

DEPARTMENT OF ENVIRONMENTAL QUALITY
Environmental Assessment

Water Protection Bureau

Name of Project: Town of Manhattan

Type of Project: The Town currently discharges treated wastewater to surface waters under their existing Montana Pollutant Discharge Elimination System (MPDES) permit (MT0021857). The project as proposed will seasonally redirect the surface water discharge to the subsurface via infiltration. The subsurface discharge proposal will be covered under a new Montana Ground Water Pollution Control System (MGWPCS) permit (MTX000278). The vadose, aquifer, and hyporheic zones will provide for natural attenuation of nutrients.

The Town will maintain their existing MPDES permit that currently authorizes discharge to the Gallatin River via the Dita Ditch. However, the proposed project may lessen the need for direct discharge of nutrients to surface waters during the critical nutrient growing season in Montana.

Location of Project: Northeast Section 03, Township 01 North, Range 03 East
Latitude: 45.87036, Longitude: -111.33132

City/Town: Manhattan

County: Gallatin

Description of Project: A determination has been made by DEQ to issue a new Montana Ground Water Pollution Control System (MGWPCS) permit to the Town of Manhattan for the Manhattan Wastewater Reclamation Facility. The proposed MGWPCS permit authorizes the discharge of treated wastewater into Class I ground water. All beneficial uses of the aquifer will be maintained. DEQ estimates that the subsurface attenuation of discharge nutrients may help to mitigate impacts to surface waters.

This project will add subsurface disposal to the existing municipal wastewater system. The disposal site will be built not far to the South of the existing wastewater treatment system near the intersection of Yadon Road and Greenspur Road (**Figure 1 and Figure 2**). All wastewater components will be located on property owned by the Town.

The scope of this EA addresses the installation and operation of the proposed subsurface wastewater disposal system. The magnitude and significance of potential impacts are summarized below (bullet #26). Maps of the project are provided below.

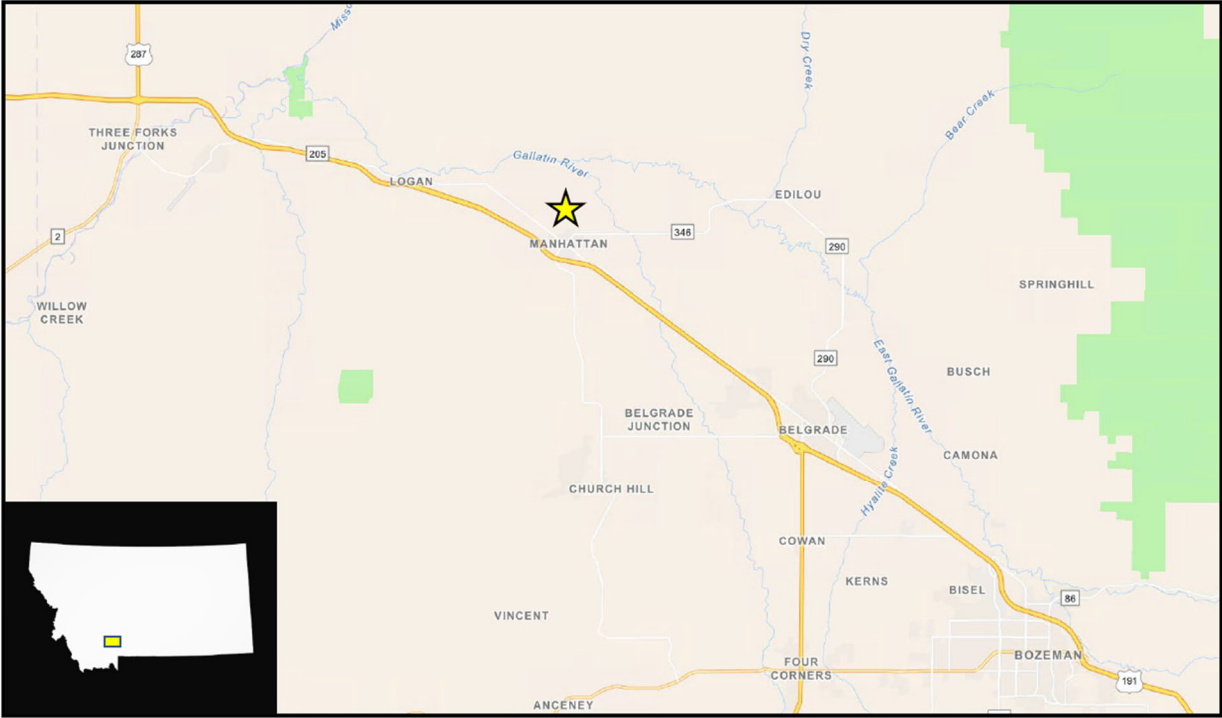


Figure 1. Regional Map



Figure 2. Vicinity Map

Agency Action and Applicable Regulations: The proposed action is to issue an individual MGWPCS permit that contains limitations, monitoring, and reporting requirements designed to protect the environment and public health. The associated MGWPCS fact sheet document (DEQ, 2024) further addresses these concerns and discusses the permitting actions in more detail. The permit is issued under the authority of the Montana Water Quality Act.

Summary of Issues: The permitting action is to regulate the discharges of pollutants to state waters from the proposed and regulated facility. Issuance of an individual discharge permit will require the permittee to implement, monitor, and manage practices to prevent pollution.

Affected Environment & Impacts of the Proposed Project:

Y = Impacts may occur (explain under Potential Impacts).

N = Not Present or No Impact will likely occur.

IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES
<p>1. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE: Are soils present which are fragile, erosive, susceptible to compaction, or unstable? Are there unusual or unstable geologic features? Are there special reclamation considerations?</p>	<p>[N]</p> <p>No significant impacts were identified by DEQ after a review of the Application, Research, and other Government Agency References in development of the Tentative Determination documents for the current MGWPCS (Montana Ground Water Pollution Control System) permit action (DEQ, 2024).</p> <p>A geotechnical investigation has been performed for the project site. Prior to construction, DEQ will review soil data to determine that proper infiltration from the infiltration gallery is met under the Sanitation in Subdivisions Act and/or the Public Water Supply Act.</p> <p>The proposed facility is located on a braided plain alluvial fan that starts near the South side of Interstate 90 and extends North to additional alluvial deposits. On-site boreholes document the shallow lithology as being Silty fine Sand, to fine Sand with Gravel sediments. It is water bearing and unconfined. These sediments may be underlain in areas by a thin lense of Clay (Figure 3).</p> <p>Dita Ditch is located at the bottom of a small bench that intersects the border of two alluvial units. It is probable that the bench is gaining to the North of the proposed infiltration galleries. This stretch of the ditch underwent stream rehabilitation in 2023. The project may provide for a more substantial hyporheic zone.</p>

IMPACTS ON THE PHYSICAL ENVIRONMENT

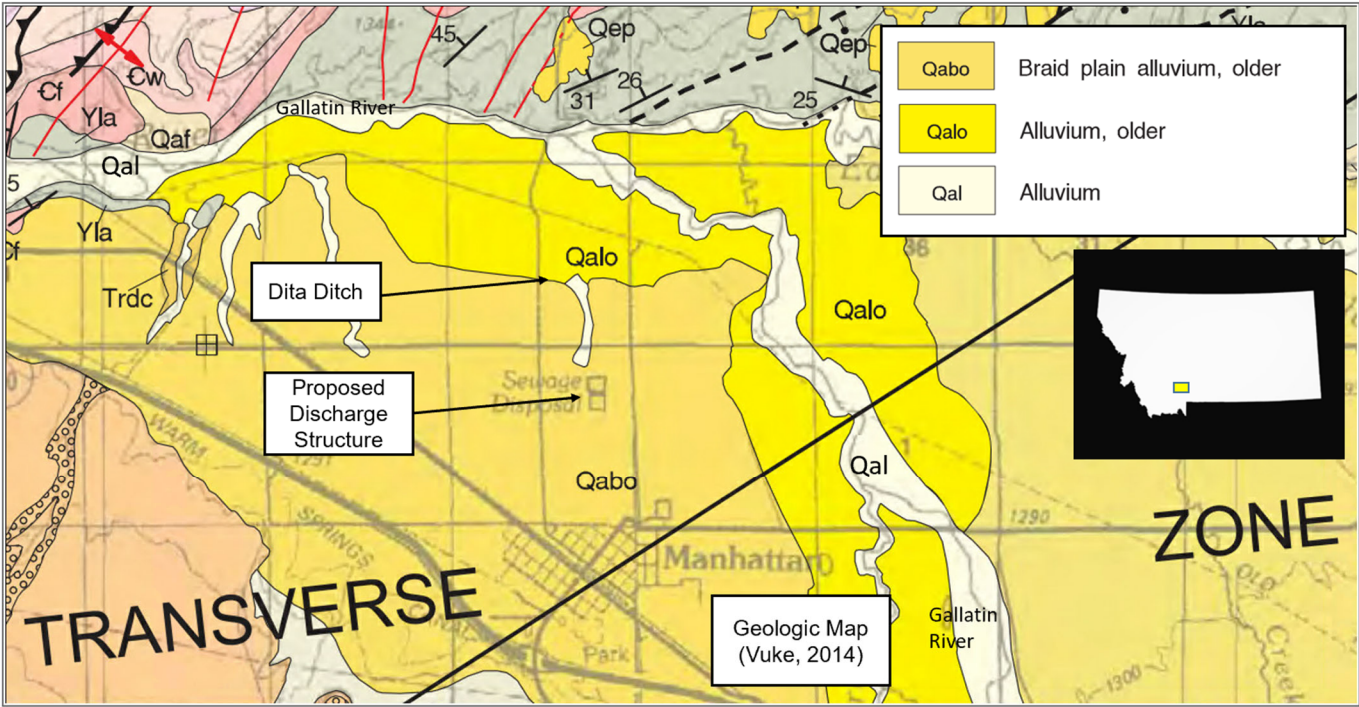


Figure 3, Geologic Map

2. WATER QUALITY, QUANTITY AND DISTRIBUTION: Are important surface or groundwater resources present? Is there potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality?

[Y]
 The project may have a beneficial impact on nearby surface waters by reducing the amount of nutrients discharged to the Gallatin River. No other significant impacts were identified by DEQ after a review of the Application, Research, and other Government Agency References in development of the Tentative Determination documents for the current MGWPCS permit action (DEQ, 2024).

Ground water is the receiving state water for this project. In order to maintain beneficial uses of the aquifer, DEQ performed an analysis on the potential impacts that this project may have on the aquifer. The resulting projections indicate that the nitrate levels downgradient of the drainfield will meet water quality standards and that all beneficial uses will be maintained.

The facility covered under this permit must show evidence of treatment capable of meeting the established effluent limitation which was derived from the most restrictive ground water quality

IMPACTS ON THE PHYSICAL ENVIRONMENT

standards and significance criteria. This effluent limitation, along with special conditions and standard conditions of the permit has been developed to maintain the beneficial uses of all state ground waters including drinking water. The facility must be able to meet this restrictive effluent limitation prior to discharge.

This project will benefit from the attenuation of nutrients within the vadose, aquifer, and hyporheic zones. Nutrients that may otherwise be discharged directly to and have impact on surface waters.

A ground water monitoring network was established as part of the Applicant's requirement to study site-specific hydrogeology at the facility. This network will be maintained and expanded to provide ongoing monitoring of the health of the aquifer as part of the MGWPCS permit. All reported data is available to the public.

All discharge disposal structures must meet the minimum set back requirements which includes surface water, flood plains, ditches and springs. The applicant is encouraged to contact and consult with the Public Water, Subdivision and State Revolving Fund programs at DEQ:

<https://deq.mt.gov/water/Programs/eng>

Construction activities may impact water quality by contributing discharges of sediment to surface waters. The applicant may be required to obtain permit coverage under a Montana Pollutant Discharge Elimination System (MPDES) General Permit for Storm Water Discharges Associated with Construction Activity. The applicant may be required to develop and implement a Storm Water Pollution Prevention Plan (SWPPP) which includes best management practices to protect nearby surface waters. Additional information can be found at the following website:

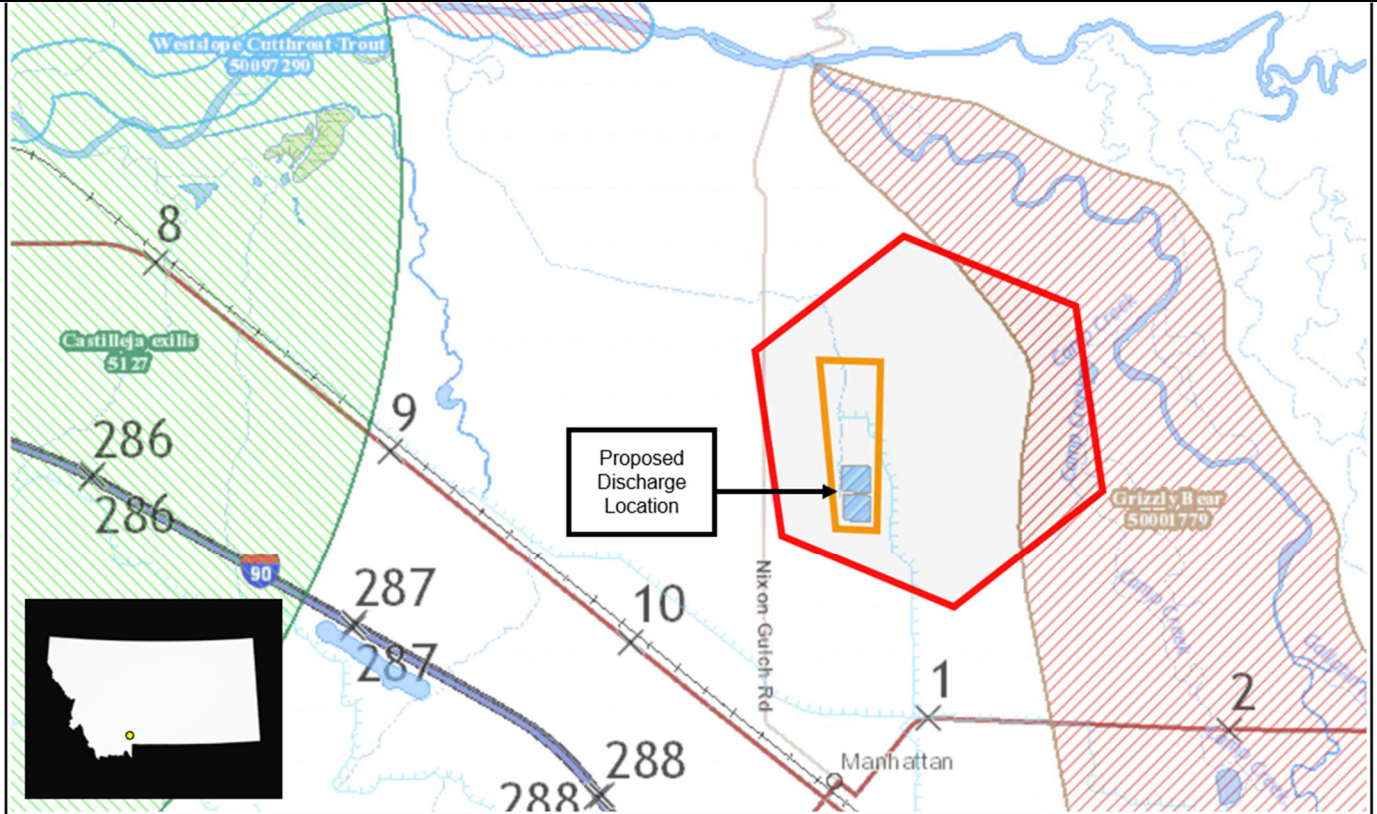
<https://deq.mt.gov/water/assistance>

The proposed project redirects the discharge of treated wastewater from the Gallatin River to the local aquifer. The Town is undergoing water mitigation efforts with the Montana Department of Natural Resources and Conservation that may lead to changes in local water rights.

IMPACTS ON THE PHYSICAL ENVIRONMENT

<p>3. AIR QUALITY: Will pollutants or particulate be produced? Is the project influenced by air quality regulations or zones (Class I airshed)?</p>	<p>[N]</p> <p>No significant impacts were identified by DEQ after a review of the Application, Research, and other Government Agency References in development of the Tentative Determination documents for the current MGWPCS permit action (DEQ, 2024).</p> <p>Best management practices are encouraged during construction of the treatment system and drainfield to mitigate particulates produced. For additional information, the applicant is encouraged to contact the Montana DEQ Air Resources Management Bureau: http://deq.mt.gov/Air</p>
<p>4. VEGETATION COVER, QUANTITY AND QUALITY: Will vegetative communities be significantly impacted? Are any rare plants or cover types present?</p>	<p>[Y]</p> <p>The project may have a beneficial impact on aquatic habitat and river ecology by reducing the amount of nutrients that are currently being discharged into the Gallatin River. This may help prevent potential eutrophication and anthropogenic related plant growth. No other significant impacts were identified by DEQ after a review of the Application, Research, and other Government Agency References in development of the Tentative Determination documents for the current MGWPCS permit action (DEQ, 2024).</p> <p>Based on a search of the Natural Heritage Database, there are no plant species listed as either S1 (at high risk), S2 (at risk), LE (listed endangered), or LT (listed threatened) within the immediate vicinity of the proposed facility. (http://fieldguide.mt.gov/statusCodes.aspx#msrc:rank).</p> <p>There is one species of concern listed as being observed in the surrounding region:</p> <ul style="list-style-type: none"> • Annual Indian Paintbrush (<i>Castilleja exilis</i>) listed as S2, was last observed in 1899 five miles east of the project area near the Town of Logan. <p>The Natural Heritage site report map of the species is provided below. The orange area in the center of the map represents the location of the existing facility and proposed project site.</p>

IMPACTS ON THE PHYSICAL ENVIRONMENT



5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS: Is there substantial use of the area by important wildlife, birds or fish?

[Y]

The project may have a beneficial impact on aquatic habitat and river ecology by reducing the amount of nutrients that are currently being discharged into the Gallatin River. This may help prevent potential eutrophication and anthropogenic related plant growth. No other significant impacts were identified by DEQ after a review of the Application, Research, and other Government Agency References in development of the Tentative Determination documents for the current MGWPCS permit action (DEQ, 2024).

Based on a search of the Natural Heritage Database, there are two animal species listed as either S1 (at high risk), S2 (at risk), LE (listed endangered), or LT (listed threatened) in the general area surrounding the proposed facility.

(<http://fieldguide.mt.gov/statusCodes.aspx#msrc:rank>).

Grizzly Bear (*Ursus arctos*) is listed as S2 and LT and is located regionally within their general habitat. The US Fish and Wildlife Service has identified a possible corridor located 2,800 feet East of the project area along the Gallatin River.

IMPACTS ON THE PHYSICAL ENVIRONMENT

	<p>Westslope Cutthroat Trout (<i>Oncorhynchus clarkii lewisi</i>) is listed as S2 and is located regionally within their general habitat. The closest location may be the Gallatin River located 1.67 miles to the Northwest of the proposed project.</p>
<p>6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES: Are any federally listed threatened or endangered species or identified habitat present? Any wetlands? Species of special concern?</p>	<p>[N] No significant impacts were identified by DEQ after a review of the Application, Research, and other Government Agency References in development of the Tentative Determination documents for the current MGWPCS permit action (DEQ, 2024).</p> <p>Please refer to #4 and #5 above. The land has been used historically for agricultural and municipal wastewater practices.</p> <p>All discharge disposal structures must meet the minimum set back requirements which include surface water, flood plains, ditches and springs. The applicant is encouraged to contact and consult with the Public Water, Subdivision, or State Revolving Fund programs at DEQ: http://deq.mt.gov/Water/SurfaceWater/DesignApprovals</p> <p>Site and habitat inventories for the applicable species were recommended in consultation with the Montana Natural Heritage Program. The applicant is encouraged to contact and consult with this program or other Natural Resource Information Programs available at the Montana State Library: http://nris.msl.mt.gov/</p>
<p>7. SAGE GROUSE EXECUTIVE ORDER: Is the project proposed in core, general or connectivity sage grouse habitat, as designated by the Sage Grouse Habitat Conservation Program (Program) at: https://sagegrouse.mt.gov/</p>	<p>[N] No significant impacts were identified by DEQ after a review of the Application, Research, and other Government Agency References in development of the Tentative Determination documents for the current MGWPCS permit action (DEQ, 2024).</p> <p>The project site is not listed as being located within sage grouse habitat. DEQ referred to the Habitat and Occurrence mapping program at https://sagegrouse.mt.gov/projects/. If there are questions about Sage Grouse at this site, the applicant must contact and consult with the Sage Grouse Habitat Conservation Program at: https://sagegrouse.mt.gov/.</p>

IMPACTS ON THE PHYSICAL ENVIRONMENT	
<p>8. HISTORICAL AND ARCHAEOLOGICAL SITES: Are any historical, archaeological or paleontological resources present?</p>	<p>[N] No significant impacts were identified by DEQ after a review of the Application, Research, and other Government Agency References in development of the Tentative Determination documents for the current MGWPCS permit action (DEQ, 2024).</p> <p>A general recommendation by the Montana State Historic Preservation Office (MSHPO) states that in the event that cultural materials are inadvertently discovered, the permittee should contact the MSHPO office for investigation.</p>
<p>9. AESTHETICS: Is the project on a prominent topographic feature? Will it be visible from populated or scenic areas? Will there be excessive noise or light?</p>	<p>[N] No significant impacts were identified by DEQ after a review of the Application, Research, and other Government Agency References in development of the Tentative Determination documents for the current MGWPCS permit action (DEQ, 2024).</p> <p>The wastewater disposal system will be located within lagoons previously used by the existing wastewater facility. The land may have been previously used for agriculture practices. The lagoons and the new infiltration basins may be visible from the local county roads.</p>
<p>10. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR, OR ENERGY: Will the project use resources that are limited in the area? Are there other activities nearby that will affect the project? Will new or upgraded power line or other energy source be needed?</p>	<p>[N] No significant impacts were identified by DEQ after a review of the Application, Research, and other Government Agency References in development of the Tentative Determination documents for the current MGWPCS permit action (DEQ, 2024).</p> <p>Upon treatment, the wastewater is discharged to the subsurface eventually migrating back to the aquifer. The discharge permit will maintain all beneficial uses of the aquifer outside of the established mixing zone.</p> <p>The proposed project redirects the discharge of treated wastewater from the Gallatin River to the local aquifer. The Town is undergoing water mitigation efforts with the Montana Department of Natural Resources and Conservation that may lead to changes in local water rights.</p>
<p>11. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES: Are there other activities nearby that will affect the project?</p>	<p>[N] No significant impacts were identified by DEQ after a review of the Application, Research, and other Government Agency</p>

IMPACTS ON THE PHYSICAL ENVIRONMENT	
	References in development of the Tentative Determination documents for the current MGWPCS permit action (DEQ, 2024).

IMPACTS ON THE HUMAN ENVIRONMENT	
12. HUMAN HEALTH AND SAFETY: Will this project add to/or reduce health and safety risks in the area?	<p>[N] No significant impacts were identified by DEQ after a review of the Application, Research, and other Government Agency References in development of the Tentative Determination documents for the current MGWPCS permit action (DEQ, 2024).</p>
13. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION: Will the project add to or alter these activities?	<p>[N] No significant impacts were identified by DEQ after a review of the Application, Research, and other Government Agency References in development of the Tentative Determination documents for the current MGWPCS permit action (DEQ, 2024).</p> <p>The wastewater disposal system will be located within lagoons previously used by the existing wastewater facility. The land may have been previously used for agriculture practices. The lagoons and the new infiltration basins may be visible from the local county roads.</p>
14. QUANTITY AND DISTRIBUTION OF EMPLOYMENT: Will the project create, move or eliminate jobs? If so, estimated number.	<p>[Y] The construction of the wastewater collection, treatment, and disposal system may result in the creation of several temporary jobs for construction.</p>
15. LOCAL AND STATE TAX BASE AND TAX REVENUES: Will the project create or eliminate tax revenue?	<p>[N] No significant impacts were identified by DEQ after a review of the Application, Research, and other Government Agency References in development of the Tentative Determination documents for the current MGWPCS permit action (DEQ, 2024).</p>
16. DEMAND FOR GOVERNMENT SERVICES: Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc.) be needed?	<p>[N] No significant impacts were identified by DEQ after a review of the Application, Research, and other Government Agency References in development of the Tentative Determination documents for the current MGWPCS permit action (DEQ, 2024).</p>

IMPACTS ON THE HUMAN ENVIRONMENT	
<p>17. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS: Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?</p>	<p>[N] No significant impacts were identified by DEQ after a review of the Application, Research, and other Government Agency References in development of the Tentative Determination documents for the current MGWPCS permit action (DEQ, 2024).</p>
<p>18. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES: Are wilderness or recreational areas nearby or accessed through this tract? Is there recreational potential within the tract?</p>	<p>[N] No significant impacts were identified by DEQ after a review of the Application, Research, and other Government Agency References in development of the Tentative Determination documents for the current MGWPCS permit action (DEQ, 2024).</p>
<p>19. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING: Will the project add to the population and require additional housing?</p>	<p>[N] No significant impacts were identified by DEQ after a review of the Application, Research, and other Government Agency References in development of the Tentative Determination documents for the current MGWPCS permit action (DEQ, 2024).</p> <p>While the project does not require additional housing, it may lead to the addition of new housing units to the Town of Manhattan's Municipal Systems.</p>
<p>20. SOCIAL STRUCTURES AND MORES: Is some disruption of native or traditional lifestyles or communities possible?</p>	<p>[N] No significant impacts were identified by DEQ after a review of the Application, Research, and other Government Agency References in development of the Tentative Determination documents for the current MGWPCS permit action (DEQ, 2024).</p>
<p>21. CULTURAL UNIQUENESS AND DIVERSITY: Will the action cause a shift in some unique quality of the area?</p>	<p>[N] No significant impacts were identified by DEQ after a review of the Application, Research, and other Government Agency References in development of the Tentative Determination documents for the current MGWPCS permit action (DEQ, 2024).</p>
<p>22. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:</p>	<p>[N] No significant impacts were identified by DEQ after a review of the Application, Research, and other Government Agency References in development of the Tentative Determination documents for the current MGWPCS permit action (DEQ, 2024).</p>
<p>23(a). PRIVATE PROPERTY IMPACTS: Are we regulating the use of private property under a regulatory statute adopted pursuant to the police power of the state? (Property management, grants of</p>	<p>[N]</p>

IMPACTS ON THE HUMAN ENVIRONMENT	
financial assistance, and the exercise of the power of eminent domain are not within this category.) If not, no further analysis is required.	No significant impacts were identified by DEQ after a review of the Application, Research, and other Government Agency References in development of the Tentative Determination documents for the current MGWPCS permit action (DEQ, 2024).
23(b). PRIVATE PROPERTY IMPACTS: Is the agency proposing to deny the application or condition the approval in a way that restricts the use of the regulated person's private property? If not, no further analysis is required.	[N] No significant impacts were identified by DEQ after a review of the Application, Research, and other Government Agency References in development of the Tentative Determination documents for the current MGWPCS permit action (DEQ, 2024).
23(c). PRIVATE PROPERTY IMPACTS: If the answer to 23(b) is affirmative, does the agency have legal discretion to impose or not impose the proposed restriction or discretion as to how the restriction will be imposed? If not, no further analysis is required. If so, the agency must determine if there are alternatives that would reduce, minimize or eliminate the restriction on the use of private property, and analyze such alternatives. The agency must disclose the potential costs of identified restrictions.	[N] No significant impacts were identified in #23b.

24. Description of and Impacts of other Alternatives Considered:

- A. No Action: Under the “No Action” alternative, the Department would not issue this ground water discharge permit. “No Action” may decrease the likelihood of the creation of a centralized wastewater system. Without the creation of a centralized system, ongoing (on-site) monitoring of the health of the aquifer is not likely.
- B. Approval with Modification: The Department has not identified any necessary modifications to grant approval. The centralized wastewater treatment system is capable of meeting the most restrictive standards prior to discharge (at end-of-pipe).

25. Direct, Secondary, and Cumulative Effects:

DEQ evaluated the fate of nitrogen (in the form of nitrate) associated with the discharge of wastewater from the proposed facility. DEQ recognizes that ground water and surface waters are hydraulically connected in the Gallatin Valley. Research indicates that the principal surface and ground water discharge point may be the Dita Ditch which terminates at the Gallatin River.

DEQ performed attenuation calculations to determine potential losses of nitrogen due to naturally occurring denitrifying conditions in the subsurface. The result of the evaluation is as follows. Using Darcy’s Law, it takes approximately 15 years for ground water to travel from the project site to the potential gaining stretch of the Dita Ditch (Freeze, 1979). During that time, nitrate naturally decays from biogeochemical processes that

occur in the aquifer (McCray, 2005). DEQ performed four analyses with the following results:

- Nitrate may decay to ambient nitrate levels (2.6 mg/L) within 500 feet of the outfall, at a point that is approximately 3,300 feet away from the Dita Ditch.
- Nitrate may decay to below the numerical surface water quality standard (0.3 mg/L) within 500 feet of the outfall, at a point that is approximately 3,300 feet away from the Dita Ditch. [*To be conservative, DEQ will use the aquatic standard listed in the 2019 Circular DEQ-7.*]
- Nitrate may decay to non-detect levels (0.01 mg/L) within 700 feet of the outfall, at a point that is approximately 3,100 feet away from the Dita Ditch.
- Nitrate may decay to natural ambient levels (1 mg/L, conservatively) within 500 feet of the outfall, at a point that is approximately 3,300 feet away from the Dita Ditch.

DEQ was conservative in these predictions. Additional sources of attenuation not used may include a 25% reduction in the vadose zone for the designed rapid infiltration basins (outfall); and hyporheic losses within riparian zones of the recently rehabilitated Dita Ditch. DEQ will require monitoring within the next permit cycle to quantify these reductions.

There are approximately four houses located between the proposed outfall and the potential gaining portion of Dita Ditch. Aquifer impacts from the discharge of these septic systems within this large area are seen as negligible due to dilution and natural attenuation. In addition, impacts from any potential upgradient source may also be negligible as ambient nitrate concentrations (**Table 4**) are slightly above naturally occurring levels (1-2 mg/L).

DEQ considered the direct, secondary, and cumulative environmental impacts of the construction and operation of the facility and found no significant adverse effects on water quality, the human environment, and the physical environment. The DEQ analysis included the cumulative impact from other past and present actions.

These projections also demonstrate that nitrate in ground water will not result in degradation of the nearest surface water. It also determined that measurable impacts to surface water are not expected.

All major discharge permitting actions, including the current action and any future actions, will include any substantive information derived from public input relating to potential impacts on the human environment and on water quality. All future actions related to this current action will be addressed by DEQ through additional discharge permitting process procedures. Any actions that are outside the purview of the discharge permit may not be addressed by DEQ until the next permitting action takes place.

To protect beneficial uses, there shall be no increase of a pollutant to a level that renders the waters harmful, detrimental, or injurious. Therefore, no wastewaters may be discharged such that the wastewater either alone or in combination with other wastes will violate or can reasonably be expected to violate any standard. The allowable discharge

will be derived from a mass-balance equation that determines the assimilative capacity of the receiving aquifer. Testing of the aquifer was completed to determine the existing impacts of all upgradient discharge sources. This ambient data represents the cumulative impacts of all existing upgradient discharges in the receiving aquifer.

A ground water monitoring network has been established that will provide for long-term monitoring of the aquifer. The ground water data collected will provide continual monitoring of the health of the aquifer including the impacts of any upgradient dischargers. This data is made available to the public for their viewing and will be used by DEQ to update future permit limitations. In addition, any update to limitations, including cumulative effect analyses, will be noticed to the public and will undergo public comment.

Long-term monitoring and reporting, renewed analysis and updates of permit conditions, and public notice and comment procedures is a benefit to having a system that is covered under a Pollution Control System permit.

26. **Summary of Magnitude and Significance of Potential Impacts:**
Impacts were assessed with the assumption that the facility will comply with the terms and conditions of the permit. Violations of the permit could lead to significant adverse impacts to state waters. Violations of the permit are not an effect of the agency action since the permit itself forbids such activities. However, the Department has taken steps to ensure that violations do not occur. The Department provides technical assistance to permittees for operation and maintenance, and also in understanding and implementing the requirements of the permit. The Department also conducts periodic inspections of permitted facilities and identifies potential problems with design or management practices. If violations of the permit do occur, the Department will take appropriate action under the Montanan Water Quality Act. Enforcement sanctions for violations of the permit include injunctions, civil and administrative penalties, and cleanup orders.
27. **Preferred Action Alternative and Rationale:** The preferred action is to issue an individual MGWPCS discharge permit. This action is preferred since the permit provides a regulatory mechanism for protecting ground water quality by applying limitations and long-term monitoring requirements.

Recommendation for Further Environmental Analysis:

EIS More Detailed EA No Further Analysis

Rationale for Recommendation: An EIS is not required under the Montana Environmental Policy Act because the project lacks significant adverse and cumulative effects to the human and physical environment.

28. **Public Involvement:**

Legal notice information for water quality discharge permits is listed at the following website: <http://deq.mt.gov/Public/notices/wqnotices>. Public comments on this proposal are invited any time prior to close of business on **May 30, 2024**. Comments may be directed to:

DEQWPBPublicComments@mt.gov

or to:

Montana Department of Environmental Quality
Water Protection Bureau
PO Box 200901
Helena, MT 59620

All comments received or postmarked prior to the close of the public comment period will be considered in the formulation of the final permit. DEQ will respond to all substantive comments pertinent to this permitting action and may issue a final decision within thirty days of the close of the public comment period.

All persons, including the applicant, who believe any condition of the draft permit is inappropriate, or that DEQ's tentative decision to deny an application, terminate a permit, or prepare a draft permit is inappropriate, shall raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by the close of the public comment period (including any public hearing). All public comments received for this draft permit will be included in the administrative record and will be available for public viewing during normal business hours.

Copies of the public notice are mailed to the applicant, state and federal agencies, and interested persons who have expressed interest in being notified of permit actions. A copy of the distribution list is available in the administrative record for this draft permit. Electronic copies of the public notice, draft permit, fact sheet, and draft environmental assessment are available at the following website:
<http://deq.mt.gov/Public/notices/wqnotices>.

Any person interested in being placed on the mailing list for information regarding this permit may contact the DEQ Water Protection Bureau at (406) 444-5546 or email DEQWPBPublicComments@mt.gov. All inquiries will need to reference the permit number (MTX000278), and include the following information: name, address, and phone number.

During the public comment period provided by the notice, DEQ will accept requests for a public hearing. A request for a public hearing must be in writing and must state the nature of the issue proposed to be raised in the hearing.

29. **Persons and/or Agencies Consulted or Referenced in the Preparation of this Analysis:**

40 CFR § 136. Guidelines Establishing Test Procedures for the Analysis of Pollutants. 2011.

Administrative Rules of Montana, Title 17, Chapter 30, Water Quality:

- Subchapter 2 - Water Quality Permit Fees.
- Subchapter 5 – Mixing Zones in Surface and Ground Water.
- Subchapter 7 – Nondegradation of Water Quality.
- Subchapter 10 – Montana Ground Water Pollution Control System.
- Subchapter 13 – Montana Pollutant Discharge Elimination System.

Bauder, J.W., et. al. 1993. Physiographic and land use characteristics associated with nitrate nitrogen in Montana ground water: *Journal of Environmental Quality*, v. 22, 99. 255-262.

Brady, N.C. and R. R. Weil. 2004. *Elements of the Nature and Properties of Soils* 2nd Edition. Prentice Hall. Upper Saddle River, NJ.

Department of Environmental Quality, 2013. Lower Gallatin Planning Area TMDLs & Framework Water Quality Improvement Plan. March 2013. Document Number M05-TMDL-02aF.

Department of Environmental Quality, Water Quality Circulars:

- Circular DEQ-2 – Design Standards for Wastewater Facilities.
- Circular DEQ-4 – Montana Standards for On-Site Subsurface Sewage Treatment Systems.
- Circular DEQ-7 – Montana Numeric Water Quality Standards, Required Reporting Values, and Trigger Values.

Driscoll, F.G. 1986. *Groundwater and Wells* 2nd Edition. Johnson Division. St. Paul, Minnesota.

Fetter, C.W., *Applied Hydrogeology*, 1994.

Freeze, R., and Cherry, J., *Groundwater*, 1979.

Greater Gallatin Watershed Council, 2014. Lower Gallatin Watershed Restoration Plan. Prepared for the Greater Gallatin Watershed Council by RESPEC, December 22, 2014.

Montana Bureau of Mines and Geology, 2007. Geologic Map of the Gallatin Valley, Bozeman 30' x 60' Quadrangle, Southwestern Montana. Vuke, et al. 2007. Open File No. 469, 2007.

Montana Bureau of Mines and Geology, 2007. Geologic Map of Montana. Vuke, et al., 2007. Geologic Map 62.

Montana Bureau of Mines and Geology, Ground-Water Information Center, GWIC state well database, Online at: <http://mbmggwic.mtech.edu>.

Montana Bureau of Mines and Geology, 2017. Principal Aquifers of Montana. Crowley et al., 2017. MBMG Hydrogeologic Map 11.

Montana Bureau of Mines and Geology, 2021. Standard Procedures and Guidelines for Field Activities, Open-File Report 746, p.96. Online at: <http://www.mbm.mtech.edu/mbmgcat/catmain.asp>

Montana Code Annotated, Title 75, Chapter 5, *Montana Water Quality Act*, 2011.

National Research Council, 1996. Use of Reclaimed Wastewater. Chapter 5, Public Health Concerns About Infectious Disease Agents, Use of Reclaimed Water and Sludge in Food Crop Production. Washington, DC: The National Academies Press. Online at: <https://doi.org/10.17226/5175>.

Ohio Environmental Protection Agency, 2007. Technical Guidance Manual for Ground Water Investigations. Online at: http://www.epa.ohio.gov/ddagw/gw_support.

U.S. Environmental Protection Agency, 2013. Effluent Limitation Guidelines. Online at: <http://water.epa.gov/scitech/wastetech/guide/>.

U.S. Environmental Protection Agency, 2018. Exposure Pathways to High-Consequence Pathogens in the Wastewater Collection and Treatment Systems. EPA/600/R-18/221. Office of Research and Development, Homeland Security Research Program, Cincinnati, OH 45268.

U.S. Environmental Protection Agency, 1993. Guidance Manual for Developing Best Management Practices. Online at: <http://www.epa.gov/npdes/pubs/owm0274.pdf>.

U.S. Environmental Protection Agency, 1991. Handbook of Suggested Practices for the Design and Installation of Ground-Water Monitoring Wells. EPA160014-891034. Office of Research and Development, Las Vegas, NV.

U.S. Environmental Protection Agency, 2013. Monitoring for Microbial Pathogens and Indicators. Tech Notes 9, National Nonpoint Source Monitoring Program. Developed for U.S. Environmental Protection Agency by Tetra Tech, Inc., Fairfax, VA.

U.S. Environmental Protection Agency, 2010. NPDES Permit Writers' Manual, 833-K-10-001.

U.S. Environmental Protection Agency, 2002b. Onsite Wastewater Treatment Systems Manual, 625/R-00/008, Office of Research and Development and Office of Water. Washington, DC.

U.S. Environmental Protection Agency. Protecting Underground Sources of Drinking Water from Underground Injection. Large-Capacity Cesspools. Online at: <https://www.epa.gov/uic/large-capacity-cesspools>.

U.S. Environmental Protection Agency, 1991. Suggested Operating Procedures for Aquifer Pumping Tests. EPA-540/S-93/503. Office of Research and Development, Washington, DC.

U.S. Environmental Protection Agency, 1991. Technical Support Document for Water Quality-Based Toxics Control (TSD). EPA-505/2-90-001. Office of Water, Washington, DC. Online at: www.epa.gov/npdes/pubs/owm0264.pdf

U.S. Environmental Protection Agency, 2009. Unified Guidance: Statistical Analysis of Ground Water Data. EPA-530/R-09-007. Office of Resource Conservation and Recovery, Washington, DC.

U.S. Geological Survey, 2016. Basic Ground Water Hydrology. Online at: <http://pubs.usgs.gov/wsp/2220/report.pdf>.

U.S. Geological Survey, 2016. Groundwater Basics. Online at: <http://water.usgs.gov/ogw/basics.html>.

U.S. Geological Survey, 1995. Geohydrologic Conditions and Land Use in the Gallatin Valley, Southwestern Montana, 1992-93. Slagle, S. 1995. Water-Resources Investigations Report 92-4023.

U.S. Geological Survey, 1960. Geology and Ground-Water Resources of the Gallatin Valley, Gallatin County, Montana. , Southwestern Montana. Hackett, O. M., et al., 1960. Geologic Survey Water-Supply Paper 1482.

U.S. Geological Survey, 2001. Ground-Water Resources of the Gallatin Local Water Quality District
Southwestern Montana. Geohydrologic Conditions and Land Use in the Gallating Valley, Southwestern Montana, 1992-93. Fact Sheet 007-01.

U.S. Geological Survey, 1996. Geographic, Geologic, and Hydrologic Summaries of Intermontane Basins of the Northern Rocky Mountains, Montana. Kendy, E. and R.E. Tresch. 1996. USGS Water-Resources Investigations Report: 96-4025.

Woessner, W., Troy, T., Ball, P. and D.C. DeBorde. 1998. Virus Transport in the Capture Zone of a Well Penetrating a High Hydraulic Conductivity Aquifer Containing a Preferential Flow Zone: Challenges to Natural Disinfection. In Proc. Source Water Protection Int., Dallas, TX. 28–30 Apr. 1998. National Water Research Inst., Fountain Valley, CA.

EA Checklist Prepared By:

Chris Boe

March 13, 2024

Approved By:

Tatiana Davila, Chief
Water Protection Bureau

DRAFT

Signature

Date