ARKANSAS REGISTER

Transmittal Sheet

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Effective Date _____ Code Number _____

Name of Agency Arkansas Department of Health

Department Environmental Health Services

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Statutory Authority for Promulgating Rules § 20-7-109 et seq, 14-236-101 et seq.

Rule Title: Rules Pertaining to Drip Dispersal Systems

Intended Effective Date (Check One)

- ☐ Emergency (ACA 25-15-204)
- ☑ 10 Days After Filing (ACA 25-15-204)
- ☐ Other _____ (Must be more than 10 days after filing date.)

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Laura Shue (Contact Person) Laura.Shue@arkansas.gov (E-mail Address) 5/2/22 (Date)

CERTIFICATION OF AUTHORIZED OFFICER

I Hereby Certify That The Attached Rules Were Adopted
In Compliance with the Arkansas Administrative Act. (ACA 25-15-201 et. seq.)

Laura Shue
Signature

501-661-2297 (Phone Number) Laura.Shue@arkansas.gov (E-mail Address)

General Counsel
Title

5/2/22
Date

Revised 7/2015 to reflect new legislation passed in the 2015 Regular Session (Act 1258). This act changed the effective date from 30 days to 10 days after filing the rule.

ARKANSAS STATE BOARD OF HEALTH

RULES PERTAINING TO DRIP DISPERSAL SYSTEMS

ACT 402 OF 1977

Ark. Code Ann. 14-236-101 et seq.

Effective May 12, 2022

Environmental Health Protection
Arkansas Department of Health
José Romero, MD
Secretary of Health

IMPORTANT!

These rules are designed for use with individual residential, commercial, or decentralized wastewater systems (defined as 10,000 gpd or less) utilizing drip dispersal.

The soil loading rates authorized in this rule shall be utilized with the water usage tables of Appendix B in Rules and Regulations pertaining to Onsite Wastewater Systems.

When using these rules for subdivision development with a decentralized wastewater treatment and collection system, an estimated water usage rate of no less than 370 gallons per day per lot shall be utilized. Subdivisions utilizing individual onsite wastewater systems are required to be designed on standard, conventional systems for subdivision review process.

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RULES PERTAINING TO DRIP DISPERSAL SYSTEMS

SECTION 1. Authority and Purpose

1.1 The following RULES PERTAINING TO DRIP DISPERSAL SYSTEMS are duly adopted and promulgated by the Arkansas State Board of Health pursuant to the authority expressly conferred by the laws of the State of Arkansas including, without limitation. Act 96 of 1913 (A.C.A. (20-7-109), and Act 402 of 1977 (A.C.A. (14-236-101) et. seq.)

1.2 Purpose: A drip dispersal system is a technology for the distribution of treated wastewater uniformly over a large area beneath the soil surface. Drip Dispersal fields are a "bed" design. The use of four (4) to six (6) inch installation cover does not fit the conventional trench design criteria utilized in the Onsite Wastewater Soil Morphology Program for system design.

SECTION 2. Definitions

2.1 **Aerobic Treatment Unit (ATU):** A mechanical on-site treatment unit that provides secondary wastewater treatment by mixing air and aerobic and facultative microbes with the wastewater. ATU's typically use a suspended growth treatment process or a fixed treatment process.

2.2 **Air/Vacuum (A/V) Relief Valve:** A valve that automatically lets air out of or into liquid carrying pipe as needed in response to changes in system pressure.

2.3 **Aerobic:** Having molecular oxygen as a part of the environment, or growing or occurring only in the presence of molecular oxygen.

2.4 **Backwash:** The process of flow reversal to clean a filter and to restore it to the normal clean condition for filtering with a minimum resistance to flow through the media or screen.

2.5 **Control Panel:** An electronic control panel that controls the quantity and time of dose. This can also control the zone receiving the effluent, automatically flushes the lines, flushes the filters, monitors the flow rates and pump run cycles or times.

2.6 **Decentralized System:** An onsite and/or cluster wastewater system used to treat and disperse or discharge small volumes of wastewater, generally from dwellings or businesses that are located relatively close together.

2.7 **Disk Filter:** A type of filter that utilizes a series of grooved rings that overlay each other to form a network of very small openings to trap contaminants.

2.8 **Distributing Valve:** A valve that distributes flow to multiple drain field laterals, zones or locations by automatically rotating upon each pump cycle.

2.9 **Drain-back:** The process of effluent draining along the laterals and manifolds after the pump shuts off. Drainage occurs both inside and outside the drip tubing and manifolds to lower elevations in the drip field.

RULES PERTAINING TO DRIP DISPERSAL SYSTEMS

2.10 **Drip Line:** Tubing constructed from polyethylene with emitters embedded regularly along the length of the tube.

2.11 **Effluent:** Sewage, water or other liquids, partially or completely treated or in its natural state flowing out of a septic tank, aerobic treatment unit, or other treatment system or systems.

2.12 **Emitters:** Small diameter openings in drip line that can dissipate pressure and allow a slow, controlled discharge normally rated in gallons per hour.

2.13 **Field Flush:** Water is passed through the drip lateral for the purpose of removing particles and other debris from the walls of the drip tubing. The flush water is carried back through the return manifold and return line to the pretreatment unit.

2.14 **Filter:** A device for the main purpose of removing suspended solids and other debris from the wastewater.

2.15 **Hydraulic Conductivity:** The rate of water movement under unit gradient in a specific soil horizon.

2.16 **Interceptor Drain:** A subsurface drain line, usually constructed upgrade from the absorption area to divert seasonal groundwater.

2.17 **Lateral:** One single run or multiple runs of drip tubing connected at one end to a supply manifold and the other end connected to a return manifold.

2.18 **Maintenance Personnel:** A individual certified by the Department to conduct assessments under the Onsite Maintenance and Monitoring Program.

2.19 **Monitoring:** Periodic inspection of system for performance.

2.20 **Pressure Compensating (PC) Emitters:** Drip emitters that allow a constant flow or discharge over a wide range of applied pressure.

2.21 **Pressure Distribution:** A system of small diameter pipes equally distributing effluent through a trench or bed.

2.22 **Pressure Regulator:** A device used to regulate and maintain a constant discharge pressure.

2.23 **Pretreatment:** The conditioning of effluent prior to dispersal by a drip system.

2.24 **Return Line:** The return line connects the return manifold to the pretreatment unit for the purpose of carrying flush water from the drip field.

2.25 **Return Manifold:** A collection manifold or piping that returns excessive wastewater and debris to the primary treatment tank during system flushes.

2.26 **Run:** One continuous length of tubing routed across contour connected to a supply line or return line or another run.

2.27 **Soil Structure:** The combination or arrangement of individual soil particles in definable aggregates, or peds, which are characterized and classified on the basis of size, shape, and degree of distinctness.

2.28 **Solenoid Valve:** An electric valve actuated by a solenoid, used for controlling the flow or liquid in pipes.

2.29 **Spin Filter:** A filter that consist of a screen cylinder enclose in a casing. The typical filter screen mesh size is 150 and a micron rating of 100.

2.30 **Static Plow:** A drip line plow with a shank that remains at a given depth as the plow is pulled through the soil.

2.31 **Supply Line:** The line that extends from the pump to the supply manifold of a given zone.

2.32 **Supply Manifold:** The supply manifold connects the supply line to the drip laterals.

2.33 **Vertical Separation:** The depth of unsaturated, original, undisturbed soil between the bottom of the drip tubing and highest seasonal water table or restrictive layer.

2.34 **Vibratory Plow:** A vibratory plow is a drip line plow with a shank that vibrates vertically as the plow is pulled through the soil.

2.35 **Water Table:** The level in saturated soil at which the hydraulic pressure is zero.

2.36 **Zone:** A group of laterals that are dosed at the same time.

SECTION 3. Site Assessment

3.1 Subsurface Drip System(s) may be utilized on sites that meet the following criteria:

3.1.1 The drip tubing or installed trench bottom shall be above the seasonal water table, whatever the duration. Brief seasonal water tables may be minimized or eliminated by the use of effective interceptor drains. Any design, which incorporates the use of an interceptor drain, shall indicate the effective depth of seasonal water table reduction.

3.1.2 Low hydraulic conductivity shall include soils with 40% or greater clay. Clay percentage shall be determined from in depth zone extending 6" above and 12" below installed drip tubing depth.

3.1.3 No loading rates are available for low hydraulic conductivity soils with greater than 60% clay.

3.1.4 Systems utilizing drip dispersal must maintain minimum of 9" separation between drip tubing and any rock substrata (consolidated or fractured) for soils that exhibit a moderate and/or long SWT.

3.1.5 Systems utilizing drip dispersal must maintain minimum of 15" separation between drip tubing and any rock substrata (consolidated or fractured) for soils that exhibit only a brief SWT or do not exhibit a SWT.

3.1.6 Soils that are structure less or with massive structure shall not be approved for onsite sub-surface treatment.

3.1.7 The lot size shall be of sufficient area to accommodate both the primary and secondary dispersal area. Both the primary and secondary dispersal area shall be sized according to the respective loading rates. If the lot can only support the primary dispersal field, a subsurface drip dispersal system shall not be installed.

SECTION 4. Drip Tubing and Emitters

4.1 Emitter spacing can range from six (6) to twenty-four (24) inches. The emitters used in the tubing shall be pressure compensating. Pressure compensating emitters have a relatively constant discharge rate *over* a wide range of pressures. Emitter flow rate shall be specified by the designer and stated on the system plans. The drip line pressure can range from 5 to 70 pounds per square inch (PSI).

4.2 Drip tubing shall be installed by one of the following methods: static plow, chain trencher or vibratory plow.

4.3 Static plow is the preferred method for inserting drip tubing into the soil. The static plow shall be pulled not pushed through the soil.

4.4 Chain trencher may be used for placement of the drip tubing in the soil. The maximum chain trench width is four (4) inches.

4.5 Wet soil shall not be plowed because of smearing.

4.6 Drip tubing installed in natural soil shall be installed to a depth of six (6) inches.

4.7 If capping fill material is used as part or all of the *cover over* the tubing, the installed depth of the tubing can range from one (1) to five (5) inches in the natural soil. Drip tubing shall not be placed in the capping fill material. In no case shall the *cover over* the tubing be less than six (6) inches.

4.8 Settled depth of the cap shall not be more than eight (8) inches. The capping fill material shall not contain more than 27% clay or 60% sand or 70% silt. Before the capping fill material is delivered to the proposed dispersal site, a textural analysis shall be provided. A credit of up to 50% of the settled cap depth may be allowed in the adjustment of the seasonal water table. The seasonal water table credit is at the sole discretion of the Department.

SECTION 5. Pretreatment Requirements

5.1 The quality of effluent that will be applied to the dispersal field shall meet the American National Standards Institute/National Sanitation Foundation (ANSI/NSF) Standard 40 (revised 2005) requirements for class 1 treatment systems. Only pretreatment units that have obtained approval from the Department shall be used.

5.2 Pretreatment system shall be required as part of any Drip Dispersal System design.

5.3 The daily flow rate capacity of a pretreatment system shall equal or exceed the daily flow rates found in Appendix B of the Rules and Regulations Pertaining to Onsite Wastewater Systems.

5.4 Pretreatment systems installed in conjunction with an individual residential structure shall have a daily flow rate capacity of not less than 400 gallon per day.

5.5 Pretreatment systems installation on non-residential or multi-structures shall be sized according to influent wastewater strength and total daily flow rate expressed in gallons per day.

SECTION 6. Filters and Screens

6.1 There are three types of filters or screens used for wastewater applications: spin or screen filter, disk, and sand.

6.2 Solids and other debris shall be filtered to a size of 100 microns or less.

6.3 Filter debris shall be returned to the septic tank, pretreatment unit, or a separate settling tank regardless of the type of filter system. The clear Schedule 40 PVC piping allows for a direct observation of the wastewater as it flows from the filter flush line or the field flush line.

SECTION 7. Control Panel

7.1 Timed dosing is the only method for controlling the dose cycles and volumes.

7.2 Control panels shall be constructed of the following basic components: NEMA 4X rated enclosure, motor-start contractors, separate circuit breakers for pump and panel control, audio and visual alarms, and wiring terminals. Optional components range from elapsed time meter or counters, event counters and pump run lights.

SECTION 8. Flow Meters and Pressure Gauges

8.1 A flow meter shall be installed after the filter system but before the drip dispersal field. The flow meter shall incorporate not only a rate of flow gauge but also a total gallons pumped register. The flow rate gauge and total gallons pumped register may be separate devices. The flow meter shall be installed in a protective box that will be of sufficient size for servicing the meter and to allow easy access for reading the

meter. The flow meter shall be sized for the dispersal flow as well as the additional field flushing volume.

8.2 Pressure gauges shall be located before the filter, after the filter and on the dispersal field return line. Pressure gauges shall be enclosed in the head works box, which allows easy access for observation. The gauges shall be liquid filled and a minimum of three (3) inches in diameter. The pressure range of the gauge shall be sufficient for the maximum pressure that will be expected in the system.

SECTION 9. Supply Line and Manifold

9.1 The supply line and manifold should be designed with a flow velocity between the 0.5 feet per and 5 feet per second.

9.2 The piping and fittings in the supply line and the manifold shall be Schedule 40. Schedule 80 fittings shall be used at the filter system as well as any point where the piping will be disconnected or subjected to abuse.

9.3 When dosing, the supply manifold shall eliminate the drain back potential from a higher to a lower elevation in the drain field.

SECTION 10. Return Manifold and Line

10.1 The return manifold and line allow the flushing of the drip dispersal field. The flushed wastewater and solids shall be returned back to the settling tank or treatment tank.

SECTION 11. Flexible Hose and Tubing

11.1 Flexible Schedule 40 PVC piping shall be used at all connections to the supply and return manifolds.

SECTION 12. Air/Vacuum Relief Valves

12.1 Air/vacuum relief valves provide a means for releasing air at the start of a dose cycle, so the system will charge quickly with wastewater and allow air to enter the system quickly at the end of dose cycle. Air/vacuum valves shall be located at the highest points of either supply or return manifolds, or both.

12.2 Air/vacuum relief valves shall be sized based on the proposed design flow rate. A valve that is under sized will not provide an adequate amount of airflow.

12.3 A Schrader valve shall be provided at each vacuum valve as a means of checking the pressure of the drip field.

SECTION 13. Flushing Valves

13.1 Automatic flushing controls shall be required for all drip systems. The flush valve shall be a solenoid or a pressure/flow compensating valve. Manual flushing valves may be installed in the field flush line. Manually operated valves may be standard ball or gate valves. The flush valve shall be fully opened during a flush cycle, regardless of the valve type. The field flushing velocity shall be in accordance with the drip tubing or system manufacturer's recommendations. The minimum field flushing velocity shall not be less than 0.5 feet per second.

SECTION 14. Pipe and Specialty Connectors and Fittings Standard

14.1 PVC pipe, tubing, reducer tees, adapters, elbows, couplers and compression fittings shall be constructed of Schedule 40 PVC.

14.2 Lock-Slip fittings, adapters, tees, elbows, and couplings shall be specifically manufactured for use with wastewater drip dispersal systems.

14.3 Insert fittings, barbed adapters, tees, elbows, and couplings shall be specifically manufactured and sized for use with wastewater drip dispersal system.

SECTION 15. Headworks Boxes

15.1 Any component or assembly that may need to be routinely serviced shall be located in a headworks box that is readily accessible.

15.2 Headworks boxes may be constructed of high-density PE (polyethylene) fiberglass, PVC, or concrete.

15.3 Headworks boxes shall be large enough to allow ease of service and allow periodic removal and replacement of components as needed. The headworks box shall be of sufficient length and depth to accommodate the various components that will be housed in the box. The lid of the headworks box shall extend above the finished grade. The bottom of the headworks box shall be designed to drain any rainwater or wastewater away from the inside of the box. The headworks box lid shall be easy to remove but also shall be made tamperproof where access to the site is not restricted or controlled. The structural strength of the headworks box and lid shall be sufficient to withstand the weight of any lawn maintenance equipment or other service equipment that may roll over the box. If the box will be subject to excessive wheel loading, additional protection shall be provided.

SECTION 16. Zones and Related Components

16.1 Automatic distributing valves shall include clear Schedule 40 piping on the output of each zone.

16.2 Check valves shall not be required if separate return lines are used to isolate returned wastewater to the pretreatment system.

SECTION 17. Pressure Regulators

17.1 Regulators shall be selected to allow sufficient pressure and flows for flushing. Pressure regulators shall be designed for use in wastewater drip dispersal system.

SECTION 18. System Installation

18.1 Protect the site prior to and after the installation of the drip system. Activities on the site shall be limited only to what is necessary for the installation of the system.

18.2 Any clearing or grubbing shall be performed based on a site-specific plan, which minimizes the disturbance of the soil and protects the overall soil characteristics. It may be necessary to use flexible PVC tubing to work around or over objects in the dispersal field; however, the number of emitters shall not be reduced.

18.3 Drip tubing shall not be installed when the soil is wet or frozen.

18.4 Drip tubing shall be installed on contour.

18.5 Flexible Schedule 40 PVC tubing shall be used at each manifold connection to provide additional crimping protection and to prevent the tubing from being pulled out of the supply or return manifold as the soil settles.

18.6 Drip tubing shall be taped, plugged or capped when cut. All piping shall be taped or capped at the end of the construction day.

18.7 PVC pipe cutters that cleanly shear the pipe or tubing shall be used rather than sawing the pipe or tubing.

18.8 Complete flushing of the supply line prior to the connection of the drip tubing shall be performed. Sufficient volume of water shall be used to ensure all debris is removed from both the supply line and the drip tubing.

18.9 A start-up system check shall be performed before the system is placed in operation. All operational functions that would be expected during routine operations shall be performed in a specified time period of not less than 24 hours. This operational test shall include but not be limited to: timed dose functions, volume loading, flow rates, pressures at the inlet and outlet of each zone, pressures at the inlet and outlet of filters, leak detection, flushing, and alarms.

18.10 Repairs or modifications shall be made to eliminate any wet spot.

18.11 The establishment of a vegetative cover is critical to the overall performance of a drip dispersal system. The dispersal area shall be covered with sod or mulch as soon as possible after the installation of the drip tubing.

SECTION 19. System Operation and Maintenance

19.1 Periodic servicing shall be required. The frequency of the service period is dependent on the operational parameters set for the system by its designer. The minimal service period shall not be less than once every three (3) months.

19.2 Alarms resulting from mechanical break downs shall be investigated and the situation causing the alarm resolved.

19.3 Owners of Drip Dispersal Systems are required to maintain a Maintenance and Monitoring Contract with Maintenance Personnel certified by the Department for the life of the system.

SECTION 20. System Design

20.1 The following procedure shall be used to determine the minimum surface area required for drip dispersal system.

20.2 The depth and duration of the seasonal water table shall be determined.

20.3 The sizing and loading rate chart found in Table 1, 2 and 3 of this manual shall be used to determine the amount of surface area required for installation.

20.4 The spacing between drip tube laterals shall not be less than two (2) ft. center to enter. Drip tube laterals spacing may be greater than two (2) ft. however, for the purpose of determining the length of tubing required for a dispersal field, all length calculation shall be two (2) ft. center to center.

20.5 The effective area of the dispersal field shall be calculated by dividing the daily wastewater flow rate (DWF) in gallons per day (gpd) by the soil loading rate (SLR) in gallons per foot square per day (g/ft ft^2 / d). [Area of the dispersal field (DF) = design wastewater flow (DWF) ÷ soil loading rate (SLR).]

20.6 The length of the drip tubing shall be determined by dividing the dispersal field (DF) required by the drip tube spacing (DT) of two (2) Ft. [Drip tube length (DTL = dispersal field area (DF) ÷ drip tube spacing (DT) of two (2) ft.]

20.7 The number of emitters required shall be determined by dividing the drip tube length (DTL) by the emitter spacing (E) ft. [Drip line lateral length (ft.) ÷ emitter spacing (ft.) = Number of emitters.]

20.8 The loading rate for a soil which has a rock substrata (consolidated or fractured) and no seasonal water tables present above the rock substrata shall be sized as a moderate seasonal water table.

SECTION 21. Training and Certification

21.1 All Designated Representatives, Installers, Environmental Health Specialists, and Certified Maintenance Personnel shall be certified in the design, construction, and maintenance of a drip dispersal system. The certification program will be provided or approved by the Department Onsite Wastewater Section.

SECTION 22. Variances and Exemptions

22.1 Requested variations from these Rules and Regulations will be considered and maybe approved at the sole discretion of the Department.

22.2 Submission of proposed experimental onsite wastewater systems may be approved, disapproved, or approved on a trial basis for a specific period of time. Such approval or disapproval shall be at the sole discretion of the Department. Submission of an experimental design shall include data as to the efficiency of operation of the proposed experimental system. A monitoring plan shall be submitted for approval in addition to the system design.

22.3 Good management practices are additions or modifications to systems which will make such systems more efficient, or which could make such systems acceptable in certain soil conditions. Where good management practices are proposed for inclusion in a drip dispersal system, approval shall be at the sole discretion of the Department or its Authorized Agent.

SECTION 23. Fees

23.1 A fee shall be levied for the review of individual drip dispersal system permit application pursuant to A. C. A. § 14-236-116.

23.2 For structures one thousand five hundred square feet (1,500 sq. ft.) or less, the fee to review a permit application is thirty dollars ($30.00).

23.3 For structures more than one thousand five hundred square feet (1,500 sq. ft.) and less than two thousand square feet (2,000 sq. ft.), the fee to review a permit application is forty-five dollars ($45.00).

23.4 For structures more than two thousand square feet (2,000 sq. ft.) and less than three thousand square feet (3,000 sq. ft.), the fee to review a permit application is ninety dollars ($90.00).

23.5 For structures more than three thousand square feet (3,000 sq. ft.) and less than four thousand square feet (4,000 sq. ft.), the fee to review a permit application is one hundred twenty dollars ($120.00).

23.6 For structures four thousand (4,000 sq. ft.) and greater, the fee to review a permit application is one hundred fifty dollars ($150.00)

23.7 For the alteration, repair, or extension of any individual drip dispersal system, the fee to review a permit application is thirty dollars ($30.00).

23.8 In calculating the square footage of a residential structure for purposes of determining the applicable fee under this section the square footage of all auxiliary areas of the residential structure shall not be considered.

23.9 Auxiliary areas include garages, carports, porches, and other similar areas as determined by the Department.

23.10 Non-individual or multi structure permit submittals shall include a Cost Estimate Worksheet (EHP-17).

SECTION 24. Penalties

24.1 Any person, firm, corporation or association who violates any of the provisions of Act 402 of 1977, as Amended, or any Rules and Regulations promulgated under the authority of Act 402 of 1977, as Amended, shall upon conviction, be deemed guilty of a misdemeanor and shall be punished by a fine of not less than one hundred dollars ($100.00) nor more than one thousand dollars ($1,000.00)

SECTION 25. Severability

25.1 If any provisions of these Rules, or the application thereof to any person is held invalid, such invalidity shall not affect other provisions or applications of these Rules, which can affect without the invalid provisions of application, and to this end the provisions hereto are declared to be severable.

SECTION 26. Repeal

26.1 All Regulations and parts of Regulations in conflict herewith are hereby repealed.

SECTION 27. Certification

This will certify that the foregoing Rules Pertaining to Drip Dispersal Systems were adopted by the Arkansas Department of Health at a regular session of the Board of Health on 28th of October, 2021.

José Romero, MD
Secretary of Health
Arkansas Department of Health

TABLE 1

DRIP DISPERSAL FIELD SIZING AND LOADING RATE CHART FOR **MODERATE** HYDRAULIC CONDUCTIVITY SOILS

	Brief SWT		Mod SWT		Long SWT	
DEPTH TO RMF (inches)	**(g/ft²/d)**	**FT²/100 Gal./Day**	**(g/ft²/d)**	**FT²/100 Gal./Day**	**(g/ft²/d)**	**FT²/100 Gal./Day**
1	0.021	4761.9	0.007	14285.71	0.003	33333.33
2	0.041	2439.02	0.014	7142.86	0.007	14285.71
3	0.062	1612.9	0.021	4761.9	0.010	10000
4	0.082	1219.51	0.027	3703.7	0.014	7142.86
5	0.103	970.87	0.034	2941.18	0.017	5882.35
6	0.123	813.01	0.041	2439.02	0.021	4761.9
7	0.144	694.44	0.048	2083.33	0.024	4166.67
8	0.164	609.76	0.055	1818.18	0.027	3703.7
9	0.185	540.54	0.062	1612.9	0.031	3225.81
10	0.205	487.8	0.068	1470.59	0.034	2941.18
11	0.226	442.48	0.075	1333.33	0.038	2631.58
12	0.246	406.5	0.082	1219.51	0.041	2439.02
13	0.267	374.53	0.089	1123.6	0.044	2272.73
14	0.287	348.43	0.096	1041.67	0.048	2083.33
15	0.308	324.68	0.103	970.87	0.051	1960.78
16	0.328	304.88	0.109	917.43	0.055	1818.18
17	0.349	286.53	0.116	862.07	0.058	1724.14
18	0.369	271	0.123	813.01	0.062	1612.9
19	0.390	256.41	0.130	769.23	0.065	1538.46
20	0.410	243.9	0.137	729.93	0.068	1470.59
21	0.431	232.02	0.144	694.44	0.072	1388.89
22	0.451	221.73	0.150	666.67	0.075	1333.33
23	0.472	211.86	0.157	636.94	0.079	1265.82
24	0.492	203.25	0.164	609.76	0.082	1219.51
25	0.513	194.93	0.171	584.8	0.085	1176.47
26	0.533	187.62	0.178	561.8	0.089	1123.6
27	0.554	180.51	0.185	540.54	0.092	1086.96
28	0.574	174.22	0.191	523.56	0.096	1041.67
29	0.595	168.07	0.198	505.05	0.099	1010.1
30	0.615	162.6	0.205	487.8	0.103	970.87
31	0.636	157.23	0.212	471.7	0.106	943.4
32	0.656	152.44	0.219	456.62	0.109	917.43
33	0.677	147.71	0.226	442.48	0.113	884.96
34	0.697	143.47	0.232	431.03	0.116	862.07
35	0.718	139.28	0.239	418.41	0.120	833.33
36	0.738	135.50	0.246	406.5	0.123	813.01
37	0.750	133.33	0.253	395.26	0.126	793.65
38	0.750	133.33	0.260	384.62	0.130	769.23
39	0.750	133.33	0.267	374.53	0.133	751.88
40	0.750	133.33	0.273	366.3	0.137	729.93
41	0.750	133.33	0.280	357.14	0.140	714.29
42	0.750	133.33	0.287	348.43	0.144	694.44
43	0.750	133.33	0.294	340.14	0.147	680.27
44	0.750	133.33	0.301	332.23	0.150	666.67
45	0.750	133.33	0.308	324.68	0.154	649.35
46	0.750	133.33	0.314	318.47	0.157	636.94
47	0.750	133.33	0.321	311.53	0.161	621.12
48	0.750	133.33	0.328	304.88	0.164	609.76

TABLE 2

DRIP DISPERSAL FIELD SIZING AND LOADING RATE CHART FOR **LOW** HYDRAULIC CONDUCTIVITY SOILS

		Brief SWT		Mod SWT		Long SWT	
DEPTH TO RMF (inches)		**(g/ft²/d)**	**FT²/100 Gal./Day**	**(g/ft²/d)**	**FT²/100 Gal./Day**	**(g/ft²/d)**	**FT²/100 Gal./Day**
1		0.014	7142.86	0.005	20000	0.002	50000
2		0.028	3571.43	0.009	11111.11	0.005	20000
3		0.042	2380.95	0.014	7142.86	0.007	14285.71
4		0.055	1818.18	0.018	5555.56	0.009	11111.11
5		0.069	1449.28	0.023	4347.83	0.012	8333.33
6		0.083	1204.82	0.028	3571.43	0.014	7142.86
7		0.097	1030.93	0.032	3125	0.016	6250
8		0.111	900.9	0.037	2702.7	0.018	5555.56
9		0.125	800	0.042	2380.95	0.021	4761.9
10		0.139	719.42	0.046	2173.91	0.023	4347.83
11		0.152	657.89	0.051	1960.78	0.025	4000
12		0.166	602.41	0.055	1818.18	0.028	3571.43
13		0.180	555.56	0.060	1666.67	0.030	3333.33
14		0.194	515.46	0.065	1538.46	0.032	3125
15		0.208	480.77	0.069	1449.28	0.035	2857.14
16		0.222	450.45	0.074	1351.35	0.037	2702.7
17		0.235	425.53	0.078	1282.05	0.039	2564.1
18		0.249	401.61	0.083	1204.82	0.042	2380.95
19		0.263	380.23	0.088	1136.36	0.044	2272.73
20		0.277	361.01	0.092	1086.96	0.046	2173.91
21		0.291	343.64	0.097	1030.93	0.048	2083.33
22		0.300	333.33	0.102	980.39	0.051	1960.78
23		0.300	333.33	0.106	943.4	0.053	1886.79
24		0.300	333.33	0.111	900.9	0.055	1818.18
25		0.300	333.33	0.115	869.57	0.058	1724.14
26		0.300	333.33	0.120	833.33	0.060	1666.67
27		0.300	333.33	0.125	800	0.062	1612.9
28		0.300	333.33	0.129	775.19	0.065	1538.46
29		0.300	333.33	0.134	746.27	0.067	1492.54
30		0.300	333.33	0.139	719.42	0.069	1449.28
31		0.300	333.33	0.143	699.3	0.072	1388.89
32		0.300	333.33	0.148	675.68	0.074	1351.35
33		0.300	333.33	0.152	657.89	0.076	1315.79
34		0.300	333.33	0.157	636.94	0.078	1282.05
35		0.300	333.33	0.162	617.28	0.081	1234.57
36		0.300	333.33	0.166	602.41	0.083	1204.82
37		0.300	333.33	0.171	584.8	0.085	1176.47
38		0.300	333.33	0.175	571.43	0.088	1136.36
39		0.300	333.33	0.180	555.56	0.090	1111.11
40		0.300	333.33	0.185	540.54	0.092	1086.96
41		0.300	333.33	0.189	529.1	0.095	1052.63
42		0.300	333.33	0.194	515.46	0.097	1030.93
43		0.300	333.33	0.199	502.51	0.099	1010.1
44		0.300	333.33	0.203	492.61	0.102	980.39
45		0.300	333.33	0.208	480.77	0.104	961.54
46		0.300	333.33	0.212	471.7	0.106	943.4
47		0.300	333.33	0.217	460.83	0.109	917.43
48		0.300	333.33	0.222	450.45	0.111	900.9

TABLE 3

DRIP DISPERSAL FIELD SIZING AND LOADING RATE CHART FOR **HIGH** HYDRAULIC CONDUCTIVITY SOILS

		Brief SWT		Mod SWT		Long SWT	
DEPTH TO RMF (inches)		(g/ft²/d)	FT²/100 Gal./Day	(g/ft²/d)	FT²/100 Gal./Day	(g/ft²/d)	FT²/100 Gal./Day
1		0.249	402	0.042	2381	0.021	4762
2		0.374	267	0.083	1205	0.042	2381
3		0.499	200	0.125	800	0.062	1613
4		0.623	161	0.166	602	0.083	1205
5		0.748	134	0.208	481	0.104	962
6		0.873	115	0.249	402	0.125	800
7		0.997	100	0.291	344	0.145	690
8		1.122	89	0.332	301	0.166	602
9		1.247	80	0.374	267	0.187	535
10		1.250	80	0.416	240	0.208	481
11		1.250	80	0.457	219	0.229	437
12		1.250	80	0.499	200	0.249	402
13		1.250	80	0.540	185	0.270	370
14		1.250	80	0.582	172	0.291	344
15		1.250	80	0.623	161	0.312	321
16		1.250	80	0.665	150	0.332	301
17		1.250	80	0.706	142	0.353	283
18		1.250	80	0.748	134	0.374	267
19		1.250	80	0.790	127	0.395	253
20		1.250	80	0.831	120	0.416	240
21		1.250	80	0.873	115	0.436	229
22		1.250	80	0.914	109	0.457	219
23		1.250	80	0.956	105	0.478	209
24		1.250	80	0.997	100	0.499	200
25		1.250	80	1.039	96	0.519	193
26		1.250	80	1.081	93	0.540	185
27		1.250	80	1.122	89	0.561	178
28		1.250	80	1.164	86	0.582	172
29		1.250	80	1.205	83	0.603	166
30		1.250	80	1.247	80	0.623	161
31		1.250	80	1.250	80	0.644	155
32		1.250	80	1.250	80	0.665	150
33		1.250	80	1.250	80	0.686	146
34		1.250	80	1.250	80	0.706	142
35		1.250	80	1.250	80	0.727	138
36		1.250	80	1.250	80	0.748	134
37		1.250	80	1.250	80	0.769	130
38		1.250	80	1.250	80	0.790	127
39		1.250	80	1.250	80	0.810	123
40		1.250	80	1.250	80	0.831	120
41		1.250	80	1.250	80	0.852	117
42		1.250	80	1.250	80	0.873	115
43		1.250	80	1.250	80	0.894	112
44		1.250	80	1.250	80	0.914	109
45		1.250	80	1.250	80	0.935	107
46		1.250	80	1.250	80	0.956	105
47		1.250	80	1.250	80	0.977	102
48		1.250	80	1.250	80	0.997	100