



FINAL ENVIRONMENTAL ASSESSMENT
for the .
Pedersen & Company Pumping, Inc.
Land Application Site
Kalispell, Montana

Solid Waste Section
PO Box 200901
Helena, MT 59620-0901

March 5, 2021

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ACRONYMS

PCP – Pedersen & Company Pumping, Inc.

ARM – Administrative Rules of Montana

AAR– Annual Application Rate

Draft EA – draft version of the environmental assessment before public comment

DEQ – Montana Department of Environmental Quality

DNRC – Montana Department of Natural Resources and Conservation

EA – Environmental Assessment

EIS – Environmental Impact Statement

Final EA – Final version of an environmental assessment after public comment

GWIC – Ground Water Information Center

MBMG – Montana Bureau of Mines and Geology

MCA – Montana Code Annotated

MEPA – Montana Environmental Policy Act

MNHP – Montana Natural Heritage Program

O&M – Operation and Maintenance

Proposed Action – Approving a new septage land application site

Septic Rules– ARM Title 17, chapter 50, subchapter 8, “Cesspool, Septic Tank, and Privy Cleaners”

SDLA – “Septic Disposal Licensure Act”, Title 75, chapter 10, part 12, MCA

Site – Approximately 127 acres of property located approximately six miles northwest of Kalispell in Flathead County, Montana, south of Church Drive at 2410 Spring Creek Road.

SWL – Static Water Levels

USFWS – United States Fish and Wildlife Service

USGS – United States Geological Survey

1. NEED FOR PROPOSED ACTION

1.1 SUMMARY

This final version of an environmental assessment (Final EA) was prepared for the septage land application site proposed by Pedersen & Company Pumping, Inc. (PCP), in accordance with the Montana Environmental Policy Act (MEPA). On October 28, 2019, the Department of Environmental Quality (DEQ) received an application from PCP for licensing a new septage land application site (Proposed Action). PCP proposes the land application of septage, graywater, portable toilet waste, and grease trap waste on approximately 127 acres of property located approximately six miles northwest of Kalispell in Flathead County, Montana, south of Church Drive at 2410 W. Spring Creek Road (Site, **Figure 1**).

1.2 BACKGROUND

In September 2014, PCP obtained a license from DEQ to pump and land apply septage in Montana. PCP is currently approved to land apply septage on other land application sites in Flathead County. PCP is proposing to add the Site to their license. The Site is on private property and is currently farmed for wheat and canola.

This application was signature certified by Flathead County prior to DEQ's environmental review. According to the Administrative Rules of Montana (ARM), DEQ cannot review a new site disposal application unless it has been previously certified by the local county health officer or designated representative.

Septage is the liquid and solid material removed from a septic tank, cesspool, portable toilet, or similar treatment works that only receive domestic waste and wastewater collected from household or commercial operations. Septage is different than sewage, which is wastewater and excrement that has not been treated and is conveyed in sewer systems. Septage is what Montana's septic tank pumpers land apply.

As Montana's population and seasonal visitation grow, the demand for disposal of septage increases. Wastewater treatment plants can accept only limited amounts of septage from pumpers. Land application by pumpers allows for safe disposal of septage without overloading Montana's wastewater treatment plants. Land application also reduces Montana farmers' reliance on chemical fertilizers to improve soil. PCP's application was submitted to DEQ under the laws and rules for licensing septic pumpers, demonstrating their intent to meet the minimum requirements for the pumping and land application of septage.

When properly managed, land application of septage is a beneficial resource, providing economic and environmental benefits with no adverse public health effects. A licensed land application program recognizes and employs practices that maximize those benefits. Septage does not include prohibited material (e.g., garbage or tampons) removed from a septic tank or similar treatment works by pumping.

1.3 PURPOSE AND NEED

DEQ's purpose and need in conducting the environmental review is to act upon PCP's application by evaluating potential impacts of the Proposed Action. If DEQ approves PCP's application, DEQ will add the Site to their existing license to pump and land apply septage in Montana. DEQ's decision to approve or deny the application depends upon the consistency of the application with the following:

1. Septage Disposal Licensure Act (SDLA);
2. Administrative Rules of Montana (ARM) Title 17, chapter 50, subchapter 8, "Cesspool, Septic Tank, and Privy Cleaners" (Septic Rules);
3. the Clean Air Act of Montana; and
4. Montana Water Quality Act.

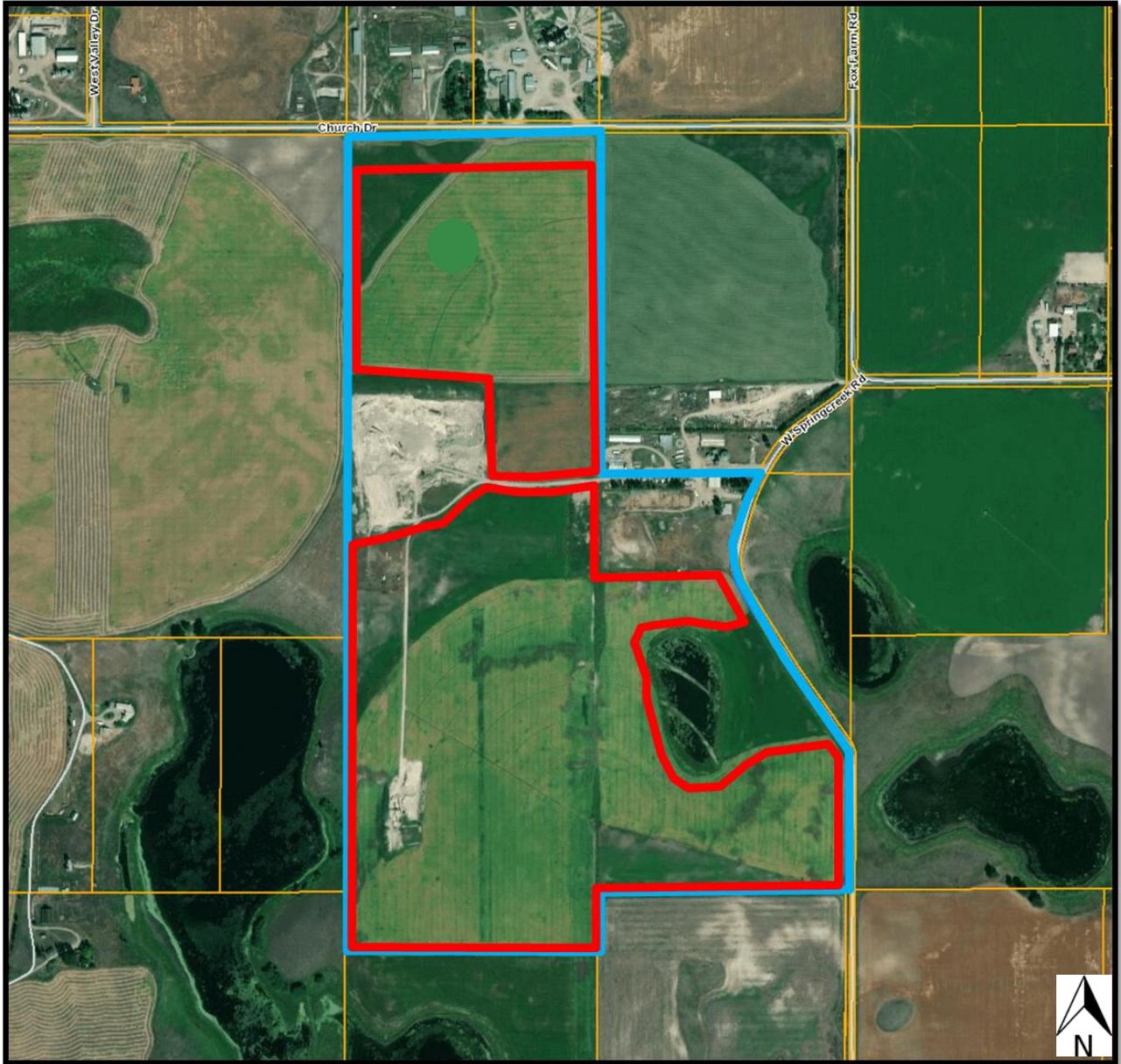
1.4 LOCATION DESCRIPTION AND STUDY AREA

The Site is located approximately six miles northwest of Kalispell at 2410 W. Spring Creek Road (**Figure 1**).

The Site is located in the NE $\frac{1}{4}$ and N $\frac{1}{2}$ of the SE $\frac{1}{4}$ of Section 15, Township 29 North, Range 22 West in Flathead County, Montana (**Figure 1**).

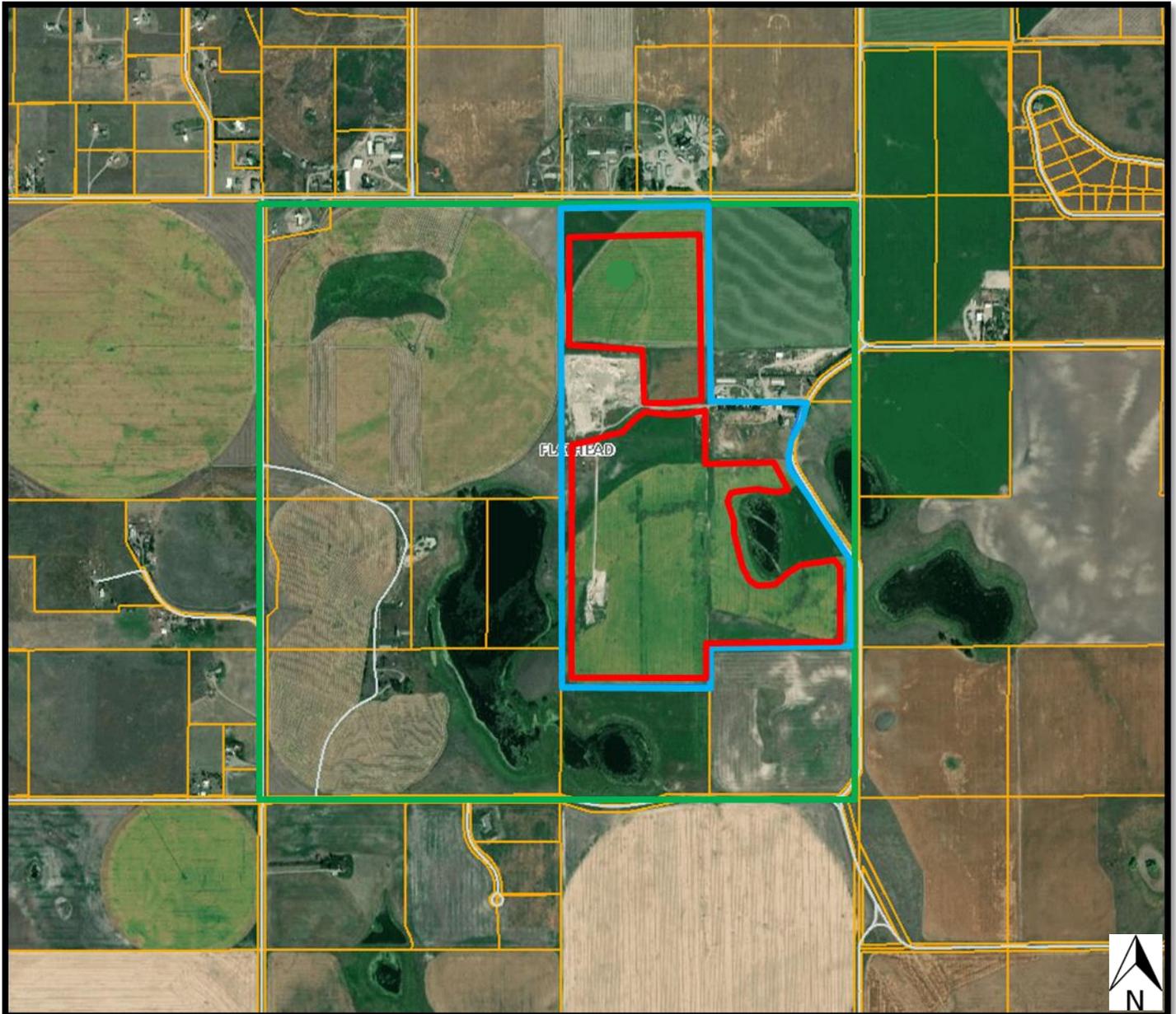
A private road will be used to access the Site. The study area perimeter (not shown) extends beyond the boundaries of the Site (**Figure 2**).

Figure 1: Land Application Site
(approximate Site in red; Krueger property in blue; surrounding property boundaries in orange)



Source: Montana Cadastral (NOT TO SCALE)

Figure 2: Study Area
(approximate Site in red; Section 15 in green; Krueger property in blue)



Source: Montana Cadastral (**NOT TO SCALE**)

1.5 COMPLIANCE WITH MEPA

Under MEPA, Montana agencies are required to prepare an environmental review for state actions that may have an impact on the human environment. Licensure of the Proposed Action is considered a state action that may have an impact on the human environment and, therefore, DEQ must prepare an environmental review. This EA analyzes the Proposed Action and reasonable alternatives to the Proposed Action, and will disclose potential impacts that may result from such actions. DEQ will determine the need for additional environmental reviews based on consideration of the criteria set forth in ARM 17.4.608.

1.6 PUBLIC INVOLVEMENT

DEQ is releasing this EA to present its initial findings described in Section 4. A 30-day public comment period began on January 20, 2021, upon release of the draft version of this environmental assessment (Draft EA). The public comment period ended on February 19, 2021. *No comments were received.* A notice of availability for the Draft EA was sent to adjacent landowners and other interested parties. A public notice was published in the Flathead Beacon and a hard copy was sent to ImagineIF Library in Kalispell. The public notice for the Draft EA, Draft EA, and Final EA may be viewed at: <https://deq.mt.gov/public/ea/SepticPumpers>.

2. DESCRIPTION OF ALTERNATIVES

This Section describes the Proposed Action and No Action alternatives. MEPA requires the evaluation of reasonable alternatives to the Proposed Action. Reasonable alternatives are achievable under current technology and are economically feasible, as determined by the economic viability of similar projects with similar goals, conditions, and physical locations. Reasonable alternatives are determined without regard to the economic strength of the applicant, but may not include an alternative facility or an alternative to the proposed project itself.

According to ARM 17.4.609(3)(f), an environmental assessment (EA) must include reasonable alternatives whenever reasonable and prudent. DEQ has not considered any other alternatives to the Proposed Action because PCP's application and operation and maintenance comply with the applicable laws and rules pertaining to land application of septage in Montana.

2.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, the Site would not be approved by DEQ. Therefore, the Site could not be used by PCP, and disposal of septage would have to occur at another approved location or treatment works.

2.2 PROPOSED ACTION

PCP is proposing the land application of septage, graywater, portable toilet waste, and grease trap waste on the Site, described in *Section 1.1*.

2.2.1 LAND APPLICATION SITE OPERATIONS

The operational and setback requirements for land application of septage at this Site are provided in **Tables 1** and **2**:

Table 1: Land Application Operational Requirements

ARM Reference	Specific Restrictions
17.50.809(10)	All non-putrescible litter must be removed from the land application site within 6 hours of application.
17.50.809(12)	Pumpings may not be applied at a rate greater than the crop's annual application rate (AAR) for nitrogen.

17.50.810(1)	Pumpings may not be applied to flooded, frozen, or snow-covered ground if the pumpings may enter state waters.
17.50.811(3)	Pumpings may be applied only if the person first performs one of the following vector attraction and pathogen reduction methods: <ul style="list-style-type: none"> • injection below the land surface so no significant amount remains on the land surface within one-hour of injection; • incorporation into the soil surface's plow layer within 6 hours of application; • addition of alkali material so that the pH is raised to and remains at 12 or higher for a period of at least 30 minutes; or, • management as required by 17.50.810 when the ground is frozen

Table 2: Land Application Site Setback Requirements

ARM Reference	Specific Restrictions
17.50.809(1)	Pumpings may not be applied to land within 500 feet of any occupied or inhabitable building.
17.50.809(2)	Pumpings may not be applied to land within 150 feet of any state surface water, including ephemeral or intermittent drainages and wetlands.
17.50.809(3)	Pumpings may not be applied to land within 100 feet of any state, federal, county, or city-maintained highway or road.
17.50.809(4)	Pumpings may not be applied to land within 100 feet of a drinking water supply source.
17.50.809(6)	Pumpings may not be applied to land with slopes greater than 6%.
17.50.809(8)	Pumpings may not be applied to land where seasonally high groundwater is 6 feet or less below ground surface.

Land application will be limited to areas approved by DEQ. Areas within the Site will not be used until their boundaries have been marked and approved by DEQ or the local county sanitarian. DEQ may also determine how and when the areas may be utilized based on potential runoff, precipitation, and frozen ground conditions.

PCP will be required to log the type and amount of septage land applied annually as well as the dates applied. Disposal logs will be submitted to DEQ semiannually. DEQ will verify the Site's annual application rate (AAR) and may periodically monitor the soils for adherence to the proposed maximum AAR.

2.2.2 EQUIPMENT AVAILABLE AND PUMPER TRUCK REQUIREMENTS

PCP has the following equipment available for land application activities:

1. 1997 Mack truck with 3,400-gallon tank
2. 1998 Kenworth truck with 3,400-gallon tank
3. 1984 International truck with 3,400-gallon tank

4. 1974 John Deere 7520

The Septic Tank, Cesspool, and Privy Cleaner Vehicle Inspection Form was created by DEQ to guide the vehicle inspection. The county health officer's (or designated representative's) signature on the vehicle inspection form certifies that the vehicle is equipped with the necessary equipment to adequately screen and spread septage while land applying. The following questions are on the form to verify compliance with the Septic Rules:

1. Does the vehicle show signs of leakage?
2. Is the vehicle equipped with the proper spreading equipment?
3. Is the spreading equipment mounted on the vehicle or separate?
4. If required to screen septage before land applying, is the vehicle, or site, equipped with the proper screening equipment?
5. Is the spreading equipment approved for use?
6. Is the screening equipment approved for use?
7. Make/Model of Vehicle
8. Tank Size

PCP will be required to submit this form for each pump or vac truck to DEQ prior to land application.

2.2.3 AMOUNT AND EXTENT OF SEPTAGE APPLICATION

Land application must not exceed the AAR (gallons per acre per year) based on:

1. The nitrogen content of the waste applied at the Site; and
2. The crop nitrogen yield for the crop or other vegetation at the Site.

The AAR for portable toilet and vault type waste is calculated as follows:

$$\text{AAR} = \frac{\text{minimum crop nitrogen requirement (lbs./acre/year)}}{0.0052 \text{ (lbs./gallon)}}$$

Because septage, graywater, portable toilet waste, and grease trap waste (or mixtures thereof) will be land applied by PCP, the AAR is adjusted for the portable toilet and vault type waste which has the highest nitrogen concentrations.

The Site grows canola and wheat. Canola has a lower crop nitrogen requirement (130 pounds per acre per year) than wheat, so it is used to calculate a conservative AAR for the Site. The resulting AAR for septage is 25,000 gallons per acre per year, which is equal to approximately 0.92 inches of liquid applied annually per acre. For comparison, the average annual precipitation in the Kalispell area is 17 inches per year.

Land application of septage at the AAR is alternated annually between separate parcels to allow for agronomic crop uptake of the applied nitrogen. Plants will utilize nitrogen available from the septage if the volume of septage applied each year does not exceed the AAR. When land application is rotated, one parcel is used every year. For example, if 100 acres are proposed for land application, 50 acres would be used one year and the other 50 acres would be used similarly the next year. In this case, PCP will designate two equal areas of approximately 64 acres and rotate parcels each year. The residual soil nutrient levels at each parcel will vary over time. DEQ may periodically monitor the soil for nutrient content to determine compliance with the AAR.

The Krueger property could annually treat the proposed 1,065,000 gallons of waste without exceeding the AAR on 64 acres each year.

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES BY RESOURCE

3.1 LOCATION DESCRIPTION AND STUDY AREA

The location description and study area are described in *Section 1.1* of this Final EA. The study area includes land and resources in and around the Site. The affected environment is described in each subsequent section depending on the resource.

3.2 IMPACTS

Table 3 shows a summary of the impacts of the No Action Alternative and the Proposed Action.

Table 3: Impacts

Resource	Alternative 1 – No Action	Alternative 2 – Proposed Action
Wildlife and Habitats	Minor impact.	Minor impact. Wildlife tend to avoid land application sites due to human scent and activities and will relocate (See Section 3.2.1)
Soils and Vegetation	Minor impact.	Minor beneficial impact. The quality of soils and vegetations will be enhanced by the Proposed Action (See Section 3.2.2)
Geology	No impact	No impacts. (See Section 3.2.3)

Hydrology and Hydrogeology	No impact.	No impacts. (See Section 3.2.4)
Aesthetics and Noise	Minor impact.	Minor impact. Land application activities resemble agricultural activities occurring in the surrounding area. Odor will largely be controlled by daily tilling. (See Section 3.2.5)
Human Health & Safety	No impact.	No impacts. (See Section 3.2.6)
Industrial, Commercial, and Industrial Activities	No impact.	No impacts. (See Section 3.2.7)
Cultural Uniqueness and Diversity	No impact.	No impacts. (See Section 3.2.8)
Demand for Government Services	Minor impact.	Minor impact. Flathead County sanitarian and DEQ will conduct periodic inspections of the Site. (See Section 3.2.9)
Socioeconomics	No impact.	No impacts. (See Section 3.2.10)
Traffic	Minor impact.	Minor impact. PCP will access the Site via Spring Creek Road, which currently supports traffic to homes and businesses in the area. (See Section 3.2.11)

3.2.1 WILDLIFE AND HABITATS

Impacts to wildlife and habitats from the Proposed Action will be minor.

Transient wildlife tends to avoid land application sites due to human scent and activities. Montana Fish, Wildlife & Parks (FWP) manages the overall wildlife populations of the region. Species of fish and amphibians are not included on the following lists because land application activities will not impact nearby surface waters based on STP requirements for minimum setbacks, maximum slopes, and elimination of runoff (see Sections 2.2.1 and 3.2.4.1).

The applicant does not plan to expand the Site beyond the boundaries described in the application. Therefore, no habitats outside the land application area will be impacted. Adjacent cultivated fields limit the habitat suitability for species of concern immediately surrounding the Site. Numerous residential and commercial developments throughout the Flathead Valley further reduce the attraction of free-ranging animal species to the Site. Beyond the immediate vicinity of the Site, an adequate amount of habitat is available nearby to accommodate any species forced to relocate due to the Proposed Action.

Impacts to wildlife and habitats from the Proposed Action will be minor.

3.2.1.1 THREATENED AND ENDANGERED SPECIES

U.S. Fish & Wildlife Service’s (USFWS) online databases were used to identify plant and animal species at the Site and study area (USFWS, 2020). The USFWS species and status listings for Flathead County, Montana, are shown in **Table 4:**

Table 4: Federally Established Species List

Scientific Name	Common Name	Status
<i>Canis lupus</i>	Gray wolf	Recovery
<i>Haliaeetus leucocephalus</i>	Bald eagle	Recovery
<i>Coccyzus americanus</i>	Yellow-billed cuckoo	Threatened
<i>Pinus albicaulis</i>	Whitebark pine	Candidate
<i>Silene spaldingii</i>	Spalding’s catchfly	Threatened
<i>Lednia tumana</i>	Meltwater lednian stonefly	Threatened
<i>Ursus arctos horribilis</i>	Grizzly bear	Threatened
<i>Lynx canadensis</i>	Canada lynx	Threatened
<i>Gulo gulo luscus</i>	North American wolverine	Threatened (proposed)

The Site does not provide the habitat necessary to independently sustain the species listed above. Nearby tracts of land in the Kootenai National Forest provide excellent habitat for listed mammals, birds, and the whitebark pine. Riparian areas surrounding nearby kettle lakes and along the Stillwater River provide additional habitat supporting listed birds and the stonefly species. The Proposed Action is not anticipated to impact these species.

3.2.1.2 SPECIES OF CONCERN

Designation as a species of concern is not a statutory or regulatory classification. Instead, these designations provide a basis for resource managers and regulators to make proactive decisions regarding species conservation.

The Montana Natural Heritage Program’s (MNHP) online databases were accessed for listed species (MNHP, 2020). The MNHP species and status listing for Township 29 North, Range 22 West is shown in **Table 5**.

Table 5: Montana Recognized Species List

Scientific Name	Common Name	Status	GRank/SRank
<i>Myotis lucifugus</i>	Little brown myotis	Species of concern	G3/S3
<i>Ursus arctos horribilis</i>	Grizzly bear	Species of concern	G4/S2
<i>Chilodrias niger</i>	Black tern	Species of concern	G4/S3
<i>Melanerpes lewis</i>	Lewis’s woodpecker	Species of concern	G4/S2

The MNHP uses a standardized ranking system developed by The Nature Conservancy and maintained by NatureServe. Each species is assigned two ranks; one represents its global status (GRank), and one represents its status in the state (SRank). The scale is 1-5; 5 means common, widespread, and abundant; 1 means at high risk. Species with a GRank 5 are not included in **Table 5**. The Site does not provide the habitat necessary to independently sustain the listed species.

The Site is not located within a Core Area or any other recognized habitat level for sage grouse, as designated by the Department of Natural Resources and Conservation (DNRC).

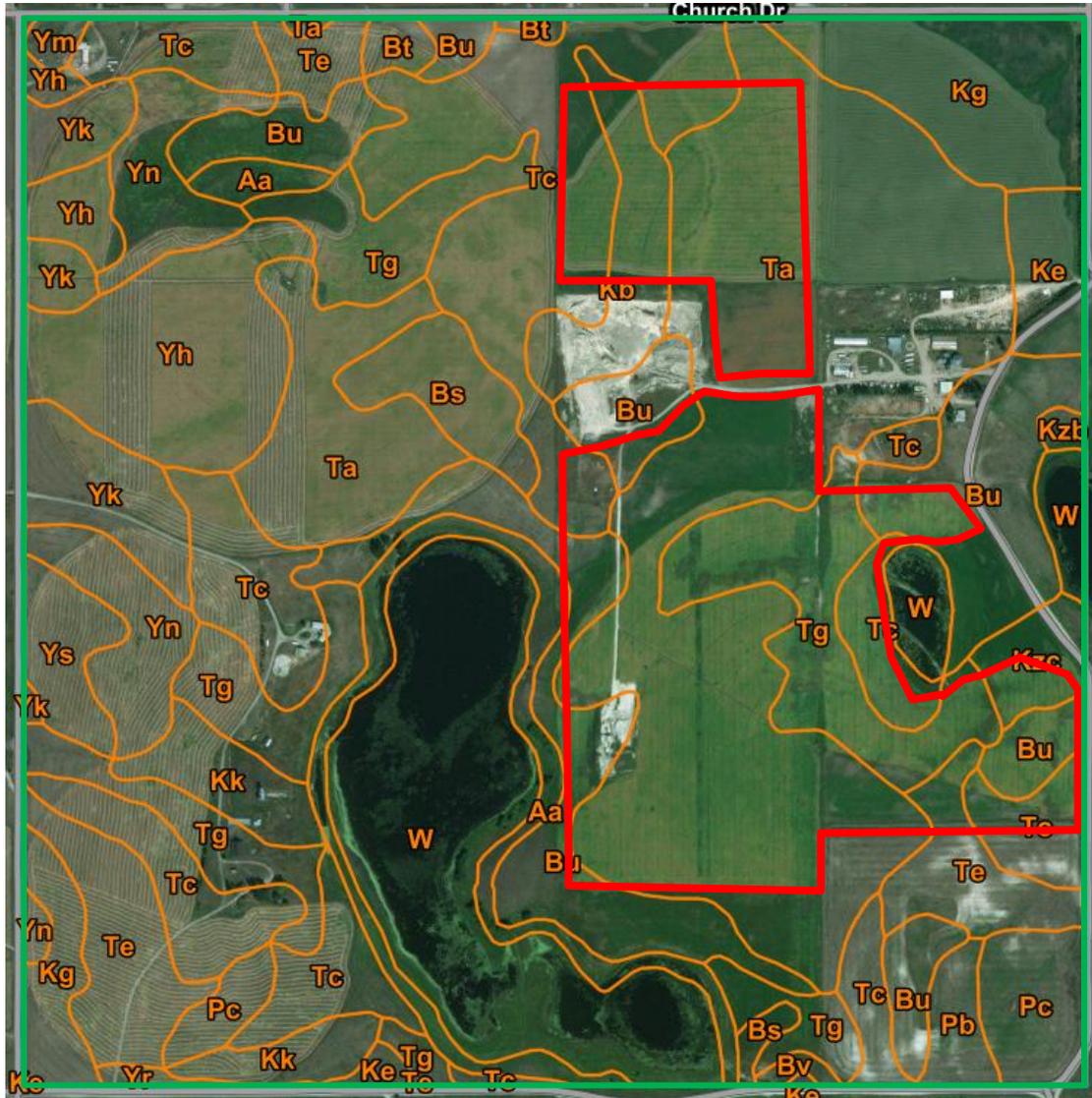
The Proposed Action is not anticipated to impact these species of concern.

3.2.2 SOILS AND VEGETATION

The impact of the Proposed Action to soils and vegetation will be minor.

The US Department of Agriculture (USDA) Natural Resources Conservation Service’s (NRCS) National Cooperative Soil Survey databases were accessed for information about the shallow subsurface soils at the Site and surrounding area (**Figure 3** and **Table 6**).

Figure 3: Soil Resource Map
(Soil unit with delineation in orange, approximate Site in red, Section 15 in green)



Source: USDA, Natural Resources Conservation Service (NRCS), 2020 (NOT TO SCALE)

Table 6: USDA-NRCS, Custom Soil Resource Report, 2020

Map Unit Symbol	Map Unit Name	Soil Rating
<i>Aa</i>	<i>Alluvial land, poorly drained</i>	<i>Very limited</i>
<i>Bu</i>	<i>Blanchard very fine sandy loam, 12 to 20 percent slopes</i>	<i>Very limited</i>
<i>Kb</i>	<i>Kalispell gravelly loam, moderately deep over gravel, 3 to 7 percent slopes</i>	<i>Not limited</i>
<i>Kzc</i>	<i>Kalispell-Tuffit silt loams, 7 to 20 percent slopes</i>	<i>Somewhat limited</i>
<i>Ta</i>	<i>Tally, Blanchard, and Flathead soils, 0 to 3 percent slopes</i>	<i>Very limited</i>
<i>Tc</i>	<i>Tally, Blanchard, and Flathead soils, 3 to 7 percent slopes</i>	<i>Very limited</i>
<i>Te</i>	<i>Tally, Blanchard, and Flathead soils, 7 to 12 percent slopes</i>	<i>Very limited</i>
<i>Tg</i>	<i>Tally, Blanchard, and Flathead soils, 12 to 20 percent slopes</i>	<i>Very limited</i>

The predominant soil types where the land application will occur are Tally, Blanchard, and Flathead soils (Ta, Tc, Te, and Tg), Blanchard very fine sandy loams (Bu and Bt), and Kalispell-Tuffit silt loams (Kzc). The ratings shown in **Table 6** are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the septage is applied, and the method by which the septage is applied. "Not limited" indicates that a soil type has characteristics which are favorable for the specified use. Good performance and low maintenance can be expected. "Somewhat limited" indicates that a soil type has characteristics which are moderately favorable for the specified use. "Very limited" indicates that a soil type has one or more characteristics which are unfavorable for the specified use (NRCS, 2020).

The Site is currently used to raise canola and wheat crops. Adjacent agricultural fields are used similarly. The MNHP online databases were also accessed for listed plant species (MNHP, 2020). No species were listed by MNHP for the Township 29 North, Range 22 West study area.

Septage contains nutrients that can reduce the reliance of the farmer on chemical fertilizers to improve soil. The Proposed Action will add valuable moisture, organic matter, and nutrients to the topsoil, improving the Site's soil tilth and crop. The quantity and quality of soils and vegetation at the Site will be enhanced by the Proposed Action.

DEQ analyzed how the land application of septage will impact the Site's environment given the weather of the region. The weather in the area is typical of northwestern Montana, classified as warm summer continental climate. The average pan evaporation rate is listed as 29.72 inches per year. The hot months of June, July, and August coincide with the average Montana septic tank pumper's busy season. Dry

soils, vegetation, and crops in this semi-arid zone will benefit from the added moisture.

3.2.3 GEOLOGY

No geological impacts are anticipated to result from the Proposed Action.

Periodic tilling of the surface topsoil to incorporate septage will not significantly affect the thickness or character of deeper glacial till found on the Site. Septage land application operations will not involve excavation.

The analysis area for geology is the Site and the surrounding area (beyond a mile). Some discussion of regional geology is provided. The analysis methods include reviewing geology field guidebooks, current United States Geological Survey (USGS) and Montana Bureau of Mines and Geology (MBMG) publications, and associated online maps (*e.g.*, Harrison et al, 1992) accessed via the MBMG ArcGIS portal.

The geology of northwest Montana is characterized by extensive and thick sequences of ancient layered sedimentary rocks locally interrupted by recently faulted graben valleys. These highly folded and thrust-faulted ancient basement rocks are exposed west of the Site in the Purcell Mountains. The Site lies near the western margin of the broad Flathead Valley and is flanked by scattered outcrops of uplifted ancient Precambrian Belt Supergroup argillites (metamorphosed mudstones). These mudstones initially formed in a thick trough (rift) of deeply buried marine rocks during the Middle Proterozoic, almost 2 billion years ago. Much later they were tightly folded and cut by a complex network of faults during the Late Cretaceous. At that time, the Laramide overthrust belt formed the northern Rocky Mountains as slabs of crust were pushed up and northeastward from subduction farther to the west. A network of normal faults and several large thrust faults extend northwest to southeast, as shown by exposures in scattered outcrops surrounding the Site in **Figure 4**. After this convergence, during mountain building of the ancestral Rocky Mountains, a much younger period of widespread Cenozoic extension formed large graben valleys throughout western Montana. These deep valleys, like Flathead Valley, were then filled, and the mountains partially buried, by sediments shed from the eroding mountains during uplift and seismicity that continue today. The sediments filling these valleys are the host for deeper groundwater aquifers.

Pleistocene age glaciation, starting 2.6 million years ago, was the primary erosional and depositional agent responsible for shaping the physiography of northwest Montana as we see it today. Four major glacial advances affected Montana during the Pleistocene epochs, with ice covering the northern third of the state during the maximum extent of the glacial advance (Alden, 1953). The Site lies within glacial features of the Rocky Mountain Trench extending far northward to the ancient ice sheets of Canada. Many episodic advances and retreats of continental ice lobes followed the valley with the longest advance reaching Polson. Glacial Lake Missoula was periodically filled by the epic outwash and lakebed deposit sequences released

during cyclic glacial retreat events. Flathead Lake remains from the last of these climatic cycles, all of which appear to coincide with changes in the Earth's rotational dynamics during the Pleistocene.

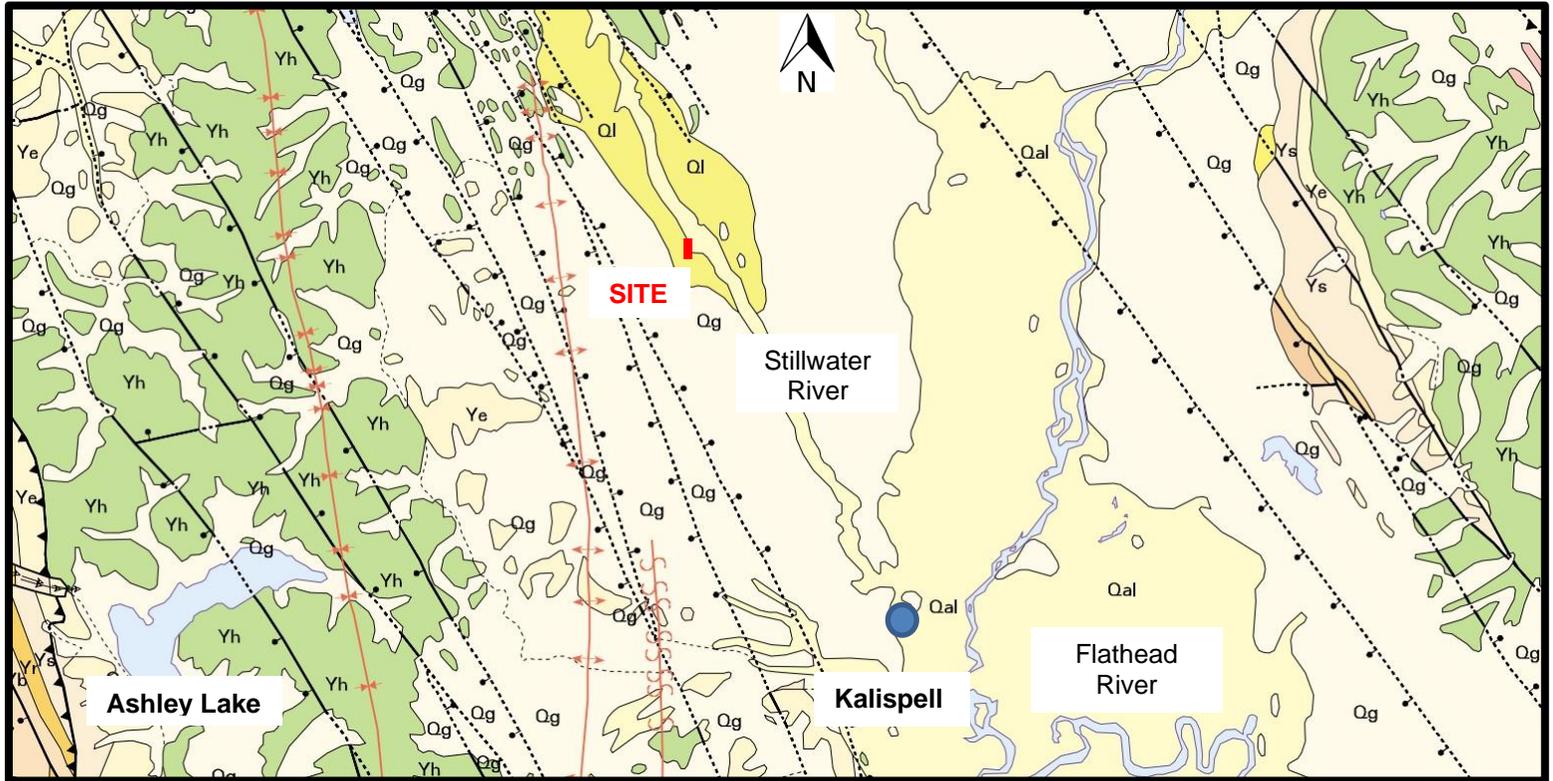
The complex Pleistocene deposits of loosely mixed or alternating clay, silt, sand, cobbles, and boulders in glacial units were often reworked by runoff into thick sandy gravel outwash layers during melting of the glaciers, with the finer sediments filling sinkholes and glacial lakebeds downstream during ancient flooding. Currently, the remaining landscape near the Site is largely a remnant kame, kettle lake, and drumlin topography, dissected by much younger Quaternary alluvium deposits and modern streams. This process of dissecting the older Pleistocene glacial deposits provides surface and near-surface variations in unconsolidated sediments of differing ages and sources.

Figure 4: Regional Geology Map
(Site in red, Kalispell in blue)

Symbols* listed younger to older:

Qal—*alluvial deposits (Holocene)*, Qg—*Glacial and fluvio-glacial deposits (Pleistocene)*, Ql—*Lake sediments (Pleistocene)*

Yh—*Helena Fm*, Ye—*Empire Fm*, Yr—*Revett Fm*, Ys—*Spokane Fm*, Yb—*Burke Fm*



* Fm means a Formation within the Middle Proterozoic Belt Supergroup

Source: USGS, Harrison et al., 1992 1:100,000 (digitized 2000)

3.2.4 HYDROLOGY AND HYDROGEOLOGY

The analysis area for hydrology and hydrogeology is the Site and surrounding area (beyond a mile). Some discussion of regional geology, based upon published reports, is also provided. The analysis methods include reviewing wetland and jurisdictional waters information, onsite drilling reports, publications of the Montana Bureau of Mines and Geology (MBMG), and online maps (Esri/ArcGIS, 2020).

3.2.4.1 SURFACE WATER

No impacts to surface waters are expected due to the Proposed Action.

The Site is located entirely within the Beaver Creek-Stillwater River watershed, hydrologic unit code (HUC) 170102100403. The mainstem Stillwater River flows approximately a mile to the northeast of the Site (**Figure 5**). The Stillwater River meets the Whitefish River, then outlets to the Flathead River, approximately 8 miles southeast of the site. Several small ponds are also located adjacent to the Site (**Figure 5**).

Periodic inspections by DEQ for compliance with setbacks near the Site borders, slope restrictions, and runoff patterns will ensure no septage enters the Stillwater River or nearby ponds.

3.2.4.2 GROUNDWATER

No impacts to groundwater or groundwater wells are expected due to the Proposed Action.

The Montana Bureau of Mines and Geology's Ground Water Information Center (GWIC) is DEQ's reference for well data in Montana. All wells located within one mile of the Site and documented by GWIC when this Final EA was written were considered. Any well not documented in GWIC is not included in this Final EA, but if wells are proven to be within setbacks, the Site's boundaries will be adjusted to maintain the setbacks.

The Site lies within the western third of the greater Flathead Valley in northwestern Montana. An impressive amount of Cenozoic basin-fill exists in the valley, and is estimated to be as much as 4,000 feet thick (MBMG, 1982). Pleistocene age glaciation is responsible for depositing extensive volumes of glacial till, outwash, and lakebed deposits.

Two primary aquifers are recognized in the study area: the shallow alluvial aquifer and the deep confined aquifer (MBMG, 2001 and 2004). The shallow alluvial aquifer is composed of unconsolidated fluvial sediments (sands and gravels) deposited along the floodplain of the Flathead, Whitefish, and Stillwater Rivers. The aquifer thickness ranges from 20 to 100 feet. Low permeability glacial till and lakebed deposits of various thicknesses separate the shallow aquifer from the deeper confined aquifer. Well logs from nearby wells indicate the low permeability deposits are laterally continuous in the area and separate surface water and shallow groundwater from the deep aquifer.

The deep confined aquifer consists of a series of interbedded sand and gravel layers with fine-grained interbeds. These deposits probably represent paleo-channels within the floodplain of the ancestral Flathead and Stillwater Rivers. The depth to the upper contact of the deep aquifer varies with the thickness of the overlying confining layer. The thickness of the deep confined aquifer is unknown, but GWIC well #235061 located on Site (**Figure 5**) was drilled to a depth of more than 750 feet without reaching the base of the aquifer. Well logs for GWIC #235061 and nearby wells show a thick glacial till unit variably comprised of clayey sands to silty gravels corresponding to the confining unit overlying the deep aquifer. This glacial till unit is overlain by glacial outwash deposits forming the shallow water table aquifer. The shallow unconfined aquifer is often referred to as the Evergreen Aquifer.

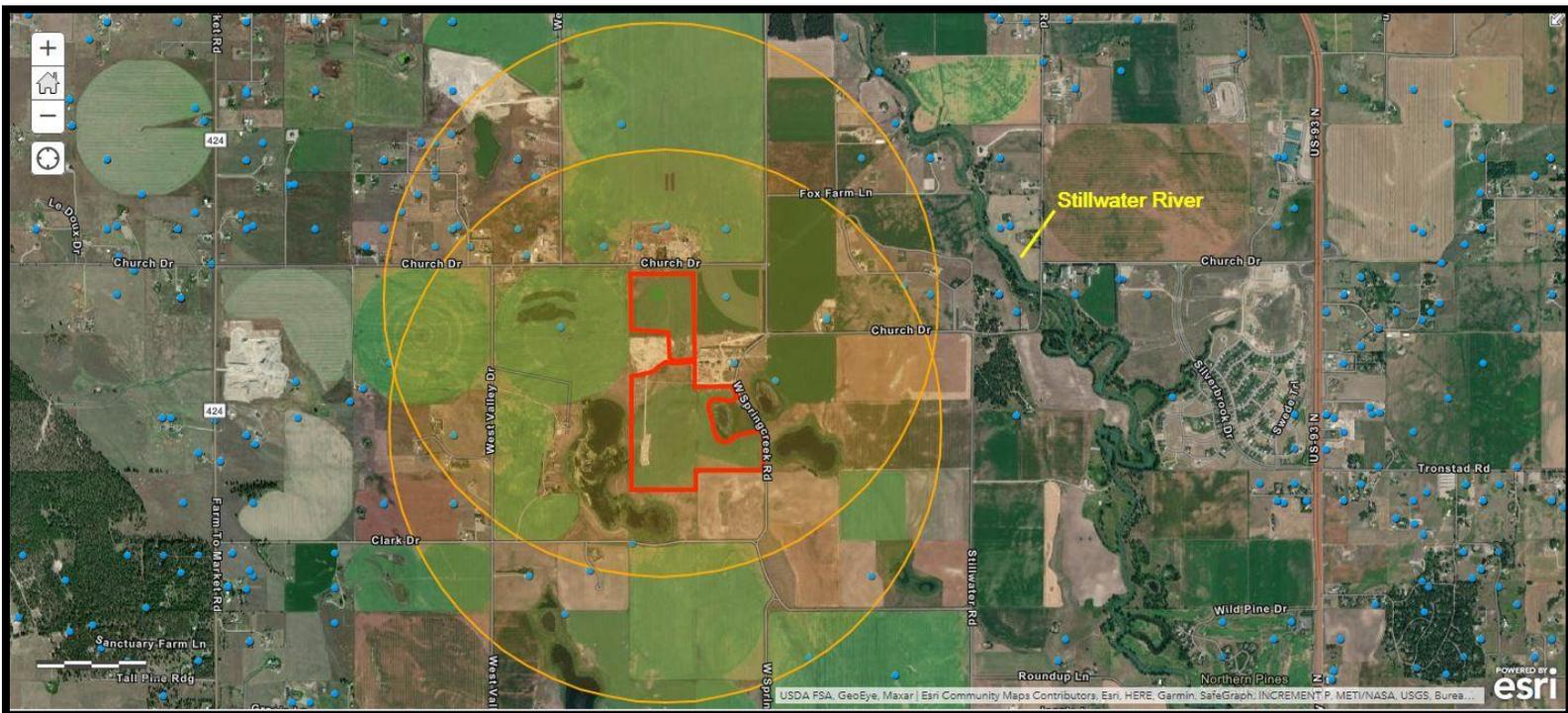
Groundwater flow directions in the deep aquifer are generally from north to south in the center of the valley. Near the edges of the valley, groundwater flows toward the center of the valley, then turns south to roughly parallel the flow direction in area rivers. In the Site vicinity, groundwater flows from north to south-southeast mimicking the flow direction of the Stillwater River (**Figure 5**).

There are 37 groundwater production wells located within a 1-mile radius of the Site (**Figure 5**). The static depth to groundwater in GWIC #235061 well (located on-Site) is 32 feet below ground surface, greater than the six-foot minimum required by ARM 17.50.809(8).

Inspections and possible monitoring by DEQ will validate compliance with requirements for land application of septage at the AAR for the crops planted on the Site. This practice will be followed at the Site to ensure the absence of vertical percolation of septage below the soil treatment zone.

No impacts to groundwater or groundwater wells are expected due to the Proposed Action.

Figure 5: Location of Nearby Groundwater Production Wells
 (GWIC wells in blue circles, approximate Site boundaries outlined in red, 1-mile radii orange shaded circles)



Source: Esri/ArcGIS and GWIC/MBMG (NOT TO SCALE)

3.2.5 AESTHETICS AND NOISE

The impact to aesthetics and noise from the Proposed Action will be minor.

A private road will be used to access the Site via Spring Creek Road. The Site is not located on a prominent topographical feature. No other development is anticipated at the Site. Approximately a dozen homes lie within one mile of the Site. The closest homes lie just across Church Drive along the north edge of the north parcel (Figure 5). Setbacks will be met accordingly (500 feet from any occupied or inhabitable building).

DEQ and/or the local county sanitarian will respond to complaints about odor to determine if wastes were not properly managed. With proper management, odors will be minimal. The naturally occurring bacteria in the soil uses carbon in the waste as a fuel source. This activity results in the breakdown of wastes, which include odors. Usually, odors are only detected at the time and immediate vicinity (within feet) of the land application activity and are controlled by tilling within six hours. Land application could occur daily. Dust caused by tillage activities during the dry season will be reduced by the moisture content of septage.

The Proposed Action will be visible from main road and resemble agricultural activities occurring in the surround area. Two pumper trucks will access the Site to conduct land application activities. However, only one truck will access the Site at a time. Noise from the truck at the Site will resemble noises from agricultural activities currently occurring in the area.

Impacts to aesthetics and noise will be minor.

3.2.6 HUMAN HEALTH & SAFETY

No impacts on human health and safety are expected due to the Proposed Action.

Septage will be land applied at the Site. Septage will be incorporated into the soil surface within six hours of application and dust will be controlled. No livestock grazing areas exist on the Site. The Site grows wheat and canola. Crops will not be harvested until 14 months after the most recent septage application, as per ARM 17.50.811(3)(a).

Regarding COVID-19, the Environmental Protection Agency (EPA) expects a properly managed septic system to treat COVID-19 the same way it safely manages other viruses often found in wastewater. The World Health Organization (WHO) has indicated that “there is no evidence to date that COVID-19 virus has been transmitted via sewerage systems, with or without wastewater treatment.” (EPA, 2020)

Access into the Site, via a private road, is controlled by a fence and gate.

Therefore, no impacts to human health and safety are expected due to the Proposed Action.

3.2.7 INDUSTRIAL, COMMERCIAL, AND AGRICULTURAL ACTIVITIES

No impacts to industrial and commercial activities are expected due to the Proposed Action. Minor positive impacts to agricultural activities are expected due to the Proposed Action.

The Site is zoned as agricultural land and will not accommodate industrial or commercial activities. When land application occurs on an annual rotation (*Section 2.2.3*), crop production can occur and agricultural activities on the Site can continue. Land application of septage will improve soil health.

Therefore, no impacts to industrial and commercial activities are expected due to the Proposed Action. Minor positive impacts to agricultural activities are expected due to the Proposed Action.

3.2.8 CULTURAL UNIQUENESS AND DIVERSITY

No impacts to cultural uniqueness and diversity are expected due to the Proposed Action.

The State Historic Preservation Office (SHPO) conducted a resource file search for Section 15, Township 29 North, Range 22 West, which indicated there have been no previously recorded sites within the area. Based upon ground disturbances in Section 15, Township 29 North, Range 22 West associated with agricultural activities and residential development in the area, SHPO determined there is a low likelihood that cultural properties will be impacted.

3.2.9 DEMAND FOR GOVERNMENT SERVICES

The impact to demand for government services from the Proposed Action will be minor.

DEQ staff will provide guidance to PCP for septage land application activities at the Site, with assistance from the Flathead County sanitarian as needed. Disposal logs showing volumes of waste applied by PCP at the Site are submitted to DEQ twice a year. Disposal logs will be reviewed by DEQ to ensure the AAR is not exceeded. Periodic inspections are performed by DEQ at all septic tank pumper land application sites. DEQ may obtain periodic soil samples for testing of nutrient levels to ensure compliance with the AAR for the Site.

Therefore, the impact to the demand for government services from the Proposed Action will be minor.

3.2.10 SOCIOECONOMICS

No impacts to socioeconomics are expected due to the Proposed Action.

No additional employees will be hired because of the Proposed Action. Employees currently hired by PCP will conduct necessary operations at the Site.

Therefore, no impacts to socioeconomics are expected.

3.2.11 TRAFFIC

The impact to traffic from the Proposed Action will be minor.

There will be no significant increase in traffic on Spring Creek Road. One pumper truck will access the Site at a time. There is a currently-approved land application site approximately 3 miles northwest of the Site. The Site will be accessed from Spring Creek Road via a private road. Spring Creek Road currently supports daily traffic to homes and businesses in the area.

Therefore, the impact to traffic from the Proposed Action will be minor.

3.3 REGULATORY RESTRICTIONS

MEPA requires state agencies to evaluate regulatory restrictions proposed for imposition on private property rights because of actions by state agencies, including alternatives that reduce, minimize, or eliminate the regulation of private property (Section 75-1-201(1)(b)(iii), MCA). Alternatives and mitigation measures required by federal or state laws and regulations to meet minimum environmental standards, as well as actions proposed by or consented to by the applicant, are not subject to a regulatory restrictions analysis.

No aspect of the alternatives under consideration will restrict the use of private lands or regulate their use beyond the permitting process prescribed by the SDLA. The conditions that will be imposed by DEQ in issuing the license will be designed to ensure conformance of the Proposed Action to minimum environmental standards or to uphold criteria proposed and/or agreed to by PCP during application review. Thus, no further DEQ analysis is required beyond the PCP application review for protection of human health and the environment.

3.4 CUMULATIVE IMPACTS

Cumulative impacts are the collective impacts on the human environment when a specific action is considered in conjunction with other past, present, and future actions by location and type. Cumulative impact analysis under MEPA requires an agency to consider all past and present state and non-state actions. Related future actions must also be considered when these actions are under concurrent consideration by any state agency through pre-impact statement studies, separate impact statement evaluation, or permit processing procedures. Cumulative impact analyses help to determine whether an action, combined with other activities, will result in significant impacts.

The Site is currently farmed for wheat and canola. The surrounding area consists of agricultural activities and residential homes. The cumulative impacts of the Proposed Action will include limitations on the utilization of the Site for agricultural, recreational, and other activities, upheld until the Proposed Action ceases (ARM 17.50.811(4) and (5)).

4. FINDINGS

The depth and breadth of the project are typical of a septage land application site. DEQ's analysis of potential impacts from the Proposed Action are sufficient and appropriate for the complexity, environmental sensitivity, degree of uncertainty, and mitigating factors provided by the Septic Rules for each resource considered.

To determine whether preparation of an EIS is necessary, DEQ is required to assess the significance of impacts associated with the Proposed Action. The criteria that DEQ is required to consider in making this determination are set forth in ARM 17.4.608(1)(a) through (g):

- (a) The severity, duration, geographic extent, and frequency of occurrence of the impact;

- (b) The probability that the impact will occur if the Proposed Action occurs; or conversely, reasonable assurance in keeping with the potential severity of an impact that the impact will not occur;
- (c) Growth-inducing or growth-inhibiting aspects of the impact, including the relationship or contribution of the impact to cumulative impacts;
- (d) The quantity and quality of each environmental resource or value that would be affected, including the uniqueness and fragility of those resources or values;
- (e) The importance to the state and to society of each environmental resource or value that would be affected;
- (f) Any precedent that would be set because of an impact of the Proposed Action that would commit DEQ to future actions with significant impacts or a decision in principle about such future actions; and
- (g) Potential conflict with local, state, or federal laws, requirements, or formal plans.

The Site's location is described in *Section 1.4* of this Final EA, and includes approximately 130 acres of property located approximately six miles northwest of Kalispell in Flathead County, Montana, south of Church Drive at 2410 Spring Creek Road. If PCP renews their license and operations comply with the SDLA and its implementing rules, land application activities and DEQ site inspections will continue indefinitely. The Site is not within sage grouse core habitat, general habitat, or connectivity area. It has no special agricultural designation. Operations will not adversely affect any threatened or endangered species.

The Proposed Action is expected to improve soils and vegetation at the Site, as described in *Section 3.2.2*.

The Proposed Action is not expected to impact surface water resources. Operational standards ensure that all the setback requirements from surface water are met and that no slopes exceed 6%, as described in *Section 3.2.4.1* of this Final EA.

The Proposed Action is not expected to impact groundwater. Setback requirements for groundwater supply wells will be maintained, as described in *Section 3.2.4.2*. The depth to groundwater is greater than six feet as required. Land application at agronomic rates will ensure that no septage could percolate below the surface treatment zone.

DEQ has not identified any growth-inducing or growth-inhibiting aspects of the Proposed Action. However, access to the parcels on the Site for utilization by human recreation, crops, and livestock will be limited to meet the regulatory restrictions necessary to protect human health (ARM 17.50.811(4) and (5)). Farming for canola and wheat will continue at the Site under these restrictions. DEQ's approval is not a decision regarding, in principle, any future actions that DEQ may perform. Furthermore, approval doesn't set any precedent or commit DEQ to any future

action. Finally, the Proposed Action does not conflict with any local, state, or federal laws, requirements, or formal plans.

The Proposed Action will meet the requirements of the SDLA, the Clean Air Act of Montana, the Montana Water Quality Act, ARM, and county ordinances. Based on a consideration of the criteria set forth in ARM 17.4.608, DEQ has determined that PCP's proposal to add the Site to its septic pumper license is not predicted to significantly impact the quality of the human environment. Therefore, preparation of an EA is the appropriate level of review under MEPA.

The land application site is approved.

5. OTHER GROUPS OR AGENCIES CONTACTED OR CONTRIBUTING TO THE EA

Flathead County Environmental Health Department
United States Environmental Protection Agency
World Health Organization
United States Department of Agriculture
Montana Natural Heritage Program
Montana Department of Environmental Quality
Montana Historical Society State Historic Preservation Office
United States Geological Survey
Montana Bureau of Mines and Geology
US Fish & Wildlife Service
Montana Sage Grouse Habitat Conservation Program

6. AUTHORS

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Septic Tank Pumper Program

Date: March 5, 2021

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