BEFORE THE BOARD OF ENVIRONMENTAL REVIEW AND
THE DEPARTMENT OF ENVIRONMENTAL QUALITY
OF THE STATE OF MONTANA

In the matter of the amendment of ARM 17.30.1001, 17.30.1334, 17.36.103, 17.36.345, 17.38.101, and 17.50.819, adoption of New Rule I pertaining to definitions, and the amendment of Department Circulars DEQ-1, DEQ-2, DEQ-3 and DEQ-4 regarding setbacks between water wells and sewage lagoons	)	NOTICE OF PUBLIC HEARING ON PROPOSED ADOPTION AND AMENDMENT (SUBDIVISIONS) (PUBLIC WATER ENGINEERING) (WATER QUALITY) (SOLID WASTE)

TO: All Concerned Persons

1. On _____, 2018 at __:00 a.m., the Board of Environmental Review, the Department of Environmental Quality will hold a public hearing in Room ___ of the Metcalf Building, 1520 East Sixth Avenue, Helena, Montana, to consider the proposed adoption and amendment of the above-stated rules.

2. The board and department will make reasonable accommodations for persons with disabilities who need an alternative accessible format of this notice. If you require an accommodation, contact Sandy Scherer, Legal Secretary, no later than 5:00 p.m., _____, 2018, to advise of the nature of the accommodation that you need. Please contact Sandy Scherer, Department of Environmental Quality, P.O. Box 200901, Helena, Montana 59620-0901; phone (406) 444-2630; fax (406) 444-4386; or e-mail sscherer@mt.gov.

3. GENERAL REASON STATEMENT: Before 2017, Section 75-5-605(1)(c) prohibited any person from siting and constructing a sewage lagoon within 500 feet of an existing water well. In 2017, the Legislature passed House Bill 368 (HB 368), which removed the 500-foot setback and directed the Department of Environmental Quality to adopt rules establishing setback requirements between sewage lagoons and water wells to prevent water well contamination. The department now proposes to adopt New Rule I, which implements HB 368 by establishing setbacks between sewage lagoons and water wells to protect water wells from bacterial and viral pathogens that come from sewage lagoons.

The department administers multiple programs that will be affected by New Rule I, including the programs related to concentrated animal feeding operations, solid waste, public water supply engineering requirements, and subdivision review. The authority to adopt rules for those programs is shared by the department and the board of environmental review. To ensure that New Rule I is applied consistently and predictably across those programs, the department proposes to amend the subdivision rules in ARM 17.36.103 and 17.36.345, and the solid waste rules of 17.50.819. The board proposes to amend the water quality rules in ARM 17.30.1001 and 17.30.1334; the public water engineering rules in 17.38.101; and

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Circulars DEQ-1, DEQ-2, and DEQ-3. The specifics of each of these proposed amendments is discussed in more detail below.

4. The rules proposed to be amended provide as follows, stricken matter interlined, new matter underlined:

17.30.1001 DEFINITIONS (1) The following definitions, in addition to those in 75-5-103, MCA, apply throughout this subchapter:

(1) through (16) remain the same.

(17) "Unrestricted reclaimed wastewater" means wastewater that is treated to the standards for Class A-1 or Class B-1 reclaimed wastewater, as set forth in Appendix B of Department Circular DEQ-2, entitled "Montana Department of Environmental Quality Design Standards for Public Sewage Systems" (~~2016~~ 2018 edition).

(a) The board adopts and incorporates by reference Department Circular DEQ-2, entitled "Department of Environmental Quality Design Standards for Public Sewage Systems" (~~2016~~ 2018 edition). Copies are available from the Department of Environmental Quality, ~~Technical and Financial Assistance~~ Engineering Bureau, P.O. Box 200901, Helena, MT 59620-0901.

AUTH: 75-5-201, 75-5-401, MCA
IMP: 75-5-301, 75-5-401, MCA

REASON: As discussed in Section 6 of this Notice, the board is proposing to make changes to Circular DEQ-2 to make that circular consistent with the requirements of New Rule I. The board proposes to amend ARM 17.30.1001 to update the reference to this new edition of the circular to ensure that programs across the department are using the same and most recent edition of the circular. The board also proposes to make a housekeeping change to update the name of the engineering bureau to reflect current department organization.

17.30.1334 TECHNICAL STANDARDS FOR CONCENTRATED ANIMAL FEEDING OPERATIONS (1) through (12) remain the same.

(13) CAFO sewage lagoons must meet the setbacks established in [NEW RULE I].

AUTH: 75-5-401, 75-5-802, MCA
IMP: 75-5-401, 75-5-802, MCA

REASON: The board is proposing to include New Rule I into the requirements for concentrated animal feeding operations (CAFOs) because the sewage contained in those lagoons can have similar or higher concentrations of pathogens than a sewage lagoon with human-derived sewage. Therefore, water wells near CAFO sewage lagoons need protection similar to water wells near sewage lagoons containing human-derived sewage.

17.36.103 APPLICATION--CONTENTS (1) In addition to the completed

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application form required by ARM 17.36.102, the following information must be submitted to the reviewing authority as part of a subdivision application:

(a) through (f) remain the same.

(g) if ground water is proposed as a water source, the applicant shall submit the following information:

(i) the location of the proposed ground water source, which must be shown on the lot layout, indicating distances to any potential sources of contamination within 500 feet, ~~and~~ any known mixing zone as defined in ARM 17.30.502 within 500 feet, and any sewage lagoon within 1,000 feet. If the reviewing authority identifies a potential problem, it may require that all potential sources of contamination be shown in accordance with Department Circular PWS-6; and

(g)(ii) through (u) remain the same.

(v) the information required in [NEW RULE I] regarding setbacks between sewage lagoons and wells.

~~(v)~~(w) all additional information that is required under this chapter or that the reviewing authority determines is reasonably necessary for the review of the proposed subdivision.

AUTH: 76-4-104, MCA
IMP: 76-4-104, 76-4-125, MCA

REASON: The department is proposing to amend ARM 17.36.103 to require subdivision applications to identify any sewage lagoon within 1,000 feet of a proposed ground water source and to include in the application any information required by New Rule I. This is reasonably necessary to ensure that subdivision applications are reviewed and approved in accordance with New Rule I. This extends the protections of wells in New Rule I to subdivisions and provides consistency across programs administered by the department. The proposed changes also would clarify that applicants need only identify those known mixing zones that are within 500 feet of a proposed ground water source, which eliminates any existing confusion about what the rule requires.

17.36.345 ADOPTION BY REFERENCE (1) For purposes of this chapter, the department adopts and incorporates by reference the following documents. All references to these documents in this chapter refer to the edition set out below:

(a) Department Circular DEQ-1, "Standards for Water Works," ~~2014~~ 2018 edition;

(b) Department Circular DEQ-2, "Design Standards for Public Sewage Systems," ~~2016~~ 2018 edition;

(c) Department Circular DEQ-3, "Standards for Small Water Systems," ~~2014~~ 2018 edition;

(d) through (m) remain the same.

(n) [NEW RULE I] regarding setbacks between sewage lagoons and wells.

(2) remains the same.

AUTH: 76-4-104, MCA
IMP: 76-4-104, MCA

REASON: As discussed in Section 6 of this Notice, the board is proposing to make changes to department Circulars DEQ-1, DEQ-2, and DEQ-3 to make those circulars consistent with the requirements of New Rule I. All of these circulars are adopted by reference by the department in the subdivision regulations. The department is proposing to amend ARM 17.36.345 to adopt those most recent versions of the circular and to adopt by reference New Rule I. Because New Rule I is designed to protect water wells from contamination from sewage lagoons, the protections in New Rule should apply to subdivision applications that are reviewed by the department. This change is also reasonably necessary to promote consistency across programs administered by the department.

17.38.101 PLANS FOR PUBLIC WATER SUPPLY OR PUBLIC SEWAGE SYSTEM (1) through (19) remain the same.

(20) For purposes of this chapter, the board adopts and incorporates by reference the following documents. All references to these documents in this chapter refer to the edition set out below:

(a) Department Circular DEQ-1, ~~2014~~ 2018 edition, which sets forth the requirements for the design and preparation of plans and specifications for public water supply systems;

(b) Department of Environmental Quality Circular DEQ-2, ~~2016~~ 2018 edition, which sets forth the requirements for the design and preparation of plans and specifications for sewage works;

(c) Department Circular DEQ-3, ~~2014~~ 2018 edition, which sets forth minimum design standards for small water systems;

(d) through (f) remain the same.

(g) Department Community Water Supply Well Expedited Review Checklist, ~~2014~~ 2018 edition, which sets forth minimum criteria and design standards for new community water supply wells;

(h) Department Noncommunity Water Supply Well Expedited Review Checklist, ~~2014~~ 2018 edition, which sets forth minimum criteria and design standards for new non-community water supply wells;

(i) through (21) remain the same.

AUTH: 75-6-103, MCA
IMP: 75-6-103, 75-6-112, 75-6-121, MCA

REASON: The board is proposing to amend ARM 17.38.101 to adopt the most recent version of Circulars DEQ-1, DEQ-2, and DEQ-3 and the Department Community Water Supply Well Expedited Review Checklist and the Department Noncommunity Water Supply Well Expedited Review Checklist. Doing so will incorporate New Rule I into the rules providing the engineering requirements for public water supply and public sewage systems.

These changes are reasonably necessary to ensure that new public water supply wells are not contaminated by sewage lagoons and that public sewage lagoons do not contaminate public or nonpublic water wells. These changes are

also necessary to provide consistency across the programs administered by the department that deal with sewage lagoons and wells, or that adopt by reference the department circulars.

17.50.819 INCORPORATION BY REFERENCE AND AVAILABILITY OF REFERENCED DOCUMENTS (1) The department adopts and incorporates by reference:

(a) Department Circular DEQ-2, Design Standards for Public Sewage Systems (~~2016~~ 2018 edition), which sets forth design standards for public sewage systems;

(b) through (3) remain the same.

AUTH: 75-10-1202, MCA
IMP: 75-10-1202, MCA

REASON: The department proposes to amend ARM 17.50.819 to adopt the most recent version of Circular DEQ-2 so that all programs that adopt the circular use the same version, thus providing consistency and predictability across the programs administered by the department.

5. The proposed new rule for a subchapter provide as follows:

NEW RULE I SETBACKS BETWEEN SEWAGE LAGOONS AND WATER WELLS (1) For purposes of this section, the following definitions apply:

(a) "Lagoon area" means the surface area of the lagoon as defined by the design high-water mark.

(b) "Maximum day well demand" means the highest volume of water discharged from a water well on any day in a year.

(c) "Sewage lagoon" means any holding or detention pond that is used for treatment or storage of water-carried waste products from residences, public buildings, institutions, or other buildings, including discharge from human beings or animals, together with ground water infiltration and surface water present. For purposes of this section, the term includes concentrated animal feeding operations but does not include storm water facilities or subsurface wastewater treatment systems.

(d) "Water well" has the same meaning as 75-5-103, MCA.

(2) All new water wells and new sewage lagoons must meet the setbacks in (3), unless the applicant demonstrates that a shorter setback is allowed under (4) or (6). Water wells and sewage lagoons that existed or were approved by the department before the effective date of this rule must meet the setbacks under either of the following circumstances:

(a) if the lagoon area is proposed to be increased; or

(b) if the maximum daily pumping rate of a water well is proposed to be increased.

(3) The following setbacks apply, unless the applicant demonstrates that a lesser setback is allowed under (4) or (6):

(a) 1,000 feet between a water well and the design high-water mark of a sewage lagoon;

(b) 200 feet between a public water supply well with continuous disinfection that meets 4-log virus inactivation and the design high-water mark of a sewage lagoon;

(c) 200 feet between a water well and the design high-water mark of a sewage lagoon if the geometric mean number of *E. coli* bacteria in the influent flow to the sewage lagoon does not exceed 126 colony forming units per 100 milliliters and 10% of the total samples do not exceed 252 colony forming units per 100 milliliters during any 30-day period; and

(d) 100 feet between a water well and the design high-water mark of a sewage lagoon if the applicant demonstrates there is no hydraulic connection between the sewage lagoon and the water well as demonstrated by groundwater gradients under the maximum day pumping rate or by confined conditions that prevent lagoon discharges from impacting the water well.

(4) A setback less than the setbacks in (3)(a) through (c)—but in no instances less than 100 feet—may be used if the applicant demonstrates that the distance needed to achieve 4-log pathogen reduction of effluent migration from the sewage lagoon to the water well is less than the setback distance in (3)(a) through (c). Pathogen reduction between the sewage lagoon and the water well must be calculated according to one of the following methods:

(a) METHOD 1 – Travel Time Method - The vertical travel time in the vadose zone for the wastewater to reach groundwater is calculated using the following equation:

$$t1 = (d)*(\theta) \div (\alpha)*365$$

Where:

t1 = vertical travel time (days)

α is total effluent recharge – the maximum allowable leakage rate or actual measured leakage rate if the measured rate is available (in/yr)

θ is volumetric soil moisture (percent)

d is the depth to groundwater (in)

The horizontal travel time in the saturated zone for the wastewater to reach the water well is calculated using the following equations:

$$t2 = (x) \div [(K)*(i) \div (ne)]$$

Where:

t2 = horizontal travel time (days)

K is hydraulic conductivity of the saturated aquifer (feet/day)

i is hydraulic gradient (feet/feet)

ne is effective porosity (dimensionless)

x is the horizontal distance from the sewage lagoon to the water well (feet)

The total log pathogen reduction from the bottom of the sewage lagoon to the water well is calculated using the following equation:

$$Pt = (t1 + t2)*0.02$$

Where:

Pt = Log reduction of pathogens during vertical and horizontal travel
0.02 = log 10 pathogen removal/day

(b) METHOD 2 – Travel time and VIRULO - The horizontal travel time (t2) is calculated the same as for Method 1. The horizontal log reduction is calculated using the following equation:

$$Ph = (t2)*0.02$$

Where:

Ph = Log reduction of pathogens during horizontal travel

The pathogen reduction during vertical movement in the vadose zone is calculated using VIRULO. The value of Ph is added to VIRULO results to provide the total pathogen reduction from the bottom of the sewage lagoon to the water well.

(c) Other methods may be used if approved by the department.

(5) In calculating 4-log pathogen reduction under (4), the following requirements apply:

(a) Hydraulic conductivity must be based on the aquifer material most likely to transmit lagoon discharges to the water well and must be determined by one of the following methods:

(i) The maximum hydraulic conductivity value of the aquifer material shown in Table 1. The hydraulic conductivity for aquifer materials not included in Table 1 may be calculated by the applicant using other methods acceptable to the department. The aquifer material must be the most permeable soil layer that is at least six inches thick and is below the bottom of the of the sewage lagoon infiltrative surface, as identified in any test pit or borehole. This method may only be used for facilities that are not requesting a source-specific ground-water mixing zone, as defined in ARM 17.30.518.

TABLE 1	
MATERIAL	**HYDRAULIC CONDUCTIVITY (ft/d)**
Basalt (permeable/vesicular)	5,100
Clay	0.025

Clay (unweathered, marine)	0.00054
Coarse sand	94,500
Fine sand	51
Glacial Till	0.72
Glacial Till (fractured)	29.5
Gravel	201,600
Gravelly sand	1,020
Igneous/metamorphic rock (fractured)	76.5
Igneous/metamorphic rock (unfractured)	0.000054
Karst limestone	18,000
Limestone	1.5
Limestone (unjointed, crystalline)	0.30
Loess	0.27
Medium sand	569
Sandstone	1.5
Sandstone (friable)	3.0
Sandstone (well cemented, unfractured)	0.0036
Sandy clay loam	1.4
Sandy silt	0.27
Shale	0.00054
Silt	0.27
Siltstone	0.0036
Silty clay	0.013
Silty sand	45
Tuff	7.2
Very fine sand	21.4

(ii) A pumping test at least 8 hours long, representative of the hydraulic conductivity of the aquifer material, and conducted on a well(s) with complete lithology and construction details. Results for pumping tests must be submitted electronically on DNRC Form 633. Pumping tests must be conducted in accordance with the requirements in ARM 36.12.121(2)(a) through (f), (3)(a), (3)(c), (3)(g), (3)(i), (3)(j), and (3)(k).

(b) Hydraulic gradient must be based on the aquifer material most likely to transmit lagoon discharges to the water well and must be determined by one of the following methods:

(i) The regional topographic slope in an area that includes the water well and the sewage lagoon. The minimum hydraulic gradient that may be used with this method is 0.005 feet/foot, and the maximum gradient that may be used is 0.05 feet/foot. This method may not be used for facilities requesting a source-specific ground-water mixing zone as defined in ARM 17.30.518.

(ii) Groundwater potentiometric maps of the aquifer that accurately represent

the local hydraulic gradient in the area of the water well and sewage lagoon.

(iii) Surveyed static water elevations in at least three wells that draw water from the aquifer, accurately represent the local hydraulic gradient in the area of the water well and sewage lagoon, and are measured on the same date to the nearest 0.01 foot.

(c) Soil type must be determined by test pits or boreholes. The following requirements apply:

(i) Test pits or boreholes must be completed to a minimum depth of 10 feet below the bottom of the sewage lagoon infiltrative surface or until an impervious layer, as defined in Circular DEQ-4, is encountered.

(ii) A minimum of two test pits or boreholes must be completed for the first 0.5 acre of lagoon area that is within 1,000 feet of a water well. A maximum of one additional test pit or borehole for each additional acre of lagoon area within 1,000 feet of a water well may be required if the department determines that additional test pits or boreholes are necessary to adequately characterize the soils between the sewage lagoon and the water well. The test pits or boreholes must be located to provide representative information on the soils beneath the sewage lagoon that affect the vertical and horizontal migration of pathogens from the sewage lagoon to the effected water well.

(iii) If the test pit or borehole locations are not within 50 feet of the toe of the sewage lagoon embankment, then the locations must be approved by the department before they are completed. The borehole method must provide a continuous soil sample that is representative of the soil and lithology profile.

(iv) Soils must be described according to the Unified Soil Classification System. The soil description must include information regarding the presence or absence of seasonal saturated conditions. If there is no evidence of saturated conditions from the test pit, borehole, or other evidence, then the depth to groundwater must be estimated as the bottom of the test pit or borehole.

(d) Soils with greater than 35 percent retained on the No. 10 sieve and geologic materials with fractures do not receive credit for virus reduction in the vadose zone.

(e) The well discharge rate used in calculations must be based on the maximum day well demand, which must be determined by using historic discharge rate records or other methods as approved by the department.

(6) The department may determine the setback calculated in accordance with this rule should be decreased—but in no instance shorter than 100 feet—if the applicant demonstrates equivalent protection of the water source that supplies the water well.

AUTH: 75-5-411, MCA
IMP: 75-5-411, MCA

<u>REASON:</u> The department proposes to adopt New Rule I, which establishes setbacks between sewage lagoons and water wells to protect water wells from bacterial and viral pathogens that come from sewage lagoons. Unlike the previous setback of 500 feet that was removed by the Legislature in HB 368, New Rule I uses scientifically based methods to calculate setbacks based on the distance needed

between the lagoon and well to provide 4-log pathogen reduction, meaning a 99.99 percent reduction of those bacteria and viruses that may impact water wells.

In developing this rule, the department considered using a matrix of different setbacks for different types of water wells (e.g., domestic, stock, irrigation, incorrect construction) and different types of sewage lagoons (e.g., municipal wastewater, concentrated animal feeding operations, animal feeding operations). The department rejected this approach for three reasons:

(1) water wells often have their use changed over time (water well construction rules are the same for domestic, stock and irrigation uses) without any regulatory requirement to report that change;

(2) there are insufficient scientific studies regarding the virulence of different types of stock or human wastewater sources; and

(3) a 4-log reduction criterion is consistent with existing regulations that define adequate disinfection to protect water wells from pathogens. Those regulations include, for example, Circular DEQ-1 and EPA's *Ground Water Source Assessment Guidance Manual*, EPA 815-R-07-023.

New Rule I provides two methods for determining the appropriate setback between a sewage lagoon and a water well. The first is in Section (3), which provides four default setbacks, depending on whether the water well or sewage is disinfected and whether the water well and sewage lagoon are hydraulically connected. The second is in Section (4), which provides applicants a process to use a lesser setback if the applicant can demonstrate that the lesser setback is sufficient to provide 4-log pathogen reduction. Applicants therefore have the choice to use the easy-to-apply default distances or use a lesser setback if they can demonstrate that the lesser distance will not contaminate the water well. The specifics of each section for the rule are discussed below.

Section (1) defines words used in the rule, which is necessary to provide clarity, consistency, and predictability in the interpretation and administration of the rule.

Section (1)(a) defines the phrase "lagoon area" as the maximum area of the lagoon designed to contain wastewater. This definition was chosen to provide a meaningful distance between water wells and lagoons in the rule with respect to susceptibility of pathogen migration. The department considered but rejected defining lagoon area in relation to the area occupied by the embankment toe. That definition would be dependent on the depth of the lagoon and land slope and would therefore not be a good metric for determining distances and risks to water wells.

Section (1)(b) defines the phrase "maximum day well demand." This definition is designed to provide the most applicable discharge rate from a water well to use in assessing the potential for pathogens discharged from a sewage lagoon to reach the water well.

Section (1)(c) defines the phrase "sewage lagoon." The definition is designed

to specifically eliminate sewage lagoon sources and other lagoon facilities that do not provide a significant source of pathogens to water wells (e.g. storm water lagoons) or have existing setback requirements in other regulations (e.g. septic systems and rapid infiltration systems). The definition does specifically include concentrated animal feeding operations sewage lagoons to eliminate any potential uncertainty for those systems.

Section (1)(d) defines the phrase "water well" as currently defined in the Water Quality Act (75-5-103, MCA) which is inclusive of all wells used to measure or produce groundwater.

Section (2)(a) requires existing sewage lagoons that are increasing the design high water mark area to comply with the rule. The rationale for this section is that sewage lagoons that expand the area occupied by wastewater have the potential to decrease the distance to nearby wells and therefore increase the risk of pathogen impacts to water wells. Increasing the lagoon size is typically also associated with increasing the amount of sewage stored in the lagoon, which creates more potential pathogen impacts to water wells.

Section (2)(b) requires existing water wells that are expanding their rate of water withdrawal to comply with the rule. The rationale for this section is that water wells that increase their withdrawal rates have an increased potential to draw wastewater from sewage lagoon discharges and therefore increase the risk of pathogen impacts to the water well.

Section (3) establishes four setback distances based on pathogen treatment and hydraulic separation between sewage lagoons and water wells. This section provides applicants with default distances instead of the potentially more difficult process of determining the distance needed to achieve 4-log pathogen reduction that is provided in Section (4).

The first default distance is provided in Section (3)(a), which establishes a distance of 1,000 feet between nondisinfected wells and lagoons. This 1,000-foot distance was chosen as the general default setback based on an analysis of common hydrogeological conditions and parameters (hydraulic conductivity, hydraulic gradient, and effective porosity) that showed that 4-log pathogen reduction is generally achieved by a 1,000-foot separation between a sewage lagoon and water well. A review of several other western and mid-western states showed a variety of setbacks, but 1,000 feet is not out of the ordinary, with Nebraska and Indiana both using a 1,000-foot setback under specific conditions.

Section (3)(b) reduces the 1,000-foot setback to 200 feet between a public water supply well with continuous disinfection that meets 4-log pathogen inactivation and the design high-water mark of a sewage lagoon. The setback is reduced to 200 feet because 4-log pathogen reduction is achieved by treatment of the water. Even though the well is continuously disinfected, the setback is set at 200 feet (instead of 100 feet) to provide additional protection to the well, which is reasonably necessary

due to the typically higher pumping rates from public wells (which create a shorter travel time for water between the sewage lagoon and water well), and the potential for an inadequate or failing disinfection system that would only need to be faulty for a short time to allow distribution of contaminated water to multiple persons. Non-public water supply wells are excluded from this section because there is no reliable mechanism to ensure proper installation, operation, and monitoring of a disinfection system.

Section (3)(c) reduces the 1,000-foot setback to 200 feet between a water well and the design high-water mark of a sewage lagoon that has been disinfected to levels required for surface water. The setback is reduced to 200 feet because the sewage entering the lagoon has the number of *E. coli* bacteria reduced via disinfection to the lowest number required in surface water classified as B-1 (ARM 17.30.623(2)(i)). The typical minimum setback between non-public water wells and surface water is 100 feet (ARM 17.36.323). Although the sewage lagoon *E. coli* numbers are reduced to surface water limits, the setback for this rule is increased to 200 feet to provide additional protection to the well, which is reasonably necessary due to the potential for an inadequate or failing disinfection system in the lagoon, the lack of monitoring in non-public wells, and the risk of natural bacterial sources such as wildlife waste that could increase the number of *E. coli* in the sewage lagoon.

Section (3)(d) proposes a setback distance of 100 feet between a water well and the design high-water mark of a sewage lagoon if there is no hydraulic connection between the sewage lagoon and the water well, meaning the wastewater leakage from the sewage lagoon cannot migrate into the water well either because of the direction of groundwater flow under maximum day pumping rates, or because an impervious geologic layer (e.g., thick clay or till layer) prevents wastewater leakage from entering the aquifer supplying water to the water well. In such cases, the lack of hydraulic connection means that the wastewater cannot physically enter the water well and provides adequate protection to reduce the setback to the minimum distance of 100 feet.

Section (4) allows applicants to use a lesser setback than those established in Section (3) if the applicant demonstrates that a shorter setback can provide 4-log pathogen reduction. This section provides a science-based method for siting lagoons and wells that protects public health and safety while giving applicants the flexibility to site wells or lagoons in locations that otherwise would not be allowed under the default setback distances in Section (3). This section requires a minimum setback of 100 feet under all circumstances, which is an accepted and longstanding standard both in and outside of Montana and is consistent with numerous state rules and circulars that use 100 feet as a minimum separation between various wastewater sources and water wells (e.g., ARM 17.36.323, ARM 36.21.638, and Circular DEQ-1 section 3.2.3.1). Additionally, it is a prudent public protection policy to maintain a minimum setback between water wells and sources of contamination to guard against unforeseen circumstances and emergencies.

This section provides two methods to determine the amount of pathogen

reduction: the travel time method and the VIRULO method. This is reasonably necessary to provide applicants with accepted methods of calculating 4-log reduction, which provides consistency and predictability in the application of the rule. These two methods were chosen because they are common and accepted methods within the department and the engineering community. The first method is based on travel time calculations in both the unsaturated zone (where the wastewater moves vertically) and groundwater (where wastewater moves primarily horizontally) using common equations that are provided in this section. The travel time formulas in this section are based on Appendix B to 020-011-23 of the Code of Wyoming Rules, available at http://wwcb.state.wy.us/PDF/RulesAndRegulations/DEQ%20Chapter%2023.pdf. The calculated travel time is then combined with a default pathogen reduction rate of 0.02 log10 removal/day (as described in Appendix C of the EPA *Ground Water Rule Source Assessment Guidance Manual*, available at https://www.epa.gov/dwreginfo/ground-water-rule-compliance-help-primacy-agencies) to provide the log removal of pathogens.

Regarding Section (4)(b), the second method combines the travel time method in the groundwater and a model, VIRULO, for the unsaturated zone. VIRULO is an EPA-supported model that is commonly used in the department and the engineering community. Information about the model is available from the EPA at https://www.epa.gov/water-research/virus-fate-and-transport-virulo-model. Finally, the rule allows other methods to be used if approved by the department. This is reasonably necessary because the two listed methods, while common, are not the only methods that can be used to calculate 4-log pathogen reduction, and the rule gives applicants the flexibility to use those other methods.

Section (5) provides acceptable methods and technical requirements for determining hydraulic conductivity, hydraulic gradient, and soil types, which are site-specific parameters needed to demonstrate the 4-log pathogen reduction in Section (4). Specifically, those three parameters are needed for calculating travel time of the wastewater in the unsaturated zone and the groundwater. Travel time is needed for calculating the amount of pathogen reduction as the wastewater migrates towards the water well. Specific methods for determining those parameters are provided to promote consistency in applying the rule and to provide applicants with the expected level of detail.

Section (5)(a) provides methods and requirements for calculating hydraulic conductivity, which are necessary because hydraulic conductivity is one of the parameters needed to calculate travel time in groundwater. This section provides two different methods to calculate hydraulic conductivity. First, hydraulic conductivity may be calculated using the values in Table 1. This is a simple and inexpensive method to estimate hydraulic conductivity that requires only information from the test pits or boreholes required in Section (5)(c) and the corresponding value in Table 1. Table 1 is proposed as part of this section to promote consistency in applying the rule and to provide applicants with a simple and quick method to determine hydraulic conductivity. The values in Table 1 were derived from reviewing

existing published values of hydraulic conductivity and using 90 percent of the highest published value for each of the soil and rock types listed in Table 1. This higher value was used because it provides a faster travel time calculation and is thus more protective of water wells to account for uncertainty in estimating the true hydraulic conductivity of the aquifer materials. The sources considered in developing Table 1 were Patrick A. Domenico and Franklin W. Schwartz, *Physical and Chemical Hydrogeology* (1990); R. Allan Freeze and John A. Cherry, *Groundwater* (1979); Fletcher G. Driscoll, *Groundwater and Wells* (2d ed. 1987); C.W. Fetter, *Applied Hydrogeology* (1994); Mary P. Anderson and William W. Woessner, *Applied Groundwater Modeling* (1992); and Geotechdata.info, *Soil void ratio*, http://geotechdata.info/parameter/permeability.html (October 7, 2013). Finally, because Table 1 does not include all types of aquifer materials, New Rule 1 allows applicants to calculate the hydraulic conductivity for aquifer materials not included in the table by methods found acceptable to the department.

While the values in Table 1 are reasonably necessary to provide applicants with an easy and inexpensive method of calculating hydraulic conductivity, the resulting values are inherently conservative because the table used the larger values of the range of published values for hydraulic conductivity. Because of that, Section (5)(a)(ii) provides a more accurate but more expensive method to calculate hydraulic conductivity by allowing a pumping test in the aquifer that is most likely transmitting wastewater to the water well. The rule provides requirements on the methods and data needed to conduct an acceptable pumping test to promote consistency in applying the rule and to provide applicants with the expected level of detail.

Section (5)(b) provides requirements for calculating hydraulic gradient, which is necessary because hydraulic gradient is one of the parameters needed to calculate travel time in groundwater. This section provides three different methods for calculating hydraulic gradient, which vary from inexpensive but conservative to more expensive but more precise. These methods are necessary to provide consistency in applying the rule while giving applicants the flexibility to tailor calculations to their needs.

The first method is provided in Section (5)(b)(i), which provides a simple and inexpensive method to estimate hydraulic gradient using the topographic slope of the regional land surface that can be measured on a United States Geological Survey (USGS) topographic map or other topographic map. Using topography to estimate hydraulic gradient is conservative because it estimates a relatively larger hydraulic gradient; a larger hydraulic gradient value results in a faster travel time to the water well, less pathogen reduction, and a larger setback distance.

The second method is provided in Section (5)(b)(ii), which allows hydraulic gradient to be determined by using a groundwater potentiometric map that is representative of the hydraulic gradient of the aquifer that is most likely to transmit water between the water well and sewage lagoon. This method is simple and inexpensive but is more precise than the topographical maps allowed in section (5)(b)(i). Section (5)(b)(iii) provides the third and typically the most accurate and

expensive method, which is to measure the local hydraulic gradient in the aquifer supplying water to the water well using water elevation measurements in at least three nearby wells.

Section (5)(c) provides location, number, and depth requirements for installing test pits or boreholes, as well as requirements for collection and description of the soils. This section is reasonably necessary because soil type is one of the parameters needed to calculate wastewater travel time in the unsaturated zone and the groundwater. This section allows both test pits and boreholes because each has advantages and disadvantages for evaluating soils. A test pit is typically dug with a backhoe and allows a large area of the soil column to be viewed, but test pits are limited in depth by the size of the backhoe and the wall strength. A borehole is typically dug with well drilling rig and provides only one narrow cross section of the soils, but the depth of the borehole is typically not limited.

Section (5)(c)(i) defines the minimum depth for the test pit or borehole as 10 feet below the bottom of the lagoon. This depth is necessary to determine the type of soil or rock that the wastewater will flow through after discharging from the lagoon and is consistent with requirements by the Natural Resources Conservation Service (NRCS) and accepted practices in the engineering community. If there is an impervious layer such as unfractured bedrock or a thick clay layer encountered before the 10-foot depth, the boring or test pit can be ended at that depth because the wastewater will not migrate below the impervious layer; the soil information above the impervious layer will be used for the pathogen reduction calculations.

Section (5)(c)(ii) provides the requirements for the number of test pits or boreholes based on the lagoon area. Two test pits or boreholes are required for lagoons with an area of less than 0.5 acres that is within 1,000 feet of a water well. Two boreholes are adequate to characterize the soils near a small lagoon, and the requirement is consistent with NRCS requirements for animal feeding operation lagoons. As the lagoon size increases, additional test pits or boreholes may be required to provide adequate information to characterize the soils near the sewage lagoon.

Section (5)(c)(iii) requires department approval for test pits and boreholes that are not within 50 feet of the lagoon embankment. Test pits and boreholes should be as close to the lagoon as possible to provide the best available information on the soils and rock beneath the lagoon. In some cases, however, an alternative location must be chosen, such as when an applicant does not have access to the land near the sewage lagoon. In those cases, the department needs to be involved with selecting the locations so that representative locations are chosen. This section also requires collection of a continuous soil sample if a borehole is used instead of test pit. A continuous sample is important to define the correct soil/lithology to use in calculating the travel times in the unsaturated zone and groundwater. Boreholes are required to have continuous and representative samples because some borehole drilling methods do not provide detailed soil layer information that is needed for

determining the correct soil properties. The rule allows the applicant to use any borehole method if it provides a representative and continuous soil sample.

Section (5)(c)(iv) requires that the commonly used Unified Soil Classification System (USCS) be used in describing soils. A common classification system was chosen to minimize confusion and interpretation errors when using New Rule I. This section also requires that the portions of the test pit or borehole that are not below the water table be examined for indications of past saturated conditions. Current or past levels of saturated conditions are important in determining the appropriate vertical and horizontal travel times of wastewater leakage from a sewage lagoon. When there is no evidence of existing or past saturated conditions or impervious layers, using the bottom of the test pit as the level of groundwater is a conservative estimate for use in determining pathogen removal. The 10-foot minimum depth allows the applicant flexibility in ending the borehole or test pit at 10 feet if that depth is sufficient for determining an acceptable setback.

Section (5)(d) provides a maximum amount of coarse material allowed in a soil type to be eligible for virus reduction as it moves vertically in the unsaturated zone. The No. 10 sieve is sized to retain coarse sand and larger sized grains. According to the EPA VIRULO documentation, soils with 35 percent or more of coarse sand or larger grains do not provide any pathogen treatment because the wastewater migration is too rapid. Geologic materials with fractures (including but not limited to sandstone, limestone, shale, basalt and granite) also do not provide any pathogen treatment for the same reason. This restriction only applies to the unsaturated portion of the travel time calculations; coarse soils and fractured materials do receive credit for pathogen reduction during the horizontal movement of wastewater in the saturated groundwater aquifer.

Section (5)(e) provides requirements for the maximum day well demand to determine wastewater travel time and hydraulic separation between sewage lagoons and water wells. The maximum day well demand is the most applicable well discharge rate to determine travel rates in groundwater and be protective of water wells; other rates such as instantaneous maximum or pump capacity are too high to provide a reasonable value for the travel time calculations, while lower rates such as annual average are too low for this purpose. Because the maximum day well demand is a new metric that has not been defined for water wells in the past, this section provides applicants the flexibility to show maximum day well demand by using historic discharge rate records, or by using other methods as approved by the department when measured discharge rates for the water well are not available or are insufficient to accurately determine the maximum day well demand.

Section (6) provides the applicant flexibility to use other means to determine a setback that is shorter (but no shorter than 100 feet) than what is calculated using the requirements in Sections (3) through (5). This section is included because this rule does not address all potential valid methods and data requirements for determining pathogen reduction, and allows for other methods to be used when appropriate.

6. The proposed changes in Circulars are as follows:

Circular DEQ-1:

1.2.2 Detailed plans, including, where pertinent:

a. through f. remain the same.

g. location of all existing and potential sources of pollution, including all sewage lagoons with the design high-water mark within 1,000 feet of the well site and all easements, ~~including easements,~~ which may affect the water source or underground treated water storage facilities;

h. through q. remain the same.

REASON: The board is proposing to amend Standard 1.2.2, which address the minimum requirements of what must be shown on the plans for a new public water supply well. The amendment would require that the location of any sewage lagoon within 1,000 feet of the well site must be identified in the plans, which is necessary so that the department can determine early in the review process if further evaluation is needed to ensure all water wells comply with New Rule I, and so that applicants are aware of its requirements early in the process and accordingly have a better basis for their decision making.

3.2.3.1 Well location

MDEQ must be consulted prior to design and construction regarding a proposed well location as it relates to required separation between existing and potential sources of contamination and ground water development. Wells must be located at least 100 feet from sewer lines, septic tanks, holding tanks, and any structure used to convey or retain industrial, storm, or sanitary waste; and from state or federal highway rights-of-way. Wells must meet the setback distance to sewage lagoons established in [NEW RULE I]. Well location(s) must be based on a source water delineation and assessment conducted in accordance with Section 1.1.7.2 of this circular.

REASON: The board is proposing to amend Standard 3.2.3.1, which provides siting requirements for proposed public water supply well locations to ensure that they are constructed at the correct distances from potential sources of contaminants, to require that wells must meet the setback distances in New Rule I. Because New Rule I is designed to protect water wells from contamination from sewage lagoons, the protections in New Rule I should apply to public wells reviewed under the public water supply laws and DEQ-1. This change is also reasonably necessary to promote consistency across programs administered by the department.

Circular DEQ-2:

11.29 Detailed Alternative Evaluation

The following must be included for the alternatives to be evaluated in detail.

a. through c.7. remain the same.

8. Protection of groundwater including public and private wells is of utmost importance. Demonstration that protection will be provided must be included. The Department must be contacted for required separation. Protection for water wells within 1,000 feet of the design high water mark of any sewage ponds must be in accordance with [New Rule I].

9. through 18. remain the same.

REASON: The board is proposing to amend Standard 11.29, which contains the site evaluation requirements for plans submitted under DEQ-2. The amendment would include a reference to New Rule I to alert applicants to its requirements, thus enabling the department to better assess and understand early in the project if a well will be impacted by the project and providing the applicant with a better basis for design and better information for decision making.

20.42 General Layout

Layouts of the proposed wastewater treatment plant must be submitted, showing:

a. through f. remain the same.

g. All wells located within 1,000 feet of the design high water mark of the sewage pond(s). Wells must meet the setback distance to sewage ponds as established in [New Rule I].

REASON: The board is proposing to amend Standard 20.42, which contains requirements for what must be shown on the plans for a new wastewater treatment facility. The board is proposing to amend this section to require that the location of any water well(s) in relation to sewage ponds comply with New Rule I. This amendment is necessary so that the department can determine if a further evaluation is needed to ensure all water wells are in compliance with New Rule I.

89.22 Location

Sludge ponds must be located as far as practicable from inhabited areas or areas likely to be inhabited during the lifetime of the structures. The distance between the design high water mark of the sludge pond and any water well must meet the setback distance as established in [New Rule I]. ~~Siting of sludge ponds must comply with the requirements of the Department. In accordance with MCA 75-5-605, a minimum separation of 500 feet (152.4 m) between the outer toe of the sewage pond embankments and any existing water well must be maintained.~~

REASON: The board is proposing to amend Standard 89.22, which currently cites 75-5-605, MCA to establish a 500-foot setback for sludge ponds (the terms “pond” and “lagoon” are used interchangeably in DEQ-2) and existing water wells. It is necessary to delete this reference in the circular after the Legislature deleted the

500-foot requirement in HB 368 and required the department to adopt new setbacks, which the department is doing in this Notice. Sludge ponds are typically used as part of the solids holding process in mechanical wastewater treatment plants and pose the same risks of well contamination that sewage lagoons do, so it is necessary that the requirements of New Rule I apply to protect water wells near sludge ponds.

93.26 Water Well Separation

~~In accordance with MCA 75-5-605, a minimum separation of 500 feet (152.4 m) between the outer toe of the sewage pond embankments and any existing water well must be maintained.~~

~~Separation requirements for storage ponds are discussed in Section 121.115 (Storage Analysis) and Section B.6 (Setbacks, Separation and Buffer Distances for Reclaimed Wastewater Use).~~ The distance between the design high water mark of the sewage pond (including those used for the storage of effluent) and any water well must meet the setback distance as established in [New Rule I].

REASON: The board is proposing to amend Standard 93.26, which currently cites 75-5-605, MCA to establish a 500-foot setback for sewage ponds and existing water wells. It is necessary to delete this reference in the circular after the Legislature deleted the 500-foot requirement in HB 368 and required the department to adopt new setbacks, which the department is doing in this Notice. In place of the previous 500-foot setback, the board is proposing to adopt New Rule I, thus protecting wells from contamination from sewage lagoons reviewed under DEQ-2. The board is also proposing to delete the cross-reference to Standards 121.115 and Appendix B.6, which provide separation requirements for storage ponds. As discussed in the statement of reasonable necessity for those standards, the board is proposing to remove those requirements to consolidate all the requirements in New Rule I.

121.115 Storage Analysis

Adequate storage during inoperable periods must be provided. Justification and calculations associated with storage volume requirements must be provided including a month by month water balance based on maximum design conditions.

Design precipitation must be based on a 10-year precipitation return period as described in Section 121.103.11 b (Precipitation). Storage requirements for wastewater treatment ponds are located in Section 93.36 (Pond Design Criteria, Tables 93-1 and 93-2).

Evaporation (E) rates must be based on estimated lake evaporation in the local area, if available. Where monthly evaporation data is unavailable, average annual evaporation may be distributed based on the ratio of average monthly ETc to average annual ETc.

Average annual evaporation and monthly precipitation values for Montana communities can be found at the Western Regional Climate Center website.

~~Storage ponds are exempt from the requirements of Section 93.26 (Water Well Separation) provided the content has been treated to the levels established in Table 121-1 (Reclaimed Wastewater Classifications and Associated Treatment Requirements) and has been adequately disinfected. Wastewater is considered adequately disinfected if the geometric mean number of *E. coli* in the influent flow to the storage pond does not exceed 630 colony forming units per 100 milliliters and 10 percent of the total samples does not exceed 1,260 colony forming units per 100 milliliters during any 30-day period.~~

APPENDIX B.6 Setbacks, Separation and Buffer Distances for Reclaimed Wastewater Use

The required distance of the approved use area from surface water and any well will be determined by the Department case-by-case based on the quality of effluent and the level of disinfection. In no case can reclaimed wastewater be discharged or applied directly to surface water unless an MPDES discharge permit is obtained from the Department.

~~Storage ponds are exempt from the requirements of Section 93.26 (Water Well Separation) provided the content has been treated to the levels established in Table B-1 (Reclaimed Wastewater Classifications and Associated Treatment Requirements) and has been adequately disinfected. Wastewater is considered adequately disinfected if the geometric mean number of *E. coli* in the influent flow to the storage pond does not exceed 630 colony forming units per 100 milliliters and 10 percent of the total samples does not exceed 1,260 colony forming units per 100 milliliters during any 30-day period.~~

The Department will establish buffer zones on a case by case basis as necessary to protect public health.

REASON: The board is proposing to amend Standards 121.115 and Appendix B.6, both of which provide exemptions from the setback requirements in Standard 93.26 for storage ponds that meet certain disinfection standards. Because the board is proposing to amend Standard 93.26 to include the requirements of New Rule I, the board is also proposing to remove the exemptions in Standards 121.115 and Appendix B.6 to consolidate the requirements in a single place, New Rule I, thus making it easier to understand and apply the setback requirements. In doing so, the board is also proposing to modify the existing requirements in these standards. The first change included in New Rule I is to not exempt storage ponds with adequate disinfection from a setback but rather reduce the setback from 1,000 feet to 200 feet. The second modification is to increase the required amount of disinfection that meets the following requirements: the geometric mean number of *E. coli* bacteria in the influent flow to the sewage lagoon does not exceed 126 colony forming units per

100 milliliters and 10 percent of the total samples do not exceed 252 colony forming units per 100 milliliters during any 30-day period. The rationale for those changes are provided in the statement of reasonable necessity for section (3)(c) of New Rule I.

Circular DEQ-3:

1.2.2 Detailed plans, including:

a. and b. remain the same.

c. location of all existing and potential sources of pollution~~, which~~ that may affect the water source or underground treated water storage facilities, including all sewage lagoons with the design high-water mark within 1,000 feet of the well site;

d. through h. remain the same.

REASON: The board is proposing to amend Standard 1.2.2, which address the minimum requirements of what must be shown on the plans for new water wells serving small water systems. The amendment would require that the location of any sewage lagoon within 1,000 feet of the well site must be identified in the plans, which is necessary so that the department can determine early in the review process if further evaluation is needed to ensure all water wells reviewed under DEQ-3 comply with New Rule I, and so that applicants are aware of its requirements early in the process and accordingly have a better basis for their decision making.

3.2.3.1 Well location

Regarding a proposed well location, MDEQ must be consulted prior to design and construction as the location relates to required separation between existing and potential sources of contamination and ground water development. Wells must be located at least 100 feet from sewer lines, septic tanks, holding tanks, and any other structures used to convey or retain industrial, storm, or sanitary waste and state or federal highway rights-of-way. Wells must meet the setback distance to sewage lagoons established in [NEW RULE I]. Well location(s) must be based on a source water delineation and assessment conducted in accordance with Section 1.1.6 of this circular.

REASON: The board is proposing to amend Standard 3.2.3.1, which provides siting requirements for proposed small water system well locations to ensure they are constructed at the correct distances from potential sources of contaminants, to require that wells must meet the setback distances in New Rule I. Because New Rule I is designed to protect water wells from contamination from sewage lagoons, the protections in New Rule I should apply to small water system wells reviewed under Circular DEQ-3. This change is also reasonably necessary to promote consistency across programs administered by the department.

New Community Water Supply Well Expedited Review Checklist

ENGINEERING REPORT:

3.2.3.1 Well location

Wells must be located at least 100 feet from sewer lines, septic tanks, holding tanks, and any structure used to convey or retain industrial, storm or sanitary waste, and state or federal highway rights-of-way. Wells must meet the setback distance to sewage lagoons established in [NEW RULE I].

PLANS:

1.2.2. Detailed plans, including where pertinent:

c. through f. remain the same.

g. location of all existing and potential sources of pollution, including easements, which may affect the water source or underground treated water storage facilities, including all sewage lagoons with the design high-water mark within 1,000 feet of the well site;

i. remains the same.

3.2.3.1 and 3.2.3.2. Well location and continued protection zone.

Plans must identify the well isolation zone and all sewer lines, septic tanks, holding tanks, groundwater mixing zones and any structure used to convey or retain industrial, storm or sanitary waste and state or federal highway rights-of-way located within 100 feet of the proposed well. Wells must meet the setback distance to sewage lagoons established in [NEW RULE I].

REASON: The board is proposing to amend the New Community Water Supply Expediated Review Checklist, which contains the same requirements as in Circular DEQ-1, to require that wells must meet the setback distances in New Rule I and that all sewage lagoons within 1,000 feet of the well site be identified in the plans. These changes are necessary to ensure that the checklist matches the revisions in DEQ-1, to provide the protection of New Rule 1 to those wells, and to allow the department to determine early in the review process if further evaluation is needed.

New Non-Community Water Supply Well Expedited Review Checklist

ENGINEERING REPORT:

3.2.3.1 Well location

Wells must be located at least 100 feet from sewer lines, septic tanks, holding tanks, and any structure used to convey or retain industrial, storm or sanitary waste, and state or federal highway rights-of-way. Wells must meet the setback distance to sewage lagoons established in [NEW RULE I].

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PLANS:

1.2.2. Detailed plans, including where pertinent:

a. and b. remain the same.

c. location of all existing and potential sources of pollution, including all sewage lagoons with the design high-water mark within 1,000 feet of the well site, which may affect the water source or underground treated water storage facilities

d. remains the same.

3.2.3.1 and 3.2.3.2. Well location and continued protection zone

Plans must identify the well isolation zone and all sewer lines, septic tanks, holding tanks, groundwater mixing zones and any structure used to convey or retain industrial, storm or sanitary waste and state or federal highway rights-of-way located within 100 feet of the proposed well. Wells must meet the setback distance to sewage lagoons established in [NEW RULE I].

REASON: The board is proposing to amend the New Non-Community Water Well Supply Expedited Review Checklist, which contains the same requirements as Circular DEQ-3, to require that wells must meet the setback distances in New Rule I and that all sewage lagoons within 1,000 feet of the well site be identified in the plans. These changes are necessary to ensure that the checklist matches the revisions in DEQ-3, to provide the protection of New Rule 1 to those wells, and to allow the department to determine early in the review process if further evaluation is needed.

7. Concerned persons may submit their data, views, or arguments, either orally or in writing, at the hearing. Written data, views, or arguments may also be submitted to Sandy Scherer, Legal Secretary, Department of Environmental Quality, 1520 E. Sixth Avenue, P.O. Box 200901, Helena, Montana 59620-0901; faxed to (406) 444-4386; or e-mailed to sscherer@mt.gov, no later than 5:00 p.m., _____, 2018. To be guaranteed consideration, mailed comments must be postmarked on or before that date.

8. The board and department maintain a list of interested persons who wish to receive notices of rulemaking actions proposed by this agency. Persons who wish to have their name added to the list shall make a written request that includes the name, e-mail, and mailing address of the person to receive notices and specifies that the person wishes to receive notices regarding: air quality; hazardous waste/waste oil; asbestos control; water/wastewater treatment plant operator certification; solid waste; junk vehicles; infectious waste; public water supply; public sewage systems regulation; hard rock (metal) mine reclamation; major facility siting; opencut mine reclamation; strip mine reclamation; subdivisions; renewable energy grants/loans; wastewater treatment or safe drinking water revolving grants and loans; water quality; CECRA; underground/above ground storage tanks; MEPA; or general procedural rules other than MEPA. Notices will be sent by e-mail unless a mailing preference is noted in the request. Such written request may be mailed or

delivered to Sandy Scherer, Legal Secretary, Department of Environmental Quality, 1520 E. Sixth Ave., P.O. Box 200901, Helena, Montana 59620-0901, faxed to the office at (406) 444-4386, e-mailed to Sandy Scherer at sscherer@mt.gov, or may be made by completing a request form at any rules hearing held by the department.

9. _____ has been designated to preside over and conduct the hearing.

10. The bill sponsor contact requirements of 2-4-302, MCA, do apply.

11. With regard to the requirements of 2-4-111, MCA, the board and the department have determined that the amendment of the above-referenced rules will significantly and directly impact small businesses.

Reviewed by:

/s/
EDWARD HAYES
Rule Reviewer

BOARD OF ENVIRONMENTAL REVIEW

BY: */s/*
CHRISTINE DEVENY
Chairman

DEPARTMENT OF ENVIRONMENTAL QUALITY

BY: */s/*
GEORGE MATHIEUS
Acting Director

Certified to the Secretary of State, _____, 2018.

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