

Sub:
Reviewer:

Missoula County
Review Date:
SUBDIVISION REVIEW CHECKLIST

EQ#:
Owner:

YES	NO	NA	QUESTION	Reviewer's Comments
			GENERAL REQUIREMENTS & PHYSICAL CONDITIONS	
			<i>Is check included with correct fee? 17.36.802 Fee checklist attached?</i>	
			<i>Is application included with owner's signature and date? 17.36.102(1)</i>	
			<i>Is the Preliminary Plat or COS Included? 17.36.103(1)(o) Is legal description complete? Exhibit A attached for COSs?</i>	
			<i>Is local Health Officer approval included? 17.36.108(2), 17.36.103(1)(p)</i>	
			<i>Is the City Council or County Commissioner's approval included? 17.36.103(1)(p) MCA 76-4-115(2)(b).</i>	
			<i>For submittals other than family transfers & boundary relocations; have comments from the Public Hearing been included & addressed? 76-4-125(1)(a) 17.36.103(1)(r)</i>	
			<i>Is USGS Topographic map included? Sub App, Pt 2, A(1) (c)</i>	
			<i>Do all lots not reviewed have exemption properly cited? 17.36.605(2), 76-4-122</i>	
			<i>Are five legible copies of lot layout (no larger than 11x17) included? 17.36.104(1)</i>	
			<i>Do site layouts match the Preliminary Plat or COS?</i>	
			<i>Does the site plan have the name of the subdivision, county, North arrow, Township, Range and Section? Are lots and parcels numbered? 17.36.104(2)</i>	
			<i>Is a graphic scale, no smaller than 1" = 200', and legend provided? 17.36.104(1)</i>	
			<i>Solid waste site noted? 17.36.103(1)(m) Solid waste not being stored on the property? ARM 17.36.309</i>	
			<i>Site visit completed?</i>	
			WASTEWATER TREATMENT:	
			<i>Are all water features, drainages, slopes, & wells shown? 17.36.104, 17.36.103(1)(e) and 17.36.322</i>	
			<i>Are gravity systems proposed only on slopes less than 15%. If pressure system is proposed on slopes between 15% and 25%, has a qualified person certified that it will work? If pressure system is proposed on slopes between 25-35%, has a waiver been granted? 17.36.322(1)</i>	
			<i>Does drainfield match the ground contour and is the configuration appropriate for the size and design of the system? 2' wide, 100' long, 7' separation. 3' wide for pressure? Equal distribution provided? DEQ 4.</i>	
			<i>Are trenches at least 100 feet away from a potable water supply? 17.36.323(1)</i>	
			<i>Are trenches > 100' from 100-year flood-plain, river, stream, water course, lake or impoundment? 17.36.323(1) If <u>no</u>, is a waiver requested and given. 17.36.323(3)</i>	
			<i>Are trenches at least 10' from water lines, property lines and buildings? 17.36.323(1), Regulation 1, Section 10</i>	
			<i>Are drainfield areas away from potential driveways and drainage from building site? Or otherwise protected? 17.36.322(4)</i>	
			<i>Do existing systems have primary & secondary treatment, pumped within 3 years and approved if necessary at time of construction? Is there a statement of hydraulic functioning? 17.36.327</i>	
			<i>Have 8' test pits been provided, and described using USDA classification? 17.36.325 Does it match SCS data provided? DEQ 4, 2.1 (10' profiles per Regulation 1, and MCCHD site eval manual).</i>	
			<i>Is there 4' minimum separation from trench bottoms to limiting layers, GW, Bedrock, Impervious Soils, mottling? 6' natural soil separation on slopes >15%? 17.36.320(3)</i>	
			<i>Percolation test with correct procedures – Regulation 1, DEQ 4 appendix A.</i>	
			<i>Does drainfield sizing meet minimum requirements based on soil type & perc rate? DEQ 4 chapter 6.1.4</i>	

Sub:
Reviewer:

Missoula County
Review Date:

EQ#:
Owner:

		<i>Do drainfields & replacement areas have the correct dimensions on the site plan to match perc rate?</i>	
		<i>Is there no need to limit bedrooms or flow? Area for 3-4 bedrooms? DEQ 4</i>	
		<i>Is pressure distribution provided for drainfields over 1000 square feet (DEQ4 6.1.3.6) or for soil types requiring it in table 9-1? (if yes complete pressure distribution checklist)</i>	
		<i>If a public system is not proposed, is the property over 500 to the nearest public sewer system or has DEQ granted a waiver to allow them not to connect to the public system? 17.36.328</i>	
		<i>If shared system, have they submitted a shared user agreement? 17.36.326(4)</i>	
		<i>If a shared or multiple user system, have they submitted an acceptable operation and maintenance manual? 17.36.326(1)</i>	
		<i>If public sewer, is it only a connection? Extensions (2 or more) require DEQ review. Are sewer mains shown, and authorization to connect provided?</i>	
		<i>If necessary, are appropriate easements provided? 17.36.326, 17.36.103(1)(q)</i>	
		WATER SYSTEM:	
		<i>Are all existing and proposed wells shown and neighboring well sites identified? 17.36.103(1)(e).</i>	
		<i>Distance from surface water 100'? 17.36.323 Table 3.</i>	
		<i>Is adequate water substantiated – 10 gpm/1hr; 6 gpm/2 hrs or 4gpm for 4 hrs, 25 feet deep. 17.36.332(1)(a) Shared: 15 gpm/1hr; 10 gpm/2hr</i>	
		<i>If a cistern is proposed to provide adequate capacity from a low flow well, has DEQ approved a wavier? 17.36.332(6)</i>	
		<i>Is the proposed location of the well shown? Have all potential sources of contamination within 500 feet been listed and the distances from the well to these potential sources noted on the lot layout? Mixing zones within 500 feet identified? 17.36.330(2)(a).</i>	
		<i>Nitrate sample & TDS or conductivity within one year provided? Or Waiver provided. 17.36.331(1)(b)</i>	
		<i>Bacteriological sample within last 6 months provided for existing drinking water wells? 17.36.335(3)(a)</i>	
		<i>Well log or other proof of depth to static water and total well depth for existing well and sampled well? 17.36.335 (3)b</i>	
		<i>If alternative water supplies are proposed (including a cistern with hauled water), is 17.36.336 addressed? Also see circular.</i>	
		<i>For private wells, is the property over 500 feet from the nearest public water supply, or has DEQ granted a waiver allowing them not to connect?</i>	
		<i>If public water, is it only a connection? Extensions (2 or more) require DEQ review. Are water mains shown, and authorization to connect provided?</i>	
		<i>If necessary, are appropriate easements provided for water? 17.36. 334</i>	
		<i>Are shared users agreements included for shared wells? 17.36.103(1)(q), 17.36.334(2)</i>	
		<i>If a multiple user system, has an acceptable operation and maintenance plan been provided? 17.36.334(1)</i>	
		<i>If multiple user system, is system in compliance with DEQ 3? Checklist been completed?</i>	
		<i>If the proposed water supply is from wells or springs (except for connections to existing public systems), has the applicant provided a letter from DNRC stating that the water supply is exempt from obtaining a water right, or that a water right has been obtained. 17.36.103(1)(s)</i>	
		<i>If the isolation zone of a proposed well goes off the subdivision or off the lot(local reg), is an easement proposed (for private land) or other authorization (public land) provided? MCA 76-4-104 (6)(i). MCCHD Reg 5, Section 4(e).</i>	
		<i>Do existing wells meet all setback requirements or has a waiver been approved by DEQ? ARM 17.36.335(2)(a) & ARM 17.36.323</i>	

Sub:
Reviewer:

Missoula County
Review Date:

EQ#:
Owner:

		<i>Do existing wells meet all construction criteria of ARM 36.21.6 or has a waiver been approved by DEQ?</i>	
--	--	--------------------------------------------------------------------------------------------------------------	--

Sub:
Reviewer:

Missoula County
Review Date:

EQ#:
Owner:

<u>CATEGORICAL EXEMPTIONS</u>		
		<i>If a categorical exemption has been requested, has the categorical exemption checklist been completed and attached?</i>
		<i>Does the project meet all six criteria in ARM 17.30.716?</i>
<u>NITRATE SENSITIVITY</u>		
		<i>Has non-deg been addressed for all sources and increased use constructed or proposed after April 29, 1993? 17.30.505 (1) (c)</i>
		<i>Are mixing zones shown and drawn correctly? Is the direction of groundwater flow reasonable? Direction? 17.30.517</i>
		<i>Are mixing zones the right length or has a source specific mixing zone been requested? 100' for lots < 2 acres, 200 feet for subdivisions 5-10 acres in size and lots 2 acres or larger, and 500 feet for other lots. 17.30.517(1)(d)(viii) & 17.30.518</i>
		<i>Has DEQ approved any source specific ground water mixing zones less than 100 feet for single family dwellings or less than 500 feet for shared, multiuser or commercial systems?</i>
		<i>Are proposed mixing zones located within the boundaries of the subdivision or within an easement or dedicated right-of-way? MCA 76-4-104(6) (i)</i>
		<i>Are all drinking water wells outside mixing zones? 17.30.506(2)(b). Do the zones of influence (typically 100 ft) of drinking water wells (on-site and off-site) remain outside the mixing zones? 17.30.508(2) and 17.36.323.</i>
		<i>Is Nitrate sensitivity analysis correct? K value, gradient, correct background nitrate level and effluent nitrate concentration, correct flow, well log information from same area and geology, shallowest groundwater used, correct drainfield length matching that shown on site layout, correct precipitation used for area, (about 13" for Missoula, airport) 17.30.715(1)(d).</i>
		<i>If shallow ground water is not high quality, are at least two ground water specific conductance values or a published report included? 17.30.715</i>
		<i>Are any cumulative effects of multiple or overlapping mixing zones properly addressed? ARM 17.30.506(2)(f)</i>
		<i>For a new or increased source, are changes at the mixing zone boundary below what is considered significant degradation pursuant to ARM 17.30.715. (5 mg/l for domestic sewage, 7.5 mg/l if Level 2 is used) If not, authorization to degrade is required by DEQ.</i>
		<i>Are human health based standards (10 mg/l) maintained beyond the ground water mixing zone boundary? ARM 17.30.508(1)(a)</i>
		<i>Does the ground water discharge enter surface water within a reasonably short distance or time? 17.30.506(2)(h). If yes, a surface water mixing zone may also be applicable pursuant to ARM 17.30.507(3).</i>
		<i>If the property is next to surface water, has Adjacent to Surface Water analysis been completed?</i>
		<i>If Adjacent to Surface Water is required, is the expected increase less than 0.01 mg/L (the trigger value)?</i>
<u>PHOSPHORUS BREAKTHROUGH ANALYSIS 17.30.715(e)</u>		
		<i>Is the nearest surface water used to calculate phosphorus breakthrough used and identified?</i>
		<i>Is the depth to ground water or limiting layer supported with test pit or other information</i>
		<i>Is the mixing depth (0.5 or 1 foot) based on the soil texture at the water table or limiting layer?</i>
		<i>Are correct dimensions of the primary drainfield used that match that shown on the site plan? Are cumulative effects and replacement areas addressed if needed?</i>
		<i>Is the correct phosphorus load used? 6.44 lbs/yr for single family. Other loads justified for other types of development?</i>
		<i>Is breakout at least 50 years? (ARM 17.30.715(1)(e))</i>
		<i>If site is adjacent to surface water, and the breakout is less than 50 years, has it been</i>

Sub:
Reviewer:

Missoula County
Review Date:

EQ#:
Owner:

		addressed under 17.36.312 &/or 17.30.715(1)(g)?	
--	--	-------------------------------------------------	--

LOCAL REQUIREMENT CHECKLIST

YES	NO	N/A	QUESTION	REVIEWER'S COMMENTS
SPECIAL MANAGEMENT AREAS, HEALTH CODE REGULATION 1				
			<i>Is the subdivision located OUT OF the MWTPSA special management area? Reg 1(18)(A). If NO, complete below</i>	
			<i>Is there language on the plat which includes the waiver and agreement to connect to public sewer and does it meet the requirements?</i>	
			<i>If in the STEP area, are STEP tanks proposed?</i>	
			<i>If there are 5 or more lots less than 5 acres, are they providing a multi-family system? Or has the City Engineer provided a letter stating that dry laid would be more appropriate per Reg 1, Section 20(8)(b)?</i>	
			<i>If there are 15 or more lots, is a community system proposed?</i>	
			<i>Has the City Engineer approved the design for the multi-family system or dry laid main in writing?</i>	
			<i>Is the subdivision located OUT OF the Rattlesnake Valley special management area?</i>	
			<i>If NO, has a variance granted? (Or subdivision is not allowed.)</i>	
			<i>Is the subdivision located OUT OF the Seeley Lake special management area?</i>	
			<i>If NO, does it meet Reg 1, Section XX?</i>	
			<i>Is the subdivision located OUT OF the Roman Creek/Touchette Lane special management area?</i>	
			<i>If NO, has a variance been granted? (Or subdivision is not allowed.)</i>	
REGULATION 1 REQUIREMENTS MORE STRINGENT THAN DEQ				
			<i>Has an arsenic water test result been received with a result of less than 7.5 ppb (0.0075 mg/l)? ARM 17.36.330 (1)(a) If so, they must comply with the Arsenic Policy.</i>	
			<i>When cesspools or septic systems that don't meet Reg 1 (5)(A) exist, are they upgraded prior to subdivision approval? Reg 1(17) (B)</i>	
			<i>Have 2 soil profiles been provided (5' and 10') Reg 1(9) D</i>	
			<i>Have 3 correct percolation tests been conducted within the boundaries of each drainfield, if required by the Health Code? Reg 1(9)(I)</i>	
			<i>Are the drainfield areas at least 100 feet from a flood-prone area? Reg 1(10)(B)2</i>	
			<i>If there is floodplain on the property, has written approval from the Floodplain Administrator been received and do exhibits with floodplain have: -the FEMA line -the map panel/date -the line per the base flood elevation -signed/stamped? (These are all required per Todd Klietz, Floodplain Administrator)</i>	
			<i>If a local variance is granted, have the conditions of the variance been met?</i>	
			<i>Does proposal comply with maximum land application rates? Reg 1(10)(D)</i>	
			<i>If an alternative system is proposed, does it comply with the requirements of the Alternative Manual in addition to DEQ 4?</i>	
			<i>If an alternative system is proposed, does it comply with the Operation and Maintenance requirements in the Alternative Manual?</i>	
			<i>If multi-user system, has Reg. 1, Section 19 been satisfied?</i>	

Sub:
Reviewer:

Missoula County
Review Date:

EQ#:
Owner:

MISSOULA VALLEY WATER QUALITY ORDINANCE SECTION 13.26.090				
			<i>If proposing a new public (community or non-community, non-transient) well within the district, has the WQD reviewed?</i>	
			<i>If a new drinking water well is proposed and a public water main is in the right-of-way adjacent to the property, will the structure be further than 200 feet from the main?</i>	
			<i>If a well is being abandoned within the district, has the WQD been notified?</i>	

Sub:
Reviewer:

Missoula County
Review Date:

EQ#:
Owner:

**SUBDIVISION SIGNIFICANCE DETERMINATION CHECKLIST
MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ)**

2nd Reviewer _____

Determination: _____ Significant _____ Non-Significant _____ Incomplete

Part I: Applicability/Exclusions	YES/NO	Basis for decision.
1. Are any high quality waters affected? (Include downstream and downgradient) <i>If NO, the nondegradation requirements are not applicable. ARM 17.30.701(1) & 75-5-103(9), MCA</i>		
2. New or increased source of pollutants? <i>If NO, the nondegradation requirements are not applicable. ARM 17.30.702(16) & 17.30.705(1)</i>		
3. Activity categorically excluded under <i>If YES, the Activity is Non-Significant. ARM 17.30.716 or 75-5-317, MCA?</i>		
4. Non-Significant under ARM 17.30.715(3)? (Public Notice Required) <i>If YES, the Activity is Non-Significant. ARM 17.30 sub-chapter 5</i>		
5. Is this determination contingent upon granting a mixing zone? <i>If YES, determine if a mixing zone can be granted before going on to Part II. If NO, continue on to Part II.</i>		
Part II: Significance Determination	YES/NO	Basis for decision.
<i>ARM 17.30.715(1)(a)</i> 6. Change in mean monthly flow of the surface water > 15%, or change in 7Q10 flow > 10%.		
<i>ARM 17.30.715(1)(b)</i> 7. Concentration of carcinogen or parameter with BCF > 300 in discharge greater than receiving water.		
<i>ARM 17.30.715(1)(c)</i> 8. Increase in toxics or nutrients > trigger value and concentration after mixing > 15% of lowest applicable standard. For nutrients, if the answer is YES, the criteria in question #10 must also be exceeded for the activity to be significant.		
<i>ARM 17.30.715(1)(f)</i> 9. Increase of a harmful parameter > 10% of applicable standard and existing water quality > 40% of applicable standard.		
<i>ARM 17.30.715(1)(g)</i> 10. Measurable effect on a beneficial use or measurable changes in aquatic life or ecological integrity from a narrative parameter.		
11. Increase in nitrate-nitrogen in groundwater at a mixing zone boundary exceeds that allowed in ARM 17.30.715(1)(d).		
12. Increases in phosphorus in groundwater where adsorptive capacity of soils will be exceeded within 50 years and will reach surface water, or the activity does not employ department approved water quality protection practices. ARM 17.30.715(1)(e)		
13. Significant under ARM 17.30.715(2)?		

If any answers to Questions #6 through #13 is YES, the Activity is Significant (except for question #8 as applied to nutrients).

Sub:
Reviewer:

Missoula County
Review Date:

EQ#:
Owner:

SUBDIVISION STORM DRAINAGE CHECKLIST

YES	NO	N/A	QUESTION	REVIEWER'S COMMENTS
			<i>Does the subdivision have less than six lots? ARM 17.36.310(2)(a). IF NO PLAN MUST BE DESIGNED BY A P.E. AND REVIEWED BY DEQ</i>	
			<i>Are lots proposed for use of single living units only with less than 25% impervious area? ARM 17.36.310(2)(b) IF NO PLAN MUST BE DESIGNED BY A P.E. AND REVIEWED BY DEQ</i>	
			MS4 Exemption ARM 17.36.310(5)	
			<i>Is the entire subdivision located entirely within a first-class or second-class municipality?</i>	
			<i>Did the applicant submit a letter of consent from the municipal or MS4 entity on a form provided by DEQ?</i>	
			<i>The municipal or MS4 entity either accepts the stormwater or requires the applicant to comply with the storm water drainage design standards?</i>	
			GENERAL REQUIREMENTS DEQ Circular 8, Section 2 and 3.1	
			<i>Is a storm drainage plan or "Drawing" provided that meets the requirements DEQ Circular 8 Section 2.3?</i>	
			<i>Are four sets of an operation and maintenance plan submitted? DEQ 8, Section 2.5</i>	
			<i>Does the operation and maintenance plan provide procedures for long-term operation and maintenance? Does O & M plan designate a responsible party? Are easements provided to ensure continued access to storm drainage facilities?</i>	
			<i>Does the storm drainage plan address pre-development and post-development site conditions?</i>	
			<i>Is an Initial Storm Water Facility sized capture the first 0.5 inches of rainfall on impervious areas provided?</i>	
			SIMPLIFIED PLAN DEQ Circular 8, Section 3.2	
			<i>Does the impervious area within each proposed lot have a slope of 3% or less?</i>	
			<i>Will the impervious areas comprise less than or equal to 25 percent of the total acreage of each lot?</i>	
			<i>Will the proposed subdivision not alter historic runoff patterns outside the boundaries of each lot?</i>	
			<i>Has the designer demonstrated that there will not be an increase in volume of runoff between lots or adjoining property as a result of development during the 100- year storm event?</i>	
			STANDARD PLAN DEQ Circular 8, Section 3.3	
			<i>Has the plan addressed storm water drainage peak flow and volume in accordance with Appendix B?</i>	
			<i>Storm water will not exceed the pre-development runoff to an adjoining property during the 2-year storm event?</i>	
			<i>Storm water will not overtop roadways or driveways during the 10-year storm event?</i>	
			<i>Storm water will not inundate any buildings or drainfields during the 100-year event? Demonstrated through narrative or calculations?</i>	
			CONVEYANCE STRUCTURES DEQ Circular 8, Section 4	
			<i>Is capacity, volume and/or velocity calculations provided?</i>	

Sub:
Reviewer:

Missoula County
Review Date:

EQ#:
Owner:

			<i>Is adequate protection from erosion at the outlet structure provided?</i>	
			<i>For open channels is a typical section view and plan view of each reach provided? (Section 4.2(c)).</i>	
			<i>For Storm Sewers are the requirements in Section 4.3 provided?</i>	
			RETENTION AND DETENTION FACILITIES DEQ Circular 8, Section 5	
			<i>Are facilities sized for the minimum volumes and peak flow rates in accordance with Chapter 3?</i>	
			<i>Are facilities located where the increased runoff will naturally accumulate, or where runoff is directed?</i>	
			<i>Are facilities shown on the plans with cross-sections and design details provided?</i>	
			<i>Designs show that retention facility, or discharge from a detention facility, will not overtop roads during 10-year storm event and will not inundate buildings or drainfields during 100-year storm event?</i>	
			<i>Is the storm runoff directed away from drainfields and sand mounds?</i>	
			<i>Retention Facilities comply with requirements in Section 5.2?</i>	
			<i>Detention Facilities comply with requirements in Section 5.3?</i>	

PRESSURE DISTRIBUTION CHECKLIST

YES	NO	N/A	QUESTION	REVIEWER'S COMMENTS
			<i>Is the volume of each dose equal to or greater than the drained volume of the transport pipe and manifold plus 5 times the distribution pipe volume? DEQ 4, 4.2.3.3</i>	Transport pipe volume = _____ Manifold pipe volume = _____ Dist. pipe volume = _____ x 5 = _____ Total = _____ dose
			<i>Is the dose volume equal to the volume of the transport line and manifold plus a volume between 5-10 times the lateral volume dose? Health Code (8)(D)(6)</i>	
			<i>Is there a single row of orifices, at least 1/8-inch in diameter? DEQ 4, 4.2.3.3</i>	
			<i>Is orifice spacing 5 feet or less? DEQ 4, 4.2.3.3</i>	
			<i>Is the duration of the discharge 15 minutes or less? DEQ 4, 6.10.4.6</i>	
			<i>Is the minimum pressure at the end of the laterals 1 psi (2.3') (5' for 1/8" orifice) DEQ 4, 4.2.3.3</i>	
			<i>Are computations provided which demonstrate uniform distribution (less than 10% variation in flow) throughout the system? DEQ 4, 4.2.3.3</i>	
			<i>If there is slope across the drainfield, is this slope considered in the uniform distribution computations? DEQ 4, 4.2.3.3</i>	
			<i>Are risers provided at each corner? DEQ 4, 4.2.3.3.</i>	
			<i>Is there adequate dose tank capacity for pump</i>	

Sub:
Reviewer:

Missoula County
Review Date:

EQ#:
Owner:

			<i>submergence and the dose volume? MCCHD Reg 1, Sec 12(E)(12)(f).</i>	
			<i>Is the dose tank separated from the septic tank by an air gap? DEQ 4, 4.2.3.3.</i>	
			<i>Is the dose tank provided with adequate access ports? DEQ 4, 4.2.3.3.</i>	
			<i>Are the pumps, valves and other apparatus accessible from the surface without entering the tank? DEQ 4, 4.2.3.3</i>	
			<i>Is the dose tank watertight and of an acceptable material? DEQ 4, 4.2.3.3.</i>	
			<i>Are high water alarms provided for the dosing chamber? DEQ 4, 4.2.3.3</i>	
			<i>Do the specifications require field testing to demonstrate uniform flow? DEQ 4, 4.2.3.3</i>	

REVIEW CERTIFICATION:

I certify that I have reviewed the application as a qualified reviewer under applicable state laws, rules, and circulars, and that it is in compliance with applicable state and local laws, rules and standards.

Signature of Certified Reviewer