accomplished under the supervision of an engineer and in accordance with the applicable sections of these rules to make a lot more conducive for use of an EDF. An OSS for a lot that has been proposed after lot modification shall be designed by an engineer when required.

(b) Unplanned lot modification can make a lot unsuitable as a site for an OSS or EDS. In these situations, the lot to be used shall require additional steps to return it to a useable state. If this is possible, the additional steps required shall be determined by an engineer with the concurrence of the LHD except under (3)(a) and (3)(c) of this rule.

(c) Lot modification, as it impacts the use of an EDF, usually involves the use of fill. Fill is material that is used to modify a lot by filling cuts or is material that is placed over in- situ soil to increase the height of the existing ground surface. Fill can be appropriate or inappropriate for use with an OSS.

(2) **Fill Requirements.**

(a) Fill that has been in place for more than 5 years over soils that are not surface saturated soils shall be evaluated in accordance with the provisions of these rules. However, additional percolation tests, permeam.eter tests, observation pits, or soil borings may be required at the discretion of the LHD to determine consistency and compaction of the fill throughout the proposed EDF area.

(b) Fill that has been in place for less than 5 years over soils that are not surface saturated soils, shall be evaluated by a PSC for confirmation of fill characteristics (formation of redoximorphic features, evidence of pedogenesis within the material, consistency, uniformity, compaction, etc.) and description of the original soil underneath the fill. The description shall address characteristics as outlined in the current USDA Keys to Soil Taxonomy. The PSC evaluation shall be submitted on ADPH Form CEP-2/3 Part C. Additionally, the fill must be in place for a period extending through at least one wet season during which average precipitation amounts were experienced. The responsible person shall provide this documentation. The LHD may consider information from the National Weather Service in determining compliance with the normal or average wet season requirements.

(c) Fill that has been in place over surface saturated soils for more than 5 years may be evaluated during the wet season and in accordance with these rules. The LHD or ADPH may, at their discretion, require additional percolation tests and soil borings to determine consistency and compaction of fill throughout the proposed EDF area.

(d) Sites with fill that has been in place over surface saturated soils less than 5 years or sites where fill will be placed over surface saturated soils, with engineer oversight, shall be evaluated by the following criteria:

1. As applicable, prior to filling a jurisdictional wetland, the responsible person shall first receive documented approval to fill the wetland from the U.S. Army Corps of Engineers or other appropriate agency.

2. Fill shall bein place for a period extending through at least onewet season during which average precipitation amounts were experienced, with the site being monitored during this period. The monitoring may be accomplished by use of properly spaced observation wells which are inspected on a weekly basis. The results of these observations shall be certified by a professional engineer, professional soils classifier, or a professional geologist. The monitoring shall be accomplished using two observation wells for every 500 square feet of EDF. Placement of the wells shall be evenly spaced with one well up gradient and one well down gradient for sloping sites. These wells shall be constructed such that water levels are measured every 7 days with a minimum of 20 recordings. Sites on which there is evidence of water rising into, or perching within, the ass shall be designed to secondary effluent

standards and maintain an MVS of 12 inches. If no water is observed, the ass shall be designed in accordance with appropriate sections of these rules.

3. The responsible person shall provide documentation that verifies that average precipitation amounts were experienced during the monitoring period, see paragraph (2)(b). The responsible person shall provide documentation pertaining to the amount of time that the fill has been in place. This shall be accomplished by one of the following methods:

(i) The approximate age of the fill based upon the effects of soil development (or lack thereof), determined by a PSC.

(ii) A document (sales invoice, construction billing, etc.) indicating dates and appropriate information such as when fill was placed.

(iii) A method approved by the LHD or the ADPH.

(e) Proposed EDF sites or discharge areas that contain fill material other than soil shall not be considered for the installation of an OSS or EDS.

(3) **Cut Requirements.**

(a) Design proposals which use cuts with fill placed below the natural ground surface (Deep Excavation with In-Ground Fill) may be used on sites with less permeable soils overlying Texture Group 1 or 2 soils where the construction of a Conventional 08S below the more restrictive layer or horizon is not practical..On such sites, the less permeable soil within the EDF may be stripped away, replaced with a suitable fill material (sand [S], loamy sand [LS] or sandy loam [SL]) which is compatible with the underlying soil, and the EDF installed, provided that the following conditions are met:

1. The site is not located within an area containing high shrink-swell soils, or mine spoil.

2. The existing underlying soils shall be Texture Group 1 or 2 soils, and contain a minimum thiclmess of 36 inches, with ASHES or bedrock no closer than 12 inches to the top of this layer.

3. The design proposal shall provide for a minimum of 24 inches of suitable fill below the bottom of the EDF. The total exposed trench depth after filling shall not exceed 60 inches.

4. The engineer, with concurrence of the LHD or ADPH, shall determine the depth at which the size of the EDF is based.

5. The design proposal shall include advanced treatment.

6. The design proposal is not for waste containing high strength sewage.

7. The OSS design shall contain instructions for removal of the unsuitable material in such a manner as to prevent compaction or disturbance of the underlying material.

8. The OSS design shall contain instructions for preparing the top 6 inches of the existing, in-situ material (under the fill) to provide an acceptable interface with the fill material. The OSS design shall provide a minim.um separation distance of 8 feet (on center) between each EDF pipe (2 feet if small diameter, LPP is used).

9. The OSS design shall have a minimum separation distance of 10 feet (8 feet for LPP), as measured from the side of the outer EDF walls, (or pipe ends) to the outer edges of the fill material (i.e., the sidewall of the cut soils).

10. Provisions have been made to intercept any sub-surface water outside the cut area from flowing into the filled area.

(b) Design proposals which use cuts with fill over the newly exposed surface (surface cut with fill above ground) shall comply with 420-3-1-.61 Controlled Fill Mound System.

(c) Design proposals which involve altering ("bench cut," etc.) a lot with severe (greater than 25 percent) or extreme (greater than 40 percent) slopes to accommodate an EDF are subject to the following requirements:

1. "Cut" material which has been moved to the down-slope side shall not be considered a suitable site for installation of an EDF.

2. The cut (benched) area, when proposed as the EDF site, shall require a high intensity soil map prepared and certified by a PSC, which addresses the impact the cut may have on the proposed EDF and REDF.

3. Sites containing continuous hard bedrock at the newly exposed surface (the cut or benched area) shall not be considered for the installation of an EDF.

4. Sites containing other restrictive rock types at the newly exposed surface may be considered for a Controlled Fill System installation (see 420-3-1-.61 Controlled Fill Mound System), provided that the design includes the following:

(i) The design proposal shall include advanced treatment.

(ii) A minimum separation distance of 24 inches between the trench bottoms and the newly exposed surface.

(iii) Use of small diameter pipe (LPP) providing low pressure disposal of effluent.

(iv) A minimum separation distance of 50 feet from the point where the Controlled Fill System side or end slope meets the newly exposed surface, to the end of the cut or benched area (i.e., the point where the cut meets the natural ground surface of the original slope).

Authors: Thad Pitman, Lem Burell, Matthew Conner, Ken Stephens, Bob Bright, David Gray, Boyd Rogers, Richard Smith

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.

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DESIGN AND CONSTRUCTION REQUIREMENTS

420-3-1-.52 Design Flow And Wastewater Concentrations.

(1) The daily design flow of sewage from dwellings shall be computed using Table 1.

(2) For Large-Flow Cluster Wastewater Systems or establishments, the design flow shall be derived from Table 1. comparable systems, or other published engineering design criteria. Sizing based on BOD concentrations shall be derived from other published design criteria.
AuthorS: Thad Pittman, Matthew Conner, Ken Stephens, Bob Bright
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.
History: Filed July 20, 1988. **Amended:** Filed June 19, 1992. **Repealed and New Rule:** Filed December 16, 1999; effective January 20, 2000. **Repealed and New Rule:** October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

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420-3-1-.53 Gravel Field Standard EDF Sizing For Dwellings.

(1) The Gravel Field Standard is the minimum total trench bottom area for dwellings calculated by multiplying the number of bedrooms by the number in the column labeled "Square Feet per Bedroom" in Table 2 or Table 3. The loading rate for an EDF shall correspond to the measured or assigned percolation rate determined according to 420-3-1-.39 Soil Permeability.

(2) A primary EDF for dwellings shall be a minimum of 300 square feet of the Gravel Field Standard. Permitted disposal products may be used with appropriate sizing.
Author: Thad Pittman, Matthew Conner, Ken Stephens, Bob Bright
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.
History: Filed July 20, 1988. **Amended:** Filed June 19, 1992. **Amended:** Filed November 18, 1998; effective December 23, 1998. **Repealed and New Rule:** Filed December 16, 1999; effective January 20, 2000. **Repealed and New Rule:** October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Repealed**

and New Rule: Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

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420-3-1-.54 Gravel Field Standard Reductions For Dwellings.

(1) Any reductions in Gravel Field Standard bottom area for a dwelling using any permitted disposal product as an alternative to the Gravel Field Standard as calculated in 420-3-1-.53 Gravel Field Standard EDF Sizing for Dwellings, shall be expressed as a percent reduction of bottom area and shall be reflected in the Product Permit.

(a) The bottom area reduction from the Gravel Field Standard for advanced treatment to secondary effluent standards is found in Column VI of Table 2 or Table 3.

(b) The minimum bottom area square footage calculated for the Gravel Field Standard may bereduced by 33 percent of bottom area if gravel depth is increased to 24 inches total for EDFs with percolation rates of less than 120 MPI.

(c) Only one bottom area reduction may be taken per field. For example, if a reduction is taken for advanced treatment, no bottom area reduction may be taken for disposal technology used, or if a bottom area reduction is taken for depth of gravel, no bottom area reduction may be taken for advanced treatment.

(d) If the system has a design flow of over 4,000 gpd, advanced treatment is required.

Author: Thad Pittman, Matthew Conner, Ken Stephens, Bob Bright **Statutory Authority:** Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq. **History:** Filed July 20, 1988. **Amended:** Filed June 19, 1992. **Repealed and New Rule:** Filed December 16, 1999; effective January 20, 2000. **Repealed and New Rule:** October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

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420-3-1-.55 Gravel Field Standard EDF Sizing For Establishments.

General Requirements. The procedure for EDF sizing for establishments depends on the estimation of volume and strength of waste. If ADPH determines the waste has not been appropriately characterized, ADPH may offer the option of a temporary Performance Permit so that the applicant may demonstrate the volume and strength of the sewage.

(2) **Sizing for High Strength Sewage.**

(a) If an establishment has a projected flow of 1,800 gpd or less of high strength sewage, advanced treatment is optional if there is enough room to accommodate the large EDF that will be required without treatment. In that case, paragraph (b) below applies. If advanced treatment is used on high strength sewage (it is required at 1,800 gpd or above), paragraph (c) below applies for sizing.

(b) If advanced treatment is not used, the EDF size is based on average design load in pounds of BOD per day and no reductions may be taken for permitted disposal products.

1. To deternrine the average design load in pounds of BOD per day, refer to 420-3- 1-.52 Design Flow and Wastewater Concentrations.

2. To calculate the BOD load to the EDF, assume that the septic tank will remove 30 percent of BOD.

3. Divide the BOD load to the EDF by the appropriate loading rate from Column V of Table 2 or Table 3. This is the bottom area of the EDF.

(c) If advanced treatment is used, then the EDF is sized using the design flow and is calculated by dividing the flow by the appropriate hydraulic loading rate in Column VI of Table 2 or Table 3. This is the bottom area of the EDF. This column gives a reduction in field size for treatment and no other reductions may be taken for permitted disposal products.

(3) **Sizing for Sewage.**

(a) If the effluent that will come from the establishment is sewage and not high strength sewage, advanced treatment is optional up to 4000 gpd flow or less. If the flow is greater than 4000 gpd1 advanced treatment is required.

(b) If advanced treatment is not used, divide the flow by the appropriate hydraulic loading rate in Column II of Table 2 or Table 3. This is the EDF size. If the flow for the establishment is sewage, a primary EDF shall be a minimum of 300 square feet of the Gravel Field Standard. Permitted disposal products may be used with appropriate sizing.

(c) If advanced treatment is used, divide the flow by the hydraulic loading rate in Column Vl of Table 2 or Table 3. This is the bottom area of the EDF. This column gives a reduction in field size for treatment and no other reductions may be taken for permitted disposal products.

(4) **Sizing for Graywater.** If advanced treatment is not required, EDF sizing shall be calculated by dividing the flow by the hydraulic loading rate in Column II of Table 2 or Table 3, but the primary EDF shall be a minimum of 300 square feet of the Gravel Field Standard. Permitted disposal products may be used with appropriate sizing.

Authors: Thad Pittman, Matthew Conner, Ken Stephens, Bob Bright

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.

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420-3-1-.56 OSS/EDS Area Requirements.

(1) The responsible person shall ensure the following:

(a) The EDF or discharge area shall be constructed so as to encompass the applicable number of permeability tests used to design the OSS or EDS.

(b) An EDF shall not be constructed in Texture Group 3, 4A, 4B, or 4C soils during periods of wet weather or when the soil is sufficiently wet at the depth of installation to exceed its plastic limit. Under these rules, the plastic limit of a soil is deemed to have been exceeded when the soil can be rolled between the palms of the hands to produce threads one-eighth inch in diameter without breaking apart and crumbling.

(c) Special caution shall be taken in allowing vehicles to cross the EDF during wet weather. Protection of Texture Group 3, 4A, 4B, or 4C soils, or fill material, is extremely important. Alteration of soil structure in the EDF area by vehicles may be grounds for the LHD to deny or revoke a Permit to Install (Repair).

(d) Excavating equipment used to construct an OSS shall be operated so as to not compress or smear the sidewalls or bottom of EDF trenches. Excessive smearing of the absorption trench sidewalls or bottom during construction may result in irreversible damage to the soil infiltrative surface and may be grounds for the LHD to revoke a Permit to Install (Repair).

(e) Vegetation with extremely hydrophytic (water-loving) root systems shall be removed for a m.irumum distance of 10 feet from the EDF.

(2) Grading of a site shall comply with the Site Development Plan (SOP), if required.

(3) Grading requirements for sites that do not require an SDP shall be as follows:

(a) Alteration of the natural condition of a site may cause the site rating to be revised to a rating of severe or extreme and may necessitate compliance with the lot modification requirements of 420-3"1-.51 Lot Modification - Planned and Unplanned, or may be grounds for denial or revocation of a Permit to Install (Repair).

(b) Final grading of a site shall divert storm water around the OBS, shall prepare the site for seeding and landscaping, and shall avoid damaging or compacting the EDF area.

(4) When grading for a Controlled Fill Mound System, the engineer's design and the requirements set forth in 420-3-1-.61 Controlled Fill Mound System and 420-3-1-.51 Lot Modification - Planned and Unplanned, shall be followed.

(5) Drainage requirements for an OBS area shall be as follows:

(a) An EDF shall not be located in a depressed area where storm water can accumulate.

(b) The discharge from drains, gutters, roof, condensate, sump pumps, footings, etc., shall be diverted away from the OSS.

(c) An OSS/EDS shall not receive any discharge other than from the building sewer.

(6) Protection of an OSS/EDS by the responsible person shall be accomplished as follows:

(a) No structure shall be placed over a component of the OSS/EDS unless access is provided for repair and relocation of the component.

(b) Lawn sprinkler water supply lines may be installed over an EDF if protected from backflow in accordance with the requirements of the International Plumbing Code. These lines, if installed, should be at least 12 inches above the top of the EDF pipe.

(c) Precautions shall be taken in the design of an EDF proposed for installation under designated playgrounds and athletic fields.

(d) An EDF shall not be located under a driveway or other area subject to vehicular traffic, whether paved or unpaved.

(e) Driveways or parking areas shall not be constructed over other components of the system unless structural provisions are in compliance with the International Plumbing Code. A driveway or parking area shall not obstruct, or limit access points required to operate or maintain a system component. The distribution piping and related devices and materials shall be rated for the anticipated load.

Author: Thad Pittman, Matthew Conner, Ken Stephens, Bob Bright
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.
History: Filed July 20, 1988. **Amended:** Filed June 19, 1992. **Repealed and New Rule:** Filed December 16, 1999; effective January 20, 2000. **Repealed and New Rule:** October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

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420-3-1-.57 Shallow Placement Systems.

(1) The shallow placement of an EDF may be utilized to overcome soil and site limitations. Except as provided in this rule, the requirements for the design and installation of a shallow placement EDF shall be the same as for other OSSs.

(2) Shallow trenches may be used under the following conditions:

(a) A gravel trench shall be a minimum of 12 inches into the natural ground surface. The minimum depth for other permitted products shall be as shown in the Product Permit. The aggregate sidewalls or top of the EDF product shall be at or below the natural ground surface.

(b) The permeability rate is based on the least permeable soil horizon within 24 inches of the ground surface, or to a depth of 18 inches below the trench bottom, whichever is deeper.

(c) The soil cover shall be a minimum 12-inch depth over the aggregate or EDF product. If in-situ soil is not used for soil cover, the fill material shall be placed prior to installation at a uniform depth over the entire EDF. The soil cover shall extend laterally 3 feet beyond any outermost EDF side or end wall before the maximum side slope of 3:1 begins.

(d) Soil used as cover shall be topsoil that will support appropriate cover vegetation. It shall be a mineral soil

material. preferably loose or friable, but not excessively sticky or plastic. It shall be relatively free of debris and coarse fragments larger than gravel size. Content of gravel shall not exceed 35 percent by volume. Textures may range from Groups 1 through 4A. Texture Groups 4B and 4C shall not be used. Care shall be taken to prevent compaction.
Author: Thad Pittman, David Gray, John Clement, Boyd Rogers, Matthew Conner, Ken Stephens, Bob Bright
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.
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420-3-1-.58 Gravel Field Standard Construction Specifications.

(1) **General Requirements.** Distribution piping shall be installed at the same elevation, unless an approved system provides for a design ensuring equal flow through each of the perforations and the effluent is uniformly applied to the soil infiltrative surface.

(a) The minimum acceptable material for non-perforated rigid pipe and fittings shall conform to the applicable section of the International Private Sewage Disposal Code excluding cellular core pipe. All pipe connections shall conform to the appropriate ASTM standard or manufacturer's requirement.

(b) The EDF may be supplied by a level header, serial distribution, or a distribution box. Other methods may be permitted provided that those methods are engineer certified.

(2) **Level Header.** The level header is used on relatively flat terrain where topography will allow EDF bottoms to be on the same elevation, within tolerance. The header shall be joined to the effluent line by a vent tee laid horizontally

and at the same elevation as the EDF pipe. A sanitary tee shall not be used for this connection.

(a) The invert of the header shall be a minimum of 4 inches below the invert of the septic tank outlet.

(b) The minimum diameter of the effluent line shall be 4 inches unless otherwise specified by an engineer and shall continue to the header line.

(c) A non-perforated header line shall not be counted as part of the required EDF.

(3) **Serial Distribution.** When a level header system cannot be installed, a system of serial distribution following land contours may be used.

(a) Effluent shall enter the uppermost EDF pipe through a watertight effluent line discharging into the trench through a vent tee laid horizontally. A sanitary tee shall not be used for this connection.

(b) EDF pipes shall be connected by means of a non-perforated line and constructed so that each trench is filled with effluent to the full design depth before effluent flows through the crossover line to the next lower EDF pipe. Distribution of effluent to EDF trenches shall be designed to ensure that lines are equally dosed when receiving effluent from preceding trenches.

(c) The invert of the uppermost EDF pipe shall be a minimum of 8 inches lower than the invert of the septic tank outlet. The invert of a crossover line shall be a minim.um of 4 inches lower than the invert of the septic tank outlet. The inverts of all crossovers from an EDF trench shall be set at equal elevation.

(d) At the point where a crossover line leaves an EDF pipe in a Conventional O8S1 the trench for the crossover line shall be dug no deeper than the top of the aggregate or top of the EDF product in the preceding trench so that an undisturbed block of earth will remain in place for the full depth of the aggregate or EDF product. Crossover lines shall be laid on undisturbed earth. Crossovers for an ADPH permitted equivalent EDF pipe shall be constructed within the requirements of the product manufacturer.

(e) The maximum length of a serial EDF pipe is 100 feet in each direction when measured from crossover.

1. For EDF pipes less than or equal to 100 feet1 one crossover is required.

2. When EDF pipes exceed 100 feet in length, at least two crossovers are required.

3. Crossovers on successive lines shall be distributed in the system to minimize short-circuiting of effluent.

(f) If serial distribution is utilized in a Controlled Fill System, Schedule 40 PVC crossovers shall be used in standard trenches with compatible 4-inch EDF pipe or an ADPH permitted equivalent. Cellular core pipe is not acceptable.

(4) **Distribution Box.** A distribution box may be used as follows:

(a) In lieu of a header line, to connect the effluent line to EDF pipes on the same elevation.

(b) In lieu of serial distribution1 to connect EDF pipes on different elevations.

(c) To evenly distribute effluent to separate EDFsections of an OSS

(d) The distribution boxshall be set on level grade. Watertight, non-perforated, rigid, 4-inch, Schedule 40 PVC, or equivalent pipe (see paragraph (1)(a) of this rule) shall extend from the distribution box to the EDF. The first 5 feet of this pipe shall be on level grade.

(5) **EDF Trench Construction Requirements.** The EDF trenches shall comply with the following requirements:

(a) The width of the trench shall not be less than 18inches nor more than 36 inches. See 420-3-1-.59 Pad and Bed Construction Specifications for alternative widths.

(b) The minimum distance between EDF sidewalls shall be 5 feet measured horizontally. Where trenches are on slopes with a grade greater than 25 percent, the minimum. distance between trenches shall comply with requirements set forth in Table 8.

(c) All trench bottom elevations in any 100-foot run of trench shall be within plus or minus 1 inch of all other elevations in that run.

(d) The minimum gravel field standard EDFtrench depth shall be 12 inches.

(e) The maximum EDF trench depth shall be 60 inches. Trench depth shall comply with the MVS in 420-3-1-.42 Soil Restriction Depth and Vertical Separation.

(f) There shall be a minimum cover of 12 inches over the EDF.

(g) The maximum length of an EDF trench in an EDF shall be 100 feet, except as provided in the serial distribution systems section of this rule.

(6) **EDF Pipe Requirements.** The EDF pipe in an EDF using aggregate shall comply with the following requirements:

(a) Appropriate pipe and fittings that conform to applicable ASTM standards shall be used.

(b) All pipe elevations in any 100-foot run of trench shall be within plus or minus 1 inch of all other pipe elevations in that run.

(c) The inside diameter of EDF pipe shall be a minimum of 4 inches.

(d) EDF pipe shall be rigid or semi-rigid perforated plastic pipe with a minimum exfiltration area of 2.2 square inches per foot of pipe. The exfiltration area shall consist of openings located uniformly on one-half the circumference of the pipe. The openings shall be of such size, shape, and uniformity as to preclude sealing by solids or entrance of gravel or other approved substance surrounding the pipe. Pipe with slits, such as agricultural drainpipe, are not approved for use as EDF pipe.

(e) Perforated pipe in the EDF trenches shall be installed with the perforations turned down.

(f) The EDF pipe shall be installed in ADPH approved aggregate.

(g) The trench bottom of an EDF line shall be placed entirely in the native soil or in the fill, if required, but not in both. If the EDF line is in a Controlled Fill System, the depth of the line shall comply with 420-3-1-.61 (9)(a) Controlled Fill Mound System.

(7) **Aggregate and Cover Material.** Aggregate and cover material shall comply with the following requirements:

(a) When the aggregate is coarse gravel or stone, it shall be washed and clean, free from fines, dust, sand, or clay, and ranging in size from one-fourth to 2.5 inches. The gravel or stone shall extend at least 8 inches below the lowest point of the EDF pipe and at least level with the topof the EDF pipe. ADPH may consider other aggregate under a Product Permit.

(b) The aggregate surrounding the EDF pipe shall be gravel as specified by these rules or approved for such use by the product manufacturer and shall be covered with untreated building paper, heavy Kraft paper, or geotechnical fabric and then back-filled with at least 12 inches of earth cover.

(c) Material which is impervious to air and water, such as plastic sheeting, polyethylene, or similar materials, shall not be used as a cover material over the aggregate in the EDF trench.

Authors: Thad Pittman, Matthew Conner. Ken Stephens, Bob Bright

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.

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420-3-1-.59 Bed And Design Construction Specifications.

(1) As an alternative to a trench system, a pad or bed may be utilized. All sewage subject to this paragraph shall be pretreated to the secondary effluent standard.

(a) The total bottom area for all pads shall be computed by dividing the design flow by the loading rate found in Table 10 and rounded up to the next whole foot. The total bottom area for all beds shall be computed by dividing the design flow by the loading rate found in Table 11 and rounded up to the next whole foot.

(b) The pad shall meet the construction standard found in the manufacturer's design manual or meet the aggregate and cover standard found in 420-3-1-.58(7) Gravel Field Standard Construction Specifications. A bed shall meet the aggregate and cover standard found in 420-3-1-.58(7) Gravel Field Standard Construction Specifications.

(c) For pads not utilizing proprietary distribution, a programmable timer and control panel shall be employed to regulate the dosing frequency and volume for uniform distribution.

Author: Thad Pittman, Matthew Conner. Ken Stephens, Bob Bright
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.
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Ed. Note: Previous Rule .84 was renumbered .59 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.60 Combined Treatment And Disposal System Specifications. For proposals utilizing CTD, construction specifications shall be stated in the specific design manual that is a part of the issued product permit. The size of the combined treatment and disposal system shall be computed by dividing the design flow by the loading rate in Table 11 and rounded up to the next whole foot. At the discretion of the product manufacturer, the size of the CTD system may be computed using Table 10 as long as uniform distribution with a programmable timer and control panel is utilized.

Author: Thad Pittman, Leigh Salter, Patricia Lindsey, Matthew Conner, Ken Stephens, Bob Bright

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.
History: **New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .85 was renumbered .60 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.61 Controlled Fill Mound Systems.

(1) **General Requirements.** If site conditions and/or characteristics of a given lot prohibit the use of a Conventional OSS in accordance with the requirements of these rules, the LHD may consider approval of plans for the installation of a Controlled Fill Mound System. Controlled Fill Mound System designs may be considered only on sites where the fill selection, placement, natural ground surface preparation, and the entire Controlled Fill Mound System construction process is performed under the direct supervision of, and certified by, a professional engineer. The Controlled Fill Mound System shall be designed in accordance with this rule.

(2) **Site Evaluation.** Prior to placing the fill, the site shall be evaluated in accordance with the site evaluation criteria of these rules.

(3) **Design Calculations.** The engineer shall begin the design with the following considerations:

(a) Design Flow as per 420-3-1-.52 Design Flow and Wastewater Concentrations.

(b) Fill Material Loading Rate. This rate is applicable to Controlled Fill Systems utilizing LPP. See Table 13.

(c) Basal Area Loading Rate (BALR). The BALR is based on 420-3-1-.40 Soil Testing Depth Requirements paragraph (2).

(d) Hydraulic Linear Loading Rate (LLR). This rate applies to LPP designs. The Hydraulic LLR is an estimate of the amount of effluent in gallons per day (gpd) that will be dispersed per linear foot Qf) of LPP and is dependent on the

direction and rate of effluent flow away from the Controlled Fill Mound System.

(e) Slope Correction Factor. This factor is necessary when the Controlled Fill Mound System is on a sloped lot and shall be applied using an appropriate value.

(4) **Distribution Area Size.** The distribution area is the space encompassing the EDF and shall be sized according to the type of EDF proposed.

(a) The distribution area for systems containing drip irrigation shall be sized to accommodate the amount of tubing indicated by Table 12. The drip irrigation field shall comply with 420-3-1-.62 Drip Irrigation Requirements.

(b) The distribution area for systems containing small diameter LPP shall be sized according to the fill material loading rate found in Table 13, when compared with the texture of the proposed fill material, the projected hydraulic linear loading rate (from a published manual) of the LPP when based on the upper horizons of the natural ground surface, and the design flow pursuant to 420-3-1-.52 Design Flow and Wastewater Concentrations. The distribution area shall have a minimum width of 3 feet.

1. The pipe distribution network utilizing LPP shall be configured based on a published manual and shall be time-dosed at least six times per day (24 hours) at regular intervals. A programmable timer and control panel shall be employed to regulate the dosing frequency and volume.

(c) The distribution area for other types of EDF (including 4-inch pipe with gravel) is based on the design flow pursuant to 420-3-1-.52 Design Flow and Wastewater Concentrations and the amount of EDF required, based on the permeability and soil textures found in the upper horizons of the natural ground surface. Specifications regarding trench widths, construction, materials, and distances between trenches, etc., are the same as required within these rules for any EDFinstallation.

(5) **Absorption Area Size.** The absorption area includes the distribution area plus the required setbacks of 2 feet for drip irrigation and LPP (5 feet for all other EDFs). These minimum distances are required between the shoulder of the fill (the beginning of the end or side slopes) and the nearest

sidewall of the bed containing the LPP, the nearest drip tube or end, or the nearest EDF trench sidewall or end.

(6) **Basal Area Size.** The basal area is comprised of the footprint of the entire Controlled Fill Mound System over the natural ground surface. In addition to accommodating the required EDF amount in the distribution area and the absorption area setbacks, the basal area calculations shall allow for a 3:1 slope or flatter on both ends and both sides (from the shoulders of the fill down to the natural ground surface). When the Controlled Fill Mound System is placed on a sloped lot, the basal area shall incorporate the appropriate slope correction factor. Additionally, basal area calculations for designs utilizing LPP shall include the linear loading rate of the EDF pipes.

(a) For EDFs containing drip irrigation, the basal area shall be sized to accommodate the required amount of EDF, plus the absorption area, plus the required side and end slopes.

(b) For EDFs containing small diameter LPP, the basal area shall be sized according to the figures found in Table 14, or, to accommodate the total area encompassed by the distribution area, the absorption area, and the required side and end slopes (the larger of these two calculations shall be used).

(c) For any other type of EDF besides LPP and drip, the system shall be sized according to the amount of EDF pipe as required from the applicable sizing tables, the required separation distances (5 feet from sidewall to sidewall) between the EDF trenches, the required separation distance (5 feet) from the trench ends or outer sidewalls to the beginning of the Controlled Fill Mound System side or end slope, and the required side slope or end slope lengths (calculated by the product height) based on a 3:1 slope or flatter. No reductions are allowed in the basal area size when based strictly on the type of disposal product.

(d) Basal area sizing for Controlled Fill Mound Systems in high shrink-swell soils (Vertisols or soils with vertic characteristics), or mine spoil shall be as follows:

1. For EDFs containing drip irrigation, a loading rate of .05 gallons per day per square foot (0.05 gpd/sq. ft.} of tubing shall be used.

2. For EDFs containing small diameter LPP, a basal area loading rate of 0.075 gallons per day per square foot (0.075 gpd/sq. ft.) shall be used.

3. For any other type of EDF besides LPP and drip, the minimum EDF amount (and basal area sized to accommodate the EDF) when the effluent entering the Controlled Fill System has received primary treatment shall be based on a minimum percolation rate greater than 180 MPI. Should any portion of the area proposed for the Controlled Fill System yield a higher percolation rate, then that rate (See Table 3) shall be used for the design.

(i) When the effluent entering the Controlled Fill Mound System has received secondary treatment, the minimum EDF amount, the distribution area sized to accommodate the EDF, and the absorption area (to the side or end slopes) may be reduced according to the figures in Table 3. The minimum basal area footprint shall remain as calculated for a Controlled Fill Mound System design receiving non-treated effluent.

(7) **Fill Material.** Soil used as fill material shall be approved by the design engineer. Table 16 shall be used.

(a) Fill material suitable for use in Controlled Fill Mound System installations shall be commercially available material, material that meets the appropriate ASTM standard for fine aggregate (concrete sand) and others to be approved by ADPH or naturally occurring materialt such as top layers of some soils and soils from pits located in areas having deep sandy to loamy deposits.

(b) Uniformity of the fill material used for the Controlled Fill Mound construction is essential. The fill shall be free of trash and debris and shall be certified by the engineer as being consistent (with respect to texture and compaction) throughout the construction.

(c) Where possiblet the fill material shall be compatible with the existing in-situ soil.

(8) **Construction of the Controlled Fill Mound.** The natural ground surface shall be properly prepared to receive the fill material. Trees within the proposed area shall be cut flush with the ground and stumps left in place unless the engineer determines this is not in the best interest of the system. In such case, the engineer shall address the existing or proposed ground clearing in the design. Where possible, large rocks shall

also be left in place. Brush and vegetation shall be removed, taking care not to compact the original soil surface, which shall be scarified to a depth of 6 to 18 inches. Clay soils may require a minimum scarification depth of 18 inches to obtain a proper soil interface. The scarification process shall be accomplished utilizing proper equipment so that the soil structure is not destroyed, and the root mat is removed from the natural surface. A chisel plow or chisel teeth mounted on a tool bar attached to the backhoe bucket is recommended. Tillers, moldboard plows, and backhoe bucket teeth are not recommended.

(a) Compaction and Placement of the Fill. The fill material shall not be moved, placed, disturbed, nor constructed if the material and/or the natural ground surface is wet. The fill material shall be placed in lifts not exceeding 6 to 12 inches and compacted to a proper density to promote stability while allowing for the vertical movement of efiluent. The fill shall be placed from the upslope side, if applicable, or from the edges, with care taken not to create ruts or compaction. A track type tractor, or similar, shall be used to move around and/or across the Controlled Fill Mound System site, but other vehicles may be used to install field lines if the fill is not excessively compacted. The final cover shall include a minimum of 6 inches of topsoil material (properly crowned) placed over the fill material so that a vegetative cover can be established. The Controlled Fill Mound shall be seeded and mulched to avoid erosion.

(b) Engineer's Certification of the Controlled Fill Mound Construction. Following the placement of the fill and construction of the mound but prior to the installation of the EDF, the engineer shall certify the fill material using ADPH Form CEP-6, Part B. Fill material permeability shall be verified by the design engineer. After the fill material is placed, a percolation or permeameter test shall be done in the fill. The test results, upon request, shall be submitted with the engineer's fill certification.

(9) **Controlled Fill Mound System Vertical Separation Requirements.**

(a) For system designs other than for drip irrigation, no EDF bottom shall be located between O and 5 inches above the natural ground surface.

(b) System designs on sites with less than 6 inches to ASHES shall, at a minimum, be required to treat effluent to

secondary effluent standards prior to discharge into the Controlled Fill System Mound.

(c) System designs on sites with less than 12 inches to bedrock shall, at a minimum, be required to treat effluent to secondary effluent standards prior to discharge into the Controlled Fill System Mound.

Author: Thad Pittman, Matthew Conner, Ken Stephens, Bob Bright

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.

History: **New Rule:** Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .94 was renumbered .61 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.62 Drip Irrigation Requirements.

(1) **General.** The drip irrigation field size shall be based on Table 12.

(a) All components shall be designed and manufactured to conform to the applicable ASTM standards for sewage disposal.

(2) **Installation.** Drip lines shall have a minimum soil cover of 6 inches and a maximum depth of 12 inches from final grade.

(a) The standard spacing for drip lines and drip emitters shall be 24 inches. The drip lines shall be laid level and shall run with the contour. The maximum length of a drip line and drip zone size, measured from the supply line to the return manifold, shall be specified and comply with the drip tube manufacturer's requirements.

1. For slopes exceeding 20 percent, the minimum spacing shall be 36 inches. However, the spacing due to slope shall not reduce the total linear footage of drip tubing required.

2. Any other spacing of the drip lines and emitters shall require ADPH approval.

(b) Vacuum breakers shall be placed at the highest elevation of a drip field or zone under protective cover and with grade level access. The maximum elevation difference, from lowest to highest point of a drip field or zone shall be 8 feet when using non-pressure- compensating drip emitters.

(c) All drip irrigation systems shall be equipped with pressure regulators or compensating devices to achieve uniform distribution over the entire drip field or zone.

1. The operating pressure necessary to fully pressurize a drip field or zone shall be within the pressure ranges specified by the drip tube manufacturer and shall be described in the drip irrigation manual. Pump selection shall take account of the operating pressure appropriate for the drip irrigation field, which shall be fully pressurized throughout the dose cycle, and the total dynamic head required for dosing and flushing.

(d) The drip line shall be installed in such a manner as to prevent pulling, stretching, or crimping of the drip line; or smearing, compaction, or damage to soil. A trencher with moving blades shall not be used to install drip tubing in Group 3 or 4 soils.

(3) **Operation.** Each drip irrigation field or zone shall be time-dosed at least six times per day (24 hours) at regular intervals. A programmable timer and control panel shall be employed to regulate the dosing frequency and volume.

(a) All drip irrigation systems shall employ a method of filtration adequate to remove suspended solids from the sewage. The filtration method used shall meet the standard specified by the drip tube manufacturer.

(4) **Package Permitting.** For the approval of drip packages with a design flow of 1,800 gpd or less, the applicant (a manufacturer of the drip tube or a secondary treatment device) shall submit to ADPH for review and approval a request for a Product Permit. The application shall list the advanced treatment device and all equipment (including manufacturer and model number) to be used with the drip package. In addition, the application shall include a letter or other certification from each component manufacturer stating that the component is appropriate for the intended use.

(a) The system will be permitted as a package and shall be installed as a package. The manufacturer of an advanced treatment device who intends to place a package drip field behind its treatment device shall design its own drip package or have an agreement with an existing drip field (system) manufacturer to use an approved package. This agreement shall be referenced in the Product Permit. Conversely, the manufacturer of the drip tubing may also hold a Product Permit by agreement with an ATS manufacturer.

(b) The drip package applicant shall demonstrate under what conditions (single or multiple zone) the package will be hydraulically stable and the conditions under which it may be used without modification.

(5) **Non-packaged Permitting.** A drip irrigation system may be permitted that is not part of an approved package as long as the OSS complies with these rules, requirements of the drip tube manufacturer, and requirements of the ATS manufacturer.
Author: Thad Pittman, Leigh Salter, Matthew Conner, Ken Stephens, Bob Bright
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.; 22-25B-1, et seq.
History: **New Rule:** Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .90 was renumbered .62 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.63 EDF Dosing Requirements.

(1) EDFs requiring more than 1,400 linear feet of EDF pipe, as determined by the Gravel Field Standard, shall be divided into separate and equal EDFs containing less than or equal to 1,000 linear feet of EDF trench in each field and shall comply with the following requirements:

(a) Each EDF shall be dosed a minimum of six times a day. If the effluent is treated to secondary effluent standards or better, dosing shall not be required.

(b) Each dose shall not be greater than 70 percent of the volume of the perforated pipe or other disposal product of the EDF into which the pumping tank is to discharge.

(c) Dosing shall be accomplished through the use of effluent pumps from a properly sized and designed dosing tank.

(d) Effluent pumps shall comply with the requirements of 420-3-1-.27 OSS/EDS Requiring Pumping of Effluent.

(2) The use of LPP below the natural ground surface may be used as a means of equalizing the distribution of effluent over the EDF and shall require engineer design, using a published manual. The minimum size of the EDF shall be based on Table 14.

Author: Thad Pittman, Matthew Conner, Ken Stephens, Bob Bright

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.

History: **New Rule:** Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .92 was renumbered .63 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.64 Disposal Of Graywater.

(1) Graywater (not including water from spas) from a single-family dwelling shall be disposed of by one of the following methods:

(a) Discharge into the building sewer.

(b) Discharge into a separate EDF. The size for a separate EDF for graywater shall be no less than 25 percent of the EDF, as determined from 420-3-1-.53 Gravel Field Standard EDF Sizing for Dwellings. The EDF may be reduced by the amount used for the graywater not to exceed 25 percent of the total required for the EDF before any other reductions are taken.

1. No permitted product reductions shall be taken in the separate EDF for graywater.

(2) The size of the EDF for graywater that includes a spa at a private dwelling shall be a minimum of 50 percent of the original EDF as computed from Table 2 or Table 3.

(3) No additional reductions are allowed unless the amount of EDF for the residential spa is determined from actual water use data.

(4) If a spa is connected to the building sewer, the effective liquid capacity of the septic tank shall be increased by 500 gallons for each spa.

(5) Where water under pressure is not present, graywater shall be dispersed through an EDF pipe of 225 square feet of the gravel field standard per dwelling. Permitted disposal products may be used with appropriate sizing. The EDF pipe shall meet the setbacks in accordance with Table 4.

(6) OSS design for a laundromat shall include measures to reduce the amount of lint in the effluent prior to disposal to the EDF.

Author: Thad Pittman, Leigh Salter, Matthew Conner, Ken Stephens, Bob Bright

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.

History: Filed July 20, 1988. **Amended:** Filed June 19, 1992. **Repealed and New Rule:** Filed December 16, 1999; effective January 20, 2000. **Repealed and New Rule:** October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Amended:** Filed October 19, 2006; effective November 23, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .87 was renumbered .64 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.65 Setback And Separation Distances.

(1) The minimum setback distances for EDFs, septic tanks, pump chambers, aerobic pre-treatment devices (including sand filters, biofilters, and ATUs}, header lines and similar devices, and various structures and topographic features, are contained in Table 4.

(2) No underground utility service or main, such as a water, electrical, phone, TV, or gas lines may cross over or under an EDF pipe.

(3) No OSS or REDF shall be located in a utility easement for underground equipment.

(4) Setback distances from a natural or man-made drainage system, embankment, or cut may be reduced in accordance with Table 4 and if supporting information is submitted by an engineer with the application to show that the drainage feature will not adversely affect the functioning of the EDF and that effluent will not reach the feature, embankment, or cut.

(5) An effluent line may cross a water line if 18 inches of vertical separation distance is maintained, with the effluent line passing under the water line. When conditions prevent an 18-inch separation from being maintained, or whenever it is necessary for the water line to cross under the effluent line, the water line shall be encased in materials specified in the International Plumbing Code for a distance of at least 5 feet on each side of the crossing.

(6) An effluent line may cross a storm drain culvert if one of the following requirements are met:

(a) Twelve inches of vertical separation distance is maintained.

(b) The effluent line is encased in materials specified in the International Plumbing Code for at least 5 feet on either side of the crossing.

(7) An effluent line may cross under a stream if at least 3 feet of stable cover can be maintained, or if the effiuent line is encased in materials specified in the International Plumbing Code for at least 10 feet on either side of the crossing and protected against the normal range of high and low water conditions, including the 100-year flood or wave action. An aerial crossing shall be by ductile iron or steel pipe with mechanical joints. Pipes shall be anchored for at least 10 feet on either side of the crossing.

(8) A Large-Flow System that meets secondary effluent standard shall be required to comply with the minimum horizontal setback distances listed in Table 4. See Table 5 for additional setback requirements.

Author: Thad Pittman, Matthew Conner, Ken Stephens, Bob Bright
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.
History: Filed July 20, 1988. **Amended:** Filed June 19, 1992. **Repealed and New Rule:** Filed December 16, 1999; effective January 20, 2000. **Repealed and New Rule:** October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .88 was renumbered .65 per certification published December 30, 2022; effective February 13, 2023.

OTHER

420-3-1-.66 Appeals.

(1) **Permit denials, suspensions, and revocations.** The denial, suspension, and/or revocation of a permit shall be governed by the Alabama Administrative Procedure Act, §41-22-1, et seq., Code of Ala. 1975.

(2) **Bearings.**

(a) Contested case hearings shall be provided in accordance with the Alabama Administrative Procedure Act, §41-22-1, et seq., Code of Ala. 1975, and the Board's Contested Case Hearing Rules, Chapter 420-1-3 Ala. Admin. Code.

(b) Informal settlement conferences may be conducted as provided in the Board's Contested Case Hearing Rules.

(3) **Revocation of Permits.** The State Health Officer may, after providing opportunity for hearing, revoke a permit for violations of any of the requirements of these rules.
Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.
History: **New Rule:** Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Amended (Rule Number Only):** Filed October 19, 2006; effective November 23, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .57 was renumbered .66 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.67 Access. Agents and employees of the ADPH or the LHD shall be permitted access to all property on which an OSS/EDS is proposed or on which an OSS/EDS has been installed for the purpose of consultation, evaluation, and/ or inspection and determining compliance with these rules.
Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.
History: **New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .58 was renumbered .67 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.68 Other Approvals Not Implied.

(1) Approval of a lot, Large-Flow Development, building development, or method of sewage disposal by ADPH, the LHD, or its agents does not constitute or imply approval by a municipality, county, or other entity having planning, zoning, or other legal jurisdiction. Similarly, approval of a like plan by another entity does not negate the requirement for approval of an OSS/EDS by ADPH, the LHD, or its agents.

(2) Nothing in these rules shall be construed to limit the authority of County Boards of Health to adopt more stringent requirements.
Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.
History: **New Rule:** Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Amended (Rule Number Only):** Filed October 19, 2006; effective November 23, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .59 was renumbered .68 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.69 No Guarantee Implied Or Expressed. The issuance of any permit under these rules and a subsequent Approval for Use shall not be a guarantee or warranty, implied or expressed, that the system will function satisfactorily for any given period.
Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.
History: New Rule: Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Amended (Rule Number Only):** Filed October 19, 2006; effective November 23, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

Ed. Note: Previous Rule .60 was renumbered .69 per certification published December 30, 2022; effective February 13, 2023.

420-3-1-.70 Variance To Rules. Written requests for a variance to these rules shall be submitted and considered pursuant to Rule 420-1-2-.09, Ala. Adm.in. Code, Waivers or Variances.
Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.
History: New Rule: Filed October 20, 2005; effective November 24, 2005; operative March 19, 2006. **Amended:** Filed October 19, 2006; effective November 23, 2006. **Repealed and New Rule:** Filed January 19, 2017; effective March 5, 2017. **Repealed and New Rule:** Published December 30, 2022; effective February 13, 2023.

APPENDIX A

Table 1
Design Flow and Wastewater Concentrations

Generator	Design Unit	Design Flow gpd
Dwellings (rule) [1]		
Dwelling (12 bedrooms or fewer)	per bedroom	150
13 or more bedrooms to a single system	per person	75
Establishments (guidelines) [2]		
Generator	**Design Unit [3]**	**Design Flow gpd**
Airport (not including food preparation)	per passenger	5
	per employee	15
Office	per employee	25
Marina with bathhouse or showers or toilets	per boat slip	10
Hotel (no food preparation)	per guest	60
Movie theatre (not including food preparation)	per seat	4
Restaurants (food preparation)		
open 16 hours or less	per seat	30
open 16 hours or more	per seat	50
open 16 hours or less with single service articles	per seat	20
open 16 hours or more with single service	per seat	35
carry out only to include caterers	per sq. ft. of floor space	.5
Bar (no food preparation)	per seat	5
Interstate rest area	per person	5
Gas station/convenience store (no food preparation)	per customer	4
Factory and office building		
with showers	per person per 8-hr shift	15
without showers	per person per 8-hr shift	25
Laundromat [4]	per machine	500
Store or shopping center with public restrooms (Not including food preparation)	per 1000 sq ft. of floor space	120
Institutions/Establishments		
Church (no food preparation)	per seat	3
Hospital	per bed	200
Medical or dental facility	per practitioner	250
	per office personnel	15
School (no food preparation or showers)	per student	18
with food preparation and showers	per student	30
with food preparation	per student	24
Boarding school	per student	95
Nursing homes and other adult congregant living	per bed	125
Recreational Establishments		
Theater, auditorium type	per seat	5
Picnic area or public lavatory	per person	5
Camp, day (no food preparation)	per person	15
Camp, day and night		
with bathhouse (no food preparation)	per person	45
Resort cabin	per person	50
Recreational Vehicle Parks		
RV park (RVs are mobile)		
with water/power/sewage hook up	per space	100
with sanitary station	per space	50

[1] Estimated flows for residential systems assume a maximum occupancy of two persons per bedroom for systems handling fewer than 13 bedrooms. Large-Flow systems require an engineer design, including occupant loading.

[2] If there are combinations of establishments, such as a convenience store with food outlet, all contributors must be combined to estimated sewage flows and BOD loadings.

[3] Unless otherwise indicated, the design flow accounts for the employees of the establishment.

[4] See 420-3-1-.64 Disposal of Graywater.

Table 2

Gravel Field Standard Sizing by Texture Group, Percolation Rate, and Wastewater Concentration[1]

(I) Soil Texture Group/Perc Rate	Field Size for Sewage Treated to Primary Effluent Standards Based on 0.4 lbs. BOD/Day/Bedroom[2]			(V) BOD Loading Rate for High Strength Sewage with No Advanced Treatment (lbs.-BOD/sq ft/day)	(VI) Hydraulic Loading Rate for Effluent with Advanced Treatment (gal / sq ft / day)
	Primary EDF[3]				
	(II) Square Feet per Bedroom and / Hydraulic Loading Rate for Untreated Sewage (gal / sq ft / day)	Linear feet/bedroom			
		(III) 24" Width	(IV) 36" Width		
Group 1					
5					
10					
15	200 / 0.75	100	67	0.00120	1.50
Group 2					
16					
25					
30	250 / 0.60	125	83	0.00096	1.00
Group 3					
31					
40					
45	300 / 0.50	150	100	0.00080	0.714
50					
55					
60					
Group 4A					
61	330 / 0.455	165	110	0.00073	0.568
65	350 / 0.429	175	117	0.00069	0.536
70	370 / 0.405	185	123	0.00065	0.507
75	390 / 0.385	195	130	0.00062	0.481
80	410 / 0.366	205	137	0.00059	0.457
85	430 / 0.349	215	143	0.00056	0.436
90	450 / 0.333	225	150	0.00053	0.417
Group 4B					
95	480 / 0.313	240	160	0.00050	0.391
100	510 / 0.294	255	170	0.00047	0.368
105	540 / 0.278	270	180	0.00044	0.347
110	570 / 0.263	285	190	0.00042	0.329
115	600 / 0.250	300	200	0.00040	0.313
120	650 / 0.231	325	217	0.00037	0.288

[1] This sizing does not include pads, beds, combined treatment and disposal, LPP designs, and drip irrigation.

[2] This is equivalent to 2 people per bedroom at 0.2 lbs. per person with consideration that the septic tank will reduce the BOD by approximately 40 percent or 0.4 lbs. - 0.16 lbs. = 0.24 lbs. to the field per bedroom. It may be assumed that the septic tank will remove 30 percent of the BOD when dealing with high strength sewage.

[3] See 420-3-1-.64 Disposal of Graywater for separate EDF sizing.

Table 3

Gravel Field Standard Sizing by Texture Group, Percolation Rate, and Wastewater Concentration[1]

(I) Soil Texture Group/Perc Rate	Field Size for Sewage Treated to Primary Effluent Standards Based on 0.4 lbs. BOD/Day/Bedroom[2]			(V) BOD Loading Rate for High Strength Sewage with No Advanced Treatment (lbs.-BOD/sq ft/day)	(VI) Hydraulic Loading Rate for Effluent with Advanced Treatment (gal / sq ft / day)
	Primary EDF[3]				
	(II) Square Feet per Bedroom and / Hydraulic Loading Rate for Untreated Sewage (gal / sq ft / day)	Linear feet/bedroom			
		(III) 24" Width	(IV) 36" Width		
Group 4C					
121	680 / 0.221	340	227	0.000353	0.245
130	710 / 0.211	355	237	0.000338	0.235
135	740 / 0.203	370	247	0.000324	0.225
140	770 / 0.195	385	257	0.000312	0.216
145	800 / 0.188	400	267	0.000300	0.208
150	830 / 0.181	415	277	0.000289	0.201
155	860 / 0.174	430	287	0.000279	0.194
160	890 / 0.169	445	297	0.000270	0.187
165	920 / 0.163	460	307	0.000261	0.181
170	950 / 0.158	475	317	0.000253	0.175
175	980 / 0.153	490	327	0.000245	0.170
180	1010 / 0.149	505	337	0.000245	0.165
185	1040 / 0.144	520	347	0.000231	0.160
190	1070 / 0.140	535	357	0.000224	0.156
195	1100 / 0.136	550	367	0.000218	0.152
200	1130 / 0.133	565	377	0.000212	0.147
205	1160 / 0.129	580	387	0.000207	0.144
210	1190 / 0.126	595	397	0.000202	0.140
215	1220 / 0.123	610	407	0.000197	0.137
220	1250 / 0.120	625	417	0.000192	0.133
225	1280 / 0.177	640	427	0.000188	0.130
230	1310 / 0.155	655	437	0.000183	0.127
235	1340 / 0.112	670	447	0.000179	0.124
240	1370 / 0.109	685	457	0.000175	0.122

[1] This sizing does not include pads, beds, combined treatment and disposal, LPP designs, and drip irrigation.

[2] This is equivalent to 2 people per bedroom at 0.2 lbs. per person with consideration that the septic tank will reduce the BOD by approximately 40 percent or 0.4 lbs. - 0.16 lbs. = 0.24 lbs. to the field per bedroom. It may be assumed that the septic tank will remove 30 percent of the BOD when sizing for high strength sewage.

[3] See 420-3-1-.64 Disposal of Graywater for separate EDF sizing.

Table 4
Minimum Setback Distances to Components of an OSS*

Structure or Topographic Feature	Minimum Horizontal Distance (ft)		
	To EDF[1]	To Tank, Treatment Device, Pump Chamber, Receptacles, and D-Box	Other Components of OSS
EDF of another system	10[2]	10	5
Components of another system (except EDF)	5	5	5
Basement or in-ground storm shelter[3]	15	5	5
w/drain	25	5	5
Building foundation[3]	5	5	5
Drainage way (natural or man-made)[3]	25	10	N/A
Embankment or cut (≥ 12"), up and downslope[3]	25	5	N/A
Hydric soils, non-ponded wetlands, or areas subject to ponding	25	25	N/A
Interceptor drain and storm water diversion[3]			
(feature located upslope)	10	5	N/A
(feature located side slope)	15	5	N/A
(feature located downslope)	25	5	N/A
Potable (drinkable) water line[4]	5	5	5
Property line	5	5	5
Caves, sinkholes, and similar depressions[5]	300	50	50
Surface water or intermittent stream	50	25	10
Swimming pool (in-ground)	10	5	N/A
Wells and potable springs[6]	100	50	5

[1] Edge of basal area for Controlled Fill Mound systems.

[2] EDF to EDF for Large-Flow systems without advanced treatment is a minimum of 100 feet.

[3] Engineer may design system and reduce setback distance to a specified distance with acceptable justification such as the use of an advanced treatment system, use of solid or culvert pipe, landscaping that diverts storm water, or drip disposal (not to be reduced to less than half the stated setback).

[4] May be less than 5 feet provided encapsulation of solid effluent line (pressurized or non-pressurized) for 5 feet from water line. This setback is not applicable for water lines above effluent lines and where the minimum vertical separation is 18 inches or greater.

[5] Geologist may reduce the setback distance with written documentation of geological investigation and specific setback distances set (not to be reduced to less than 60 percent the stated setback).

[6] The minimum setback distance for an EDF to wells and springs for a Large-Flow Development recorded prior to October 18, 1978 and for lots established prior to March 18, 1982, shall be 50 feet with every effort made to exceed that distance.

* This table applies to all Small-Flow and any Large-Flow systems with advanced treatment. See Table 5 for setback distance requirements for Large-Flow systems without advanced treatment. See Table 6 for additional Innovative EDS setbacks. Drip irrigation disposal lines shall be 2 feet from all components in this table except that it shall be 25 feet from surface water.

Table 5

Additional Minimum Setback Distances for Large-Flow OSSs that DO NOT HAVE ADVANCED TREATMENT and/or are not Managed by a Governmental Agency, Co-Op, or Wastewater Management Entity

To EDF	
Structure or Topographic Feature	**Minimum Horizontal Distance (ft)**
Property line	25
Surface water or water supply source	200
Other Large-Flow system	100
To Collection Sewers, Force Mains, or Supply Lines	
Structure or Topographic Feature	**Minimum Horizontal Distance (ft)**
Public water supply source; unless constructed to International Plumbing Code standards	100 50
Private water supply source; unless constructed to International Plumbing Code standards	50 25
Property line	25
Basement	10
Surface water; unless constructed to International Plumbing Code standards	50 10
Top of slope embankment or cut of 2 feet or more vertical height	10
Interceptor drains, storm drains, and storm water diversions	5
Swimming pool	10
Other EDF	5

Table 6

Additional Minimum Setback Distances for an Innovative EDS[1]

From Point of Discharge	
Structure or Topographic Feature	**Minimum Distance (ft)[2]**
Property line	75
Surface water, hydric soils, or frequently flooded areas	100
Drainage way or storm water diversion	50
Potable (drinkable) water line	10
Dwelling	50[3]
Any other structure on the lot	25
Any easement	50
Other discharge area	25

[1] For setbacks not found in this table, see Table 4.
[2] Setback distances are measured on the downslope and side slope from the point(s) of discharge.
[3] From any direction.

Table 7

MVS Requirements
(For LPP/Drip See Table 15)

SYSTEM LIMITATION	CONVENTIONAL				ENGINEERED		
	SLIGHT	MODERATE	SEVERE		EXTREME		
						AT Required[1]	
1. Percolation (Min/In)[2]	5-30	31-90	91-120	1-<5	121-240	>240	1-<5<1
1a MVS[3] from Redox[4]	24"	18"	18"	36"	18"	12"	24" w/AT
1b MVS from Hard Bedrock	18"	18"	18"		18"	12"	
1c MVS from Other R/L[5]	12"	12"	12"		12"	6"	
Min trench depth for above	12" below Natural Ground Surface except where a low-profile product is used[6]				May vary but either 6" above or below (not exactly at) the fill/soil interface		

[1] With an engineer design, all vertical separation requirements (MVS) greater than 12" may be reduced to 12" with the addition of advanced treatment (AT) of effluent with the exception of soils with percolation rates less than 5 min/inch.

[2] Percolation rates may be either actual measurements or assigned/estimated rates, depending on the method used (Refer to 420-3-1-.39 Soil Permeability).

[3] MVS from restrictive layers (R/L). If no restriction is found, the MVS shall be determined as the maximum vertical separation based on permeability (18, 24, or 36 inches).

[4] ASHES/Redoximorphic Features – The presence of chroma 2 or less colors (Munsell or equivalent) is universally accepted as indicating saturated and anaerobic conditions for a significant period of time during most years. In some soils additional contemporary redox features are often encountered above chroma 2 or less colors (i.e., chromas of 3 and/or 4 in combination with higher chroma concentrations, plinthite, manganese staining on peds, etc.). If indications of additional contemporary redox features occur higher than 24 (18)* inches above chroma 2s, the trench bottoms shall be positioned no deeper than where these additional contemporary redox features occur, but in no case less than 24 (18)* inches above 2 percent or more chroma 2 or less. (See 420-3-1-.42 Soil Restriction Depth and Vertical Separation for the definition of significant saturation duration and problem soils as related to redox features other than chroma 2 or less). *(For the correct MVS based on percolation rate).

[5] Other restrictive layers may include but are not limited to the following: dense and/or brittle layers, slowly or very slowly permeable parent material, soft bedrock (Cr), or greater than 50 percent consolidated bedrock by volume. When restrictive bedrock layers are discontinuous or tilted such that the critical depths are highly variable, use the 50 percent rule. Any horizon with greater than 50 percent consolidated bedrock shall be considered a restrictive layer. Does not include gravitational water.

[6] Natural Ground Surface – That portion of a soil which is normally exposed to the atmosphere, has been subjected to plant and animal activity for a significant period of time and has accumulated some degree of organic matter usually accompanied by the development of soil structure.

Table 8

Slope
Spacing of Trenches Based on Width of Trench
and Slope for a Conventional Gravel-Field Standard OSS with a Level Header

Percent Slope	Trench Spacing (Side Wall to Side Wall)[1]	Minimum Trench Depth[2]	Minimum Cover
26-30	6 feet	28"	16"
31-40	7 feet	33"	21"

[1] The distances between trenches are measured between adjacent sidewalls.
[2] The minimum trench depth shall be measured on the downhill side of the trench and the minimum cover as listed in this table shall be confirmed.

Table 9

Septic Tank Capacities for Dwellings Without Advanced Treatment[1]

Number of Bedrooms	Minimum Effective Liquid Capacity (gal)
4 or fewer	1,000
5	1,500
Each additional bedroom, add	250

[1] Capacities listed provide for a single system to serve household wastes from standard plumbing fixtures and appliances commonly used in a dwelling, including dishwasher, shower, bathtub, and automatic clothes washer. See 420-3-1-.64 Disposal of Graywater.

Table 10
Loading Rates for a Pad

PERC RATE min/inch	SOIL GROUP U.S.D.A. Textures	LOADING RATE gpd/sq.ft.
5-15	Sand, Loamy Sand	2.31
20-30	Sandy Loam, Loam, Sandy Clay Loam, Silt Loam, Silty Clay Loam, Clay Loam	1.54
35-45		0.952
50-60		0.893
65	Sandy Clay, Silty Clay, Clay	0.631
70		0.596
75		0.566
80		0.508
85		0.485
90		0.463
95	High Shrink-Swell Clay, Poorly Structured Soil [1]	0.412
100		0.387
105		0.366
110		0.346
115		0.329
120		0.304
125		0.258
130		0.247
135		0.237
140		0.228
145		0.220
150		0.212
155		0.204
160		0.198
165		0.191
170		0.185
175		0.179
180		0.174
185		0.168
190		0.164
195		0.159
200		0.156
205		0.151
210		0.147
215		0.144
220		0.140
225		0.137
230		0.135
235		0.131
240		0.127

[1] Product manual for the applicable ATU shall be referenced to ensure suitability and/or design/construction standards for use in soils with a percolation rate greater than 120 MPI.

EXAMPLE: Three-Bedroom dwelling with a 120 min/in percolation rate:

Total flow in gpd / loading rate = required disposal area (sq.ft.).

Table 11

Loading Rates for Beds with Advanced Treatment and Combined Treatment and Disposal Systems

PERC RATE min/inch	SOIL GROUP U.S.D.A. Textures	LOADING RATE gpd/sq.ft.
5	Sand, Loamy Sand	1.50
10		1.50
15		1.50
20	Sandy Loam, Loam	1.00
25		1.00
30		1.00
35	Sandy Clay Loam, Silt Loam, Silty Clay Loam, Clay Loam	0.71
40		0.71
45		0.71
50		0.71
55		0.71
60		0.71
65	Sandy Clay, Silty Clay, Clay	0.36
70		0.36
75		0.36
80		0.28
85		0.28
90		0.28
95	High Shrink-Swell Clay, Poorly Structured Soil	0.28
100		0.28
105		0.28
110		0.28
115		0.28
120		0.28

EXAMPLE: Three-Bedroom dwelling with a 90 min/in percolation rate:

Total flow in gpd / loading rate = required disposal area (sq.ft.).

Required total area (sq.ft.): 450/0.28 = 1607 square feet

Table 12
Loading Rates for Drip Irrigation Systems

PERC RATE min/inch	SOIL GROUP U.S.D.A. Textures	LOADING RATE gpd/sq.ft.
<5	Sand, Loamy Sand	0.45
5		0.45
10		0.45
15		0.45
20	Sandy Loam, Loam	0.4
25		0.4
30		0.4
35		0.4
40		0.4
45		0.4
50	Sandy Clay Loam, Silt Loam, Clay Loam, Silty Clay Loam	0.3
55		0.3
60		0.2
65		0.2
70		0.1
75		0.1
80		0.1
85		0.1
90		0.1
95	Sandy Clay, Silty Clay, Clay	0.075
100		0.05
105		0.05
110		0.05
115		0.05
120		0.05
>120		0.05

EXAMPLE: Three-bedroom dwelling with a 50 min/in percolation rate:

Total flow in gallons per day (gpd)/ loading rate = required disposal area (sq.ft.).

Total area (sq.ft.) / 2' (2 foot spacing is the standard used to determine total square footage required) drip tube spacing (ft) = required linear footage (LF) of drip tubing, regardless of the percentage of slope. For slopes greater than 20 percent, the spacing between the drip lines shall be increased to 36 inches or more.

Required total area (sq.ft.): 450/.3 = 1,500 square feet

Required length of drip tubing (LF): 1,500/2 = 750 LF

Table 13

Low Pressure Pipe (LPP) Fill Material Loading Rates for Controlled Fill Mound Systems

SOIL TEXTURE	PERCOLATION RATE Min/inch	LOADING RATE gpd/sq.ft.	LOADING RATE w/secondary treatment gpd/sq.ft.
Sand	5 to 10	1.0	2.0
Loamy sand	11 to 19	0.8	1.5
Sandy loam	20 to 30	0.6	1.0
Sandy clay loam	31 to 45	0.4	0.6

EXAMPLE: Three-Bedroom dwelling utilizing loamy sand fill without secondary treatment:

Total flow in gpd / loading rate = required distribution area (sq.ft.).

Required total area (sq.ft.): 450/.8 = 563 square feet

Table 14

Low Pressure Pipe (LPP) Basal Area Loading Rates for Controlled Fill Mound Systems

SOIL GROUP See Table 2 and Table 3	PERCOLATION RATE Min/inch	LOADING RATE gpd/sq.ft.	LOADING RATE w/secondary treatment gpd/sq.ft.
Group 1	5 to 15	1.0 to 0.8	2.0 to 1.6
Group 2	16 to 30	0.8 to 0.6	1.6 to 1.2
Group 3	31 to 60	0.6 to 0.4	1.2 to 0.8
Group 4	61 to 90	0.4 to 0.2	0.6 to 0.3
Group 4B	91 to 120	0.2 to 0.1	0.3 to 0.15
Group 4C	121 to 180	.075	0.125 to 0.1
	>180	.050	.075

EXAMPLE: Three-bedroom dwelling with a 120 min/in MPI without secondary treatment:

Total flow in gpd / loading rate = required basal area (sq.ft.)

Required total area (sq.ft.): 450/.15 = 3,000 square feet

Table 15

Reductions for Controlled Fill OSS with LPP/Drip Receiving Effluent Treated to Secondary Standards

EDF Separation Requirement (Trench/Bed Bottom to Restrictive Layer)

Pipe Type	Chroma 2 (ASHES)	Bedrock	Other R/L and soils with permeability > 240 min/inch
Drip	12 inches	12 inches	6 inches
LPP	12 inches	12 inches	6 inches

Table 16

Controlled Fill Material Guide

(For determining suitable fill material when naturally available fill is used)[1]

Evaluation Method	Suitable	Marginal	Unsuitable
Percolation	5-30 min/inch	31-45 min/inch	<5 or >45 min/inch
Unified	1 - SW, SP, SM 2 – SM-SC, SC	3	3, 4A, 4B, 4C
Morphology	1 – S, LS 2 – SL, L, light SCL	3	3, 4A, 4B, 4C

[1] This guide is intended for soils in their naturally occurring condition or soil material that has not been compacted or worked while wet.

Table 17

Minimum Lot Size Categories
For Dwellings or Establishments on Individual Systems[1]

Recording Date[2]	Water Supply[3]	Type Lot (Large-flow development or Non-Large-flow development)	Lot Size
Before 10/18/1978	Public/Private	Both	No minimum
Before 3/18/1982	Public/Private	Non-Large-Flow Development	No minimum
10/18/1978 to 3/17/1982	Private (well)	Large-Flow Development	20,000 sq.ft.
3/18/1982 to 1/20/2000	Private (well)	Both	20,000 sq.ft.
1/21/2000 to 3/18/2006	Private (well)	Both	20,000 sq.ft.
3/19/06 to current	Private (well)	Both	40,000 sq.ft.[4]
10/18/1978 to 3/17/1982	Public	Large-Flow Development	15,000 sq.ft.[5]
3/18/1982 to 1/20/2000	Public	Both	15,000 sq.ft.[5]
1/21/2000 to 3/18/2006	Public	Both	15,000 sq.ft.[5]
3/19/06 to current	Public	Lots except those with EDF/REDF in Hydric or High Shrink-Swell, Mine Spoil	15,000 sq.ft.[5]
3/19/06 to current	Public/Private	Lots with EDF/REDF in Hydric or High Shrink-Swell, Mine Spoil	43,560 sq.ft. (1 acre)[6]

[1] For lots utilizing an EDS, minimum lot size shall be based on setbacks in Table 4 and Table 6.
[2] Only to include a recording for lot dimension changes.
[3] See Public Water Supply definition.
[4] Lot size can be reduced to not less than 20,000 sq.ft. based on an Engineered Design.
[5] Lot size can be reduced based on an Engineered Design.
[6] Noncontiguous satellite lots in high shrink-swell soils; mine spoil must be ½ acre (21,780 sq. ft.).
Square footage requirements in this table are average square footage per dwelling or establishment.

Table 18
Site Limitations

SYSTEM LIMITATION	CONVENTIONAL			ENGINEERED	
	SLIGHT	MODERATE	SEVERE	EXTREME	
Slope (%)	0-15	16-25		26-40	>40 [1]
Flooding Frequency Chance/Year	None	Rare <5%	Occasional 5-50%	Frequent [1] >50%	
Landform (Slope Position)	Summit, Shoulder, Back & Other Linear or Convex	Lower Back Foot & Other Slightly Concave	Toe, Head, Depression, & Other Concave Mine Spoil	Swamp, Wetlands, Floodplain Drain, Gully, Mine Spoil, Hydric Soil Area [1]	

[1] OSS is generally not installed in these areas – Do not fill or manipulate without prior approval. Some exceptions are addressed in 420-3-1-.61 Controlled Fill Mound System and 420-3-1-.51 Lot Modification – Planned and Unplanned but no provisions are made for the use of frequently flooded areas, slopes over 40 percent, or drainage ways for EDF/REDF.

Table 19
Site Investigation Requirements for Small-Flow Single-Family Dwellings

Method	Number of Tests	Location on Lot	Test in REDF (req. for lots <15,000 sq ft)[1]
Percolation	2 tests & 2 borings	In proposed EDF/EDS area	1 test & 1 boring
Unified	2	In proposed EDF/EDS area	1
Morphology	2	In proposed EDF/EDS area	1
Soil Map	2 per lot or 4 per acre	Borings located as required in 420-3-1-.49 Soil Maps	1

[1] Required regardless of the recording date of the lot. Not applicable to an EDS.

Table 20
Unified Method

Soil Class/Texture Group	Unified System Symbol	Percent Fines Clay/Silt	Percent Liquid Limit	Percent Plastic Index	Estimated Permeability Min/Inch
1A	SP, SW, GP, GW	<12			<1-<5*
1	SM, SP-SM, GM	12-20		>4	5-15
2	SC, SC-SM, SM	21-35		4-7	16-30
3	SC, SC-SM, CL, ML, CL-ML	36-60	< 50	4-7	31-60
4A	CL, ML, CL-ML	50-70	< 50	7-15	61-90
4B	CL, ML, CL-ML	> 70	< 50	7-20	91-120
4C	CH, MH	> 70	> 50	>20	> 120

*<1 = uncoated sand – 1- <5 = coated sand

Table 21
Soil Morphology Method

Texture Groups	Min/Inch
1A COS, S (uncoated/coated)*	<1-<5*
1 S, LS	5-15
2 SL, L (<20% clay)	16-30
3 SCL, SC, CL, L, SiCL, SiL (20-40% clay)	31-60
4A SC, SiC, C (low s/s, kaolinitic)	61-90
4B SC, SiC, C (moderate s/s, mixed)	91-120
4C SC, SiC, C (high s/s, smectitic)	>120

*<1 = uncoated sand – 1- <5 = coated sand

Author: Department of Health
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-26-1 et seq.
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