DRAFT ENVIRONMENTAL ASSESSMENT
for the proposed
Crazy Mountain Industries, Inc.
Land Application Site
Livingston, Montana

Solid Waste Section
PO Box 200901
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May 10, 2021

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ACRONYMS

CMI – Crazy Mountain Industries, Inc.

ARM – Administrative Rules of Montana

AAR– Annual Application Rate

Draft EA – Draft version of an 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

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 100 acres of Cahill property located 3.7 miles east of Livingston on Swingley Road in Park County, Montana.

SWL – Static Water Level

USFWS – United States Fish and Wildlife Service

USGS – United States Geological Survey

1. NEED FOR PROPOSED ACTION

1.1 SUMMARY

This draft environmental assessment (Draft EA) was prepared for the septage land application site proposed by Crazy Mountain Industries, Inc. (CMI), in accordance with the Montana Environmental Policy Act (MEPA). On February 1, 2021, the Department of Environmental Quality (DEQ) received an application from CMI for licensing a new septage land application site (Proposed Action). CMI proposes the land application of septage on approximately 100 acres of Mission LLC. (Jeff Cahill) property located 3.7 miles east of Livingston on Swingley Road in Park County, Montana. (Site, **Figure 1**).

1.2 BACKGROUND

In January 1994, CMI obtained a license from DEQ to pump and land apply septage in Montana. CMI is currently approved to land apply septage on one land application site in Park County. CMI is proposing to add the Site to their license.

This application was signature certified by Park 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. Naturally occurring bacteria within wastewater reside in the typical septic tank, digesting organic matter over time. Pre-treated liquid (effluent) typically exits the septic tank through a perforated pipe and enters its leach field, leaving floating materials and solids in the tank for further digestion. Septic tanks are commonly pumped every two to five years depending on tank capacity and number of users. Septage is either delivered to a wastewater treatment plant for secondary treatment, land applied as proposed in the Draft EA, or dewatered and landfilled at a licensed Class II municipal solid waste landfill facility. 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. CMI'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 must conduct an environmental review on CMI's application by evaluating potential impacts of the Proposed Action. If DEQ approves the application, DEQ will add the Site to their existing license. DEQ's decision to approve or deny the application depends upon the consistency of the application with the following:

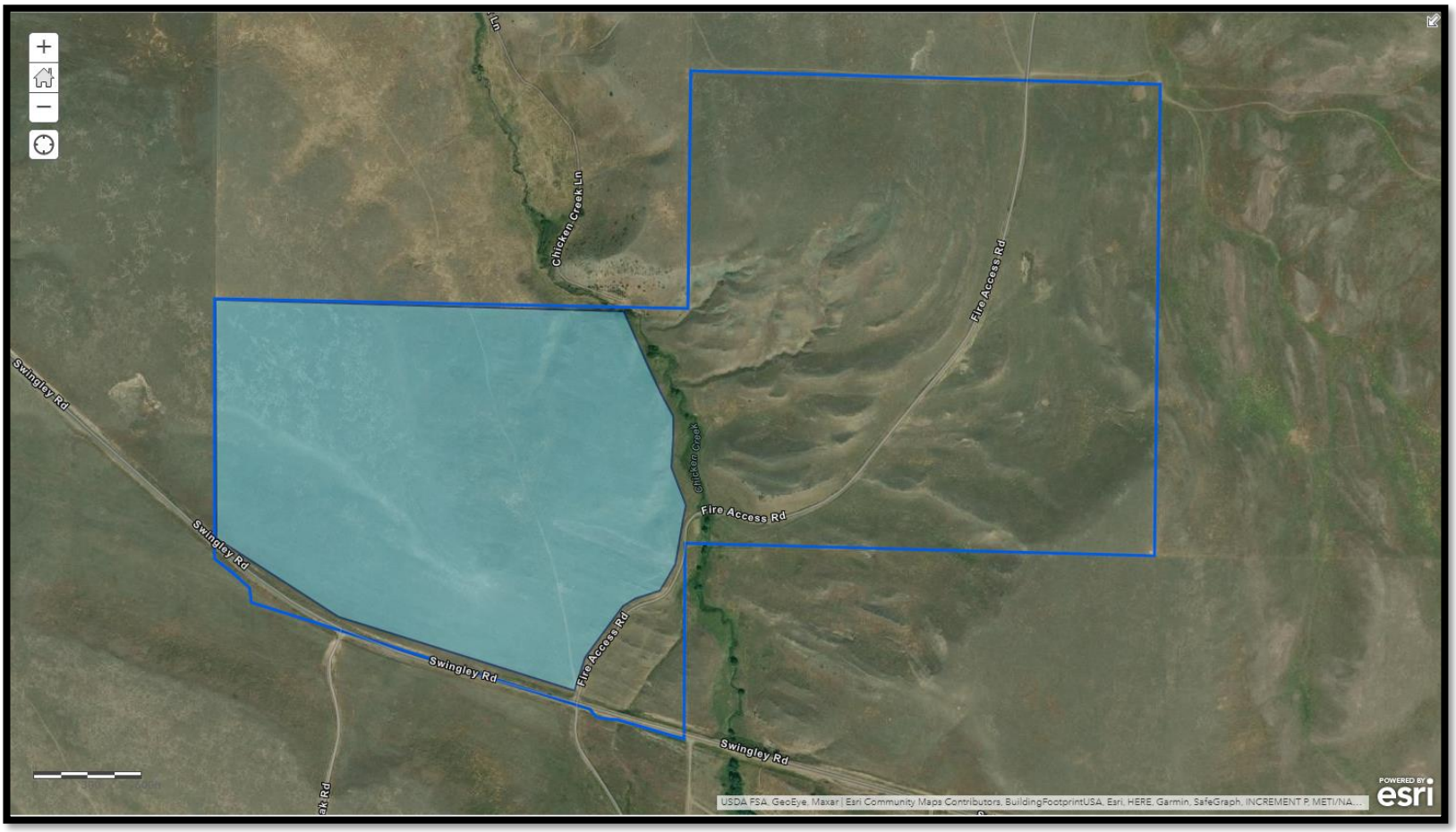
1. Septage Disposal Licensure Act (SDLA);
2. Administrative Rules of Montana (ARM) Title 17, chapter 50, subchapter 8, "Cesspool, Septic Tank, and Privy Cleaners" (Septic Rules);
3. the Clean Air Act of Montana; and
4. Montana Water Quality Act.

1.4 LOCATION DESCRIPTION AND STUDY AREA

The Site is in the East ½ of Section 15, Township 2 South, Range 10 East in Park County, Montana. The Site is currently pasture grass.

A private drive via Swingley Road would be used to access the Site (**Figure 1**). The study area encompasses property that surrounds the Site. The study area depends on the resource under evaluation, as noted in the subparts of *Section 3*.

Figure 1: Proposed Land Application Site
(approximate Site shaded in light blue; Cahill property in blue)



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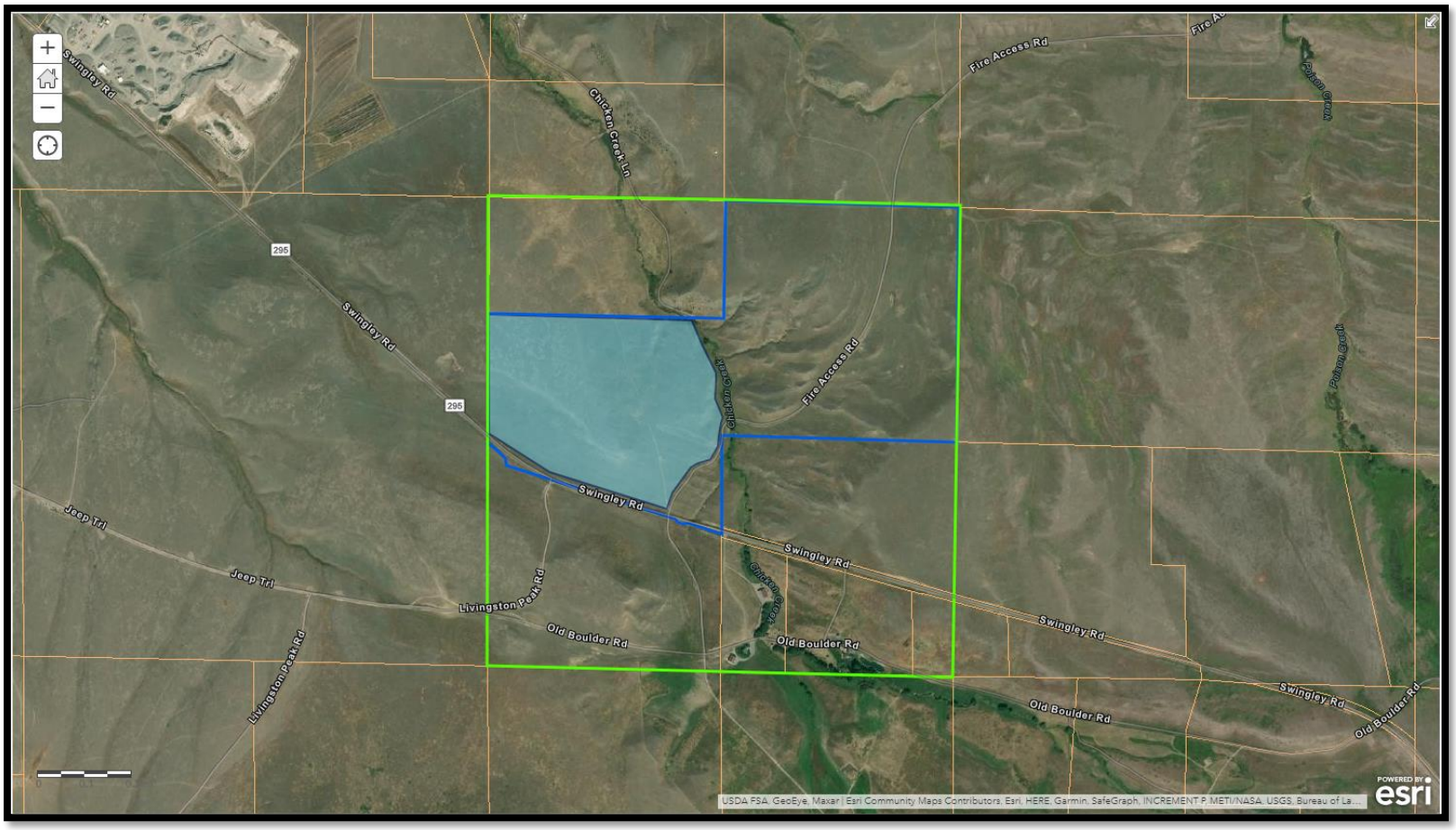
*Source: Montana Cadastral (**NOT TO SCALE**)*

Figure 2: Study Area
(approximate Site shaded in light blue; Section 15 in green; Cahill property in blue)



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*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. The Proposed Action is considered a state action that may have an impact on human health and the environment. Therefore, DEQ must prepare an environmental assessment. This Draft EA analyzes the Proposed Action and reasonable alternatives to the Proposed Action and discloses 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 Draft EA to present its initial findings described in *Section 4*. A 30-day public comment period begins upon release of the document. The public comment period ends on June 9, 2021. A notice of availability for the Draft EA was sent to adjacent landowners and other interested parties. A public notice was published in the Livingston Enterprise and a hard copy was sent to Livingston-Park County Public Library in Livingston, Montana. The public notice and Draft 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 alternatives whenever reasonable and prudent. DEQ has not considered any other alternatives to the Proposed Action because CMI'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 CMI, and disposal of septage would have to occur at another approved location or treatment works.

2.2 PROPOSED ACTION

CMI is proposing the land application of septage 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: • 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 would be limited to areas approved by DEQ. Areas within the Site would not be used until their boundaries have been marked and approved by DEQ or the local county sanitarian.

CMI would be required to log the type and amount of septage land applied annually as well as the dates applied. Disposal logs would be submitted to DEQ semiannually. DEQ would 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

CMI has the following equipment available for land application activities:

1. 2004 Kenworth with a 3000-gallon tank
2. 2021 Freightliner with a 4000-gallon tank
3. 2006 Freightliner with a vac trailer with a 5460-gallon tank
    a. All trucks and trailers are equipped with spreader bars that are cam-locked to valve posts on the back of the tanks.
    b. All pumpings would be screened, then land applied.

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

CMI would 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:

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

The Site is currently pasture grass. The nitrogen requirement for grass is 75 pounds per acre per year based on a conservative yield expectation at the Site. The resulting AAR for septage is 14,423 gallons per acre per year, which is equal to approximately 0.53 inches of liquid applied annually per acre. For comparison, the average annual precipitation in the Livingston area is 14.8 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 can

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, CMI would designate two equal areas of approximately 50 acres and rotate parcels each year. The residual soil nutrient levels at each parcel would vary over time. DEQ may periodically monitor the soil for nutrient content to determine compliance with the AAR.

The Cahill property could annually treat the proposed 525,000 gallons of waste without exceeding the AAR on approximately 50 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 Draft 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 would relocate (See Section 3.2.1)
Soils and Vegetation	Minor impact.	Minor beneficial impact. The quality of soils and crop yields would 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 and commercial activities occurring in the surrounding area. Odor would 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. Park County sanitarian and DEQ would 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. CMI would access the Site via a private road off of Swingley Drive, 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 would 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, amphibians, and aquatic invertebrates and plants are not included on the following lists because land application activities would not impact nearby perennial 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 would be impacted. Parcels of land adjacent to the Site are primarily used as pasture. Beyond

the immediate vicinity of the Site, a mixture of pasture, grasslands, and wooded areas provide habitat for species present in the region.

3.2.1.1 THREATENED AND ENDANGERED SPECIES

The U.S. Fish & Wildlife Service's (USFWS) online databases were used to identify plant and animal species at the Site and study area (USFWS, 2021). The USFWS species and status listings for Park County, Montana, are shown in **Table 4**:

Table 4: Federally Established Species List

Scientific Name	Common Name	Status
Canis lupus	Gray wolf	Recovery
Haliaeetus leucocephalus	Bald eagle	Recovery
Spiranthes diluvialis	Ute ladies'-tresses	Threatened
Pinus albicaulis	Whitebark pine	Proposed threatened
Aquila chrysaetos	Golden eagle	Species of concern
Charadrius montanus	Mountain plover	Resolved taxon
Lynx canadensis	Canada lynx	Threatened
Centrocercus urophasianus	Greater sage grouse	Resolved taxon
Anthus spragueii	Sprague's pipit	Resolved taxon
Gulo gulo luscus	North American wolverine	Resolved taxon
Ursus arctos horribilis	Grizzly bear	Threatened
Danaus plexippus	Monarch butterfly	Candidate

The Site does not provide the habitat necessary to independently sustain the species listed above. Nearby grasslands, wooded drainages, and protected areas south of the Site provide adequate habitat for any species forced to relocate. Habitat for the whitebark pine exists south of the Site in the Absaroka Range and points of higher elevation in Park County. The Ute ladies'-tresses prefer moist riparian habitats, which can be found in the area along the Yellowstone River and its tributaries. The greater sage grouse is addressed separately in *Section 3.2.1.2*. The Proposed Action may deter transient wildlife from passing through the active land application area, but impacts to these species are anticipated to be minor.

3.2.1.2 SPECIES OF CONCERN

No impacts to species of concern are anticipated to result from the Proposed Action.

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, 2021). The MNHP species and status listing for Township 2 South, Range 10 East is shown in **Table 5**.

Table 5: Montana Recognized Species List

Scientific Name	Common Name	Status	GRank/SRank
Anthus spragueii	Sprague's pipit	Species of concern	G3/S3
Ursus arctos horribilis	Grizzly bear	Species of concern	G4/S2
Lasiurus cinereus	Hoary bat	Species of concern	G3/S3
Lasiurus borealis	Eastern red bat	Species of concern	G3/S3
Gulo gulo	Wolverine	Species of concern	G4/S3
Corynorhinus townsendii	Townsend's big-eared bat	Species of concern	G4/S3

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**.

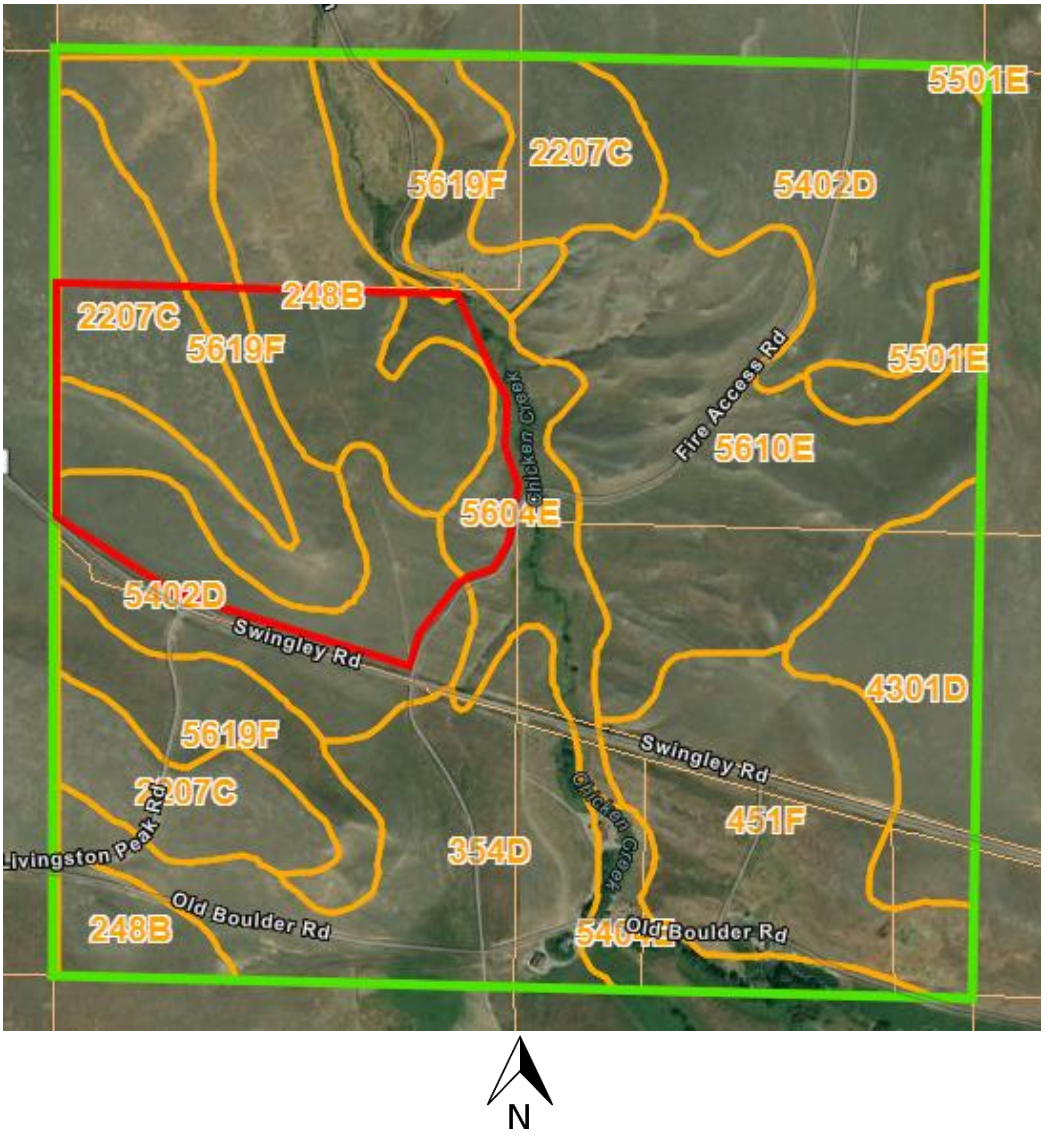
The Site is not located within a Core Area or any other recognized habitat level for the greater sage grouse, as designated by the Department of Natural Resources and Conservation (DNRC).

3.2.2 SOILS AND VEGETATION

The impact of the Proposed Action to soils and vegetation would 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), 2021 (**NOT TO SCALE**)*

Table 6: USDA-NRCS, Custom Soil Resource Report, 2021

Map Unit Symbol	*Map Unit Name*	*Soil Rating*
248B	*Tamaneen cobbly clay loam, 0 to 4 percent slopes*	*Somewhat limited*
5619F	*Bacbuster-Sawicki-Corbly complex, 15 to 60 percent slopes*	*Very limited*
2207C	*Trimad-Trimad stony complex, 0 to 8 percent slopes*	*Somewhat limited*
5604E	*Pachel-Bigbear-Fairway complex, 2 to 15 percent slope*	*Very limited*
5402D	*Bacbuster-Bigbear-Vershal, very channery complex, 4 to 15 percent slopes*	*Very limited*

Soil types where land application would occur are a mix of clay and cobble loams, channery, and complex mixtures. 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, 2021).

The Site grows pasture grasses. The MNHP online databases were also accessed for listed plant species in the Township 2 South, Range 10 East study area (MNHP, 2021). Three species with a GRank 5 were listed and were not included in this assessment due to their relative abundance. No impact on plant species of concern is expected to result from the Proposed Action.

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

DEQ analyzed how the land application of septage would impact the Site's environment given the weather of the region. The weather in the area is typical of central Montana, classified as warm summer continental climate. The average pan evaporation rate is listed as 43.92 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 would 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 would not significantly affect the thickness or character of colluvium that remains on the Site. Septage land application operations would not involve excavation.

The analysis area for geology is the Site and the surrounding area (beyond a mile from site boundary in **Figure 4**). Some discussion of regional geology is provided. The analysis methods include:

1. Field work;
2. Reviewing geology field guidebooks including the Roadside Geology of Montana (Hyndman and Alt);
3. Current United States Geological Survey (USGS), Montana Bureau of Mines and Geology (MBMG), and other professional journal publications; and
4. Existing online maps of the Site area accessed via the MBMG and DEQ ArcGIS portals.

South-central Montana is mostly characterized by rolling high plains comprised of deeply eroded Mesozoic to Tertiary and some Paleozoic subhorizontal sedimentary rocks. Such ancient, largely marine basins are locally interrupted by faulted and folded mountain highlands in the region approaching the Rocky Mountain Front range to the southwest in the Absaroka-Beartooth Plateau.

After a long period of Paleozoic oceanic shelf stability, a shallow sea invaded the region during the Late Mesozoic to Early Tertiary Era, forming large connected basins and sedimentary deposits in Montana, Wyoming, and North Dakota. Thick sequences of sandy to shaly marine sedimentary rocks are found at the surface and at depth in the area surrounding the Site. These numerous and extensive late uplifts include the contiguous Absaroka Mountains (exposing Eocene andesite volcanic terrane) and Beartooth Plateau (exposing Precambrian cratonic terrane and Stillwater Complex) nearby extending south of the Site towards the Yellowstone Plateau.

A network of ancient streams flowing east-to northeast off the early uplifted Rockies combined with the ancestral Yellowstone River drainage network as the primary erosional and depositional mechanisms responsible for much of the physiography of south-central Montana as we see it today. The isolated Crazy Mountains to the north, and the extensive Absaroka and Beartooth ranges south of the Site, were first subject to rapid and prolonged erosion by numerous streams rushing down to the ancient Yellowstone River, when the inland sea began a long retreat as the clastic Late Cretaceous to Early Tertiary Fort Union Formation prograded eastward along its western shoreline. The high mountains and bordering foothills near the Site were then deeply dissected and worn down during this early erosional episode. The early paleo-pediments which probably formed around some of the mountain fronts, and the surrounding foreland plains extending north to eastward, were later buried by coarse paleo-gravels from prograding alluvial fans and bajadas as uplift and erosion of the ancient Rockies peaked sometime in the Oligocene (Alden, 1932).

A second episode of rejuvenated uplift and deep exhumation caused scattered exposure of the underlying Upper Mesozoic, Paleozoic, and Archean basement rocks

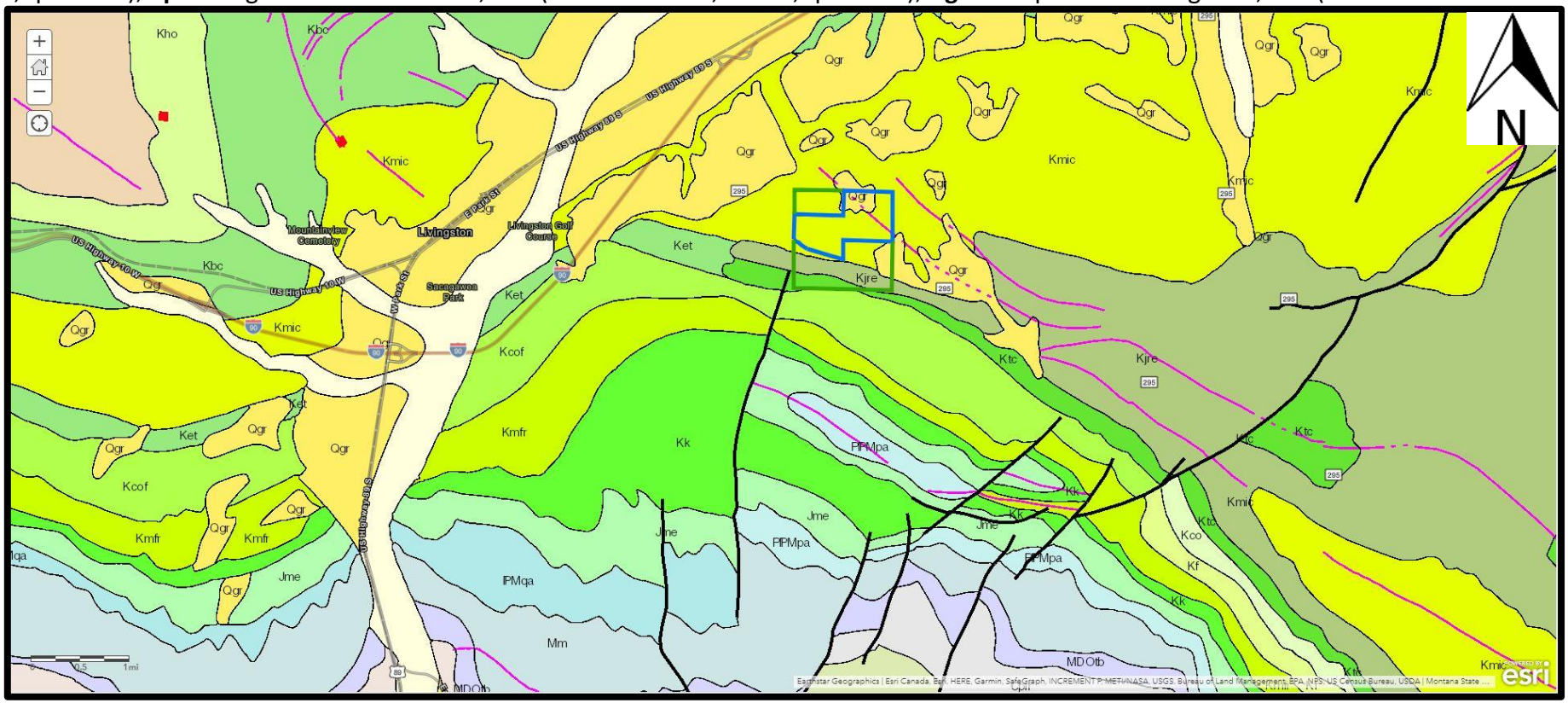
found in nearby major tectonic uplifts between the Site and the Yellowstone Plateau today. Buried adjacent mountain ranges south and west of the Site were further uncovered during Laramide uplift and erosion to expose Late Cretaceous to Tertiary sedimentary strata from the early Laramide (even beneath the adjacent high plains topography). Several levels of paleo-terraces surrounded these mountains as further reworking of the extensive older Tertiary gravel alluvium by the ancient Yellowstone River network dissected and redeposited these constituents. Erosion of the paleo-fluvial terraces and underlying older sedimentary strata of the region was further rejuvenated after final retreat of the continental and alpine glaciers at the close of the Pleistocene. This uplift and erosion also further exposed the northern flanks of the steep Absaroka Range, adjacent to and south of the Site, which allowed capture of the Yellowstone River where it exits the Paradise Valley through the canyon just south of Livingston.

Numerous local plateaus, mesas, and scattered terrace benches are now found throughout the foothills areas, some still capped by thin remains of the paleo-fluvial gravels. These existing landforms and sedimentary veneer provide direct evidence of ongoing uplift from the south, likely caused at depth by westward migration of the North American plate over the Yellowstone hotspot. All phases of these Pliocene to Holocene paleo-fluvial gravels (grouped as **Qgr** in dark yellow on **Figure 4**) have consequently been eroded from the Site landforms, and from large areas in the surrounding landscape, to leave a scattered veneer of well-rounded lag gravel clasts remaining on some exposed bedrock surfaces. An underlying unit of folded fossiliferous Late Cretaceous volcanoclastic strata is found at the Site (**Kmic** in **Figure 4**) with various remnants of mostly sandy to silty clay colluvium on the surface of the weathered bedrock today (see Soils in **Sec. 3.2.2** above and Surface Water in **Sec. 3.2.4** below).

Figure 4: Regional Geologic Map*
(Site property blue, sec 15 green)

Rock Unit Symbols listed younger to older with brief descriptions:

Symbols: **Qal** – Alluvium; **Qgr** –Gravelly deposits, udv (Alluvial fan, pediment, & terrace deposits); **TKfu** – Fort Union Fm (Conglomerate, sandstone, siltstone, shale, fossils, coal); **Tav** – Absaroka Volcanics, udv (Andesite); **Khc** – Hell Creek Fm (Sandstone) **Kho** – Hoppers Fm (Andesitic sandstone); **Kbc** – Billman Creek Fm (Claystone, fossils, DB); **Kmic** – Miner and Cokedale Fms, udv (Andesitic siltstone, fossils, DB); **Kjre** – Judith River through Eagle Fms, udv (Sandstone, mudstone, shale, coal); **Ktc** – Telegraph Creek Fm (Shale, sandy shale); **Kcof** – Cody Shale and Frontier Fm, udv (Mudstone, sandstone, siltstone, limestone, bentonite); **Kmfr** – Mowry through Fall River Fms, udv (Siliceous sandstone, siltstone, shale); **Kk** – Kootenai Fm (Mudstone, sandstone); **Jme** – Morrison Fm and Ellis Group, udv (Shale, limestone, fossils, DB); **P|PMpa** – Phosphoria, Amsden, Quadrant Fms, and Madison Group, udv (Shale, limestone, siltstone, cherty limestone); **|PMqa** – Quadrant and Amsden Fms, udv (Quartzite, sandstone, and shale); **Mm** – Madison Group, udv (Dol limestone); **MDOtb** – Three Forks, Jefferson, Bighorn Fms, udv (Shale, dol limestones); **€gf** – Grove Creek to Flathead Fms, udv (Dol limestones, shales, quartzite); **€pif** – Pilgrim to Flathead Fms, udv (Dol limestones, shales, quartzite); **Aga** – Amphibolite and gneiss, udv (Precambrian metamorphic).



* Fm (or Fms) means a Formation (or grouped Formations) with udv as undivided; dol dolomitic; DB dinosaur bones; wide black faults; purple fold axes; red with squares calcite veins.

Source: MBMG, web mapping application and Montana Geologic Map 62 (2007); Montana Cadastral Map, NRIS; Esri/ArcGIS services (2021) **(NOT TO SCALE)**

3.2.4 HYDROLOGY AND HYDROGEOLOGY

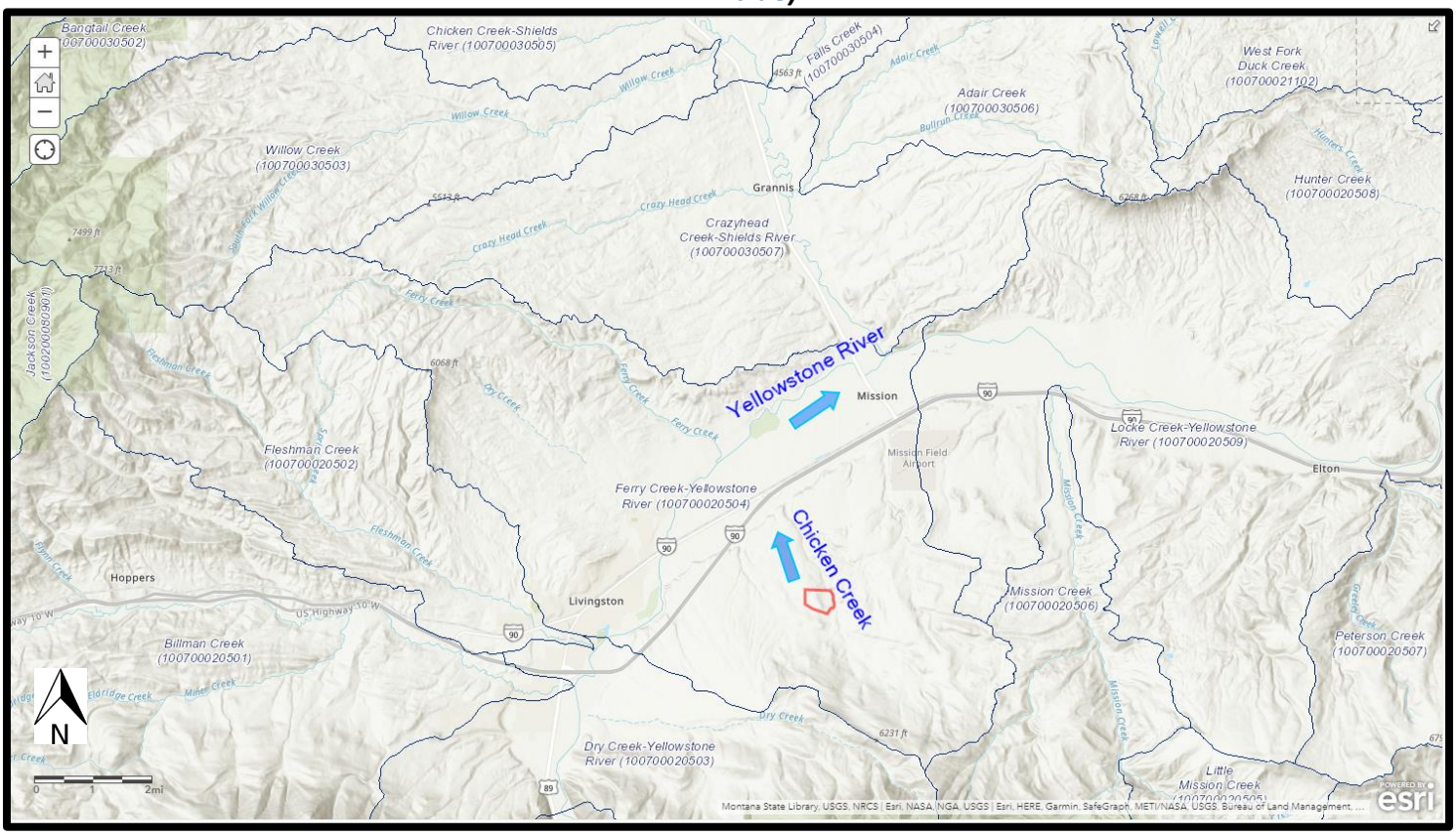
The analysis area for hydrology and hydrogeology is the Site and surrounding area (beyond a mile). Some discussion of regional geology, based on published reports, is also provided. The analysis methods include reviewing wetland and jurisdictional waters information, onsite drilling reports, publications of the Montana Bureau of Mines and Geology (MBMG), and online maps (Esri/ArcGIS, 2021).

3.2.4.1 SURFACE WATER

No impacts to surface waters are anticipated to result from the Proposed Action.

The Site is located within the Ferry Creek – Yellowstone River watershed, hydrologic unit code (HUC) 100700020504 (**Figure 5**). During a major runoff event, surface water from the Site would travel east-northeast to Chicken Creek. Chicken Creek outlets to the Yellowstone River approximately 3 miles north of the Site.

Figure 5: Surface Water
(approximate Site in red, flow direction arrow in blue, HUC-12 watershed boundaries in dark blue)



*Source: Esri/ArcGIS, Montana State Library, USGS, and NRCS (**NOT TO SCALE**)*

Periodic inspections by DEQ for compliance with setbacks near the Site borders, slope restrictions, and runoff patterns would ensure no septage enters Chicken Creek.

3.2.4.2 GROUNDWATER

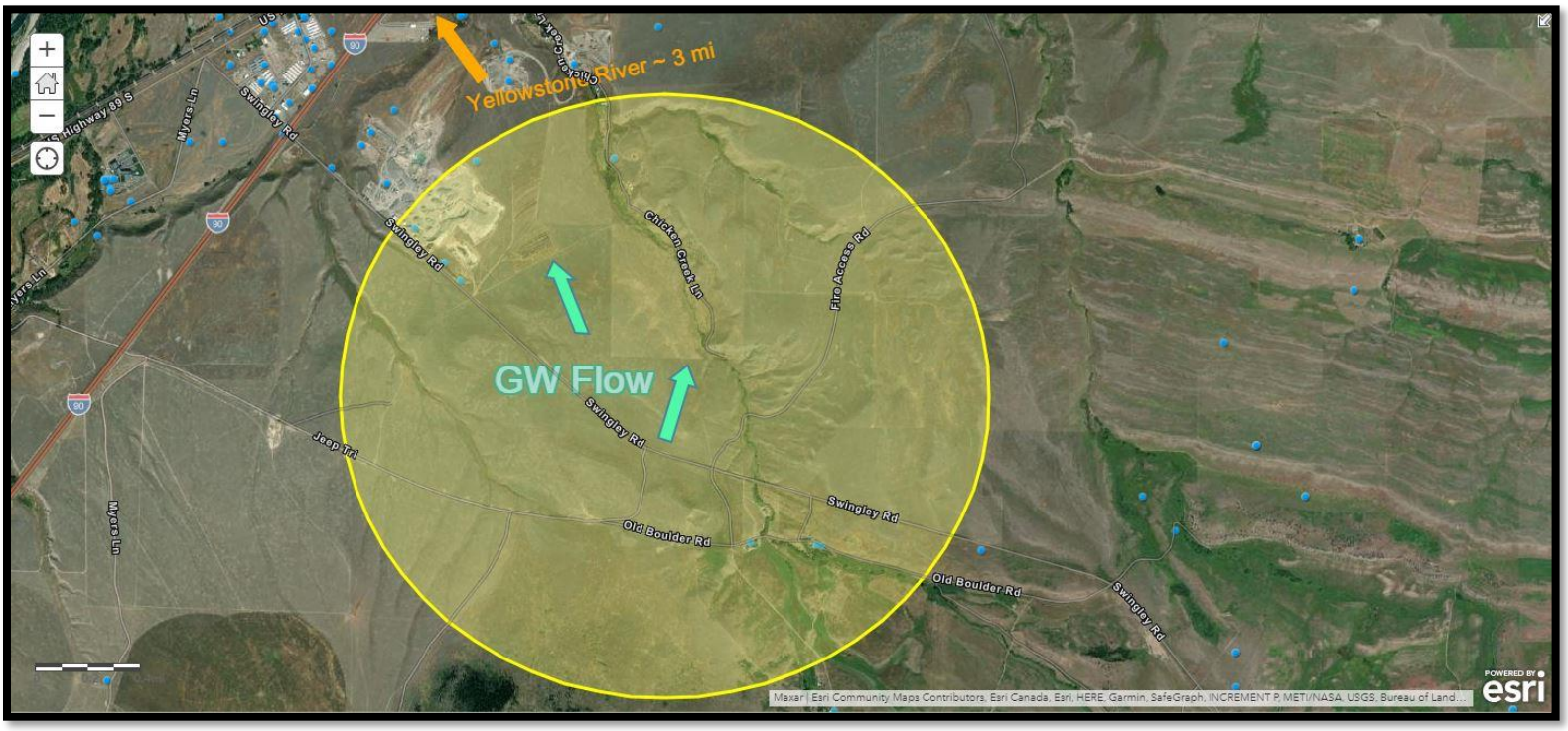
No impacts to groundwater or groundwater wells are anticipated to result from the Proposed Action.

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 Draft EA was written were considered. Any well not documented in GWIC is not included in this Draft EA, but if wells are proven to be within setbacks, the Site's boundaries would be adjusted to maintain the setbacks. See *Section 3.2.3* of this report for descriptions of the depositional environment beneath the Site.

There are 8 documented groundwater production wells within a 1-mile radius of the Site. No wells exist on the Site. Groundwater flow directions in the Site vicinity are assumed to be north-northeast toward Chicken Creek and then north-northwest toward the Yellowstone River mimicking surface water drainage patterns (**Figure 6**). Groundwater production wells located near Chicken Creek report static water levels of approximately 21 to 22 feet below the ground surface (bgsDrillers' boring logs indicate that these wells are completed between 160 to 305 feet bgs with multiple screened intervals capturing groundwater bearing zones from fractures within the sedimentary formations. Although relatively shallow static water levels have been reported in nearby wells, the actual groundwater sources exist deep (well-perforated intervals greater than 100 feet bgs) within fractured zones of shale and sandstone formations. It can be assumed that the depth to groundwater at the Site is greater than the six feet minimum required by ARM 17.50.809(8).

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

Figure 6: Location of Nearby Groundwater Production Wells
(GWIC wells in blue circles, 1-mile radius yellow shaded circle)



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*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 would be minor.

A private road would be used to access the Site via Swingley Road. The Site is not located on a prominent topographical feature. No other development is anticipated at the Site. The Site is located in a rural area.

DEQ and/or the local county sanitarian would respond to complaints about odor to determine if wastes were not properly managed. With proper management, odors would be minimal. Naturally occurring bacteria in the soil use 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 further mitigated by tilling within six hours. Land application could occur daily. Dust caused by tillage activities during the dry season would be reduced by the moisture content of septage.

The Proposed Action would be visible from Swingley Road. Only one truck would access the Site at a time. Noise from the truck at the Site would resemble noises from agricultural and commercial activities currently occurring in the area. Therefore, impacts to aesthetics and noise would be minor.

3.2.6 HUMAN HEALTH & SAFETY

No impacts on human health and safety are anticipated to result from the Proposed Action.

Septage would be land applied at the Site. Septage would be incorporated into the soil surface within six hours of application and dust would be controlled. Livestock grazing is not anticipated at the Site. If grazing were to occur, it would not be permitted while land application activities occur or within 30 days of the most recent application, as per ARM 17.50.811 (5)(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." Remnant RNA (component virus proteins) in fecal matter has been used to track the relative prevalence of the virus in wastewater treatment plants. More research is needed in this area, but there is no evidence of COVID-19 transmission from exposure to treated or untreated wastewater to date. (EPA, 2020)

The Site is on private property and is accessed from Swingley Road.

3.2.7 INDUSTRIAL, COMMERCIAL, AND AGRICULTURAL ACTIVITIES

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

The Site is rural land and would 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 would improve soil health.

3.2.8 CULTURAL UNIQUENESS AND DIVERSITY

No impacts to cultural uniqueness and diversity are anticipated to result from the Proposed Action.

The State Historic Preservation Office (SHPO) conducted a resource file search for Section 15, Township 2 South, Range 10 East, which indicated there have been no previously recorded sites within the area. Based upon ground disturbances in Section 15, Township 2 South, Range 10 East associated with agricultural activities and

residential development, SHPO determined there is a low likelihood that cultural properties would be impacted.

3.2.9 DEMAND FOR GOVERNMENT SERVICES

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

DEQ staff would provide guidance to CMI for septage land application activities at the Site, with assistance from the Park County sanitarian as needed. Disposal logs showing volumes of waste applied by CMI at the Site are submitted to DEQ twice a year. Disposal logs would 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.

3.2.10 SOCIOECONOMICS

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

No additional employees would be hired because of the Proposed Action. Employees currently employed by CMI would conduct necessary operations at the Site.

3.2.11 TRAFFIC

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

There would be no significant increase in traffic on Swingley Road. One pumper truck would access the Site at a time. The Site would be accessed from Swingley Road. Swingley Road currently supports daily traffic to homes and businesses in the area.

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 would restrict the use of private lands or regulate their use beyond the permitting process prescribed by the SDLA. The conditions that would be imposed by DEQ in issuing the license would be designed to ensure conformance of the Proposed Action to minimum environmental standards or to uphold criteria proposed and/or agreed to by CMI during application review. Thus, no further DEQ analysis is required beyond the CMI 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, would result in significant impacts.

The Site is currently pasture grass. The surrounding area consists of agricultural activities and residential homes. The cumulative impacts of the Proposed Action would 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 Draft EA, and includes approximately 100 acres of Cahill property located 3.7 miles east of Livingston on Swingley Road in Park County, Montana. If CMI renews their license and operations comply with the SDLA and its implementing rules, land application activities and DEQ site inspections would continue indefinitely. The Site is not within sage grouse core habitat, general habitat, or connectivity area. It has no special agricultural designation. Operations would not adversely affect any threatened or endangered species.

The Proposed Action is expected to improve soils and crops grown 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 Draft EA.

The Proposed Action is not expected to impact groundwater. The depth to groundwater is greater than six feet as required. Land application at agronomic rates would 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 would be limited to meet the regulatory restrictions necessary to protect human health (ARM 17.50.811(4) and (5)). 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 would 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 CMI's proposal to add the Site to its septic pumper license is not anticipated to significantly impact the quality of the human environment. Therefore, preparation of an EA is the appropriate level of review under MEPA.

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

Park County Environmental Health Department
United States Environmental Protection Agency
World Health Organization
United States Department of Agriculture
Montana Natural Heritage Program
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: May 10, 2021

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