

DEPARTMENT OF ENVIRONMENTAL QUALITY
Environmental Assessment

Water Protection Bureau

Name of Project: Paradise Wastewater Treatment Facility

Type of Project: Proposed discharge of treated domestic wastewater to ground water under the Montana Ground Water Pollution Control System (MGWPCS) permit program.

Location of Project: SWNE Section 20, Township 19 North, Range 25 West
Latitude: 47.39492, Longitude: -114.805171

City/Town: Paradise

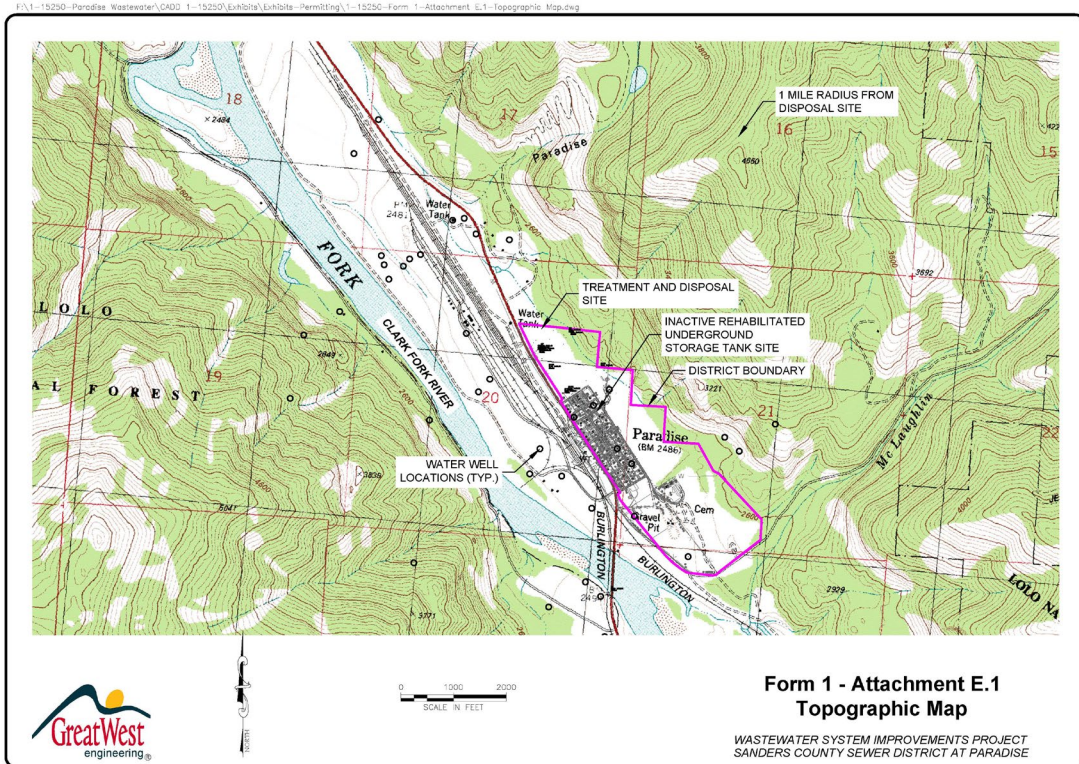
County: Sanders

Description of Project: A determination has been made by DEQ to issue a new Montana Ground Water Pollution Control System (MGWPCS) permit to Sanders County Sewer District at Paradise for the proposed Paradise Wastewater Treatment Facility. The facility will be a new centralized system that collects, treats, and disposes of community wastewaters. This system will replace existing on-site household systems that have either substandard treatment and/or disposal systems such as cesspools.

The Sewer District was established after the Town's public water supply wells were determined to be susceptible (very high rating) to contamination from the nearby existing household discharges. This permitting action will help mitigate this threat by abandoning the nearby household systems, and relocating the wastewater discharge further away and downgradient from the Town's water supply.

The centralized community system will have Level 2 wastewater treatment resulting in an overall net-reduction of nitrogen. In addition, the proposed subsurface wastewater infiltration system is designed to mitigate the transport of pathogenic bacteria resulting in a net-benefit to public health. The proposed MGWPCS permit authorizes the discharge of treated wastewater into Class I ground water.

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



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 fact sheet document 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 existing household systems are not currently authorized to discharge pollutants under the Montana Water Quality Act. 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>A geotechnical investigation was performed for the project on May 17, 2019. The investigation documented the conditions of the shallow subsurface and vadose zone. DEQ used the respective data in development of the respective discharge permit and engineering design review of the proposed facility. The investigation is provided within the associated fact sheet document.</p> <p>All future wastewater connections and pretreatment systems are required to undergo DEQ design review under the Sanitation in Subdivisions Act and/or the Public Water Supply Act.</p>
<p>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?</p>	<p>[Y]</p> <p>The proposed project is likely to have an overall net benefit to water quality of the aquifer. The proposed project is designed to minimize the current existential threat to the beneficial uses of the shallow aquifer underlying the Town. This includes protection of the Town's own public water supply wells which are highly susceptible to contamination.</p> <p>Most of the existing wastewater systems within the community are cesspools and other structures not considered by DEQ and EPA to be modern day systems that consist of: buried tankage, a treatment component, a distribution system, and a shallow soil absorption area. Due to the shallow ground water table underlying the town, the injection or transport of wastewater pathogens from the existing systems is likely. In addition, most of the current systems provide for little to no nitrogen treatment.</p> <p>The proposed project will construct a pressure-dosed subsurface wastewater infiltration system with a shallow soil absorption area. This will provide for natural treatment and mitigation of pathogen transport. The project will also establish treatment designed to remove 60% of nitrogen from the wastewater stream. As designed, DEQ estimates that the proposed system will overall result in a 51% reduction of discharged nitrogen when compared to the existing systems.</p>

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The Sanders County Sewer District at Paradise was created in 2011. The County has referred to the following as reasons for establishment of the District:

- Many of the wastewater generators are actively using substandard on-site wastewater disposal methods and therefore present a direct existential threat to public health and safety as well as the environment.
- Dangerous pathogens and contaminants exist in sewage being discharged just above or directly into the shallow ground water table.
- The 2005 DEQ Source Water Delineation and Assessment Report (PWS ID # MT0000385) for the Paradise public water supply (PWS) wells which states:

The Sanders County Water District PWS wells have a very high susceptibility to contamination from the area of high septic density located east and southeast of the wells. This area is the residential area of Paradise itself. Paradise would be very well served to consider the development of a centralized sewer collection system and wastewater treatment plant to carry off and remove septic waste from town.

Even though they may be causing detrimental effects to the aquifer, none of the current wastewater systems in Town have permit coverage under the Montana Water Quality Act. The proposed facility however will have proper permit coverage under a Montana Ground Water Pollution. With permit coverage, the permittee must show evidence of treatment capable of meeting the established effluent limitation which was derived from the most restrictive ground water quality standards. The permit will establish long term monitoring and reporting of wastewater and ground water in determining compliance and the health of the aquifer.

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:

<http://deq.mt.gov/Water/SurfaceWater/DesignApprovals>

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

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	<p>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:</p> <p>http://deq.mt.gov/water/StormWater/stormsystems</p>
<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>Best management practices are encouraged during construction of the replacement treatment system and drainfield to mitigate particulates produced. For additional information, the applicant is encouraged to contact the Montana DEQ Air Resources Management Bureau:</p> <p>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>[N]</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) in the vicinity of the proposed facility.</p> <p>(http://fieldguide.mt.gov/statusCodes.aspx#msrc:rank).</p> <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 proposed facility site.</p>

IMPACTS ON THE PHYSICAL ENVIRONMENT



Program of the Montana State Library's
 Natural Resource Information System
 operated by the University of Montana.

Legend

Model Icons	Habitat Icons	Range Icons	Num Obs
Suitable (native range)	Common	Introduced	Count of obs with
Optimal Suitability	Occasional	Year-round	Good predictor
Moderate Suitability		Summer	(n=1000m)
Low Suitability		Winter	* indicates
Suitable (introduced range)		Migratory	additional poor
		Historic	predictor obs
			(100m-10,000m)

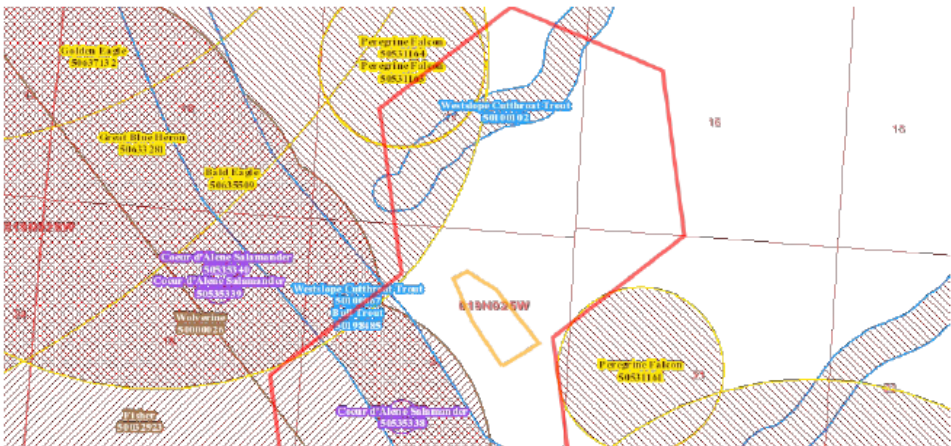
Latitude Longitude
 47.72773 -114.79202
 47.41155 -114.92174

Native Species

Summarized by: (Custom Area of Interest)

Filtered by:

MT_Status='Species of Concern'
 or **SRANK='S1', 'S2'**
 or **USFWS='LE', 'LT'**



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

[N] Based on a search of the Natural Heritage Database, there are no animal species listed as either S1 (at high risk), S2 (at risk), LE (listed endangered), or LT (listed threatened) in the immediate vicinity of the proposed facility.

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

The Clark Fork of the Columbia River is located 2,000 feet to the southwest of the proposed drainfields (sidegradient to the recorded baseline ground water flow direction); and, 1.75 miles to the northwest of the drainfields (downgradient to the recorded baseline ground water flow direction). The river is habitat for Bull Trout (*Salvelinus confluentus*) and Westslope Cutthroat Trout (*Oncorhynchus clarkii lewisi*). Both are listed as S2 and LT.

In 1988, an observance of the Coeur d'Alene Salamander (*Plethodon idahoensis*) occurred near the Clark Fork of the Columbia River approximately 2,200 feet to the southwest of the proposed facility. This species is listed as S2.

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	<p>The Natural Heritage site report map of the species is included. The orange area in the center of the map represents the location of the proposed facility site.</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>[Y]</p> <p>This project will result in a benefit to the health of the environment. As discussed in the Water Quality Section (#2), the proposed project will result in an approximate 51% reduction of nitrogen and provide for natural treatment and mitigation of pathogens in the Town's wastewaters.</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:</p> <p>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]</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>
<p>8. HISTORICAL AND ARCHAEOLOGICAL SITES: Are any historical, archaeological or paleontological resources present?</p>	<p>[N]</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>[Y]</p> <p>The wastewater treatment facility will be enclosed within buildings located on pre-disturbed lands previously used for agriculture practices. The proposed drainfields may be subsurface and largely not visible.</p> <p>The proposed facility will replace existing cesspool and other non-modern structures that are not properly covered and sealed.</p>

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<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>[Y] The construction of the facility may result in additional lots being built in or around the current Town. This may result in a greater local demand for water.</p> <p>The regional shallow aquifer is the source for most of the water wells in the area. The aquifer is primarily feed by the nearby Clark Fork of the Columbia River. The aquifer is not known to be a limited resource. Most waters sourced for the community will be returned directly back into the aquifer via shallow discharge structures. The proposed system will increase the beneficial uses of the aquifer as a resource by decreasing nitrogen loading and treating/mitigating the transport of wastewater pathogens.</p>
<p>11. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES: Are there other activities nearby that will affect the project?</p>	<p>[N] There is a nearby Land Treatment Unit established by DEQ under the Montana Hazardous Waste Act and the Resource Conservation and Recovery Act (RCRA). The unit encompasses land that was once historically used for creosote treatment of railroad ties. This unit is currently undergoing rehabilitation from historical contaminates. The unit is sidegradient of the community’s proposed facility. https://deq.mt.gov/Land/hazwaste/RCRA/rcraBNSFfactsht</p>

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<p>12. HUMAN HEALTH AND SAFETY: Will this project add to/or reduce health and safety risks in the area?</p>	<p>[Y] The proposed project will result in a direct improvement in the health and safety of the town’s residents and visitors. The proposed community system will result in the abandonment of the Town’s current cesspools and other uncontrolled wastewater discharge structures. The Town’s current methods of handling and disposal of human waste is a direct existential threat to both the public and environmental health of the community.</p> <p>Both Sanders County and community residents recognized these hazards in 2011 when they created the Sanders County Sewer District at Paradise. As discussed in the Water Quality Section (#2), the County has referred to the following as reasons for establishment of the District:</p> <ul style="list-style-type: none"> • Many of the wastewater generators are actively using substandard on-site wastewater disposal methods and
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IMPACTS ON THE HUMAN ENVIRONMENT

	<p>therefore present a direct existential threat to public health and safety as well as the environment.</p> <ul style="list-style-type: none"> • Dangerous pathogens and contaminants exist in sewage being discharged just above or into the shallow ground water table. • The 2005 DEQ Source Water Delineation and Assessment Report (PWS ID # MT0000385) for the Paradise public water supply (PWS) wells which states: <i>The Sanders County Water District PWS wells have a very high susceptibility to contamination from the area of high septic density located east and southeast of the wells. This area is the residential area of Paradise itself. Paradise would be very well served to consider the development of a centralized sewer collection system and wastewater treatment plant to carry off and remove septic waste from town.</i>
<p>13. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION: Will the project add to or alter these activities?</p>	<p>[Y] The facility will be built on land that could be used for agricultural purposes.</p>
<p>14. QUANTITY AND DISTRIBUTION OF EMPLOYMENT: Will the project create, move or eliminate jobs? If so, estimated number.</p>	<p>[Y] The construction of a new wastewater collection, treatment, and disposal system may result in the creation of several temporary jobs for construction. The operation and maintenance of the wastewater treatment system may also result in permanent jobs.</p>
<p>15. LOCAL AND STATE TAX BASE AND TAX REVENUES: Will the project create or eliminate tax revenue?</p>	<p>[Y] The project may change the land use for the proposed area of the facility.</p>
<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>	<p>[N] Traffic may increase in town during the construction of the wastewater collection and distribution systems. Once initial construction is complete, there may be minimal traffic both at the facility and in town for the operation and maintenance of the system. Highway 200 may be the direct access point for the proposed treatment and disposal system. The Montana Department of Transportation may regulate access. https://www.mdt.mt.gov/research/toolkit/m1/pptools/ds/am.shtml</p>

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17. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS: Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?	[Y] The construction and operation of the proposed facility is a vital tool in achieving the local sewer district's goal of abandoning cesspools and other unauthorized discharge structures (see Section #2 and #12). https://co.sanders.mt.us/departments/boards-committees/
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?	[N]
19. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING: Will the project add to the population and require additional housing?	[Y] The project may lead to additional building lots in and around the existing town.
20. SOCIAL STRUCTURES AND MORES: Is some disruption of native or traditional lifestyles or communities possible?	[N]
21. CULTURAL UNIQUENESS AND DIVERSITY: Will the action cause a shift in some unique quality of the area?	[N]
22. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:	[N]
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 financial assistance, and the exercise of the power of eminent domain are not within this category.) If not, no further analysis is required.	[N] Please see the private property impact discussion located below in #23.b. and c.
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] The aquifer underlying the town and the proposed community system flows under a private parcel that is owned by Montana Rail Link (see the highlighted blue area of the Montana Cadastral map below). This property may be currently leased to the Burlington Northern Santa Fe (BNSF) railroad. The juxtaposition of this property is indicative that it is a right-of-way for the nearby and active BNSF mainline. The subsurface aquifer is not privately owned but rather a Water of the State.

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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] The proposed project will have a net-benefit impact to the aquifer, and any future developments will benefit from the nearby Sewer District’s community wastewater and water systems.

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 community wastewater system. Without the creation of a centralized system, the sewer districts goals of abandonment of the existing cesspools is in danger. This will lead to the continued operation of these and other unauthorized discharge structures that are a direct existential threat to public health and the environment. This action may result in the continued discharge of pathogenic bacteria and nitrogen in exceedance of water quality standards, which is prohibited under the Montana Water Quality Act.
- B. Approval with Modification: An alternative would be to require the shutdown of these unauthorized cesspool wastewater systems as they are likely exceeding water quality standards. This action for an existing town may not be feasible as their wastewater needs to be actively managed. The community has approved a sewer district which

goals include construction of a centralized wastewater system and abandonment of the existing cesspools. This will result in the elimination of the on-site dischargers. DEQ does not believe any necessary modifications are needed to grant approval of this preferred action. However, and in the interim, DEQ may establish enforcement actions or administrative orders on consent for the current cesspool sources as deemed necessary.

25. **Cumulative Effects:**

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. The preferred and current action helps mitigate past actions that have led to improper treatment and disposal of human wastes. The current action results in a net-benefit to the environment and human health as it will eliminate the existing and non-permitted sources of pollution. The current action also results in a net-benefit to the human environment by eliminating unsecured wastewater structures and their potential pathogen pathways. 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. This factors in the cumulative impacts of all existing upgradient discharges in the receiving aquifer.

Testing of the aquifer was completed to determine the existing impacts of all upgradient discharge sources. The resulting ambient nitrogen levels were used to determine the assimilative capacity to ensure limitations were achieved that factors in these existing sources.

The proposed community system is projected to reduce the load of nitrogen being discharged from the Town's existing household systems by 51%. This will result in the deconstruction and abandonment of the existing systems that will ultimately improve the overall conditions of the 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 for DEQ to

continually monitor 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 continually used by DEQ to update 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, continual analysis and updates of permit conditions, and public notice and comment procedures is a benefit to having a community system that is covered under a discharge 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 for the proposed community system. This action is preferred since the permit provides a regulatory mechanism for protecting ground water quality by applying limitations and long-term monitoring requirements. The preferred action allows construction of a community wastewater system that will result in the abandonment of unauthorized and likely polluting household systems. The modern community system will result in the reduction of nitrogen discharged, and the treatment and mitigation of pathogenic bacteria.

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. The project will result in a net-benefit to the receiving aquifer.

28. **Public Involvement:**

Legal notice information for water quality discharge permits are 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 February 25, 2020. 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 (MTX000261), 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.

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

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.

Department of Environmental Quality, Source Water Delineation and Assessment Report, PWS ID #MT0000385. February 15, 2005.

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.

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

Lonn, J., et al. 2007. Geologic Map of the Plains Quadrangle, Western Montana. Montana Bureau of Mines and Geology. Open-File Report 554.

Montana Bureau of Mines and Geology, Ground-Water Information Center, Retrieved October 2020, from the GWIC database, <http://mbmaggwic.mtech.edu>.

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.
<https://doi.org/10.17226/5175>.

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

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

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

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, 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. Protecting Underground Sources of Drinking Water from Underground Injection. Large-Capacity Cesspools. <https://www.epa.gov/uic/large-capacity-cesspools>.

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, 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. 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, Basic Ground Water Hydrology, <http://pubs.usgs.gov/wsp/2220/report.pdf>, 2016.

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

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.

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

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