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Rules and Regulations
For Onsite
Wastewater
Treatment Systems
Rule #3

RiverStone Board of Health
Yellowstone City-County Health Department
dba RiverStone Health

123 South 27th Street
Billings, MT 59101

11th Revision September 2016

-TABLE OF CONTENTS-

Table of Contents	1
Preamble	2
Purpose of Regulation	3
Section 1 – Authority and Scope	3
Section 2 – Effective Date	3
Section 3 – Definitions	4
Section 4 – Installer Licensure and Penalties	7
Section 5 – Construction Application	9
Section 6 – Expired Applications	10
Section 7 – Denial Procedure	10
Section 8 – Inspection and Permit	11
Section 9 – General Requirements	12
Section 10 – Technical Requirements	12
Site Conditions	12
Septic Tanks	13
Standard Absorption Trenches	14
Other Onsite Wastewater Systems	16
Section 11 – Local Variance	17
Section 12 – Conflict of Ordinance	17
Section 13 – Adoption by Reference	18
Appendix A – Percolation Test	
Appendix B – Soil Characterization	
Appendix C – Ground Water Monitoring	
Appendix D – Sample Construction Application	
Appendix E – Sample Permit	

PREAMBLE

The Yellowstone City-County Health Department, dba RiverStone Health, is a multi-jurisdictional service district created under an inter-local agreement among the City of Billings, Montana, (“Billings”) the City of Laurel, Montana (“Laurel”) and Yellowstone County, Montana (the “County”) for the purpose of providing a higher level of service than is available through local governments forming such a district and to provide services that are not available through the governments forming such a district¹. The inter-local agreement creates a City-County Board of Health (the “Board”) which possesses the powers, duties, obligations, and responsibilities granted to local boards of health under 50-2-101, MCA *et seq* (“Health Department Functions”)². Those powers include the authority to appoint a local health officer (the “Health Officer”) who possesses the powers and duties enumerated under 50-2-118, MCA. Health Department Functions include:

1. Adoption of necessary regulations that are not less stringent than state standards for the control and disposal of sewage from private and public buildings and facilities that are not regulated by Title 75, chapter 6, or Title 76, chapter 4;
2. Adoption of necessary fees to administer regulations for the control and disposal of sewage from private and public buildings and facilities;
3. Adoption of regulations that do not conflict with rules adopted by the Montana Department of Public Health and Human Services (subject to the provisions of 50-2-130, MCA), for sanitation in public and private buildings and facilities that affects public health and for the maintenance of sewage treatment systems that do not discharge effluent directly into state water and that are not required to have an operating permit as required by rules adopted under 75-5-401, MCA; and
4. Adoption of other regulations that do not conflict with rules adopted by the Montana Department of Public Health and Human Services in order to implement the public health laws³.

At a public hearing and public comment duly held on September 22, 2016, the Board adopted written findings that based on the evidence in the record, implementing the provisions of this rule protects the public health or environment; and the Board requirements and standards imposed can mitigate the harm to the public health or the environment and is achievable under current technology. The written findings referenced information and peer-review scientific studies contained in the record that formed the basis for the Board’s conclusion and includes information from the hearing record regarding the costs to the regulated community that are directly attributable to the proposed local standard or requirement outlined in this rule.

¹ See 7-11-1102(1), MCA.

² See 7-11-1102(2)(i), MCA.

³ See 50-2-116(k), MCA.

-PURPOSE of REGULATIONS-

The Board of Health recognizes the importance of proper treatment and disposal of wastewater to prevent disease transmission from bacteria, viruses and parasites. Safe treatment and disposal of all wastewater is necessary to protect public health and the environment, and to prevent the occurrences of public health nuisances. It is with this in mind the Board of Health has adopted the following regulations.

SECTION 1—AUTHORITY and SCOPE

- 1.1 Pursuant to 50-2-116, MCA, local Boards of Health may adopt regulations not less stringent than state standards for the control and disposal of sewage from buildings and facilities that are not regulated by Title 75, chapter 6, or Title 76, chapter 4.
- 1.2 These regulations cover all on-site wastewater treatment systems in Yellowstone County with the exception of public sewage systems, as defined herein.
- 1.3 The permit system established through these regulations governs only the installation of on-site wastewater treatment systems. The permit is not to be construed as a building permit or any other permit that may be required by other agencies or departments.
- 1.4 RiverStone Health does not design on-site wastewater treatment systems. The requirements set forth in the permit do not bind or obligate the department to guarantee the operation or longevity of any system.
- 1.5 RiverStone Health may require of the applicant, through this permitting process, verification of compliance, or the ability to comply with other agencies', districts', or governmental entities' bylaws, ordinances, zoning laws, rules, and regulations.
- 1.6 Failure to obtain a permit, comply with these regulations, or correct noted deficiencies will result in action taken under authority of 50-2-124, MCA.

SECTION 2—EFFECTIVE DATE

Provisions established under this rule shall become effective as of 09/22/2016.

SECTION 3—DEFINITIONS

- 3.1 “**ABSORPTION AREA**” means that area determined by multiplying the length by the width of the bottom area of the absorption trench or bed.
- 3.2 “**ABSORPTION BED**” means an absorption system that consists of excavations greater than 3 feet in width where the distribution system is laid for the purpose of distributing pretreated waste effluent into the ground.
- 3.3 “**ABSORPTION SYSTEM**” means any secondary treatment system, including absorption trenches, elevated sand mounds, evapotranspiration absorption (ETA), gray water irrigation, and subsurface drip systems, used for subsurface disposal of pretreated waste effluent.
- 3.5 “**ALTERATION or REPAIR**” means physically changing an on-site wastewater treatment system by lengthening, shortening, widening, or totally replacing the system.
- 3.6 “**APPLICANT**” means any owner, or their legal representative, of the property on which the on-site wastewater treatment system is to be installed.
- 3.7 “**APPROVED SUBDIVISION**” means a division of land, which has received approval from the Department of Environmental Quality and has a Release of Sanitary Restrictions or Certificate of Subdivision Plat Approval Statement filed with the Clerk & Recorder.
- 3.8 “**BEDROCK**” means material that cannot be readily excavated by hand tools, or material that does not allow water to pass through or that has insufficient quantities of fines to provide for the adequate treatment and disposal of wastewater.
- 3.9 “**BEDROOM**” means any room used for sleeping. An unfinished basement, for the purposes of this rule, is considered a bedroom.
- 3.10 “**BOARD or BOARD OF HEALTH**” means the RiverStone Board of Health.
- 3.11 “**CALENDAR YEAR**” means January 1 through December 31 of any given year.
- 3.12 “**CIRCULAR DEQ 4**” means the most recent edition of Circular DEQ 4: Montana Standards for Subsurface Wastewater Treatment Systems. For the purposes of this rule, may be referred to as “DEQ 4”.
- 3.13 “**CONSTRUCTION APPLICATION**” means the written approval from the health authority to construct an onsite wastewater treatment system in accordance with the reviewed plans submitted by the applicant. For the purposes of this rule, may be referred to as “application”. (*See Appendix E for sample construction application*)
- 3.14 “**DESIGN FLOW**” means the flow used for sizing hydraulic facilities, such as pumps, piping, storage, and absorption systems.
- 3.15 “**DISTRIBUTION BOX**” means a watertight receptacle which receives septic tank effluent and distributes it equally into two or more pipes leading to the absorption area.
- 3.16 “**DRAINAGE WAY**” means a course or channel in which water moves in draining an area.

- 3.17 “**EFFLUENT**” means partially treated wastewater from a primary, advanced, or other treatment facility.
- 3.18 “**EFFLUENT FILTER**” means an effluent treatment device installed on the outlet of a septic tank designed to prevent the passage of suspended matter larger than 1/8 inch in size.
- 3.19 “**EXPERIMENTAL SYSTEM**” means a wastewater treatment system, which is neither conventional nor alternative, for which specific design standards are not provided in DEQ 4.
- 3.20 “**FAILED SYSTEM**” means an onsite wastewater treatment system which no longer provides the treatment and/or disposal for which it was intended. This includes systems which violate any of the requirements of this rule or 17.36.913 ARM
- 3.21 “**FILL**” means soil materials that have been displaced from their original location.
- 3.22 “**FLOODPLAIN**” means the area adjoining a watercourse or drainage way which would be covered by the floodwater of a flood of 100 year frequency with the exception of sheet flood areas that receive less than one foot of water per occurrence and are considered zone “B” areas by the Federal Emergency Management Agency (FEMA). The floodplain consists of the floodway and flood fringe as defined in ARM 36.15.101.
- 3.23 “**GRAY WATER**” means wastewater that is collected separately from a sewage flow and that does not contain industrial chemicals, hazardous wastes, or wastewater from toilets.
- 3.24 “**GROUNDWATER OBSERVATION WELL**” means a well (pipe) installed for the purpose of measuring the depth from the natural ground surface to the seasonally high groundwater in accordance with DEQ 4. (*See Appendix C for additional information*)
- 3.25 “**HEALTH AUTHORITY**” means the Health Officer or authorized representatives.
- 3.26 “**HEALTH OFFICER**” means the legally established authority as designated by the Board.
- 3.27 “**HOLDING TANK**” means a watertight receptacle that receives wastewater for retention and does not, as part of its normal operation, dispose or treat the wastewater.
- 3.28 “**HORIZON**” means a layer in a soil profile that can be distinguished from each of the layers directly above or beneath it by having distinctly different physical, chemical, and/or biological characteristics.
- 3.29 “**IMPERVIOUS LAYER**” means any layer of material in the soil profile that has a percolation rate slower than 240 minutes per inch.
- 3.30 “**INDIVIDUAL WASTEWATER SYSTEM**” means an onsite wastewater treatment system that serves one living unit or commercial structure. The total number of people served may not exceed 24.
- 3.31 “**INDIVIDUAL WATER SYSTEM**” means any water system that serves one living unit or commercial structure. The total number of people served may not exceed 24.

- 3.32 “**INSTALLER or LICENSED INSTALLER**” means an individual, partnership, or company that holds a current license issued by the Board of Health to install, alter, or repair onsite wastewater sewage treatment system under the terms of this rule.
- 3.33 “**LIMITING LAYER**” means bedrock, impervious layer, or seasonally high groundwater.
- 3.34 “**LIVING UNIT**” means the area under one roof that can be used for one residential unit having facilities for sleeping, cooking, and sanitation. A duplex is considered two living units.
- 3.35 “**MANIFOLD**” means a solid (non-perforated) main wastewater line that distributes effluent to individual lines.
- 3.36 “**MULTI-USER SEWAGE TREATMENT SYSTEM**” means a non-public sewage system that serves or is intended to serve more than two living or commercial units. The total number of people served may not exceed 24. In estimating the population that will be served by a proposed residential system, the reviewing authority shall multiply the number of living units times 2.5 people per living unit.
- 3.37 “**NATURAL SOIL**” means undisturbed soil that has developed through natural processes and to which no fill material has been added.
- 3.38 “**ONSITE WASTEWATER TREATMENT or DISPOSAL SYSTEM**” means a system that receives wastewater for purposes of treatment, storage, or disposal. The term includes all disposal methods described in Circular DEQ 4.
- 3.39 “**OWNER**” means the person who is shown to be the legal title holder of land onto which an onsite wastewater treatment system has been or is to be placed.
- 3.40 “**PERCOLATION TEST**” means a standardized test used to assess the infiltration rate of soils and to aid in sizing absorption areas and determining site suitability. Results are typically expressed in units of minutes per inch. *(Included here as Appendix A)*
- 3.41 “**PERMIT**” means the approval given in writing by the health authority following a complete and satisfactory inspection of any onsite wastewater treatment system. The permit approval denotes compliance to plans submitted in the construction application and allows for backfilling the system and placing it into operation. *(See Appendix F for sample permit)*
- 3.42 “**PIT PRIVY**” means a pit that receives undiluted, non-water carried toilet wastes.
- 3.43 “**PRESSURE DISTRIBUTION**” means an effluent distribution system where all pipes are pressurized and the effluent is pumped (or delivered by siphon) to the next portion of the treatment system in a specific time interval.
- 3.44 “**PUBLIC WASTEWATER SYSTEM**” means a system of collection, transportation, treatment, or disposal of sewage that serves 15 or more families or 25 or more persons daily for any 60 or more days in a calendar year.
- 3.45 “**QUALIFIED SITE EVALUATOR**” means a soils scientist, professional engineer, registered sanitarian, hydro geologist or geologist who has experience and knowledge of soil morphology. Other individuals will be considered qualified after providing to the reviewing authority evidence of experience describing soils or experience conducting necessary test procedures.

- 3.46 “**SEALED PIT PRIVY (VAULT)**” means an enclosed receptacle designed to receive non-water-carried toilet wastes into a watertight vault.
- 3.47 “**SEASONALLY HIGH GROUNDWATER**” means the depth from the natural ground surface to the upper surface of the zone of saturation as measured in an unlined hole or perforated monitoring well during the time of the year when the water table is the highest. The term includes the upper surface of a perched water table.
- 3.48 “**SEPTIC TANK**” means a wastewater settling tank in which settled sludge is in immediate contact with the wastewater flowing through the tank while the organic solids are decomposed by anaerobic action.
- 3.49 “**SEWAGE**” is synonymous with “wastewater” for the purpose of this rule.
- 3.50 “**SHARED WASTEWATER SYSTEM**” means an onsite wastewater system that serves 2 living or commercial units. The total number of people served may not exceed 24.
- 3.51 “**SITE EVALUATION**” means an evaluation made to determine if a site is suitable for the installation of a subsurface wastewater treatment system.
- 3.52 “**SOIL PROFILE**” means a description of the soil strata to a depth of eight feet using the United States Department of Agriculture (USDA) soil classification system method, which can be found in Appendix B of Circular DEQ4. *(Included here as Appendix B)*
- 3.53 “**SURFACE WATER**” means any water on the earth’s surface including lakes, ponds, rivers, creeks, and swamps. This term does not include irrigation waters where the waters are used up within the irrigation system and the waters are not returned to state waters.
- 3.54 “**VARIANCE**” means the grant, by the Board of Health and pursuant to ARM 17.36.922, of an exception to the minimum requirements set out in this rule or DEQ 4.
- 3.55 “**WASTEWATER**” means water-carried wastes, including but not limited to, household, commercial or industrial wastes, chemicals, human excrement; or animal and vegetable matter in suspension or solution.
- 3.56 “**ZONE OF SATURATION**” means the areas beneath the ground in which all open spaces are filled with groundwater.

SECTION 4—INSTALLER LICENSURE and PENALTIES

- 4.1 It shall be unlawful for any person to construct, alter, or repair an onsite wastewater treatment system within Yellowstone County unless such person holds a valid license issued by the Board of Health.
- 4.2 **EXEMPTION:** A non-licensed installer who is constructing, altering or repairing an onsite wastewater treatment system on his/her property is exempt from the licensing requirement in Section 4.1 only if the system to be installed allows for standard gravel or gravelless wastewater treatment system design.
- 4.3 Application for licensure shall be made in writing to the health authority and shall contain name, address, phone number, and email address if applicable.

- 4.4 Each licensed installer will be required to successfully pass a written examination once every 3 years from the date of the previously issued license.
- 4.5 License will be issued upon passing written examination and payment of applicable fees as determined by the Board of Health.
- 4.6 A license is good for one calendar year and shall expire annually on December 31. The license may be reissued within 60 days of expiration by paying a renewal fee as determined by the Board of Health. Failure to renew license within the specified time period shall cause installer to pay an additional late fee and to successfully pass the written examination.
- 4.7 Licenses are not transferable.
- 4.8 **RECIPROcity:** Licensure to construct, alter, or repair on-site wastewater treatment systems within Yellowstone County may be granted on the basis of licensure in another health district or county. Reciprocity, for this purpose in Yellowstone County, requires the installer have a current, valid license issued by another jurisdictional area.
- 4.9 Any licensed installer who commits any of the following acts or has committed a series of lesser violations will have their license suspended by the Board of Health.:
- (A) Installing an onsite wastewater system without an application approved by the local health authority;
 - (B) Installing an onsite wastewater system without health authority inspection;
 - (C) Providing false or deliberate alteration of information and data for the purpose of obtaining an application or permit;
- 4.10 **SUSPENSION:** The Board may take any remedial action necessary to protect the public health, safety, and welfare to cure the violation. License suspension will act as a temporary revocation which will become permanent unless appealed in a timely manner. In this scenario, under no circumstances may an installer continue to construct, install, or otherwise work in any manner with on-site wastewater treatment systems until their license is reinstated. Any installer failing to follow the provisions of license suspension may be subject to applicable civil and criminal penalties.
- 4.11 **REINSTATEMENT:** Those seeking reinstatement must successfully pass the onsite wastewater treatment system examination prior to renewal. If, after reinstatement following a one year suspension, their license is revoked once more, the installer, at the discretion of the Health Officer, shall be permanently barred from obtaining an on-site wastewater treatment systems license for Yellowstone County.
- 4.12 **RIGHT TO APPEAL:** The installer has the right of direct appeal to the Board of Health. The aggrieved party must submit a written notice of intent to appeal to the Board within 20 days of notice of suspension. Failure to file a timely notice of appeal shall result in a forfeiture of this right.
- 4.13 **RIGHT TO A HEARING:** A public hearing shall be scheduled once the aggrieved party has filed a timely notice of appeal. The Board shall notify the aggrieved party and the Health Officer of the date, time, and location of the scheduled hearing. At the hearing, the aggrieved party may appear in person, with an advocate, or submit a written statement. The purpose of the hearing will be to determine whether the installers' license should be revoked. The proceeding shall be recorded. Within 15 days of the hearing the Board shall mail a letter including the reasons for their decision to the aggrieved party. This decision is final.

- 4.14 BURDEN OF PROOF: At the hearing the aggrieved party bears the burden of proof to convince the Board that their license should be reinstated. The aggrieved party has the right to produce evidence, including witnesses, in their defense.
- 4.15 Any person who violates any provision of this rule or any provision of any rule adopted by the Board of Health may be subject to applicable civil and criminal penalties pursuant to Section 50-2-124, MCA.

SECTION 5—CONSTRUCTION APPLICATION

- 5.1 It shall be unlawful for any person to construct, alter, or repair an onsite wastewater system within Yellowstone County unless that person holds an application approved by the local health authority.
- 5.2 Submittal information for construction applications must be made to the local health authority prior to construction of the system. Review and approval or denial will be completed by the local health authority.
- 5.3 Repair/replacement applications will be evaluated on a case-by-case basis in an effort to mitigate any adverse effects of a failed or failing wastewater treatment system. A written consultation between the licensed installer and the health authority is required prior to conducting a repair/replacement system installation. In most cases, this written consultation will result in the approval of a construction application. A replacement system for a failed septic system which cannot meet all the requirements of this rule will be considered if it is in accordance with the general requirements in Section 9 and allows for the best treatment practical. A replacement system may be subject to a variance procedure in Section 12 if general requirements cannot be met.
- 5.4 The minimum information that must be provided on an application for an onsite wastewater treatment system includes:
- (A) Property address and legal description of the parcel where the system is proposed;
 - (B) Name, phone number, and mailing address of the applicant;
 - (C) Number of bedrooms in a living unit or number of employees in a commercial building (provide a floor plan for residential properties if available);
 - (D) Complete lot layout plan illustrating the building site, location of water supply, location of septic tank, primary drainfield area, and 100% replacement area drainfield area. The plan must show distances between these proposed features and all existing facilities on surrounding parcels.
 - (E) Information concerning soil and site conditions is needed for the review and approval of onsite wastewater systems. (See Section 11.2). The site evaluation information may need to be provided by qualified site evaluator. Location of soil test pits and monitoring wells must also be illustrated on the lot layout plan.
- 5.5 No construction application will be approved until all pertinent information and applicable fees have been received and approved in accordance with this rule and all applicable rules.
- 5.6 No construction application for an onsite wastewater treatment system will be issued where an approved public collection and treatment system is readily available within a distance of 500 feet from the property line. For the purposes of this rule:

- (A) A public system is not “readily available” if there is evidence demonstrating that connection to the system is physically impractical, economically impractical, or easements cannot be obtained;
- (B) A connection is “economically impractical” if the cost of connection to the public system equals or exceeds 3 times the cost of installation of an approvable onsite system.

5.7 Fees are set by Board of Health action pursuant to 50-2-116, MCA and are non-refundable.

SECTION 6—EXPIRED APPLICATIONS

- 6.1 If the onsite wastewater treatment system for which a construction application has been approved has not been installed within 12 months after issuance of such application, then it expires and becomes void. Any construction application that has expired may be reinstated if the applicant makes a reapplication request.
- 6.2 If a construction application is voided, the applicant will apply for a new application subject to all requirements that are in effect at the time of the new application, including fees.
- 6.3 It is unlawful to install, alter, or repair an onsite wastewater system after the application has been voided.

SECTION 7—DENIAL PROCEDURE

- 7.1 The health authority may deny a construction application for the installation, alteration, or repair of an onsite wastewater treatment system if it is determined that:
 - (A) The installation, alteration, or repair, as proposed, is in conflict with the requirements of ARM 17.36.911-924, Circular DEQ 4, and this rule;
 - (B) The applicant has failed to supply all necessary information to make a determination of acceptability for the purpose of issuing an application within 60 days after a written request from the health authority to provide such information;
 - (C) The applicant has failed to pay any applicable fees as set forth by the Board of Health;
 - (D) False or deliberately altered information is provided by the applicant.
- 7.2 A construction application to install, alter, or repair an onsite wastewater sewage treatment system will be denied if it is found that such installation is in conflict with any portion of the Certificate of Subdivision Approval (COSA).
- 7.3 The burden of proof shall be placed on the applicant to show that the approval of the construction application will not in any way conflict with the purpose of this rule and will not adversely affect the health or safety of any person. Failure to provide such proof shall give cause to deny any application.
- 7.4 Written approval or denial of a construction application will be given to the applicant in person or by mail within 30 days of the application date.
- 7.5 An applicant may appeal a denied construction application or variance for an onsite wastewater treatment system by a written submission to the Health Officer within 30 days of receipt of the denial notice.
 - (A) The burden of proof shall be placed upon the applicant to show that approving an application will not affect or injure any adjacent properties, will not conflict with the purpose of this rule, and will not adversely affect the health or safety of any person.

- (B) The Health Officer must respond to the appeal within 30 days of receipt. Reasons for denying or upholding the appeal must be provided in writing.
- 7.6 If an applicant's appeal to the Health Officer under Section 7.5 is denied, the applicant may appeal that decision to the Board of Health within 30 days of the Health Officer's denial. After receiving timely notice of appeal, the Board shall invite the applicant to appeal at its next regularly scheduled meeting. The applicant may appear in person, with an advocate, or submit a written statement. The Board shall respond to the appeal in writing within 15 days after the hearing. Reasons for the Board's decision shall be provided in writing.
- 7.7 Pursuant to ARM 17.36.924 the Board's decision may be appealed to DEQ.

SECTION 8—INSPECTION and PERMIT

- 8.1 It is unlawful to provide false or deliberate alteration of information and data for the purpose of obtaining an application or permit.
- 8.2 Construction of an onsite wastewater treatment system may commence upon notification of approval of the construction application by the health authority.
- 8.3 All new construction, alteration, and repair of on-site wastewater systems must be inspected by the health authority prior to backfilling any portion of the system unless specific permission by the health authority has been granted. Failure to have the system inspected may result in a fee of 3 times the cost of the permit fee as set by the Board of Health.
- 8.4 It is the responsibility of the applicant or the applicant's representative to notify the health authority 24 hours prior to completion time of the system to schedule an inspection. Requests for inspections must be made during normal work hours, excluding weekends and declared Board of Health holidays.
- 8.5 Permission for the health authority to access private property in order to conduct an inspection is implied in the approval of the construction application.
- 8.6 The health authority will document any violations at the time of inspection. All violations are required to be corrected before a permit can be issued and an onsite wastewater treatment system can be made operational.
- 8.7 Following a satisfactory inspection, the health authority will issue a permit which includes a diagram of the system as installed. The permit illustrates distances, dimensions, and construction details of the system. A copy of the permit will be provided to the applicant or their representative, which in most cases is the licensed septic installer.
- 8.8 Inspection and permitting of installation, alteration, or repair of an onsite wastewater treatment system by the health authority denotes compliance to plans submitted and approved during the construction application. A permit does not guarantee performance or longevity of the system.
- 8.9 Any onsite wastewater system that has been inspected and approved may not be altered in any manner unless approved by the health authority prior to the proposed change.

SECTION 9—GENERAL REQUIREMENTS

- 9.1 Pursuant to ARM 17.36.913, no person may construct, alter, extend, operate, or use an onsite wastewater treatment or disposal system that may:
- (A) Contaminate any actual or potential drinking water system;
 - (B) Cause a public health hazard as a possible result of access to insects, rodents, or other possible carriers of disease;
 - (C) Cause a public health hazard by being accessible to persons or animals;
 - (D) Violate any statute or regulation governing water pollution or wastewater treatment and disposal including the rules contained in this regulation and ARM 17.36.911;
 - (E) Pollute or contaminate state water in violation of 75-5-605, MCA;
 - (F) Degrade state water unless authorized in violation of 75-5-303, MCA;
 - (G) Cause a nuisance due to odor, unsightly appearance, or other aesthetic considerations.

SECTION 10—TECHNICAL REQUIREMENTS

- 10.1 Installation of onsite wastewater treatment systems will consist of a septic tank and drainfield and will be designed to receive, dispose, and treat all wastewater (sewage and liquid wastes) from homes, businesses, and other facilities not served by public sewer systems. All on-site wastewater treatment systems approved by the health authority must conform to the design criteria of these regulations and in accordance with requirements in ARM 17.36.914.
- (A) Only domestic sewage wastes may be placed into an onsite wastewater treatment system. Rain water from roofs, streets, and other areas shall be excluded and channeled away from the drainfield area. Groundwater from foundation drains shall be excluded and channeled away from the drainfield area. Wastewater from water treatment devices including water softeners, iron filters, and reverse osmosis units may be discharged into a dry well, a separate drainfield with distribution pipe, or onto the ground if not prohibited by other regulations.
 - (B) Gray water irrigation systems must meet the requirements of Section 6.10 of DEQ 4 and 17.36.319 ARM.
- 10.2 SITE CONDITIONS: Information concerning site conditions is required for the design and location for each new or expanded onsite wastewater treatment system.
- (A) Site condition information includes, but is not limited to, the following:
 - (1) Soil conditions and types in accordance with Appendix B of DEQ 4;
 - (2) Depth to any limiting layer;
 - (3) Percent slope of the land in the area of the proposed drainfield;
 - (4) 100 year floodplain delineation;
 - (5) Size and shape of the lot;
 - (6) Amount of suitable area for an onsite wastewater system with 100% replacement area;
 - (7) Proper setbacks maintained (wells, cisterns, and property lines);
 - (8) Compliance with the non-degradation requirements of the Montana Quality Act (MCA 75-5-301) must be demonstrated.
 - (B) On-site wastewater treatment systems must be located to maximize the vertical separation distance from the bottom of the absorption trench to the seasonally high groundwater level, bedrock, or other limiting layer. Under no circumstances may this separation be less than 4 feet of natural soil.

- (C) Test pits for soil profiles must be within 25 feet of the proposed drainfield area. Test pits for soil profiles are excavated a minimum depth of 8 feet unless a limiting layer is encountered at a shallower depth. The deeper soil profile may be required to show compliance with non-degradation rules for phosphorus breakthrough.
- (D) Soil percolation tests should be conducted within the boundary of the proposed drainfield area and at the depth equal to that of the proposed drainfield trenches.
- (E) The health authority may require the applicant to install and monitor groundwater observation wells in accordance with if the applicant or the health authority has reason to believe that seasonally high groundwater will be within 7 feet of the surface, at any time of the year. Measurement must occur for long enough period of time to detect a peak and sustained decline in groundwater level.
- (F) Onsite wastewater treatment systems may not be located in drainage ways, with the exception of sealed components as set forth in ARM 17.37.918.

10.3 SEPTIC TANKS – General septic tank requirements as well as design, construction, and maintenance requirements must be in accordance with Chapter 5.1 of DEQ 4.

(A) Required minimum horizontal distances between septic tanks and various features:

- (1) Foundation walls.....10 feet
- (2) Wells50 feet
- (3) Property lines.....10 feet
- (4) Water lines.....10 feet
- (5) Lakes, streams, and ponds.....50 feet
- (6) Cisterns.....25 feet
- (7) Roadcuts, cliffs, and banks.....10 feet
- (8) 100 year flood plain delineation lines.....100 feet

(B) The chart below indicates the minimum required septic tank capacity levels in residential applications:

NUMBER OF BEDROOMS	LIQUID CAPACITY OF TANK (Gallons)
1 – 3	1000
4 – 5	1500
6 – 7	2000

Table 1: Residential Septic Tank Capacity Requirements

Note: For greater than 7 bedrooms: 2000 gallons plus 250 gallons for each additional bedroom. For example a nine (9) bedroom house would require a 2,500 gallon tank. In situations where bedrooms are not used to size the septic tank and where flows are less than or equal to five hundred (500) gallons per day, the tank must have a capacity of at least 1.5 times the design flows.

- (C) The septic tank shall be located where it is readily accessible for inspection and maintenance.
- (D) General provisions regarding effluent filters must meet requirements in DEQ 4. Effluent filters are required on all new and repaired/replacement systems.
- (E) At such time a septic tank is replaced or abandoned, it must be pumped and removed or filled with suitable material.

- (F) Establishments such as restaurants that produce grease exceeding the limits of residential strength wastewater must be provided with grease traps.

10.4 STANDARD ABSORPTION TRENCHES

- (A) Absorption trenches must meet the following setback criteria (ARM 17.36.918):

- (1) Absorption trenches will be located at least 100 feet from a well or pump section line. Greater horizontal separation distances may be needed depending on engineering and hydrological data and type of water supply.
- (2) Absorption trenches shall be located at least 100 feet from the 100-year floodplain of any lake, stream, water course, or water impoundment unless a waiver has been provided by the reviewing authority. A waiver may only be provided if:
 - i. The water course is an irrigation ditch and the groundwater flow at the drainfield site will not enter it; or
 - ii. The river or stream average yearly high-water mark is a minimum of 100 feet from the drainfield and the bottom of the drainfield will be at least 2 feet above the 100-year floodplain elevation.
- (3) Absorption trenches will be at least 10 feet from water lines, property lines, and foundation walls.
- (4) Absorption trenches shall be at least 25 feet from roadcuts, cliffs, or banks.

- (B) Absorption trenches will not be constructed in soils having a percolation rate slower than 240 minutes per inch; or where rapid percolation may result in contamination of water-bearing formations or surface waters.

- (C) Absorption trenches will be located to maximize the vertical separation distance from the bottom of the trench to any limiting layer, but under no circumstances can this vertical separation be less than 4 feet of natural soil.

- (D) No component of a wastewater treatment system, including the 100% replacement area drainfield, may be located under structures, driveways, parking areas, or other areas subject to vehicular traffic.

- (E) Fill material cannot be used to overcome minimum vertical or horizontal separation distances.

- (F) Minimum required absorption trench system size requirements are based upon estimated wastewater design flows as determined in DEQ 4. The following are examples of residential wastewater design flow rates in gallons per day (gpd):

1 bedroom	150 gpd
2 bedrooms	225 gpd
3 bedrooms	300 gpd
4 bedrooms	350 gpd
5 bedrooms	400 gpd
Each additional bedroom	Add 50 gpd

Table 2: Residential Wastewater Design Flowrates

(G) The following table from Chapter 2 of Circular DEQ 4 illustrates the relationship between different soil type, percolation rate, and application rate.

Soil Type - Texture	Percolation Rate (MPI)	Application Rate (gpd/ft ²)(a) (b)
Gravel, gravelly sand, or very coarse sand (c)	< 3	0.8
Loamy sand, coarse sand(d)	3 - 5	0.8
Medium sand, sandy loam	6 - 9	0.6
Fine sandy loam, loam	10 - 15	0.5
Very fine sand, sandy clay, loam, silt loam	16 - 30	0.4
Clay loam, silty clay loam	31 - 50	0.3
Sandy clay	51 - 120	0.2
Clays, silts, silty clays	121 - 240	0.15
Limiting Layer	>240	NA

Table 3: Percolation and Application Rates by Soil Texture

- (a) If more than 500 lineal feet or 1,000 square feet of distribution line are required prior to applying any reductions, then pressure distribution must be provided.
- (b) Comparison of the soil profile report, percolation rate, and USDA-NRCS soils report should be reviewed. If the information shows a variable application rate, additional site specific information may be required by the reviewing authority.
- (c) Systems installed in gravel or coarser textured soils with percolation rates faster than 3 mpi must be pressure dosed and sand lined.
- (d) Pressure distribution must be provided for these soils if there is less than 6 feet from the bottom of the trench to a limiting layer.

(H) An area that can be used as a 100% replacement area for the original drainfield system, prior to applying any reductions, shall be designated. Evidence of suitability may be required of the replacement area.

(I) Interim usage of the 100% replacement area drainfield must be compatible with future drainfield use. Locating a swimming pool, detached garage/shed, private shop, or any other landscape feature within the replacement area may result in denial the of a construction application or voiding an existing permit approval.

(J) Gravity absorption trenches must be separated by at least 5 feet between trench walls. Dosed absorption trenches must be separated by at least 4 feet between trench walls.

(K) Gravity absorption trenches must be between 18 inches and 24 inches wide. Pressure distribution systems may have absorption trenches 36 inches wide.

(L) Absorption trenches shall not exceed 100 feet in length or be shorter than 15 feet in length from where effluent is first applied to the soil.

(M) Standard absorption system trenches shall not exceed 36 inches in depth.

(N) Standard absorption field distribution lines shall be constructed using PVC material and shall be 4 inches in diameter.

(O) Subsurface wastewater treatment systems may not be used if natural slopes are greater than 15% percent. However the health authority may, by waiver pursuant to ARM 17.36.601, allow a wastewater treatment system with a design flow of 500 gallons per day or less on slopes between 15% - 25%. The system must be evaluated by a professional engineer before a waiver can be granted.

- (P) Coiled perforation plastic pipe will not be used for distribution lines. Only straight lines shall be used.
- (Q) Drain rock must be washed and range from 3/4 – 2 1/2 inches in size.
- (R) Material used to cover the drain rock prior to backfilling shall be straw, untreated building paper, or synthetic drainage fabric. Non-porous plastic or treated building paper may not be used.
- (S) Construction:
 - (1) Schedule 40 pipe leading into the septic tank must have solid walls and have a minimum downward slope of 1/4 inch per foot. A minimum of 10 feet of Schedule 40 pipe leading out of the septic tank must have solid walls and have a minimum downward slope of 1/8 inch per foot.
 - (2) A manifold must be installed between the septic tank and the absorption trenches. The manifold must be of watertight construction. Distribution boxes may be used in gravity systems in lieu of manifolds. Manifolds must be set level and arranged so that effluent is distributed to an equal length of distribution pipe on both sides of the junction of the inlet pipe to the manifold.
 - (3) At least 6 inches of washed drain rock shall be placed in the bottom of the trench under the distribution pipe. A minimum of 2 inches of drain rock shall be placed over the distribution pipe.
 - (4) Systems requiring more than 500 linear feet of trench shall be pressure-dosed.
 - (5) Leaching chambers (gravelless systems) may be used in place of distribution pipe and drain rock.
- (T) Dosed or pressure-dosed system designs: Refer to Chapter 4.2, Circular DEQ 4.

10.5 OTHER ONSITE WASTEWATER SYSTEMS:

- (A) Other wastewater treatment systems will only be permissible if site constraints prevent the applicant from constructing a system that meets the requirements of this rule or those requirements found in DEQ 4 and all off-site treatment system alternatives have been considered and determined not to be feasible.
- (B) Holding tanks will only be used as a replacement for a failed wastewater treatment system if an alternative treatment system cannot be approved. Holding tanks must be constructed and operated in accordance with Chapter 8.1 of DEQ 4.
- (C) Sealed pit privies (or sealed vault privy) are allowed as a new system if it is owned and operated by a local, state, or federal unit of government and is constructed and operated in accordance with ARM 17.36.918 and Chapter 8.2 of DEQ 4.

- (D) The following shall not be used for new or replacement on-site wastewater systems:
 - (1) Seepage pits and cesspools;
 - (2) Unsealed pit privies;

- (E) The following may only be used as replacement systems and are subject to the limitations provided in Circular DEQ 4:
 - (1) Holding tanks;
 - (2) Fill systems;

SECTION 11—LOCAL VARIANCES

- 11.1 Pursuant to ARM 17.36.922, an applicant may request a variance from the requirements of Section 11 by filing a petition with the Board of Health. The Board may grant a variance from the requirement only if it finds that:
 - (A) The system that would be allowed by the variance is unlikely to cause pollution of state waters pursuant to 75-5-605, MCA;
 - (B) The granting of the variance will protect the quality of water for public water supplies and domestic uses;
 - (C) The granting of the variance will protect the quality of water for other beneficial uses including those specified in 76-4-101, MCA;
 - (D) The granting of the variance will not adversely affect public health, safety, or welfare;

- 11.2 The local Board of Health's decision may be appealed to DEQ.

SECTION 12—CONFLICT of ORDINANCES

- 12.1 In an instance where a provision of this Rule is found to be in conflict with a provision of any zoning, building, fire, safety, or health regulation or code of Yellowstone County, or any municipality within Yellowstone County, existing on the effective date of this regulation, the provision which is determined by the Health Officer to establish a higher standard for the protection of the public health, safety, and welfare shall prevail.

- 12.2 In an instance where a provision of this Rule is found to be in conflict with a provision of any other ordinance or code of Yellowstone County, or any municipality within Yellowstone County, on the effective date of this regulation, the provisions of this Rule shall be deemed to prevail, and such other provisions of any ordinances or codes are hereby declared superseded to the extent that they may be found in conflict with this regulation.

- 12.3 If any section, paragraph, sentence, clause, or phrase of this Rule should be declared invalid for any reason, such invalidity shall not affect the remaining portions of this rule. The provisions of this Rule are hereby severable.

SECTION 13—ADOPTION BY REFERENCE

- 13.1 For the purposes of this rule, RiverStone Health hereby adopts and incorporates by reference:
- (A) Circular DEQ 4, *Montana Standards for Subsurface Wastewater Treatment Systems*, 2013 Edition (deq.mt.gov/Portals/112/Water/PWSUB/Documents/engineers/2014/DEQ4-2013-Final.pdf);
 - (B) The U.S. Department of Agriculture's *National Soil Survey Handbook* (USDA, NRCS, September 1999) and the *Soil Survey Manual* (USDA, October 1993), which contain a recognized set of methods for identifying the nature and characteristics of soils.
- 13.2 Copies of the documents incorporated by reference in this rule may be obtained from the Montana DEQ, P.O. Box 200901, Helena, MT 59620-0901.

PASSED AND ADOPTED BY THE RIVERSTONE BOARD OF HEALTH,

This 22 day of September, 2016.



CHAIRMAN

Appendix A – PERCOLATION TEST PROCEDURE

(from Circular DEQ 4, pg. 124-126)

Properly conducted percolation tests may be needed to determine absorption system site suitability and to size the absorption system. If needed, percolation tests must be conducted within the boundary of the proposed absorption system. The percolation test must be completed by a qualified site evaluator approved by the reviewing authority. Some system designs may dictate different test procedures than those outlined below. Please see applicable chapters for further requirements.

Procedures outlined in ASTM D5093-02, Field Measurement of Infiltration Rate Using a Double-Ring Infiltrometer with a Sealed-Inner Ring, may be required in addition to those listed below.

Test Hole Preparation

1. Dig or bore holes 6 to 10 inches in diameter with vertical sides. The depth of the holes must be at the approximate depth of the proposed absorption trenches, typically 24 inches below ground. If the hole is larger than 6 to 8 inches, place a piece of 4-inch diameter, perforated pipe inside the hole, and fill the space between the pipe and the walls of the hole with drain rock. It is recommended that a sketch or photograph of the hole be provided to the reviewing authority.
2. Roughen or scratch the bottoms and sides of the holes to provide natural un-smearred surfaces. Remove loose material. Place about 2 inches of 3/4-inch washed gravel in the bottom of holes to prevent scouring during water addition.
3. Establish a reference point for measurements in or above each hole.

Soaking

1. Fill holes with clear water to a level of at least 12 inches above the gravel.
2. If the soil is coarser than sandy clay loam and the first 12 inches of water seeps away in 60 minutes or less, add 12 inches of water a second time. If the second filling seeps away in 60 minutes or less, the percolation test should be run immediately in accordance with the sandy soil test. If both the first and second fillings have percolation rates faster than 3 mpi, the test may be stopped
3. If either the soil is sandy clay loam or finer, or the first 12 inches or the second 12 inches does not seep away in 60 minutes, the percolation test must be run in accordance with the test for other soils. In these other soils, maintain at least 12 inches of water in the hole for at least 4 hours to presoak the hole.

Sandy Soils Test (percolation rate of 10 mpi or faster)

This test is applicable to sandy soils only (percolation rate of 10 mpi or faster). Add water to provide a depth of 6 inches above gravel. Measure water level drop at least four times, in equally spaced intervals, in a 1-hour time period. Measure to nearest 1/4 inch. Refill to 6-inch depth after each measurement. Do not exceed 6-inch depth of water. Use final water-level drop to calculate rate.

Other Soils Test (percolation rate slower than 10 mpi)

This test is applicable to other soils (percolation rate slower than 10 mpi). Remove loose material on top of gravel. Add water to provide a depth of 6 inches above gravel. Measure water levels for a minimum of 1 hour. A minimum of 4 measurements must be taken. The test must continue until 2 successive readings yield percolation rates that do not vary by more than 15 percent, or until measurements have been taken for 4 hours. Do not exceed 6-inch depth of water. Use final water-level drop to calculate rate.

Records

Record the following information on the attached form and include as part of the application:

- Date(s) of test(s)
- Location, diameter, and depth of each test hole
- Time of day that each soak period began and ended
- Time of day for beginning and end of each water-level drop interval
- Each water-level drop measurement
- Calculated percolation rate
- Name and signature of person performing test
- Name of owner or project name

Rate Calculation

Percolation Rate = Time interval in minutes/water-level drop in inches.

Units must be expressed in minutes per inch (mpi).

PERCOLATION TEST FORM

Owner Name _____ Project Name _____

Legal Description of Parcel _____ Test Number _____

Diameter Test Hole _____ Depth of Test Hole _____

Date and Time Soak Period Began _____ Ended _____

Date Perc Test Began _____

Distance of the reference point above the bottom of the hole _____

Test Results

Start Time	End Time	Time Interval (minutes)	Initial Distance Below Reference Point	Final Distance Below Reference Point	Drop in Water Level (inches)	Percolation Rate (mpi)

I certify that this percolation test was done in accordance with DEQ-4 Appendix A.

Name and/or Company (printed)

Signature

Date

Appendix B - SOIL CHARACTERIZATION (excerpted from Circular DEQ 4, pg.127-138)

Accurate description of soil types must be based on information within Appendix B for evaluating the soils in the area of the proposed absorption system to determine if suitable conditions for wastewater treatment and disposal exist. Appendix B provides guidance for reporting soil characteristics using terminology generally accepted by the field of soil science. Application rate for wastewater treatment and disposal is based on soil characteristics using this terminology and the relative proportions of sand, silt and clay within a soil matrix.

Soil Texture

Soil texture refers to the weight proportion of the separates for particles less than 2 mm. Field criteria for estimating soil texture must be chosen to fit the soils of the area. Sand particles feel gritty and can be seen individually with the naked eye. Silt particles cannot be seen individually without magnification. They have a smooth feel to the fingers when dry or wet. In some places, clay soils are sticky, in others, they are not. Soils dominated by montmorillonite clays, for example, feel different than soils that contain similar amounts of micaceous or kaolinitic clay. The reviewing authority may require that field estimates of soil texture be checked against laboratory determinations and adjusted as necessary when soil texture cannot be identified.

Soil

The United States Department of Agriculture uses the following size separates for the <2 mm mineral material:

Very coarse sand:	2.0 – 1.0 mm
Coarse sand:	1.0 – 0.5 mm
Medium sand:	0.5 – 0.25 mm
Fine sand:	0.25 – 0.10 mm
Very fine sand:	0.10 – 0.05 mm
Silt:	0.05 – 0.002 mm
Clay:	<0.002 mm

The texture classes are sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, and clay. Subclasses of sand are subdivided into coarse sand, sand, fine sand, and very fine sand. Subclasses of loamy sands and sandy loams that are based on sand size are named similarly.

Rock Fragments

Rock fragments are described by size, shape, and, for some, the kind of rock. The classes are pebbles, cobbles, channers, flagstones, stones, and boulders. If a size or range of sizes predominates, the class is modified as, for example: "fine pebbles," "cobbles 100 to 150 mm in diameter," and channers 25 to 50 mm in length." Gravel is a collection of pebbles that have diameters ranging from to 75 mm. The terms "pebble" and "cobble" are usually restricted to rounded or subrounded fragments. However, they can be used to describe angular fragments if they are not flat.

Soil Color

Elements of soil color descriptions are the color name, the Munsell notation, the water state, and the physical state: "brown (10YR 5/3), dry, crushed, and smoothed." The Munsell color system uses 3 elements of color – hue, value, and chroma – to make up a color notation. The notation is recorded in the form: hue, value/chroma – for example, 5Y 6/3. *Hue* is a measure of the chromatic composition of light that reaches the eye. The Munsell system is based on five principle hues: red (R), yellow (Y), green (G), blue (B), and purple (P). Five intermediate hues representing midpoints between each pair of principle hues complete the 10 major hue names used to describe the notation. The intermediate hues are yellow-red (YR), green-yellow (GY), blue-green (BG), purple-blue (PB), and red-purple (RP). *Value* indicates the degree of lightness or darkness of a color in relation to a neutral gray scale. On a neutral gray (achromatic) scale, value extends from pure black (0/) to pure white (10/). The value notation is a measure of the amount of light that reaches the eye under standard lighting conditions. *Chroma* is the relative purity or strength of the spectral color. Chroma indicates the degree of saturation of neutral gray by the spectral color. The scales of chroma for soils extend from /0 to a chroma of /8 as the strongest expression of color used for soils.

Soil Structure

Soil structure refers to units composed of primary particles. The cohesion within these units is greater than the adhesion among units. As a consequence, under stress, the soil mass tends to rupture along predetermined planes or zones. Three planes or zones, in turn, form the boundary. A structural unit that is the consequence of soil development is called a ped. The surfaces of peds persist through cycles of wetting and drying in place. Commonly, the surface of the ped and its interior differ as to composition or organization, or both, because of soil development. Some soils lack structure and are referred to as structureless. In structureless layers or horizons, no units are observable in place or after the soil has been gently disturbed, such as by tapping a space containing a slice of soil against a hard surface or by dropping a large fragment on the ground. When structureless soils are ruptured, soil fragments, single grains, or both, result. Structureless soil material may be either single grain or massive. Soil material of single grains lacks structure. In addition, it is loose. On rupture, more than 50 percent of the mass consists of discrete mineral particles. Some soils have simple structure, each unit being an entity without component smaller units. Others have compound structure, in which large units are composed of smaller units separated by persistent planes of weakness. In soils that have structure, the shape, size, and grade (distinctness) of the units are described.

Shape

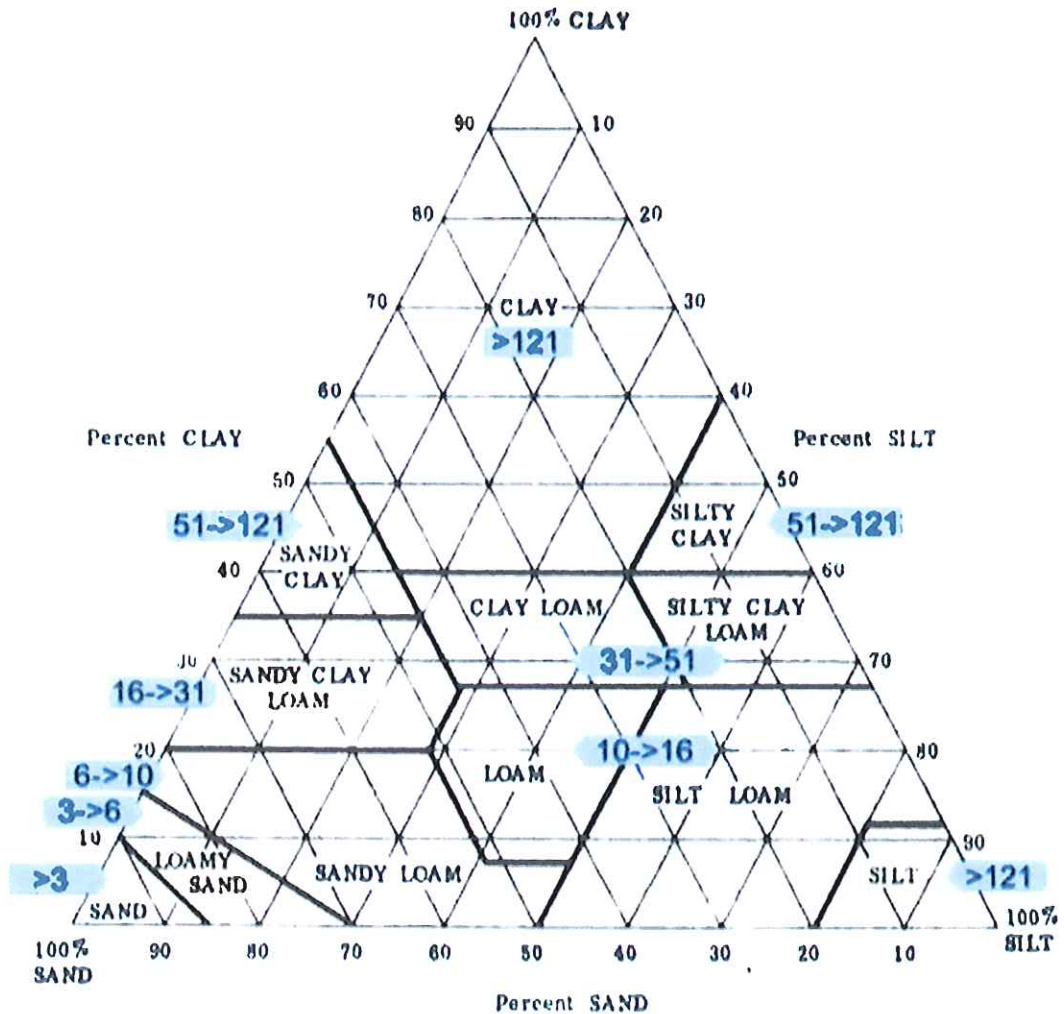
Several basic shapes of structural units are recognized in soils:

- *Platy*: The units are flat and platelike. They are generally oriented horizontally. A special form, lenticular platy structure, is recognized for plates that are thickest in the middle and thin toward the edges.
- *Prismatic*: The individual units are bounded by flat to rounded vertical faces. Units are distinctly longer vertically and the faces are typically casts or molds of adjoining units. Vertices are angular or subrounded. The tops of prisms are somewhat indistinct and normally flat.
- *Columnar*: The units are similar to prisms and are bounded by flat or slightly rounded vertical faces. The tops of columns, in contrast to those prisms, are very distinct and normally rounded.

- *Blocky*: The units are block like or polyhedral. They are bounded by flat or slightly rounded surfaces that are casts of the faces of surrounding peds. Typically, blocky structural units are nearly equidimensional but grade to prisms and to plates. The structure is described as angular blocky if the faces intersect at relatively sharp angles. The structure is described as subangular blocky if the faces are a mixture of rounded and plane faces and the corners are mostly rounded.
- *Granular*: The units are approximately spherical or polyhedral and are bounded by curved or very irregular faces that are not casts of adjoining peds.

Textural Triangle

Soil Percolation Rate min/in



Appendix C - GROUND WATER MONITORING (from Circular DEQ 4, pg. 139-140)

Observation Schedule

Observation must be done during the time when ground water levels are highest. This is typically during spring runoff or during the irrigation period, but may also be at some other time during the year. Observation must be done weekly or more frequently during the appropriate periods of suspected high ground water. Observation must include at least two weeks of observation prior to and after the ground water peak, otherwise the reviewing authority may reject the results. The applicant is encouraged to consult with the state and/or county before installing wells. The monitoring of the observation well must be completed by a qualified site evaluator as defined in Section 1.2.68 approved by the reviewing authority.

Surface water levels may be indicative of the ground water levels that may peak several weeks after spring runoff and irrigation seasons.

Local conditions may indicate that there is more than one geologic horizon that can become seasonally saturated. This may require observation wells to be installed at different horizons. The well should be placed in, but not extended through, the horizon that is to be monitored.

The reviewing authority may refuse to accept seasonal high ground water data when the total precipitation for the previous year, defined as May 1 of the previous year to April 30 of the current year, of April 1 snowpack equivalent, measured at the nearest officially recognized observation station, is more than 25 percent below the 30-year historical average. This is based upon the definition of drought conditions created by the National Drought Mitigation Center. The reviewing authority may consider soil morphology and data from nearby ground water observation sites with similar soil, geology, and proximity to streams or irrigation ditches, if available, to determine maximum ground water elevation during periods of drought.

Where to Install

The observation well(s) must be installed within 25 feet of the proposed absorption trench and on the same elevation. The reviewing authority may require the placement of the well(s) in an exact location. Additional observation wells may be required if the recommended observation sites show ground water higher than 6 feet below the ground surface.

Installation Process

The observation well must be installed vertically into a dug or drilled hole.

A slotted water well pipe should be used that is 2 to 4 inches in diameter and 10 feet long.

- A. Slotted pipe (PVC is the most common material) with slot sizes between 40 and 100 (i.e. slot widths between 0.04 and 0.10 inches wide) is suggested. Slots should be horizontal and spaced at intervals less than or equal to 0.5 inches.
- B. Check with the reviewing authority to determine if an alternate well material is acceptable.

The pipe should be perforated from 1 foot below the ground surface to 8 feet below the ground surface unless multiple horizons exist.

The casing must be unperforated 1 foot below the ground surface to the top of the observation well. The well must extend at least 2 feet above the ground surface.

The top of the observation well must be sealed with a watertight cap.

The area around the well must be backfilled with native material to 1 foot below the ground surface.

The observation well must be sealed in such a manner that prevents surface runoff from running along the outside of the well casing. The well should be sealed from 1 foot below the ground surface to slightly above grade to allow for subsidence and to maintain a positive ground slope away from well casing. The material used to seal the well can be either fine-grained material or bentonite.

Each observation well should be flagged to facilitate locating the well and labeled with the lot number, location, and subdivision name.

Measuring Procedures

Lower a measuring tape or stick to the water level and measure the distance from the water level to the top of the pipe (see example on next page). Water levels should be measured to the nearest inch. A plunking device or electronic water sensor can also be used. Data should be submitted in a similar form to that of the example.

Measure the distance from the top of the pipe to the natural ground surface (B distance) (see example). Then measure the distance from the top of the pipe to the water level (A distance) (see example). Subtract B from A. This value equals the actual separation between the water table and the natural ground surface.

Decommissioning

The applicant should consult with the reviewing authority before decommissioning observation wells.

GROUND WATER OBSERVATION RESULTS (Circular DEQ4, pg.141)

Name: _____

Location: _____

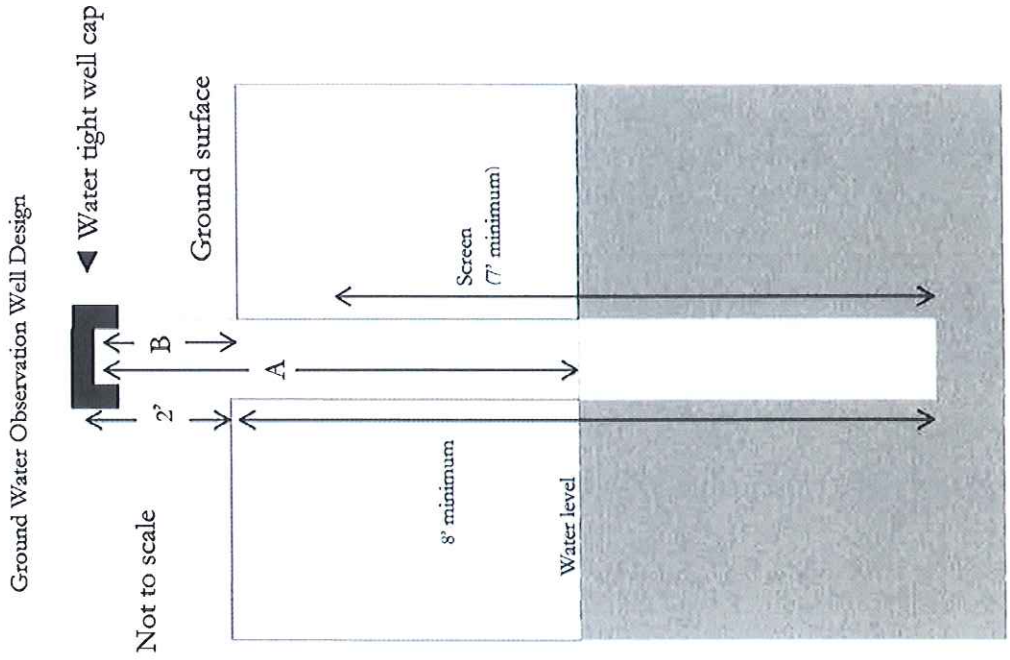
Legal Description: _____

Observation Well # _____

Other Location Information:

Date	Time	A (inches)	B (inches)	A-B (inches)

A = Distance to top of casing to the ground water level in pipe (inches).
 B = Distance from top of casing to the natural ground surface (inches).
 Note: If the observation pipe is dry, enter the total depth measured and “dry” in this column.





Environmental Health Program
406-256-2770

Septic System CONSTRUCTION APPLICATION

**** When calling for an inspection you must call the day prior to the inspection.
Same day appointments must be scheduled by 9 am. ****

Date: 3/3/2016

Request # 1825##

Site Location: 123 Sample St

Legal Description: Application Sub, 2nd Filing, L1 B1

Property Owner/Applicant Info: Sep T. Icsystem

Phone#: (406) 256-1111

Designed for 3 bedrooms.

Minimum Drainfield Size Requirements: 0.## gpd/ft²

Total Minimum Amount of Drainfield (to be installed):

Standard System: ## square feet	## lineal feet (24" wide)
Standard Chamber System: ## square feet	## lineal feet (24" wide)
Pressure-Dosed System: ## square feet	## lineal feet (36" wide)
Pressure-Dosed Chamber System: ## square feet	## lineal feet (36" wide)

Water Supply: Well

Well Distance to Septic Tank: 50' minimum
Distance to Drainfield: 100' minimum

Cistern Distance to Septic Tank: 25' minimum
Distance to Drainfield: 50' minimum

Septic Tank Requirements:

Tank Size (Gallons): 1000

Drainfield Requirements:

Depth to Trench Bottom – 36" maximum

System type: Standard (Chambers Optional)

Installation of this system must conform to the requirements of Yellowstone City-County Board of Health Rule #3 and MT Department of Environmental Quality W.Q.P.B. Circular DEQ 4. **Any alteration or variation from the approved site plan or above specifications requires approval from the reviewing authority prior to construction.**

Comments: This Construction Application is not to be confused with a Permit to Operate or Permit Approval.

This document provides minimum sizing requirements and grants permission for construction of an On-site

Wastewater System to begin. A system must be inspected by a Sanitarian prior to operating.

Reviewed by: RS

Fee Paid: INV #1234

Appendix D



Septic System
PERMIT (Rev.04/2016)

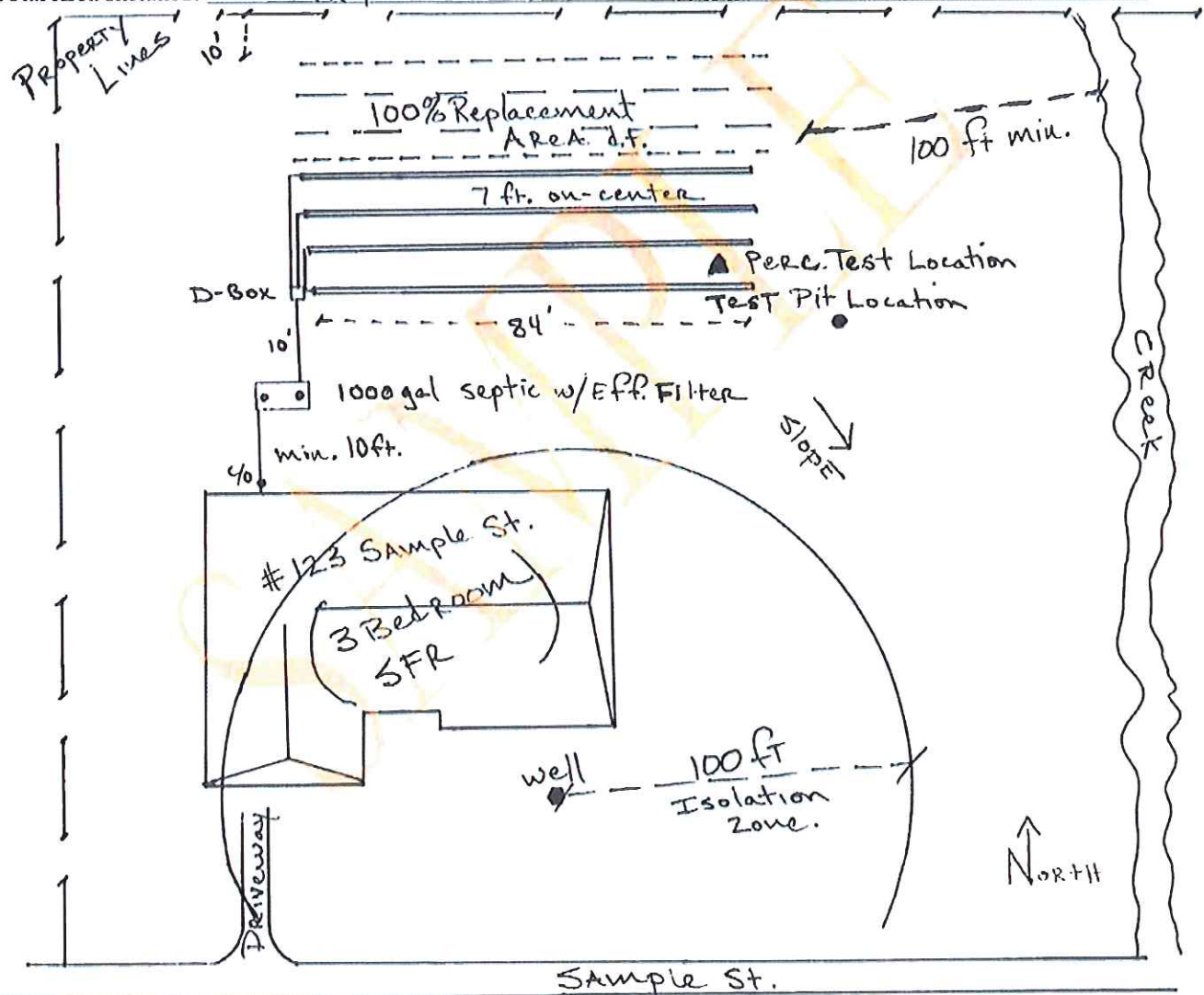
Date: Apr. 2016 Tracking Sheet Request # 21012 EHS Permit # 0001

Site Location (Address): 123 Sample St.

Legal Description (Subdivision or COS): Application Sub., 2nd Filing, L1/B1

System Type: Shallow - Capped Standard Chamber

Total Area Installed: 84 x 4 = 336 l.f. x 2 ft.wd. = 672 ft²



Installer: X Mr. Licensed Septic Install Sanitarian: X Registered Sanitarian

Note: Inspection denotes compliance to plans submitted to Yellowstone City-County Board of Health Rules and Regulations. It does not guarantee performance or longevity of system. (Septic-Permit - 03/2016)