DRAFT ENVIRONMENTAL ASSESSMENT

Proposed Class II Solid Waste Management System

Auto Shred Residue (ASR) Repository

Billings, Montana

Solid Waste Section

PO Box 200901

Helena MT 59620-0901

October 30, 2023

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Acronyms

Active Cell – Area within a landfill unit where disposal is occurring, not to exceed more than 6.07 acres at a time.

ARM – Administrative Rules of Montana

BMP's – Best Management Practices

Cell Life – Approximate duration a particular landfill cell is active from construction to closure.

C&D – Construction and Demolition

CQA/CQC – Construction Quality Assurance/Construction Quality Control

DEQ – Montana Department of Environmental Quality

Draft EA – Draft version of an environmental assessment

EIS – Environmental Impact Statement

EPA – Environmental Protection Agency

Facility Life – Approximate duration of the Proposed Action, not to exceed 122 years.

FWP – Montana Department of Fish, Wildlife, and Parks

GWIC – Ground Water Information Center

IWMA – Integrated Waste Management Act

MBMG – Montana Bureau of Mines and Geology

MCA – Montana Code Annotated

MEPA – Montana Environmental Policy Act

MSW – Municipal Solid Waste

NRCS – Natural Resource Conservation Service

O&M – Operation and Maintenance

PSR – Pacific Steel and Recycling

RCRA – Resource Conservation and Recovery Act

SWMA – Montana Solid Waste Management Act

SWP – Montana DEQ Solid Waste Program

SWS – Montana DEQ Solid Waste Section

USDA – United States Department of Agriculture

USEPA – United States Environmental Protection Agency

USFWS – United States Fish and Wildlife Service

USGS – United States Geological Survey

1. PURPOSE AND NEED FOR ACTION

1.1 Summary

On December 15, 2022, Pacific Steel and Recycling (PSR) submitted a Solid Waste Management System (SWMS) license application to the Montana Department of Environmental Quality (DEQ). The application proposes to establish a Class II Solid Waste Management System for an Auto Shred Residue (ASR) Repository, including a liner system, leachate collection system, and groundwater monitoring and controls (Proposed Action). The 320-acre site would border US Highway 87 to the east and Shepard Acton Road to the south and be located six miles west of Shepherd and seven miles north of Billings, in Yellowstone County, Montana (Site, (**Figures 1** and **2**)). Of the 320 total acre site, only 90 acres are planned for Class II waste disposal activities. The Site, which is presently vacant grassland, would be operated by PSR and coordinate the management of at least 25,000 tons of ASR per year. The Site details include:

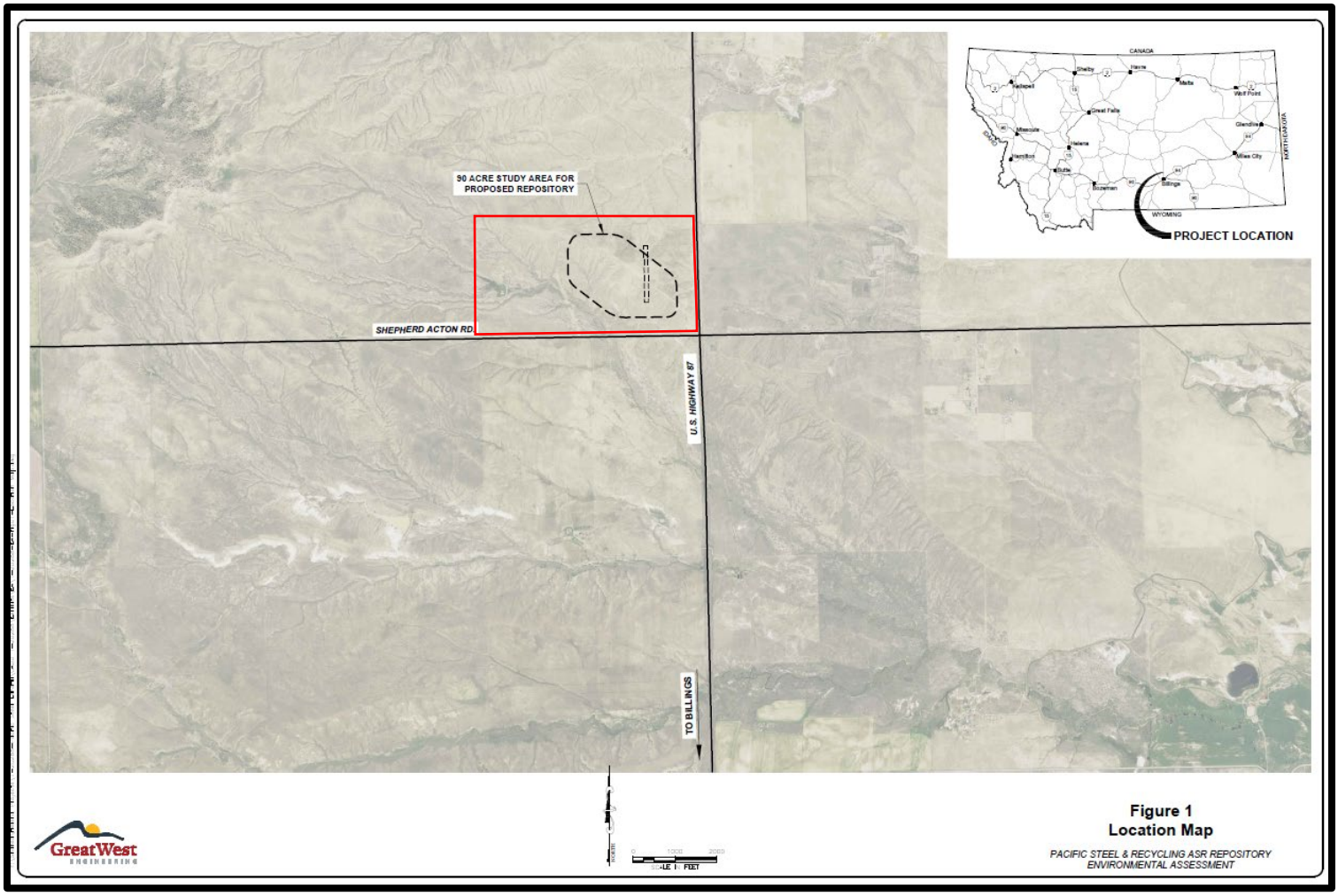
- Site would accept at least 25,000 tons of ASR annually from PSR facilities, so there is no need for a scale or office area at this time.
- Air Space Capacity – 8.03 million cubic yards
- Solid Waste Capacity – 6.69 million cubic yards or 3.06 million tons
- The estimated facility life expectancy is 122 years.
- The life estimate is based on an effective waste to soil ratio of 5:1 and in-place density of 915 LB/CY. This equates to a volume per ton ratio of 2.62 CY/Ton.
- PSR would only accept Class II waste in the License area. No restricted and/or special waste.

1.2 Background

PSR operates an automobile shredding facility east of Billings near Lockwood, Montana. The facility currently generates approximately 25,000 tons of ASR annually. Currently, PSR hauls this material to the City of Billings Regional Landfill for disposal. PSR contracted with Great West Engineering to design its own Class II landfill for the specific disposal of ASR.

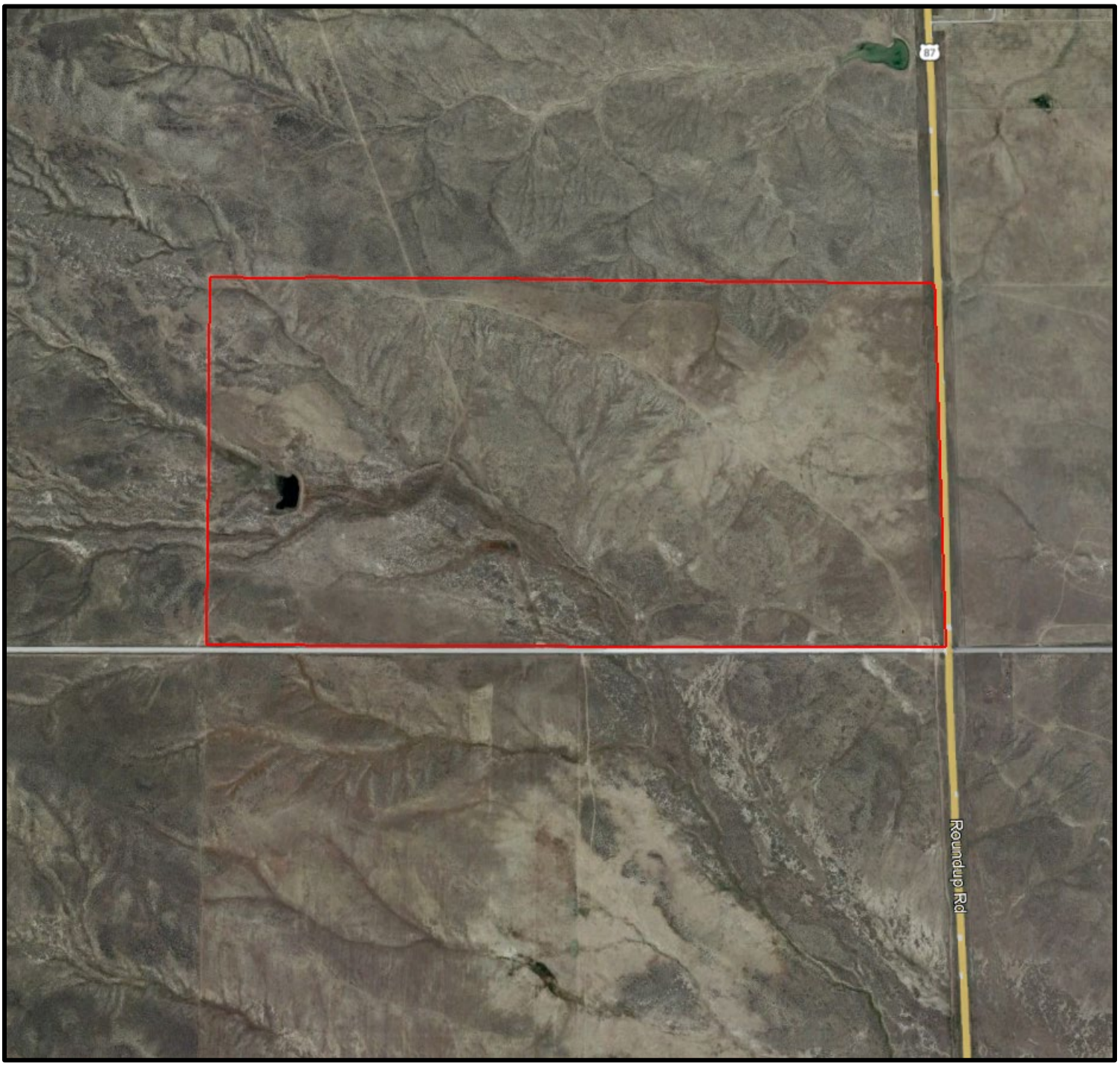
Group II wastes, or commonly municipal solid waste (MSW), which may include significant decomposable wastes and some mixed solid wastes of appreciably decomposable materials. It may also broadly share the common materials and characteristics of almost all other waste groups, or select wastes (such as household hazardous, commercial, industrial, asbestos, TENORM, exempted remediation, etc.). But required exceptions include chiefly hazardous, radioactive, TSCA, mining, and a few other wastes as defined by federal EPA, NRC, etc.). ASR falls into this group of wastes. ASR is generated from separating recyclable scrap parts during shredding of automobiles. The “fluff” portion of this separated waste is what would be landfilled at the Site. It is mainly composted of plastics and trace metal and other waste that couldn’t be separated.

Figure 1: Location of the Site
*Site in **red***



(Source: Figure 1 of the Pacific Steel & Recycling License Application; Great West 2023)
Not to Scale

Figure 2: Aerial Photo of the Site
*(Site in **red**)*



(Source: Google Earth, 2023)
Not to Scale

1.3 Purpose, Need, and Benefits

Pacific Steel and Recycling has applied to DEQ for review and licensure of a Class II solid waste management facility. DEQ's purpose and need is to act on Pacific Steel and Recycling's application to operate an ASR as described in its application. DEQ's decision to approve or deny the Proposed Action depends upon compliance and consistency (i.e., "equivalence") of the SWMS application with:

1. Applicable tenants of the SWMA, Clean Air Act of Montana (CAA), and Montana Water Quality Act (WQA) established by Montana Code Annotated (MCA); and

2. Applicable solid waste management criteria as required in the ARM.

ARM Title 17, chapter 50, establishes the minimum requirements for the licensing of all SWMS proposals. DEQ's final decision to license a SWMS must be validated by the local health officer within 15 days of its issuance.

PSR's purpose and need is to license the facility as proposed so disposal of ASR can occur in lieu of transporting this waste to the Billings Regional Landfill. The Proposed Action will leave more airspace for waste in the greater Billings area to be disposed of appropriately, increasing the life expectancy of the landfill. Further allowing for the potential future recovery of ASR for other uses to be determined.

The Montana Solid Waste Management Act (SWMA) establishes the minimum requirements for development and licensing of SWMS to protect the environment and the health and welfare of Montana citizens. The SWMA supports long-range planning efforts to ensure that adequate landfill capacity is available in Montana to meet the state's growing population needs. Administrative rules adopted by DEQ pursuant to the SWMA establish requirements for the design, operation, monitoring, correction, financial assurance, closure, and post-closure care of all licensed SWMS based on the type of facility.

1.4 Location Description and Study Area

The Site would occupy 320-acres located within Section 3, Township 2 North, Range 26 East. The Site is located approximately six miles west of Shepherd, Montana and seven miles north of Billings, Montana, in Yellowstone County (**Figure 1**). The proposed boundary borders US Highway 87 to the east and Shepherd Acton Road to the south.

PSR owns the property planned for the Class II Solid Waste facility. Currently, the property and all areas immediately around the property area are undeveloped grassland with some sagebrush. The Site is intermittently used for the grazing of cattle. The property to the north and west of the site is owned by Charter Ranch, Inc., and used for grazing; the property to the south is owned by Bar Diamond Ranch LLC and Bureau of Land Management; and the property to the east of the site is owned by MRB Properties LLC. Access to and from the Site would utilize Shepherd Acton Rd.

Typically, the study area includes the extent of the Site and adjacent areas within at least one mile of the Site. The study area is defined in *Section 3.1*. The study area for each resource is unique and described in each subsection under *Section 3.3*.

1.5 Authorizing Action

MONTANA ENVIRONMENTAL POLICY ACT (MEPA)

MEPA was created as a procedural mechanism to assist the legislature in determining whether laws are adequate to address impacts to Montana's environment and to inform the public and public officials of potential impacts resulting from decisions made by state agencies. DEQ prepared this Draft EA in accordance with requirements of MEPA to disclose potential threats to human health and the environment

associated with the proposed action. All actions associated with creating this MEPA document are public record, and not a record of decision, and certainly do not provide regulatory authority beyond the authority explicitly provided in existing regulations.

Among the several purposes an EA may serve, it may be used to determine the need to prepare an EIS through an initial evaluation and determination of the significance of impacts associated with the proposed action. ARM 17.4.607(2)(c). An EA may also be used to ensure the fullest appropriate opportunity for public review and comment on proposed actions, including alternative and planned mitigation, where the residual impacts do not warrant the preparation of an EIS. ARM 17.4.607(2)(d). This document may disclose impacts over which DEQ has no regulatory authority.

GENERAL LICENSING

DEQ is responsible for issuing SWMS licenses under authority of the SWMA and associated ARM. The Class II license application must contain engineering design plans and an operations plan addressing the methods that would be used to manage the Group II waste at the Site. It must also include a detailed closure and post-closure care plan. It may also include groundwater and methane monitoring plans. These required documents and the DEQ decision to license the proposed facility must first be approved by the Mineral County Health Officer.

DEQ is also responsible for protecting air quality under the Montana Clean Air Act (CAA), and water quality and quantity under the Montana Water Quality Act (WQA). The options that DEQ has for decision-making upon completion of the EA are:

1. Denying the application if the Proposed Action would violate SWMA, CAA, or WQA.
2. Approving the application as submitted.
3. Approving the application with agency mitigatory measures.
4. Determining the need for further environmental review.

Table 1 provides a listing of any state, local, or federal agencies that may have overlapped or additional jurisdiction or environmental review responsibility for the Proposed Action and the permits, licenses, and other authorizations required. All necessary permits and approvals must be attained prior to onsite implementation of the proposed action after licensing by DEQ.

Table 1: Applicable Regulatory Activities

Applicable Regulatory Activities	
Agencies	**Responsibilities**
DEQ – Waste Management Bureau	SWMS license
DEQ – Air Quality Bureau	Air quality permitting
DEQ – Water Protection Bureau	Montana Pollutant Discharge Elimination System (MPDES) permit
Yellowstone County Health Officer	SWMS license validation by county health officer
Yellowstone County	County waste container sites, road construction and maintenance, land use, and weed plan approval
(List of agencies involved and their respective or licensing requirements)	

CONTINUAL FACILITY REVIEW AND LICENSE RENEWAL

All licensed SWMS facility operations must conform with applicable laws and rules pertaining to solid waste management. If rules or statutes are adjusted or changed, operations would need to adjust accordingly. When a SWMS is initially approved and licensed, it becomes subject to a series of regular licensing and operational reviews by DEQ:

SWMS License Renewal Applications Review: Annual

The license renewal form includes waste volumes for the previous year. DEQ uses reported waste volumes to determine fees and the level of operational activities. A license is renewed if all renewal information is supplied, and the facility can demonstrate an ongoing ability to operate in compliance with applicable rules and statutes.

SWMS Inspections and Site Visits: Annual to Semi-Annual

DEQ staff inspect licensed SWMS facilities to verify compliance with applicable rules and statutes. Prior to inspections, staff review the facility's approved operation & maintenance (O&M) plan. During inspections, staff evaluate all landfill waste management systems and operations. Compliance assistance is emphasized, however, failure to follow the approved O&M plan or to meet the requirements of applicable rules and statutes may result in a violation requiring corrective action(s) and further compliance review with DEQ follow-up (*e.g.,* approval of appropriate O&M Plan changes) and a repeat inspection.

O&M Plan Review: At least every five years

Facilities are required to update O&M plans at least every five years. Should no updates be needed, facilities may notify DEQ that operations have not changed. Whenever significant operational changes are expected or required, facilities must notify DEQ in advance by submitting an updated plan for review and approval prior to implementation under ARM 17.50.509 (3). All changes must comply with all applicable rules and statutes during the period in which the plan is reviewed.

Engineering Plans Review: Approximately every five years

As operations develop, the designs for the waste collection, sorting, or separation, including the management of liquids, may require adjustment and any necessary changes in equipment or layout may be

submitted to and approved by DEQ. Any such changes must comply with applicable rules and statutes during the period in which the engineering plan is reviewed.

1.6 Public Participation

Pursuant to ARM 17.4.610(3), DEQ is responsible for providing opportunities for public participation of EAs for review and comment.

DEQ determined that public participation is warranted for this action and is conducting a public comment period for this Draft EA, which began upon publication of this document.

The original public comment period ended ***October 30, 2023***, but has been extended to ***November 30, 2023***. Notification was sent to adjacent landowners and other interested parties that requested to be notified. A press release announcing the Draft EA's availability was sent out on October 20, 2023, and the EA is posted at: *https://deq.mt.gov/public/publiccomment* .

PSR's application is available at the link above.

2. DESCRIPTION OF ALTERNATIVES

2.1 Introduction

This section describes the Proposed Action and reasonable alternatives to the PSR's Proposed Action, including the No Action alternative. MEPA requires state agencies to consider the No Action and reasonable alternatives to a proposed action that are available and prudent to consider. The alternate approach or course of action must accomplish the same objectives as the Proposed Action, and must be realistic, technologically available, and must have a logical relationship to the Proposed Action. Section 75-1-220, MCA, states that for a project that is not a state-sponsored project, an alternatives analysis does not include an alternative facility or an alternative to the proposed project itself. Therefore, DEQ only considered alternatives applicable to the proposed facility at the proposed location.

2.2 DEQ Alternative 1 – NO ACTION ALTERNATIVE

Under the No Action Alternative, the Proposed Action would not be approved by DEQ. The Site could not be licensed as a Class II SWMS and would not be constructed by PSR. The ASR would not be allowed in the monofill and would be disposed in the Billings Regional Landfill.

2.3 DEQ Alternative 2 – PROPOSED ACTION

The Proposed Action is the licensing by DEQ of a Class II Solid Waste Management System as proposed by PSR in their December 15, 2022, application. The Proposed Action would allow for construction and operation of the Facility as an ASR monofil, including a liner system, leachate collection system, and groundwater monitoring and controls. The proposed facility would only allow the disposal of ASR and no other wastes. The repository would only be used by company personnel and would not be open to the public or used by other commercial or industrial companies. Please see Section 1.1 for additional information relating to PSR's application.

Currently, all ASR goes to the City of Billings Regional Landfill and is mixed with municipal waste. Creating an ASR repository would allow PSR the option or reclamation of ASR in the future if necessary and limit the amount of non-degradable waste entering the Billings Regional Landfill. The construction of the proposed facility would increase the life expectancy of the current Billings Regional Landfill.

3. AFFECTED ENVIRONMENT AND IMPACT BY RESOURCE

3.1 Affected Environment and Study Area

The Site would be located on property owned by Pacific Steel & Recycling approximately six miles west of Shepherd and seven miles North of Billings, Montana (**Figure 1**). The Proposed Action would occupy 90 acres for Class II waste disposal activities.

Except where noted in specific resource sections, the study area for resource impact analysis includes all lands and resources located within the 320-acre parcel, 90 acres of which would be used for Class II waste disposal activities, and all adjacent lands within one mile in each direction. The study area may vary based on the predicted locations of direct and secondary impacts that could result from the Proposed Action as noted for each impact analysis.

3.2 Categories of Potential Impacts from the Proposed Action

The impact analysis would identify and evaluate direct and secondary impacts, which are as follows:

- **Direct impacts:** Impacts that occur at the same time and place as the action that triggers the effect.
- **Secondary impacts:** Further impacts to the human environment that may be stimulated or induced by or otherwise result from a direct impact of the action.

Where impacts are expected to occur, the impacts analysis estimates the duration and intensity of the impact. The severity of an impact is measured using the following:

- **No impact:** There would be no change from current conditions.
- **Negligible:** An adverse or beneficial effect would occur but would be at the lowest levels of detection.
- **Minor:** The effect would be noticeable but would be relatively small and would not affect the function or integrity of the resource.
- **Moderate:** The effect would be easily identifiable and would change the function or integrity of the resource.
- **Major:** The effect would alter the resource.

Tables 2 and **3** outline the impacts assessed (NOTE: numbers in the tables do not correspond to the heading numbers in the document).

DEQ is aware of the recent district court opinion in Held v. State, ruling the statutory prohibition on including greenhouse gas analyses in MEPA reviews unconstitutional.[1] That decision is being appealed to the Montana Supreme Court and final resolution is yet unsettled. While litigation is ongoing, and consistent with the court order, DEQ has started a process to assess and improve our environmental review processes, including consideration of future climate impact analyses.

[1] *Held v. State*, No. CDV-2020-307 (Mont. 1st Jud. Dist. Ct. Aug. 14, 2023).

Table 2: Impacts to the Physical Environment

Physical Environment	Major	Moderate	Minor	None	Unknown	Attached
1. Terrestrial and Aquatic Life and Habitats			✔			✔
2. Water Quality, Quantity, and Distribution				✔		✔
3. Geology and Soil Quality, Stability, and Moisture			✔			✔
4. Vegetation Cover, Quantity, and Quality			✔			✔
5. Aesthetics			✔			✔
6. Air Quality			✔			✔
7. Unique, Endangered, Fragile, or Limited Environmental Resources				✔		
8. Historical and Archaeological Sites				✔		✔
9. Demands on Environmental Resources on Land, Water, Air, or Energy				✔		

Table 3: Impacts to the Human Environment

Human Environment	Major	Moderate	Minor	None	Unknown	Attached
1. Social Structures & Mores				✔		
2. Cultural Uniqueness & Diversity				✔		✔
3. Density & Distribution of Population & Housing				✔		
4. Human Health & Safety				✔		✔
5. Quantity & Distribution of Employment			✔			✔
6. Local & State Tax Base Revenues			✔			✔
7. Demand for Government Services			✔			✔
8. Industrial, Commercial, & Agricultural Activities & Production			✔			✔
9. Access to & Quality of Recreational & Wilderness Activities				✔		
10. Locally Adopted Environmental Plans & Goals				✔		

3.3 Terrestrial, Aquatic Life, and Habitats

The affected environment and study area include all lands and resources located within the proposed study area as defined in *Section 3.1* with the exception that the Montana National Heritage Program animal and plant species of concern mapped within the entire Township 2 North, Range 26 East.

The 320 acres owned by PSR contains two areas designated by the United States Fish and Wildlife Service (USFWS) National Wetlands Inventory and Montana National Heritage Program (MTNHP) as "Freshwater Emergent Wetlands" (**Figure 3**). These Palustrine Emergent Wetlands are described by the MTNHP as temporarily flooded wetlands with erect, rooted herbaceous vegetation present during most of the growing season. Both wetlands on site are described as being diked or impounded (MTNHP, 2023).

Neither of these two wetland areas are within the 90-acre proposed disturbance area. PSR's application proposes they maintain a buffer zone (undisturbed area) to the east of the ephemeral stream, and as such facility construction will not alter or in any way encroach upon the classified wetlands described above. Since there will not be any wetlands impacted or destroyed, there will not be any need for compensatory mitigation." (Great West, 2022).

The MTNHP describes the Site as predominantly Shrubland, Steppe, and Savanna systems with minor portions of Grassland systems. There is no current human land use on the site.

The MTNHP was queried for animal and plant species of concern. The focus area of the query was Township 2 North, Range 26 East, which is larger than the study area, but the smallest defined area allowed in the search. Species of concern are summarized in **Table 4** below. The search was provided by the MTNHP on June 7, 2022, and provided within the Pacific Steel and Recycling application.

Table 4: Species of Concern

Common Name	Family	Global Rank	State Rank	Habitat
Mammals				
Black-tailed Prairie Dog	Squirrels	G4	S3	Grasslands
Spotted Bat	Bats	G4	S3	Cliffs with rock crevices
Birds				
Golden Eagle	Hawks/Kites/Eagles	G5	S3	Grasslands
Great Blue Heron	Bitterns/Egrets/Herons/ Night-Herons	G5	S3	Riparian Forest
Burrowing Owl	Owls	G4	S3B	Grasslands
Greater Sage Grouse	Upland Game Birds	G3G4	S2	Sagebrush
Pinyon Jay	Jays/Crows/Magpies	G4	S3	Open Conifer Forest
Loggerhead Shrike	Shrikes	G4	S3B	Shrubland
Reptiles				
Snapping Turtle	Snapping Turtles	G5	S3	Prairie Rivers and Streams
Western Milksnake	Colubrid Snakes	G5	S2	Rock Outcrops
Plants				
None Found				

MTNHP Rank Definition

G1 S1 At high risk because of **extremely limited** and/or **rapidly declining** population numbers, range and/or habitat, making it highly vulnerable to global extinction or extirpation in the state.

G2 S2 At risk because of **very limited** and/or **potentially declining** population numbers, range and/or habitat, making it vulnerable to global extinction or extirpation in the state.

G3 S3 Potentially at risk because of **limited** and/or **declining** numbers, range and/or habitat, even though it may be abundant in some areas.

G4 S4 Apparently secure, though it may be quite rare in parts of its range, and/or suspected to be declining.

G5 S5 Common, widespread, and abundant (although it may be rare in parts of its range). Not vulnerable in most of its range.
GX SX Presumed Extinct or Extirpated - Species is believed to be extinct throughout its range or extirpated in Montana. Not located despite intensive searches of historical sites and other appropriate habitat, and small likelihood that it will ever be rediscovered.
GH SH Historical, known only from records usually 40 or more years old; may be rediscovered.
GNR SNR Not Ranked as of yet.

Of the ten animal species of concern, two animals, the Greater Sage Grouse and the Western Milksnake, qualify as a S2, or at risk because of a very limited and/or potentially declining population numbers, range and/or habitat, making it vulnerable to global extinction or extirpation in the state. The proposed project area consists of predominantly undeveloped grasslands with little sage brush and no rock outcrops.

The Site is located within general habitat for sage grouse as defined by the State of Montana. PSR contacted the Montana Sage Grouse Habitat Conservation and mitigation costs have been determined by the agency. PSR intends to contribute to the Stewardship Account to obtain the necessary permit.

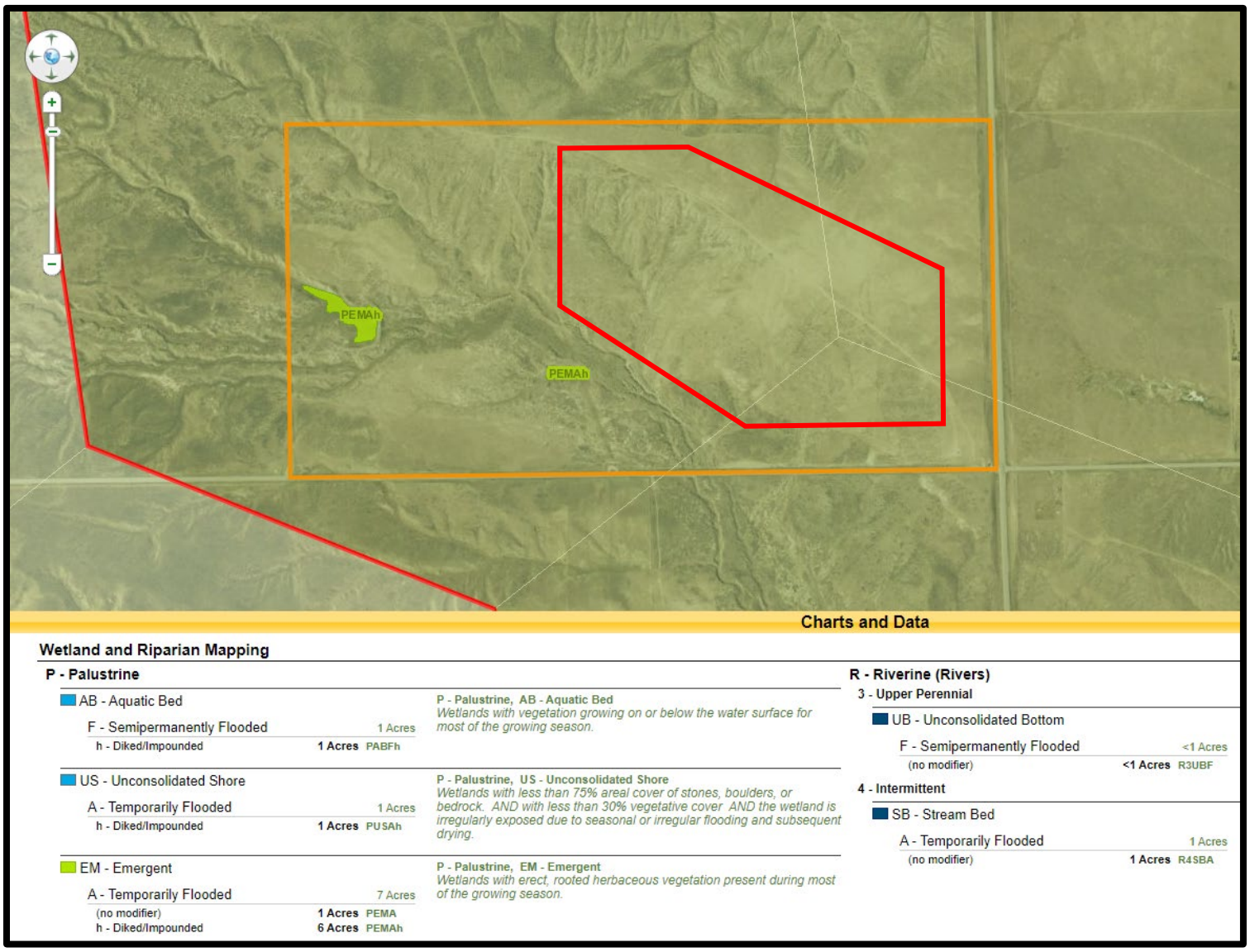
Transient wildlife populations, including whitetail deer, mule deer, many bird species, and more occupy the habitat within and surrounding the Site boundary. Transient, by definition, means “lasting only for a short time”, or “impermanent”. Such species exhibit transient behavior, relocating regularly and rarely remaining in one area for long periods of time. The development of the project area may require relocation of local and transient animals, but much of the surrounding areas offer similar habitats. Additionally, none of the species of concern listed in the area have been found in this habitat upon previous inspection of the Site. If such animals are found, the proper state agencies would be contacted immediately.

Under the No Action Alternative, the Site would not be licensed as a Class II Solid Waste Facility, and there would be no potential impacts to terrestrial and aquatic life and habitats.

Since the two wetland areas found within the project site would not be impacted or destroyed, there are no impacts to aquatic life habitats. Due to the activities involved in the Proposed Action, there would be minor impacts to terrestrial habitats on site.

Figure 3: Wetlands Map

*(PSR property in **orange**, 90-acre licensed boundary in **red**)*



(Source: https://mtnhp.org/mapviewer/?t=8)

Not to Scale

3.4 Water Quality, Quantity, and Distribution

The affected environment and study area include all lands and resources located within the 320-acre parcel and all adjacent lands within one mile in each direction.

3.4.1 Surface Water

The study area lies within the boundaries of the Yellowstone River watershed. The Yellowstone River watershed, which drains an area of approximately 34,000 square miles including portions of north-central Wyoming and south-central Montana.

Figure 4 shows the primary surface water features within a one-mile radius of the property boundary. The closest surface water feature from the initial waste disposal cells (Phases 1 thru 4) is the surface depression located approximately 300 feet southwest of the southwestern perimeter of the waste footprint. This would

be classified as an 'ephemeral stream' and only flows during brief periodic episodes in direct response to substantial precipitation or snowmelt runoff events. The presence of flowing surface water in this drainage has not been observed during field investigations conducted in July 2021, December 2021/January 2022; and August/September 2022.

The Site would incorporate perimeter ditches and berms to divert any run-on from entering any waste area. All run-off collected from the repository area would be directed to storm water detention ponds. The detention ponds detain greater than the total volume of water from the 25-year, 24-hour storm event. The repository would operate and maintain the detention ponds and ditches in accordance with the Storm Water Pollution Prevention Plan (SWPPP) and General Industrial Stormwater Discharge Permit which would be obtained prior to beginning operations. A SWPPP is a site-specific document that identifies potential sources of stormwater pollution at a site.

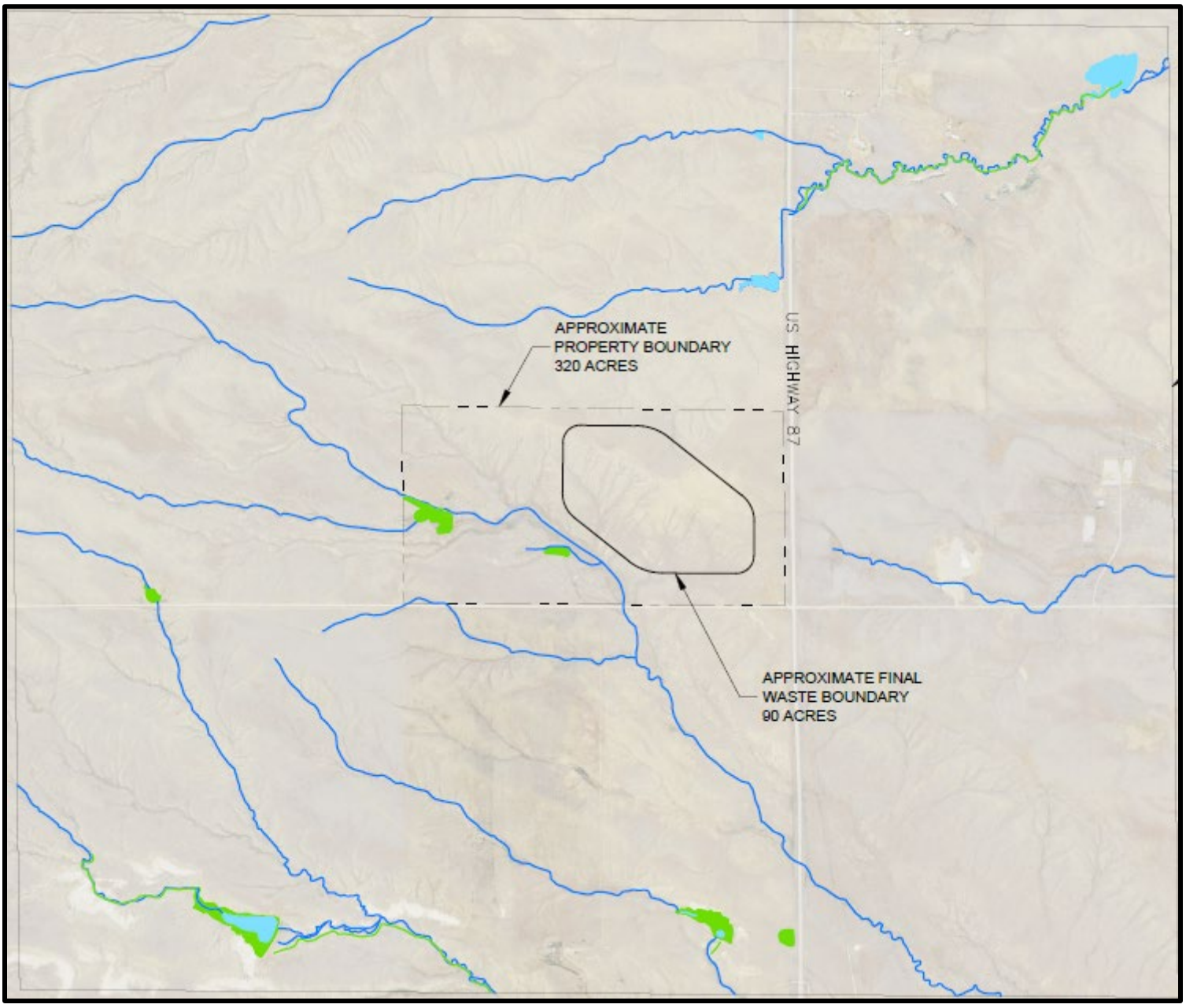
All surface water ditches and culverts are designed and constructed to handle the 25 year, 24-hour storm water run-off. **Figure 5** shows the proposed drainage patterns of the ASR repository as shown in the Operation and Maintenance Plan (Great West, 2022). The PSR staff would be responsible for maintenance items as follows:

- Surface water ditches shall prevent any water from off the site running onto the waste areas.
- All run-off from waste areas shall be directed to the detention ponds.
- The drainage ditches shall be periodically inspected, and any erosional damage repaired.
- Ditches which frequently have erosional damage should be mitigated with straw bales, rock checks, rip rap, permanent vegetation, erosion blankets, or other best management practices (BMPs).
- Culverts should also be periodically inspected for blockage, especially after significant run-off events.
- Any plugged culverts should be immediately cleaned out to restore capacity.

Stormwater is water that originates during precipitation events and snow or ice melt. Stormwater can soak into the ground, be held on the surface to evaporate, or run off towards downstream surface water bodies. Surface water flow may occur at the Site when water generated by rain, snowfall, or melting of accumulated snow, flows freely over the land surface into the drainages. Surface water flow may occur when the soil is saturated and its holding capacity is exceeded, when precipitation falls more quickly than the soil can absorb it, or more typically, when a combination of these conditions exists. Stormwater runoff collection in low areas within the western portion of the site would allow all runoff to collect in basins and infiltrate the surface soils as previously provided.

The topography generally slopes to the south or southeast, towards the localized drainage feature. A general drainage pattern to the southeast is consistent with the regional setting.

Figure 4: Surface Water Map



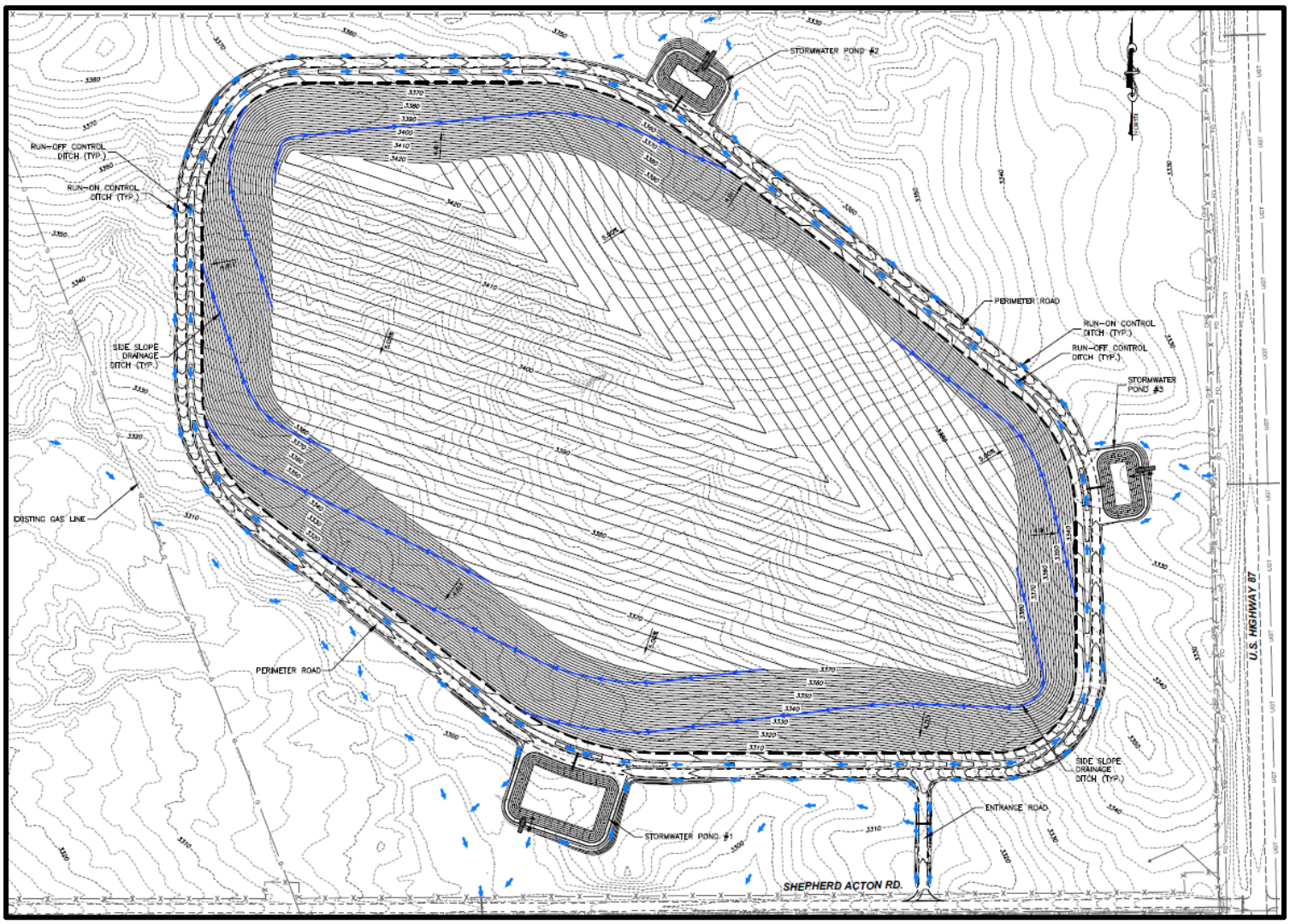
(Source: from Figure 5 of the Pacific Steel & Recycling ASR Repository Soils and Hydrogeologic Report, 2022)

Not to Scale

PSR would be required to obtain a General Construction Storm Water Permit from DEQ's Water Protection Bureau prior to any potential future construction activities. The general storm water discharge permit coverage is for construction activities that include clearing, grading, grubbing, excavation, or other earth disturbing activities affecting one or more acres and discharge storm water to state surface waters. Conditions of the general permit require PSR to implement BMPs to control sediment and erosion during construction activities, washing off-road equipment prior to entering the construction site. Seeding would be done with a native seed mixture (equivalent to mix from the Natural Resource Conservation Service (NRCS)) and mulching and fertilizing of disturbed areas to reduce weed establishment and prevent erosion would be required. Storm water BMPs are control measures used to manage changes in the quality and

quantity of storm water runoff. BMPs are designed to reduce the volume, peak flows, and/or quality of storm water through evaporation, infiltration, detention, and filtration.

Figure 5: Drainage Map



(Source: from Figure 3 of the Pacific Steel & Recycling ASR Repository Operation and Maintenance Plan, 2022)

Not to Scale

3.4.2 Ground Water

Through the application process, PSR installed six groundwater monitoring wells on the Site to better understand local groundwater. Placement of the wells were all within the permitted boundary, generally around the perimeter of the planned waste disposal areas.

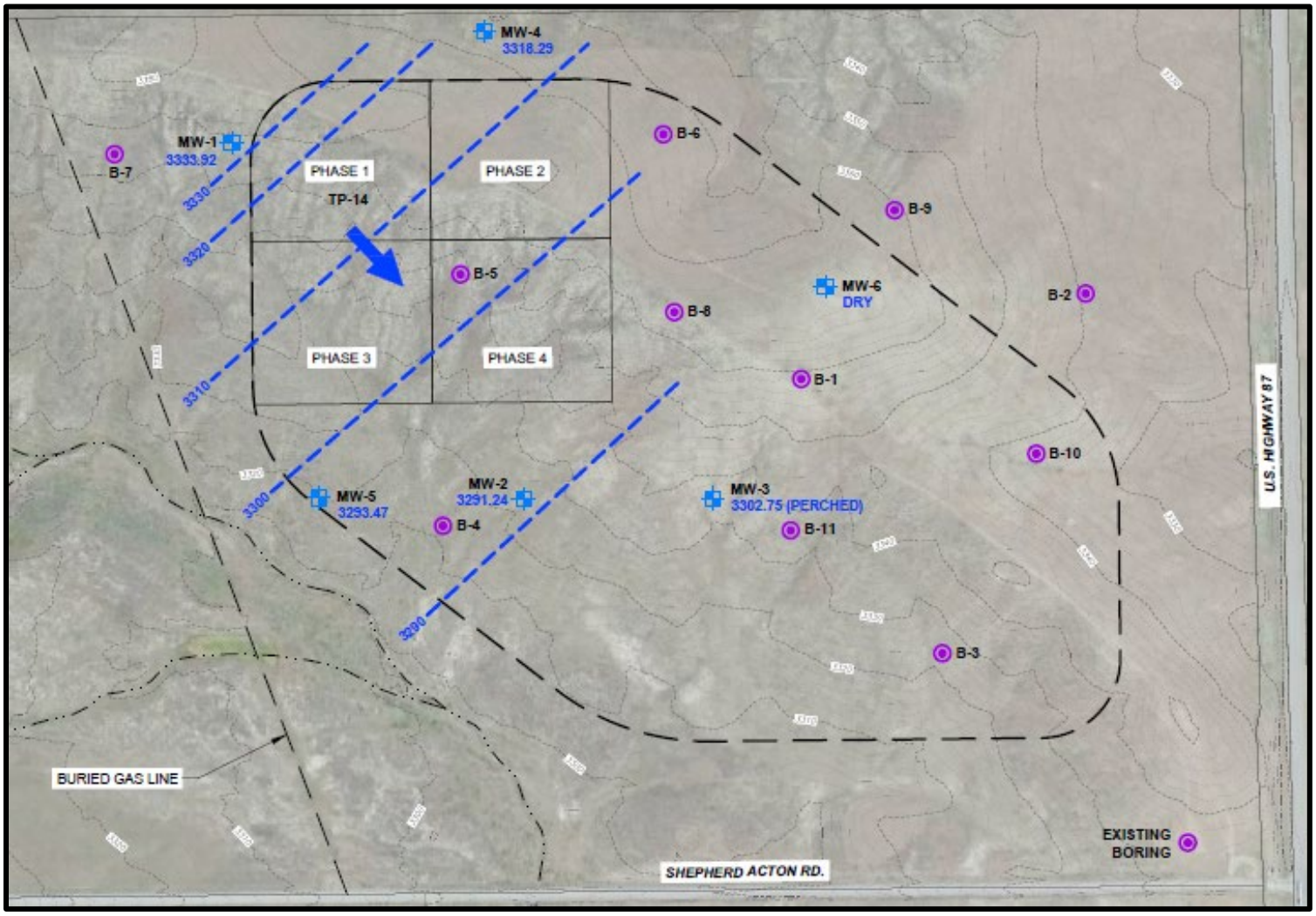
According to PSR's license application, the general characteristics of soils and the uppermost saturated conditions used to determine well depth were described as:

- **Well MW-1**. The depth to uppermost saturated conditions was observed in a relatively thin (less than 1 ft thick) seam which was logged at a depth from approximately 50 to 51 ft bgs. The monitoring well screen was placed from 45 to 65 ft bgs, spanning this uppermost saturated condition.

- **Well MW-2**. The depth to uppermost saturated conditions was observed in a relatively thin (less than 1ft thick) seam which was logged at the depth of 61 to 64 ft bgs. The monitoring well screen was placed from 59 to 69 ft bgs, spanning this uppermost saturated condition.
- **Well MW-3**. The depth to uppermost saturated conditions was observed in a relatively thin (less than 1 ft thick) seam which was logged at the depth of 41 ft bgs. The monitoring well screen was placed from 38 to 48 ft bgs, spanning this uppermost saturated condition.
- **Well MW-4**. The depth to uppermost saturated conditions was observed as 'trace moisture' during drilling at a depth of 65 ft bgs. The monitoring well screen was placed from 65 to 75 ft bgs, spanning this uppermost saturated condition.
- **Well MW-5**. The depth to uppermost saturated conditions was observed in a relatively thin (2-inch thick) seam which was logged at the depth of 35 to 36 ft bgs. The monitoring well screen was placed from 35 to 45 ft bgs, spanning this uppermost saturated condition.
- **Well MW-6**. The depth to uppermost saturated conditions was observed as a 'trace' of moisture at a depth of 35 ft bgs. The monitoring well screen was placed from 35 to 50 ft bgs, spanning this uppermost saturated condition.

The newly installed wells and the inferred groundwater flow direction can be seen on **Figure 6** below. According to PSR's license application, the uppermost groundwater aquifer is encountered at depths ranging from approximately 35 to 70 ft bgs (Great West, 2022). The groundwater elevations and hydraulic head relationships from the newly installed wells suggest a generalized groundwater flow direction to the southeast. The well purging and development data demonstrate the yield of groundwater from these uppermost saturated seams is relatively low and is categorized as 'poor-quality' water that is extremely high in ion abundance (namely conductance, TDS, sulfate, and sodium)) and generally unfit for human or stock consumption.

Figure 6: Groundwater Flow Map

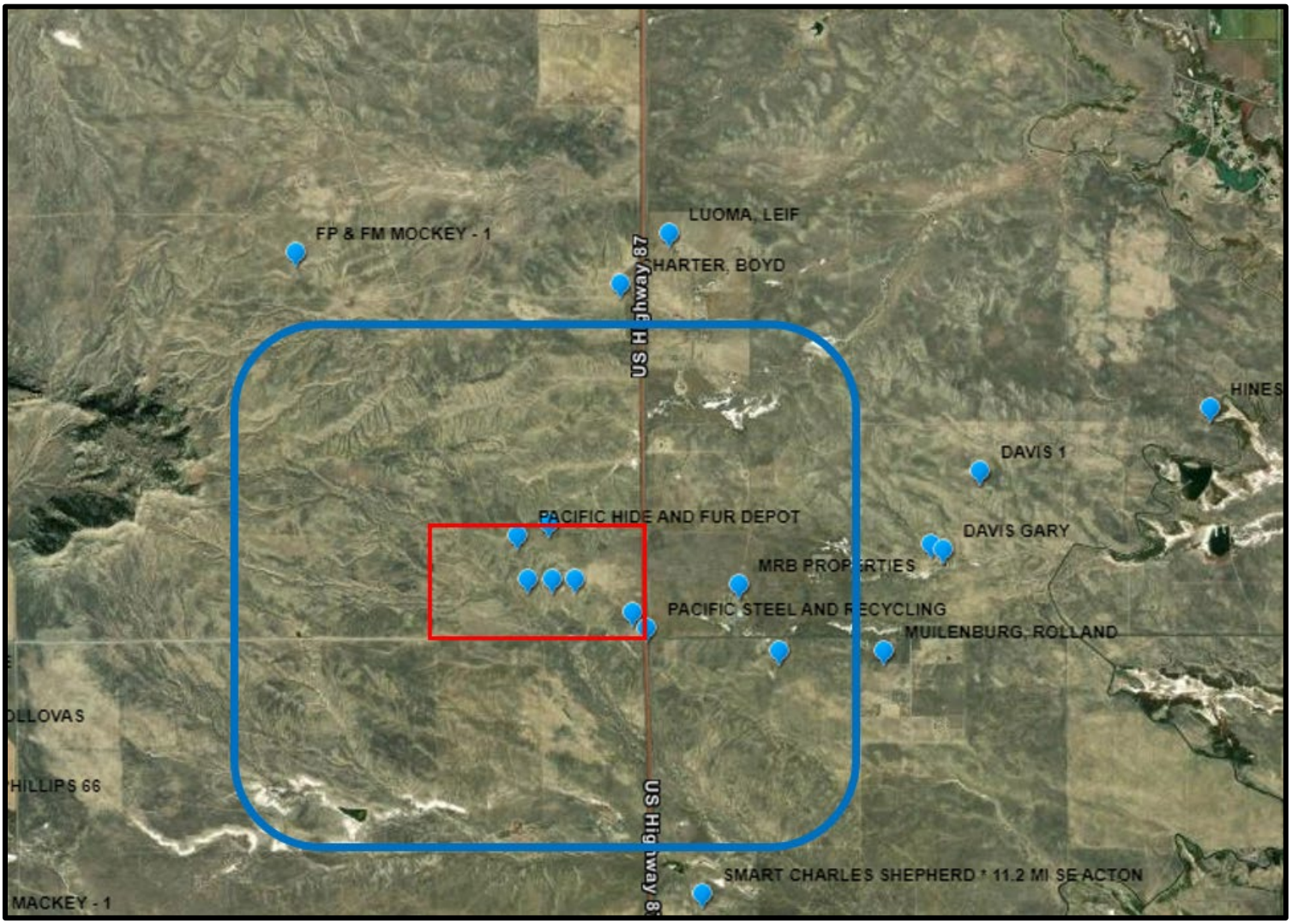


(Source: from Figure 7 of the Pacific Steel & Recycling ASR Repository Soils and Hydrogeologic Report)

A search of the Montana Bureau of Mines and Geology Ground Water Information Center (GWIC) database indicates there are ten water-supply wells within a one-mile radius of the Site. A search of GWIC for Sections 2, 3, 4, 9, 10, and 11, Township 2N, Range 26E, and Sections 33, 34, and 35, Township 3N, Range 26E, (the nine Sections encompassing and surrounding the Site) found 15 wells with data. All but two wells within the mile study area and east of the Site are owned by PSR. Wells found within the search can be seen on **Figure 7**. As shown in *Table 5*, well averages of the surrounding Sections show an average well depth of 213 feet, an average static water level of 48 feet before ground surface, and an average yield of 19 gallons per minute.

Figure 7: Groundwater Well Map

*License boundary in **red**, Search within 1 mile radius of boundary in **blue**.*



(Source: GWIC, Montana Bureau of Mines and Geology, 2023)

Table 5: GWIC Well Data

GWIC ID	Site Name	Township	Range	Section	Type	Total Depth	Static Water Level	Yield	Date	Use
311881	MRB PROPERTIES	02N	26E	2	WELL	600	106	2	11/6/2020	STOCKWATER
323347	PACIFIC HIDE AND FUR DEPOT * MW-1	02N	26E	3	WELL	65	37		9/1/2022	MONITORING
323348	PACIFIC HIDE AND FUR DEPOT * MW-2	02N	26E	3	WELL	70	32		8/30/2022	MONITORING
323349	PACIFIC HIDE AND FUR DEPOT * MW-3	02N	26E	3	WELL	48	32		8/30/2022	MONITORING
323350	PACIFIC HIDE AND FUR DEPOT * MW-4	02N	26E	3	WELL	75	40		9/1/2022	MONITORING
325918	PACIFIC HIDE AND FUR DEPOT * MW-5	02N	26E	3	WELL	45	29		8/31/2022	MONITORING
323352	PACIFIC HIDE AND FUR DEPOT * MW-6	02N	26E	3	WELL	50			8/31/2022	MONITORING
304784	HAALAND, NORM	02N	26E	3	WELL	545	74	5	5/25/2005	STOCKWATER
252353	FUCHS, GARY AND KATHY	02N	26E	11	WELL	57	24	50	6/21/2009	DOMESTIC
252353	FUCHS, GARY AND KATHY	02N	26E	11	WELL	57	24	60	6/21/2009	DOMESTIC
315108	PACIFIC STEEL AND RECYCLING - TEST DRILL	02N	26E	11	WELL	340			6/15/2021	TEST WELL
898373	FP & FM MOCKEY - 1	03N	26E	33	PETWELL					
15012	CHARTER, BOYD*	03N	26E	34	WELL	1,614.00	-62.37	2	10/17/1983	STOCKWATER
15012	CHARTER, BOYD*	03N	26E	34	WELL	1,614.00	-62.37	10	10/17/1983	STOCKWATER
209491	LUOMA, LEIF	03N	26E	35	WELL	600	85	6	2/28/2004	DOMESTIC
					Averages	**213**	**48**	**19**		

*Wells removed from average calculations

Depth in feet, Static Water Level in feet below ground surface, Yield in gallons per minute

Under the No Action Alternative, there would be no additional impacts to surface water or groundwater beyond current activities on the Site.

Under the Proposed Action, there could be minimal adverse impacts to surface water and groundwater. Run-on ditches proposed by PSR would route the water around the monofill. Run-off ditches would be located between the access roads and the waste boundary which direct the water to stormwater ponds located on site. The stormwater ponds are designed to handle the 25-year, 24-hour storm event. PSR would need to obtain a SWPPP and Stormwater Discharge Permit would be provided after the Site is licensed and prior to the construction of the facility.

Additionally, the proposed liner system would be designed and installed to protect groundwater to the maximum extent required by state and federal regulations. The cells in the Facility would be constructed with a DEQ-approved alternative composite liner system consisting of a compacted native clay subgrade overlain by a 60 mil HDPE liner. A leachate collection system is also planned for the Facility. Further details of the liner and collection system are depicted in the PSR Master Plan found attached to the SWMS application. Waste cell and leachate collection system final design documents would be completed as the Facility progresses and submitted to the Montana DEQ for approval.

With the appropriate measures are proposed to take place, no impacts to the current surface water and groundwater system are anticipated due to the Proposed Action.

3.5 Geology and Soil Quality, Stability, and Moisture

The affected environment and study area include all lands and resources located within one mile of the project Site. As shown in **Figure 8** (below), The Montana Bureau of Mines and Geology (MBMG) Geologic Map of the Billings 30' x 60' Quadrangle, Montana shows the site sitting in a large area of Kb and Qal, or predominantly BearPaw Shale with small areas of alluvium (Lopez, 2000).

As noted within the PSR license application, Great West performed test pitting on the Site. Test pit locations were selected to provide a grid-like coverage of the Site with respect to the permitted area (**Figure 9**). Subsurface conditions were logged by a field geologist onto boring logs. Additionally, test boreholes were drilled targeting the interior of the expansion area footprint in consideration of test pit locations and to account for planned or potential deeper borings or groundwater monitoring wells placed around the perimeter of the waste boundary limits. In addition to recovering and logging soil cuttings, standard-penetration test drive samples were collected.

As shown on the PSR license application (Great West, 2022), a generalized summary of observed subsurface conditions from the deep boring, which is considered representative of the overall site conditions is below:

- **0-33 ft bgs.** Field observations of the cuttings for this interval were 'silty fine SAND', brown, dry, loose. From a review of nearby test pit data and from published geologic data, this material is interpreted as a highly weathered SANDSTONE bed within the upper portion of the Bearpaw Shale Unit.
- **33-340 ft bgs**. Field observations of continuous cuttings for this depth were logged as fine-grained SHALE, grey to dark grey, moderately weathered and becoming more competent with depth. Weathered SANDSTONE beds were logged from 285 to 295 ft bgs, and from 319 to 340 ft bgs.

3.5.1 Geology

The analysis methods for geology included some review of local drilling and map information from publications of the Montana Bureau of Mines and Geology and the U.S. Geological Survey, and review of online soil maps and reports from the U.S. Department of Agriculture's Natural Resource Conservation Service.

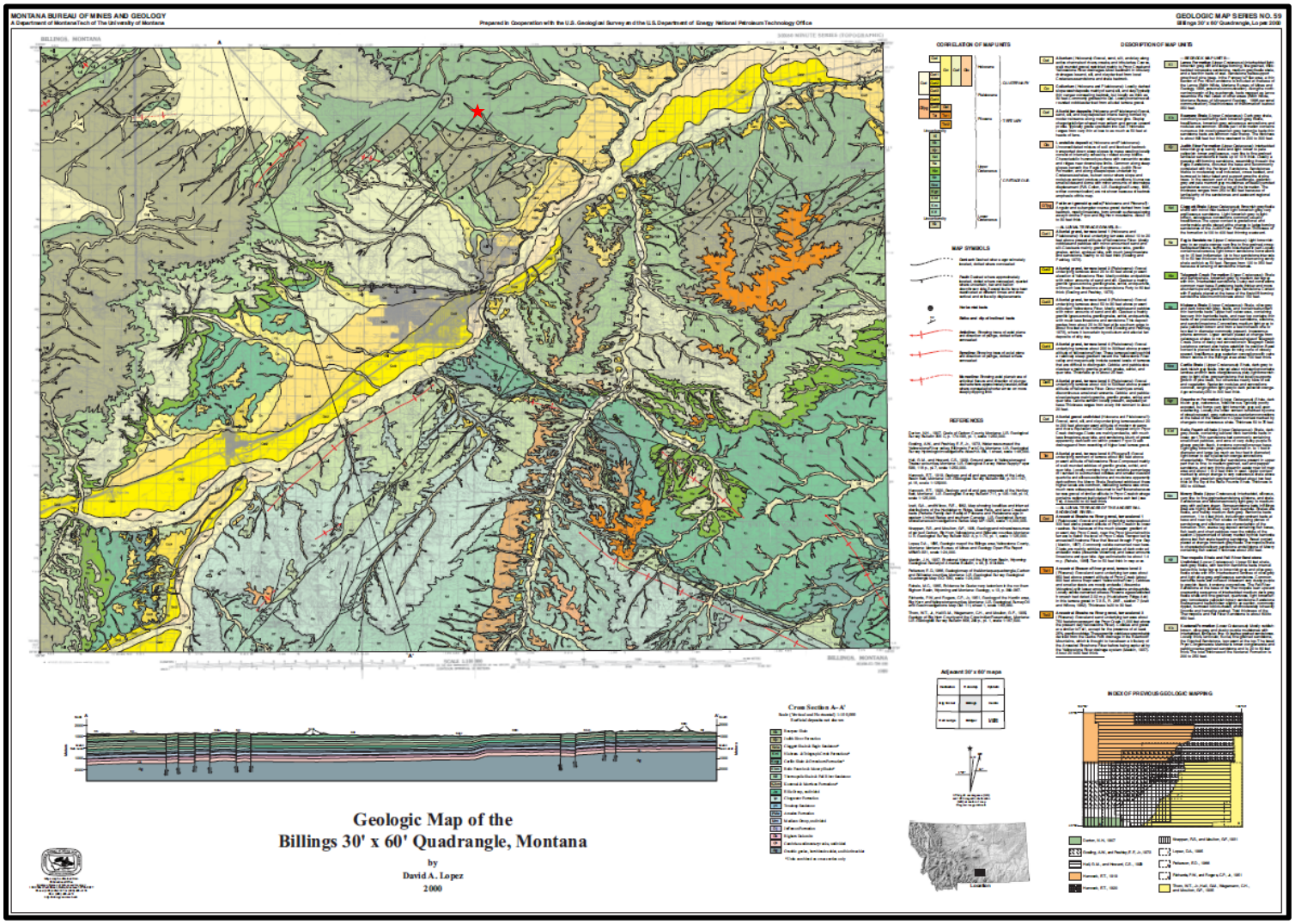
Under the No Action Alternative, there would be no additional impacts to the site geology beyond current activities on the property. No impacts to geology are anticipated because of the Proposed Action.

Though the Facility construction will create new topography as material is landfilled, the Facility will not affect the geology of the area. The geology of the area remains the same regardless of any landfilling activities that would take place.

Descriptions of the map units are described below:

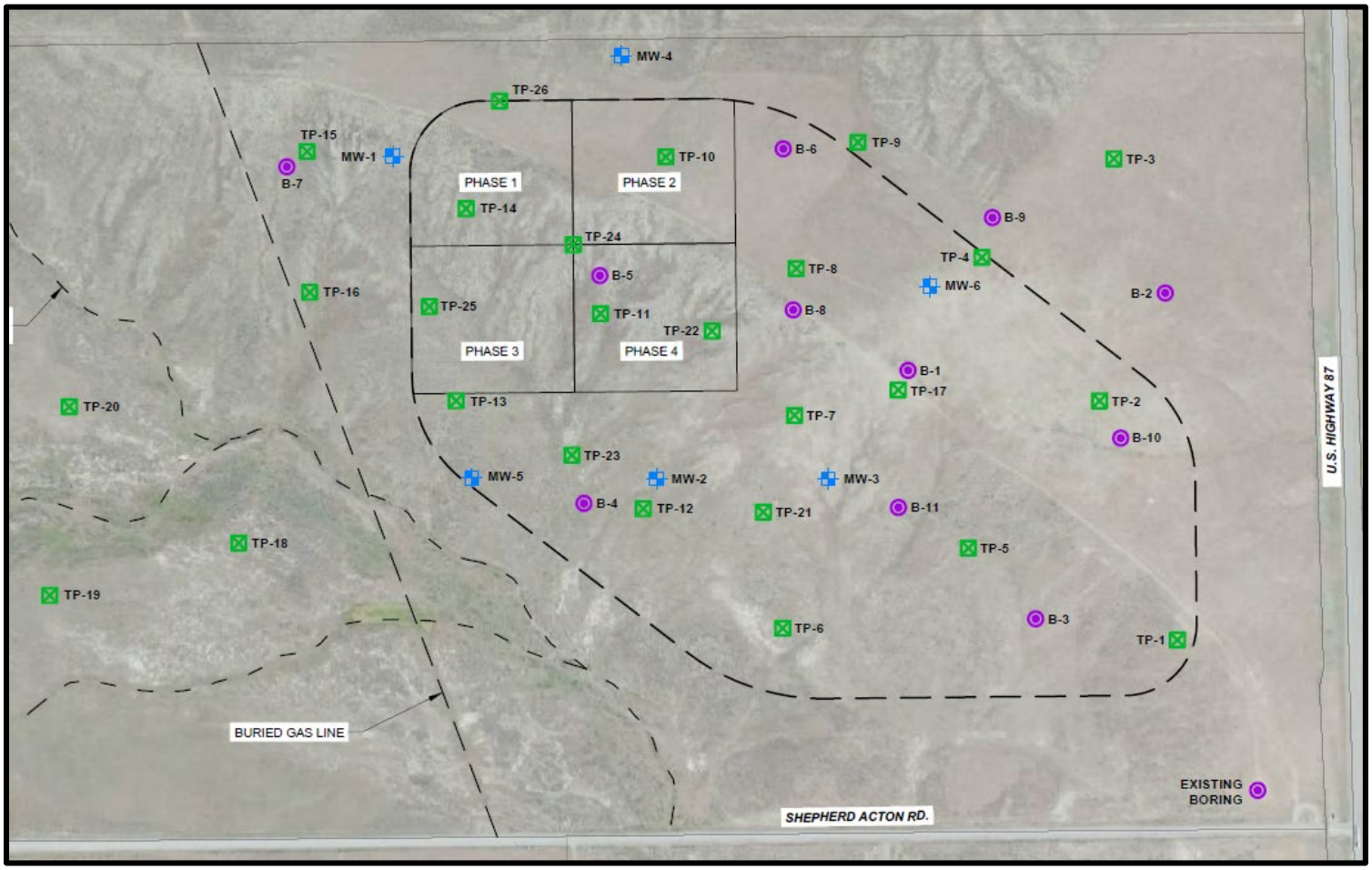
- **Kb - Bearpaw Shale** (Upper Cretaceous): Dark-gray shale, commonly weathering dark brownish-gray, fissile, fossiliferous, brownish-gray calcareous concretions, and nodules are common. Middle part of formation contains numerous thin mostly greenish-gray bentonite beds; thin sandstone beds are common near the top. The thickness is about 800 feet but thins westward to 200 to 300 feet.
- **Qal - Alluvium** (Holocene): Gravel, sand, silt, and clay along active channels of rivers, creeks, and tributaries. Coarse, well-rounded gravel restricted mainly to Pryor Creek and Yellowstone River drainages. Most sediment in tributary drainages is sand, silt, and clay derived from local Cretaceous sandstone and shale bedrock.

Figure 8: Geology Map
*(Site in **red**)*



Source Montana Bureau of Mines and Geology, 2000)

Figure 9: Test Pit, Boring, and Monitoring Well Locations



(Source: from Figure 4 of the Pacific Steel & Recycling ASR Repository Soils and Hydrogeology Report)
Not to Scale

3.5.2 Soils

Figure 10 shows a soils map of the project site and study area obtained from the United States Department of Agriculture (USDA) National Resources Conservation Service (NRCS) web soil survey.

As shown in **Figure 10** and described within the map legend, much of the project area consists of Pierre clay, Haverson and Lohmiller soils, Midway-Razor clay loams, Arvada-Bone silty clay loams, and Pierre-Lismas clays. Much of the proposed 90-acre project area lies within Pierre clay or Midway-Razor clay loams. Both are considered well drained, are not frequent to flooding or ponding, and have a very low available water supply. Both units show bedrock lies between 12 and 31 inches below surface and both are considered not prime farmland. Much of the other soils have similar features and typically consist of silty clay, clay, or clay loam from 0-60" in depth.

Under the No Action Alternative, there would be no additional impacts to the existing soils on the property. The Site would continue to be vacant grassland and no disturbance would occur.

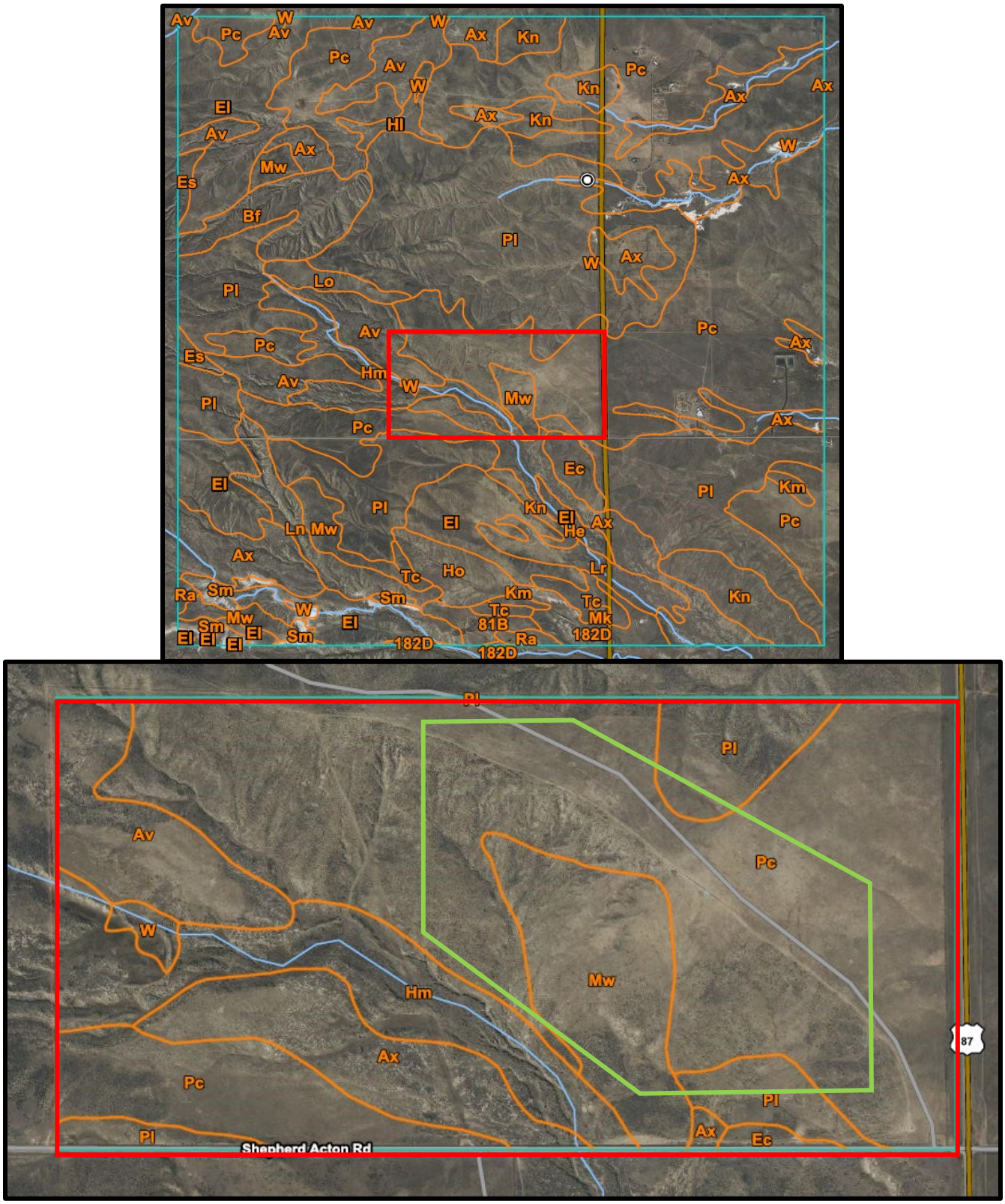
Under the Proposed Action, impacts to soil would be minor.

Soil would be disturbed during construction and disposal activities. The current land use would change from generally unused grassland to construction and an ASR repository site. This change in use would result in a minor impact to surface and subsurface soils during the life of the Class II solid waste management

system. The Proposed Action would require the removal of surface soils to allow landfilling of ASR. Removed soils would be stockpiled onsite for use as cover. The Site's final cover would consist of a one-foot-thick layer of native soils, a two-foot layer of select native soil, and a one-foot-thick layer of native sand and topsoil augmented accordingly. Topsoil would then be seeded to provide a vegetated surface cover. Upon closure, it would be grassland. Soil removal and cell and road construction activities would occur near and on the Active Cell for the Cell life over the span of the Facility Life. Soil removal activities and ground disturbances may result in the potential of noxious weed growth at the Site. Any approval of weed plans or mitigation would fall to Yellowstone County.

Figure 10: Soils Map

*Site in **red**, Study Area in **teal** on top, Zoomed in license boundary in **lime green** on bottom.*



(Source: U.S. Department of Agriculture, Natural Resource Conservation Service)

Not to Scale

Table 6: Soils Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
81B	Delpoint-Cabbart loams, 2 to 8 percent slopes	33.2	0.6%
182D	Cabbart-Delpoint loams, 4 to 15 percent slopes	71.1	1.2%
Av	Arvada clay loam, 1 to 4 percent slopes	237.3	4.1%
Ax	Arvada-Bone silty clay loams, 0 to 1 percent slopes	611.1	10.6%
Bf	Bainville-Elso-Shale outcrop complex, 7 to 25 percent slopes	137.9	2.4%
Ec	Elso clay loam, 4 to 7 percent slopes	37.3	0.6%
El	Elso clay loam, 7 to 15 percent slopes	561.4	9.8%
Es	Elso-Lohmiller complex, 15 to 35 percent slopes	26.4	0.5%
He	Haverson silty clay loam, 1 to 3 percent slopes	21.1	0.4%
Hl	Haverson and Lohmiller soils, 0 to 4 percent slopes	29.0	0.5%
Hm	Haverson and Lohmiller soils, channeled, 0 to 35 percent slopes	112.4	2.0%
Ho	Heldt silty clay loam, 4 to 7 percent slopes	70.3	1.2%
Km	Kyle silty clay, 1 to 4 percent slopes	16.6	0.3%
Kn	Kyle silty clay, 4 to 7 percent slopes	210.6	3.7%
Ln	Lismas clay, 15 to 35 percent slopes	94.5	1.6%
Lo	Lohmiller silty clay, 3 to 7 percent slopes	36.5	0.6%
Lr	Lohmiller silty clay, 0 to 1 percent slopes	74.5	1.3%
Mk	McKenzie clay, 0 to 1 percent slopes	2.5	0.0%
Mw	Midway-Razor clay loams, 4 to 7 percent slopes	118.6	2.1%
Pc	Pierre clay, 4 to 7 percent slopes	1,748.7	30.4%
Pl	Pierre-Lismas clays, 7 to 15 percent slopes	1,365.2	23.8%
Ra	Razor clay loam, 2 to 7 percent slopes	16.9	0.3%
Sm	Shale outcrop-Midway complex, 15 to 35 percent slopes	50.0	0.9%
Tc	Thurlow clay loam, 4 to 7 percent slopes	50.0	0.9%
W	Water	11.1	0.2%
Totals for Area of Interest		**5,744.6**	**100.0%**

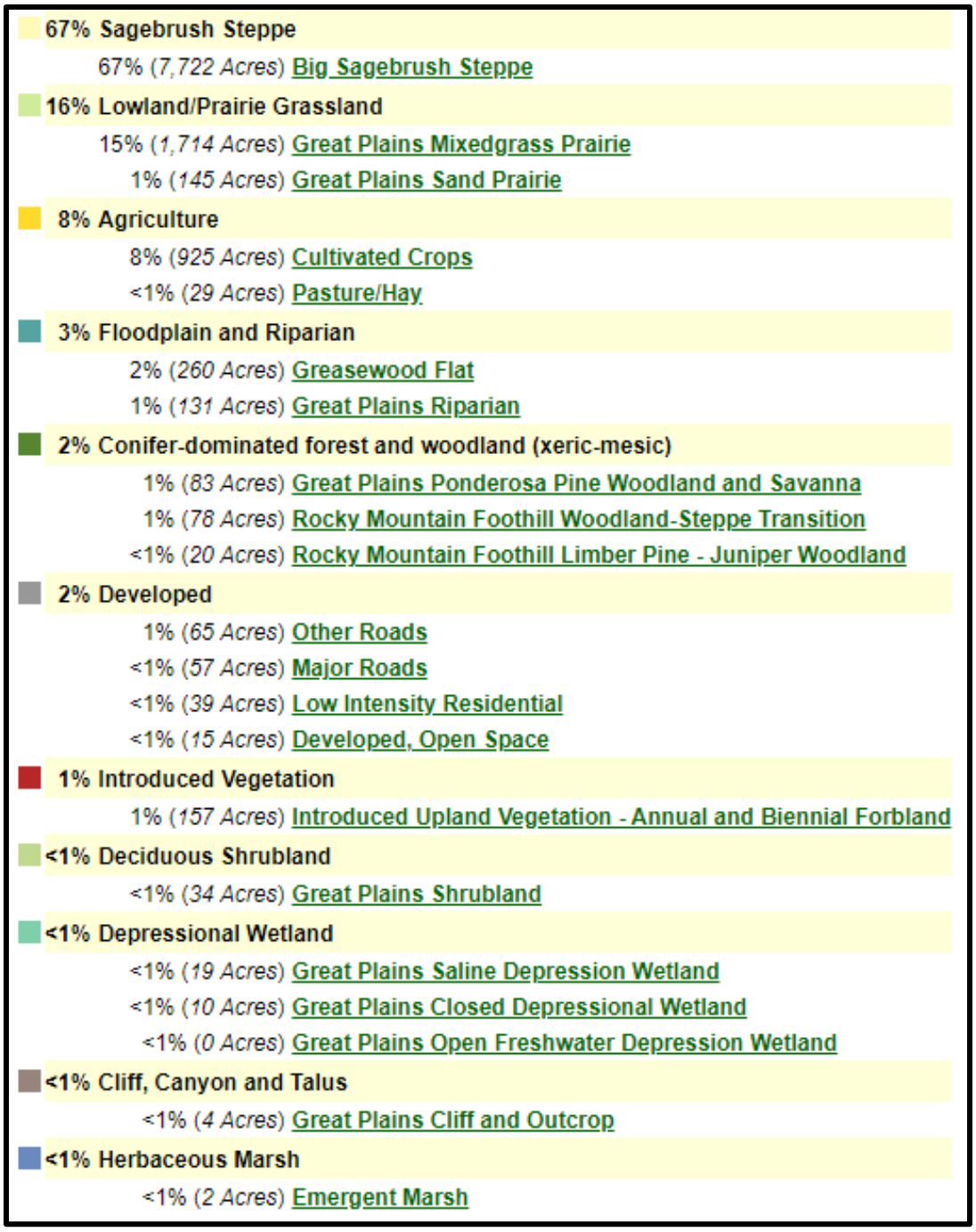
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Av	Arvada clay loam, 1 to 4 percent slopes	19.8	6.2%
Ax	Arvada-Bone silty clay loams, 0 to 1 percent slopes	23.9	7.5%
Ec	Elso clay loam, 4 to 7 percent slopes	1.7	0.5%
Hm	Haverson and Lohmiller soils, channeled, 0 to 35 percent slopes	34.4	10.8%
Mw	Midway-Razor clay loams, 4 to 7 percent slopes	27.9	8.8%
Pc	Pierre clay, 4 to 7 percent slopes	183.5	57.9%
Pl	Pierre-Lismas clays, 7 to 15 percent slopes	23.7	7.5%
W	Water	2.2	0.7%
Totals for Area of Interest		**317.2**	**100.0%**

(Source: U.S. Department of Agriculture, Natural Resource Conservation Service)

3.6 Vegetation Cover, Quantity, and Quality

The affected environment and study area include all lands and resources located within one mile of the project Site. The Site and study area are shown in **Figure 11**.

Land cover in the study area is described by the following types and quantities. Descriptions of the predominant vegetative covers are as follows.



Source: MTNHP

Most of the study area is covered in Sagebrush Steppe, Lowland/Prairie Grassland, and Agriculture. The MTNHP descriptions of Vegetative Cover for the three predominant land covers are shown below:

Sagebrush Steppe: Perennial herbaceous components typically contribute greater than 25% vegetative cover and consist mostly of rhizomatous and bunch-form graminoids, with a diversity of perennial forbs. In Montana, the dominant graminoid in this system is western wheatgrass (*Pascopyrum smithii*).

Great Plains Mixed Grass Prairie: Dynamic vegetative communities make up this diverse prairie ecosystem. Vegetation is a mixture of mid and short grasses, generally having an average height of 30 centimeters (12 inches). Throughout the Montana portion of this system, rhizomatous western wheatgrass is the dominant component, especially on finer-textured soils and where the moisture balance is favorable. Grasses were typically used by large herbivores such as bison, but since European settlement, herbivores such as cattle and sheep have been the primary users of the vegetation.

Near the Canadian border and at higher elevations with greater precipitation, this system grades into grasslands dominated by rough fescue and Idaho fescue. These two tussock grasses are indicative of more mesic sites and characterize the Rocky Mountain Lower Montane, Foothill and Valley Grassland system. In these border regions, shrub-loving wildlife such as antelope, mule deer, and sage grouse are common. Previously cultivated acres may have been re-vegetated by non-native plants creating associations such as Kentucky bluegrass/western wheatgrass and pure stands of crested wheatgrass. Sites with a strong component of green needlegrass indicate a more favorable moisture balance, although this is one of the most palatable of the mid-grasses. Needle and thread is also an important component; it increases with coarser soil textures, or under heavy grazing at the expense of western wheatgrass. Extreme overgrazing can result in the loss of western wheatgrass from the system.

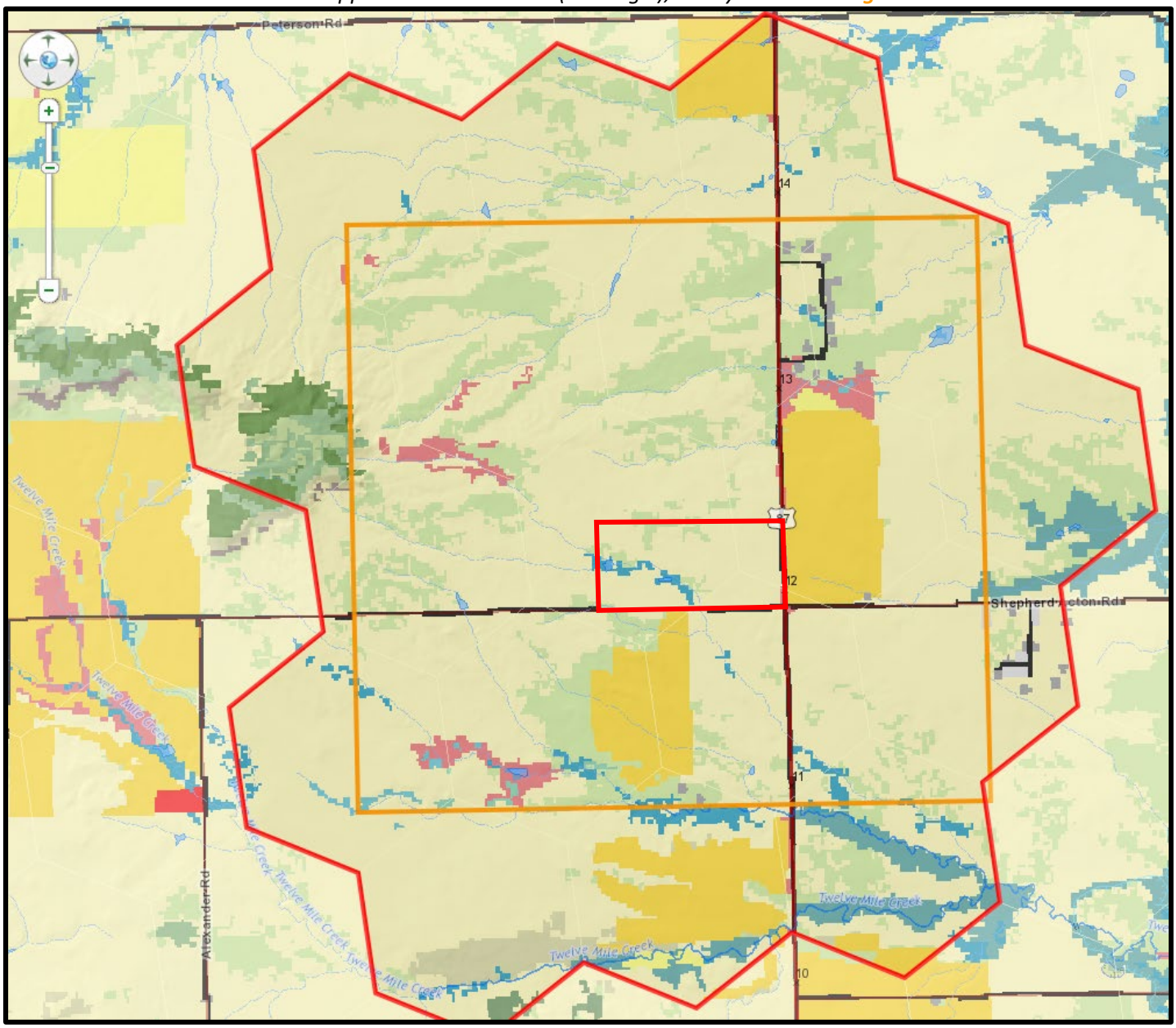
Cultivated Crops: These areas are used to produce crops, such as alfalfa, corn, small grains, seed crops, and vegetables, typically on an annual cycle. Agricultural plant cover is variable depending on the season and type of farming and may be dry-farmed or irrigated.

Under the No Action Alternative, the Site would not be approved by DEQ. There would be no additional impacts to the vegetation on the property, and the site would continue to be vacant grassland with no disturbance.

Under the Proposed Action, vegetation would be disturbed during construction and operation. While PSR is proposing to re-establish native grasses and vegetation to match existing conditions during the closure process, minor impacts to vegetation are anticipated during the construction and operation of the facility due to the removal of soil and vegetation to construct the 90-acre Facility.

Figure 11: Vegetative Cover Map

*Approximate Site in **red** (rectangle), Study Area in **orange**.*



(Source: Montana Natural Heritage Program, Land Cover Map Viewer)

3.7 Aesthetics

The following aesthetic categories are discussed below in accordance with their impact due to the Proposed Action. All the below would occur for the Facility Life.

3.7.1 Odors and Visuals

Class II solid wastes do produce gases, primarily hydrogen sulfide and ammonia, from the bacterial breakdown of waste material resulting in odors. The amount of gas produced depends on the type of waste

present, the age of the waste, oxygen content, the amount of moisture, and temperature, and the amount of time and conditions under which the waste stockpiled or disposed. Gas formation increases as the temperature and moisture content increase. The quantity of putrescible municipal solid waste (MSW), which typically produces odor, would be minor.

Under the No Action Alternative, there would be no impacts to odor. The Site would continue to be vacant grassland and no odors would be produced. Further, no visuals would be impacted because the Site would not be developed for landfilling activities.

PSR only proposes to dispose of ASR on the Site. Odors or visuals from the disposal of ASR are expected to be negligible since ASR is not degradable and does not have a strong odor. Additionally, the daily, intermediate, and final proposed covers would provide further odor control. Visually, the Site will look like a typical landfill. Once closed, there would be new topography, but it would be revegetated to resemble the surrounding area.

Minor impacts from odors and visuals are anticipated because the Proposed Action would produce increased industrial activity due to the need for construction contractors, machinery, and associated equipment and materials. Machinery would be necessary to run the facility and would likely produce small amounts of exhaust odor. The odors produced are unlikely to reach neighboring properties, however, as the surrounding area is sparsely populated.

3.7.2 Vectors

Vectors that can create health hazards and nuisances include flies, mosquitoes, rodents, and birds. Vectors are not expected to be an issue at this facility since the ASR is non-degradable and non-organic and is unattractive to vectors. Vectors would be controlled by proper spreading, compaction, and covering of incoming wastes (Great West, 2022).

No impacts from vectors are anticipated because of the Proposed Action.

3.7.3 Traffic

Traffic on US Highway 87 North near the Site currently consists of normal vehicle traffic, haul trucks, local area farming trucks, and other agricultural equipment. During construction activities, there would be additional temporary increase in the volume of traffic to and from the Site to support additional workers during construction, but these additional vehicles are not expected to adversely influence traffic patterns and would be only a relatively short duration during construction efforts. After the repository is constructed, the volume of future traffic is anticipated to be slightly more than existing or present-day traffic (Great West, 2022).

The effects of temporary increases on traffic are expected to be negligible or have minimal impact on traffic networks or patterns. A Traffic Impact Study was completed for the proposed project by Great West and submitted in the application. The Traffic Impact Study concluded that no infrastructure improvements are necessary to accommodate the additional traffic that the project would generate. However, based on this study, PSR agreed to work with Yellowstone County to install rumble strips along Shepard Acton Road to improve intersection safety.

Minor impacts from traffic are anticipated because of the Proposed Action for the Facility Life.

3.7.4 Noise

As provided within the PSR's license application, noise control at the Site is needed for comfort and safety of on-site personnel and to avoid nuisance to the surrounding community (Great West, 2022). The Site is fortunate to be located approximately one mile from the nearest neighbor, which further minimizes adverse noise impacts from construction and operation of the Facility.

Noise limitations imposed by the Department of Labor and Industries must be observed to protect employees from hearing damage. The PSR Operation & Maintenance Plan provided the following procedures which would be implemented at the site to minimize noise:

- Maintain proper mufflers on vehicles and operating equipment
- Periodically monitor equipment decibel levels of each machine
- Provide ear protection devices for operators
- Provide annual hearing tests and training per the Hearing Conservation Program
- Maintain perimeter buffer

Minor impacts from noise are anticipated because of the Proposed Action for the Facility Life.

3.8 Air Quality

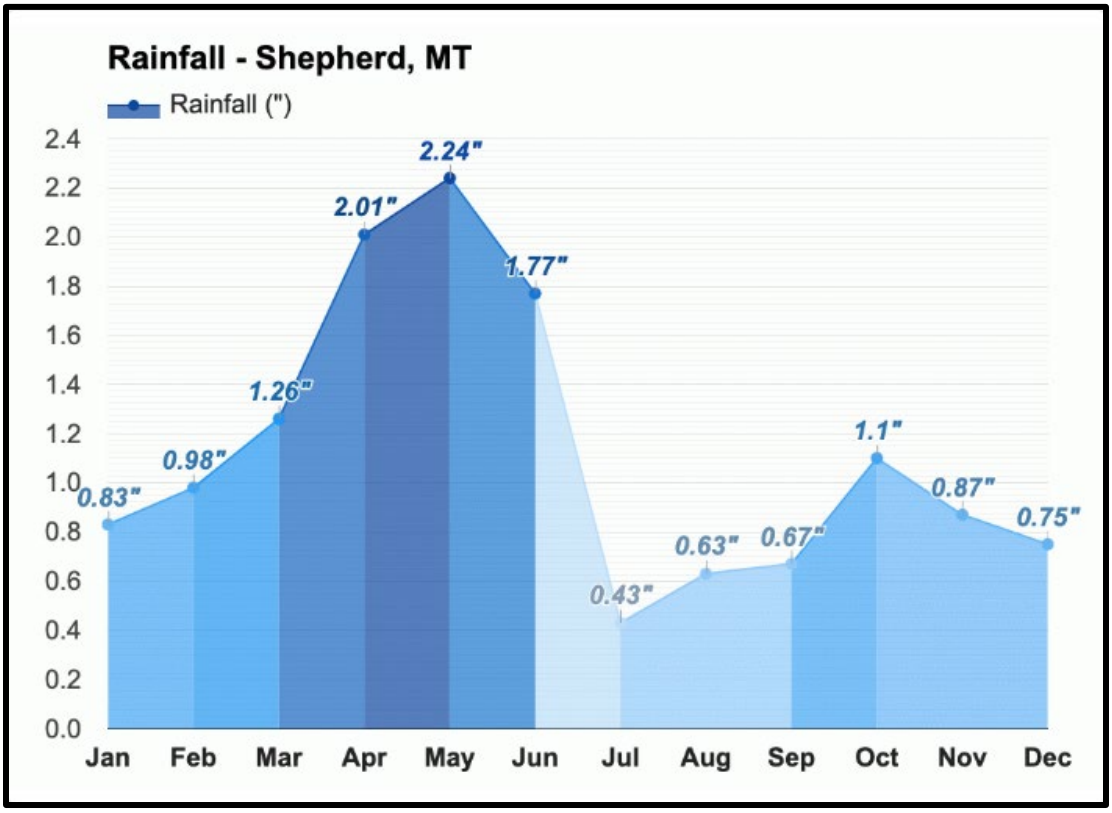
Air quality may be impacted due to:

(1) increased levels of airborne dust particulates potentially generated from construction, earthwork, maintenance, and traffic to/from the repository during ongoing waste disposal activities.

Landfill gas emissions would not be an issue with this facility since the ASR material is non-degradable, non-organic, and only minor quantities of integrated MSW would contaminate the ASR. Air quality impacts due to airborne dust and particulate matter may occur as related to earthwork/moving activities during repository construction/excavation, and traffic to/from the repository via increased traffic related to construction activities. Air quality impacts due to general operations are not anticipated to be significant. During construction activities and periods of dry conditions during routine hauling of waste, BMPs such as dust suppression, or watering the haul roads would effectively reduce air quality impacts.

According to weather-us.com, Shepherd, Montana averages 13.54 inches of rainfall a year, significantly under the United States average of 38.1 inches. **Figure 12** shows the average rainfall per month trend for Shepherd, Montana. Typical seasons show a rainy Spring with May having on average 17.8 days of rainfall, averaging 2.24 inches. The warmest and driest month of the year is July, experiencing 85.5-degree Fahrenheit temperatures, 7.4 days of rain per month, totaling on average 0.43 inches.

Figure 12: Average Rainfall



(Source: https://www.weather-us.com/en/montana-usa/shepherd-climate)

The warm dry summers are likely to be the time when fugitive dust is highest. Windy conditions during dry periods can generate the most fugitive dust if dust suppression methods are not applied. Water or chemical dust suppressants can be used to control fugitive road dust if necessary. Water or a chemical dust suppressant can be applied at a rate that would not cause runoff or erosion. Applications of water and chemical dust suppressants could reduce fugitive dust emissions by up to 50 to 80 percent if correctly applied.

DEQ administrative rules require all facilities to comply with applicable air quality requirements. These include restrictions on particulate matter emissions to not exceed an opacity of 20 percent or more averaged over 6 consecutive minutes, whether from fugitive dust sources or from combustion sources, per ARM 17.8.304 and ARM 17.8.308. In addition, ARM 17.8.308 also requires that facilities take reasonable precautions to control emissions of airborne particulate matter from the production, handling, and storage of any material and to apply reasonable precautions to any street, road, or parking lot. As described above, PSR can control fugitive dust at the Site by watering roads as an effective method for reducing fugitive dust emissions.

Under the No Action Alternative, there would be no additional impacts to the existing air quality beyond current activities on the Site.

Minor impacts to air quality are anticipated because of the Proposed Action.

3.9 Cultural Uniqueness and Diversity

Under the No Action Alternative, there would be no additional impacts to the existing cultural resources and archaeological sites on the property. The Site would continue to be vacant grassland and no impacts would be made.

Within the PSR license application, a Class III Cultural Resource Survey and Report was completed. The Report was completed by Rabbitbrush Archaeological Services, LLC and can be found as Appendix J in the Application (Great West, 2022). No cultural resources were discovered which would be impacted by the proposed project. It is not anticipated that the Proposed Action would cause a shift in any unique quality of the area.

No impacts on historical and archaeological sites are anticipated because of the Proposed Action.

3.10 Human Health & Safety

Under the No Action Alternative, the Site would not be approved by DEQ, and there would be no impacts to human health and safety.

Under the Proposed Action, minor potential impacts to human health and safety may occur. No hazardous waste sites are located within the study area.

Since construction of the proposed facility would need to occur, there is anticipated to be a minor impact to site workers during the construction phases and throughout the life of the Class II facility. Working near vehicles, haul trucks, and heavy machinery would always present a level of danger to site workers. PSR has proposed a Safety Program within their Operation and Maintenance Program that would be implemented and always followed. In accordance with their safety program, the following information was provided:

> *"The implementation of a safety program is necessary for protecting life and property from injury and damage. Thorough knowledge of this plan by the employees will be required to facilitate immediate action if any situation should arise. All employees should read and be familiar with Pacific Steel's Safety Manual and Standards. Safety at the site is the responsibility of all personnel active at the site. The site manager and company safety officials shall be in charge of implementing the safety program at the site. Records will need to be kept verifying training, accidents, and situations that may lead to unsafe working conditions."*

Minor impacts on human health and safety are anticipated because of the Proposed Action.

3.11 Quantity & Distribution of Employment

Under the No Action Alternative, the Site would not be approved by DEQ. If the Site is not approved and no ASR Repository is built, no jobs would be created, and no distribution of employment would enter the nearby region.

Under the Proposed Action, the Site would be constructed and operate as a Class II SWMS ASR Monofill for up to 122 years. The facility would create jobs not only during construction, but during operation as well. There is an anticipated minor increase to temporary workers during the construction phases, as well as the assumption that additional workers would be needed to operate and maintain the facility throughout its lifetime. The additions of temporary and full-time workers would be a minor beneficial impact to the quantity of employment in the region.

3.12 Local & State Tax Base Revenues, and Property Values

In the past 30 years, various research has been done on the effects of landfills on property values. This research pertains more to hazardous and municipal solid waste landfills, which this facility is not. Because of the similar natures of these operations, this study informs the effect of similar operations.

These studies have yielded inconsistent results. Typically, hedonic regression models have been used to try to isolate the effects of landfills on property values holding all other variables constant. Surveys have also been used in studies. Some studies show statistically significant adverse effects of landfills on property values. Generally, larger effects on property values are seen from larger landfills, less modern landfills, landfills that accept hazardous waste or pose health risks, areas with negative perceptions of landfills, landfills that are more visible, and higher end properties. However, even these effects are not robust across

all studies and not all these effects were studied in every study. A study by Bouvier, RA., et al. entitled, "The Effect of Landfills on Rural Residential Property Values: Some Empirical Evidence," does not provide grounds for broad generalization about the effect of rural landfills on property values (2000, The Journal of Regional Analysis & Policy). It finds that in five of the landfills studied (in rural to semi-rural areas), no statistically significant evidence of an effect from landfills was found. In the remaining case, evidence of an effect was found, indicating that houses near this landfill suffered an average loss of about six percent in value. This significant case was a landfill that was unlined and uncapped and is on EPA's "potential health risk" list. Bouvier suggests that each landfill be studied on a case-by-case basis. A study by C.P. Cartee, entitled "A Review of Sanitary Landfill Impacts on Property Values," found that while it generally is believed that landfills negatively impact property values, in some cases, the development of a sanitary landfill may enhance a property's value (1989, Real Estate Appraiser and Analyst). It finds that the introduction of new roads, utilities, and drainage may stimulate development and lead to increases in land values.

No impacts to local and state tax base revenues are anticipated because of the No Action Alternative.

Under the Proposed Action, the short-term influx in local employment during construction phases of the project and the addition of operational jobs would result in a beneficial impact to the local tax base. Should the facility be constructed, the taxable value of the property would increase, therefore increasing the tax revenue from this specific parcel. The additional tax revenue generated from the execution of the Proposed Action would be a positive benefit for the local and regional community for the Facility Life.

3.13 Demand for Government Services

Under the No Action Alternative, there would be no additional impacts to the demand for government services in conjunction with oversight of the property. The Site would continue to be vacant grassland and no need for governmental services would be present.

Under the Proposed Action, minor impacts to the demand for government services are expected. The Site would be approved as a Class II solid waste management system and require DEQ regulation, oversight, and compliance. The Yellowstone County sanitarian would conduct periodic inspections as needed. Current staff, not associated with the government, would oversee operations and maintenance. No additional DEQ or Yellowstone County staff would be acquired because of the Proposed Action.

3.14 Industrial, Commercial, and Agricultural Activities

Under the No Action Alternative, there would be no additional impacts to industrial, commercial, and agricultural activities on the Site. The Site would continue to be vacant grassland. According to the application, the Site is intermittently used for the grazing of cattle. Under the Proposed Action, the site would no longer be usable for cattle grazing; however, the 320-acre parcel is small in comparison to the large swaths of nearby agricultural land. The farmers using the site for grazing likely have many other nearby options.

Construction of the proposed repository project would result in a minor increase to industrial activity due to the need for construction contractors, additional machinery, and associated equipment and materials. Due to the relocation of cattle intermittently grazing the property and the increase of industrial activity from the Proposed Action, minor impacts to industrial, commercial, and agricultural operations are anticipated.

3.15 Private Property

MEPA requires state agencies to evaluate regulatory restrictions proposed to be imposed on private property rights because of major actions of state agencies, including an analysis of alternatives that reduce, minimize, or eliminate the regulators of private property (Section 75-1-201(1)(b)(iv)(D), MCA). Alternatives and mitigations 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, do not need to be subjected to a regulatory restrictions analysis.

The Facility is located on private land owned by the applicant. 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 SWMA. The conditions that would be imposed by DEQ is issuing the license would be designed to make the project meet minimum environmental standards or have been proposed and/or agreed to by PSR. Thus, no further analysis is required.

3.16 Cumulative Impacts

Cumulative impacts are the collective impacts on the human environment within the borders of Montana of the Proposed Action when considered in conjunction with other past, present, and future actions related to the Proposed Action by location or generic type. Cumulative impact analyses help to determine whether an action would result in significant impacts when added to other activities.

At this time, there are no negative cumulative impacts associated with the licensing of the Class II facility under the Proposed Action. No nearby past, present, or future actions are anticipated to pair with the Proposed Action and exacerbate impacts.

A positive cumulative impact of the Proposed Action is the removal of ASR waste from the Billings Regional Landfill. The construction of the proposed repository would remove large amounts of waste from the Billings Regional Landfill, lengthen the life of their current facility, and support recovery and potential reuse of the ASR from the landfill at a later date. This positive impact would affect the greater Billings area.

3.17 Unavoidable Impacts

Under the No Action Alternative, there would be no unavoidable impacts to the Site or surrounding study area. The Site would remain vacant grassland.

Residual impacts from the Proposed Action would include the loss of developed soil and vegetation from approximately 90 acres of the 320-acre site for ASR use. However, topsoil would be placed as part of the cap construction during final closure of the facility. The topsoil would be reseeded with native vegetation. Some sediment control structures would remain, and the capped units would appear as manmade features across the landscape. Post-closure land use would be restricted to animal grazing. No structures that require the placement of footings or foundations are allowed over closed landfill units. Any disturbance of the closed landfill final cover for construction of any structure would have to be approved in advance by DEQ. Plant communities dominated by native plants would be replaced by reclaimed plant communities on the property. Noxious weeds would be treated to ensure revegetation by native grasses occurs as required by the county weed control program. The disturbed areas would be reclaimed, reseeded, revegetated, and a program implemented to inventory and treat noxious weeds would be implemented.

Additional unavoidable impacts would be the visual development of the proposed site and all necessary machinery and buildings. Local citizens, workers, and passersby would see the operation of a Class II facility instead of native grassland. The visual aspect of the site would change, but closure procedures would allow the site to return to grassland and grazing at the end of the facility life. It is stated within the PSR application that following waste disposal activities, the site would be covered in accordance with their Closure Plan and revegetated to match native vegetation to allow for wildlife habitat and livestock grazing. While this is the appropriate closure procedure, if the Site is not mined or recovered to remove the ASR waste, the unavoidable impact is that a monofil now exists on this property and would be located on site indefinitely. Development, reuse, and overall public perception of the property would be adversely impacted.

4. CONCLUSIONS AND FINDINGS

4.1 A listing and appropriate evaluation of mitigation, stipulations, and other controls enforceable by the agency or another government agency

The Proposed Action would meet the minimum requirements of the SWMA and associated administrative rules regulating solid waste disposal. Adherence to the solid waste, water quality, and air quality regulations and the DEQ-approved facility O&M plan would mitigate the potential for harmful releases and impacts to human health and the environment by the Proposed Action.

4.2 Findings

To determine whether preparation of an environmental impact statement is necessary, DEQ is required to determine the significance of the 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 as follows:

1. The severity, duration, geographic extent, and frequency of the occurrence of the impact.
2. 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.
3. Growth-inducing or growth-inhibiting aspects of the impact, including the relationship or contribution of the impact to cumulative impacts.
4. The importance to the state and to society of each environmental resource or value that would be affected.
5. Any precedent that would be set because of an impact of the proposed action that would commit the department to future actions with significant impacts or a decision in principle about such future actions; and
6. Potential conflict with local, state, or federal laws, requirements, or formal plans.

The Site would encompass approximately 90 acres and accept ASR only. Any prohibited items would be transported and appropriately disposed of at the City of Billings Regional Landfill.

The analysis area for vegetation is one mile beyond the Site. This landscape is common in eastern Montana and is not unique or limited. The Site is surrounded by an extensive amount of similar land. The Site is not located within Sage Grouse core habitat, general habitat, or connectivity area. The Proposed Action would not adversely affect any threatened or endangered species.

The Proposed Action is not expected to impact surface water resources. Stormwater is retained and managed onsite in existing stormwater infiltration areas. PSR would incorporate perimeter ditches and berms to divert any run-on from entering any waste area. All run-off collected from the repository area is directed to storm water detention ponds. No on-site water has the potential to leave the Site and enter a jurisdictional stormwater body.

The Proposed Action is not expected impact ground water. The proposed liner system would be designed and installed to protect groundwater to the maximum extent required by state and federal regulations.

DEQ has not identified any growth-inducing or growth-inhibiting aspects of the Facility. DEQ's approval of the Facility does not set any precedent and would not commit the DEQ to any future action with significant impacts, nor is it a decision in principle about any future actions that DEQ may act on. Finally, operation of the Facility does not conflict with any local, state, or federal laws, requirements, or formal plans.

Based on consideration of all the criteria set forth in ARM 17.4.608, DEQ has determined that the Proposed Action would not significantly affect the human environment. Therefore, an environmental assessment is the appropriate level of environmental review and preparation of an environmental impact statement is not required.

4.3 Other groups or agencies contacted or contributing to this EA.

Great West Engineering
Montana Bureau of Mines and Geology
Montana Department of Environmental Quality
Montana Greater Sage-Grouse Habitat Conservation Program
Montana Natural Heritage Program
State of Montana Historic Preservation Office
U.S. Department of Agriculture - Natural Resource Conservation Service
U.S. Fish and Wildlife Service

4.4 Authors

Draft EA prepared by:
Montana DEQ, Solid Waste Section
Granite Peak Environmental, LLC

Date: October 30, 2023

5. REFERENCES

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