

Cheyenne River Sioux Tribe Sanitary Landfill

**Cheyenne River Sioux Tribe of the
Cheyenne River Reservation, South Dakota**

**Indian Health Service
Division of Sanitation Facilities Construction**

Indian Health Service Project Number: GP22K14

Environmental Assessment

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ABBREVIATIONS AND ACRONYMS

BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
CAA	Clean Air Act
CFR	Code of Federal Regulations
CREDCO	Cheyenne River Economic Development Corporation
EJ	Environmental Justice
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
ft	feet
GLO	General Land Office
HUC	hydrologic unit codes
IHS	Indian Health Service
IPaC	Information for Planning and Consultation
MSWLF	Municipal Solid Waste MSWLF
NAAQS	National Ambient Air Quality Standards
NAIP	National Agriculture Imagery Program
NEPA	National Environmental Policy Act
NHD	National Hydrography Dataset
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
NLCD	National Land Cover Database
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSPS	New Source Performance Standards
NWI	National Wetlands Inventory
PEM	Palustrine Emergent
RCRA	Resource Conservation and Recovery Act
SDFGP	South Dakota Game, Fish, and Parks
SDSHPO	South Dakota State Historic Preservation Office
SFCP	Sanitation Facilities Construction Program
SSURGO	Soil Survey Geographic
THPO	Tribal Historic Preservation Office
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
USFWS	U.S. Fish and Wildlife Service
WSS	Web Soil Survey

1.0 Introduction and Background

This environmental assessment (EA) was prepared pursuant to the National Environmental Policy Act (NEPA) as amended, 42 U.S.C. §§ 4231-4347, and implemented by the Council on Environmental Quality Regulations (40 C.F.R. §§ 1500-1508). The Cheyenne River Economic Development Corporation (CREDCO) proposes to develop and manage the Cheyenne River Sioux Tribe (Tribe) Sanitary MSWLF (Project or MSWLF), a new Resource Conservation and Recovery Act (RCRA)-compliant municipal solid waste MSWLF (MSWLF) on the Cheyenne River Reservation with funding from the Indian Health Service (IHS) Sanitation Facilities Construction Program (SFCP).

The residents living on the Cheyenne River Reservation currently use an existing municipal waste landfill site in Eagle Butte, Zeibach County, South Dakota to dispose of their municipal solid waste. This landfill is not compliant with the RCRA regulations at 40 Code of Federal Regulations (CFR) Part 258 Subtitle D and therefore, no controls are in place that would protect human health and the environment.

The existing landfill site on the Cheyenne River Reservation was established in the 1980s and consists of an administrative and equipment building, separate unlined municipal solid waste and construction and demolition waste landfill areas, an equipment and material storage area, an abandoned underground scale, and two separate collection areas for tires and white goods¹ that are collected and recycled on an as-needed basis by others. The landfill site is enclosed with a fence and interconnected with unpaved roads. A gated security access point is located on the west side of the landfill site with access to the Landfill Road. The landfill site lacks a compacted liner system, storm water or leachate collection and treatment system, daily cover, and vector controls. The estimated annual tonnage for the Landfill site is approximately 9,500 – 10,000 tons per year as based on the number of collection trucks dumping on a weekly basis. CREDCO currently operates three rear loading collection trucks and one side loading curb-tender truck that service both residential and commercial dumpsters.

1.1 PROPOSED ACTION

CREDCO proposes to develop and manage a new RCRA-compliant MSWLF with 13 cells on approximately 80-acres, southeast of the existing landfill site (Figures 1 through 3, Appendix A). The permit design for the proposed MSWLF was developed to avoid wetland impacts, and maintain cost-effectiveness based on access from the existing landfill operation areas. CREDCO is receiving funding from IHS and intends to apply for United States Department of Agriculture (USDA) Rural Development funding to support this Project.

1.1.1 Landfill Design and Construction

The 80-acre area contains the proposed MSWLF footprint in addition to the required infrastructure necessary for the operations of the proposed MSWLF, including perimeter roads and stormwater ditches, a leachate collection pond, and a stormwater sedimentation pond.

¹ The U.S. Environmental Protection Agency defines “white goods” as refrigerators, ranges, water heaters, freezers, unit air conditioners, washing machines, clothes dryers and other similar domestic and commercial large appliances. White good appliance may contain chlorofluorocarbons, hydrochlorofluorocarbons, PCBs, mercury and other hazardous chemicals (<https://iwaste.epa.gov/guidance/natural-disaster/fact-sheets/types-of-waste?id=white-goods>).

The proposed MSWLF would be comprised of 13 disposal cells, ranging in waste disposal size from 2.8 to 6.1 acres, that would be constructed in separate phases. Construction of a new cell would not begin until a prior cell is near its capacity. The first cell, Cell 1, would be located at the northern end of the landfill. Final closure of the landfill would occur in phases as cells reach their capacity. Once each landfill cell reaches final permitted waste elevations, the cell would be closed with a final cover. When all cells reach capacity, the final cover would be tied together into a single continuous cap. MSWLF closure will be compliant with the RCRA 40 CFR Part 258 Subtitle F.

The footprint of the waste limits for the proposed MSWLF covers an area of approximately 48 acres. The final cover design is graded with 4 horizontal (H): 1 vertical (V) side slopes to a crest elevation of approximately 2,300 feet and a final peak elevation of approximately 2,320 feet. The minimum final cover slope on the crown is five percent to promote drainage and limit ponding due to differential settlements.

The bottom liner system would consist of the following components from top to bottom:

- Uppermost drainage layer material to facilitate leachate collection
- Geotextile layer over geomembrane
- 60-mil-thick HDPE geomembrane
- A minimum 2-foot-thick, low-permeability soil layer

The base grade elevations will be graded so that leachate across the floor of the cell drains with a minimum grade of two percent into leachate collection trenches. The leachate collection trenches are anticipated to drain to the west and be connected to a leachate sewer pipe that will drain south directly into the leachate collection pond via gravity. The leachate collection pond will be located on the southwest of the proposed MSWLF footprint. The leachate pond will be sized to adequately handle the leachate generated for all the active phases of the MSWLF.

Stormwater will be collected and controlled on-site through a series of terrace channels, letdown structures, open channels, and a sedimentation pond. Precipitation that falls on the active face and comes into contact with municipal solid waste will be managed as leachate. Precipitation that lands on intermediate and final cover soils and does not come in contact with municipal solid waste will be managed as stormwater. The final cover system will be designed to minimize infiltration of precipitation and will route stormwater through a series of side slope terrace channels and letdown down structures that will ultimately drain into stormwater ditches around the perimeter of the MSWLF. These stormwater ditches will then drain the stormwater into the sedimentation pond, where it will be released at a controlled discharge rate. The stormwater sedimentation pond is located on the east side at the south end of the proposed MSWLF.

The total available airspace capacity of the Project for the proposed MSWLF design is approximately 4,100,000 cubic yards. Based on an airspace utilization factor of 1,000 pounds per cubic yard, an annual tonnage of 9,950 tons received, and a one-percent waste growth rate through closure, it is anticipated that the proposed MSWLF will have a life of approximately 100 years.

Soils required for the life of the proposed MSWLF include daily and intermediate cover soils, final cover soils, and protective cover soils for the side slopes of developed cells. It's assumed that the primary source of soil needed for MSWLF operations will be from the MSWLF excavation areas. As landfill cells are developed, additional areas may be required for soil stockpiling and/or borrowing during landfill operations. It is assumed that an area directly adjacent to the proposed MSWLF will be used for soil stockpiling or borrowing operations in the future.

Approximately 1.3 miles of 40-foot-wide road around the perimeter of the facility is planned. This road will be used during construction of the MSWLF and continue to be used for daily MSWLF operations and maintained for the life of the MSWLF.

Earth moving construction equipment would be needed to excavate MSWLF cells, prepare subgrade layers, construct bottom liners, build leachate and stormwater conveyance systems, and construct the perimeter access road. The equipment during MSWLF cell construction would typically include:

- Scrapers, dump trucks, and excavators for cell excavation and transport of soil to stockpile areas
- Bulldozers for grading for preparation of final subgrade
- Compactors for compaction of final subgrade

Similar equipment will be used for daily MSWLF operations, maintenance, and monitoring activities. A Plan of Operations will be prepared to serve as a reference document for MSWLF staff that provides operational criteria required by RCRA regulations at 40 CFR Part 258 Subtitle D.

1.2 PURPOSE AND NEED

CREDCO has been tasked by the Tribe to maintain and operate the solid waste program on the Cheyenne River Reservation. CREDCO's goal is to manage and operate a safe and environmentally responsible solid waste management system to satisfy the waste disposal needs of the residents living on the Cheyenne River Reservation. To meet the needs of the community and to provide for the protection of human health and the environment, CREDCO estimates that it should increase the solid waste (e.g., household garbage) disposal capacity to 4,100,000 cubic yards in a new RCRA-compliant MSWLF to serve the community over the next 100 years (through approximately year 2125). In the near-term, approximately 2,456 Tribal homes would benefit from the Project.

1.3 AGENCY CONSULTATION AND COORDINATION

The proposed MSWLF permit design and development is being coordinated through IHS as the primary agency for administrative, technical, and funding support for the Project.

As noted previously, CREDCO intends to apply for USDA Rural Development funding assistance for the proposed Project.

The Project team held a pre-permit consultation meeting with USEPA Region 8 Enforcement and Compliance Assurance Division in October 2023. The final MSWLF permit application will be submitted to the USEPA for review in summer 2024. It is anticipated that the USEPA will provide concurrence that the proposed MSWLF permit application is in conformance with the RCRA Subtitle D requirements by fall 2024.

Additional agency consultation and concurrence is discussed in Section 3.0 for environmental and cultural resource reviews.

2.0 Alternatives

To be considered preferable to a proposed action, an alternative must provide a significant environmental advantage, meet the objectives of the proposed action, and be technically feasible and practicable. As described in Section 1.2, the purpose of the new MSWLF is to serve current and future needs for a RCRA-compliant MSWLF over a 100-year planning horizon.

2.1 ALTERNATIVE 1: NO ACTION ALTERNATIVE

Under the No Action Alternative, CREDCO would not develop the RCRA-compliant MSWLF. Current conditions and operation would continue, including the potential release of contaminants, with use of the existing landfill site until its capacity is reached at which point, waste would likely need to be hauled to other areas for processing and disposal. Alternative sites that would accept the hauled municipal waste are approximately 1.5 to 2 hours away and off the Cheyenne River Reservation. This alternative would not meet the stated purpose and need of the proposed action.

2.2 ALTERNATIVE 2: PROPOSED ACTION

Under the Proposed Action, CREDCO would operate and maintain the RCRA-compliant proposed MSWLF, which would include the following components:

- 80-acre MSWLF site
- 48-acre MSWLF waste boundary
- Capacity of 4,100,000 cubic yards with 13 cells
- Leachate collection system
- Stormwater sedimentation system
- Perimeter road

3.0 Affected Environment

The existing environment, as well as the expected environmental consequences of the No Action and Proposed Action Alternatives are described in the following sections. The affected environment is described for each resource based on a review of existing desktop data as well as field data, where available.

Each resource topic is divided into sub-sections. The “Affected Environment” describes the current environmental conditions. The “Impacts and Mitigation” section describes the impacts that each alternative would have on the current affected environment (including both construction and operational impacts), identifies applicable mitigation measures, and assesses the significance of impacts of each alternative compared to the current affected environment.

When determining the significance of an impact, duration of the impact; the intensity (e.g., severity) of the impact; and the geographic, biological, and/or social context in which the effects would occur were considered (40 CFR 1501.3).

When considering the environmental consequences of the Project, the duration of each potential impact is described as temporary, short-term, long-term, or permanent. These terms are defined as follows.

- Temporary impacts generally occur during construction.
- Long-term impacts generally occur for a longer duration, such as operation (e.g., use of a cell until it reaches capacity or active life of project).
- Permanent impacts are defined as activities that modify a resource to the extent that the resource may not return to pre-construction conditions.

Context means considering the extent of the impact such as in a national, regional, or local setting. Intensity refers to the severity of the impact in whatever context(s) it occurs. To determine intensity, the severity of the impact is considered using both the quantity of the resource affected as well as impact duration.

In determining intensity, the following eight factors are considered under NEPA (40 CFR § 1501.3(d)(2)):

1. The degree to which the action may adversely affect public health and safety.
2. The degree to which the action may adversely affect unique characteristics of the geographic area such as historic or cultural resources, parks, Tribal sacred sites, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.
3. Whether the action may violate relevant Federal, State, Tribal, or local laws or other requirements or be inconsistent with Federal, State, Tribal, or local policies designed for the protection of the environment.
4. The degree to which the potential effects on the human environment are highly uncertain.
5. The degree to which the action may adversely affect resources listed or eligible for listing in the National Register of Historic Places.
6. The degree to which the action may adversely affect an endangered or threatened species or its habitat, including habitat that has been determined to be critical under the Endangered Species Act of 1973.
7. The degree to which the action may adversely affect communities with environmental justice concerns.
8. The degree to which the action may adversely affect rights of Tribal Nations that have been reserved through treaties, statutes, or Executive Orders.

The terms negligible, minor, moderate, and major are used to describe intensity in relation to significance and are described below:

- No impact: There would be no change from current conditions.

- Negligible: An adverse or beneficial effect would occur but would not be perceptible.
- Minor: The effect would be perceptible but would not affect the overall function, integrity, or use of the resource.
- Moderate: The effect would be perceptible and would change the function or integrity of the resource, but the resource could be relied upon for its current use.
- Major: The effect would alter the overall function or integrity of the resource such that it could not be relied upon for its current use.

3.1 LAND USE

Land uses and cover types were classified using aerial photo interpretation to identify the most current uses in the Project Area, supported by review National Land Cover Database (NLCD) data for the general area. Land use and land cover can be broken down into the following five main categories:

- Developed lands: These are areas characterized by medium- to high-density constructed buildings, such as certain residential subdivisions and commercial areas, as well as impervious surfaces.
- Open space: These are areas primarily covered by planted grasses, including vegetation planted in developed settings for erosion control or aesthetic purposes, but also natural herbaceous vegetation and undeveloped land, parks, and open space recreational facilities.
- Forested lands: These are areas where land cover consists of natural or maintained woody vegetation.
- Agricultural lands: These are areas used for row crops, specialized agricultural activities, or grazing.
- Open water: These are open water features, including rivers, streams, lakes, canals, waterways, reservoirs, and ponds.

Grassland or herbaceous lands comprise the majority of the Project. Developed land is present, but is limited to the existing landfill access road and installation of utilities that serve the existing landfill (NLCD Land Cover, 2022). Currently, the grassland is used for elk grazing by the Tribe's managed elk herd.

3.1.1 Impacts and Mitigation

Alternative 1

The existing land use will change under Alternative 1. The capacity of disposal is limited under Alternative 1, and additional land for landfill operations would be required resulting in similar land use changes and disturbance as Alternative 2 as described below.

Alternative 2

Under Alternative 2, approximately 80 acres of land would be disturbed during construction and disposal activities. The land use would change from grassland to commercial/industrial land use, which received approval from the Tribe's Game, Fish, and Parks Department. During the life of the project, 80 acres of

grassland would be unavailable for grazing. After final closure, the land would be returned to grassland. The construction and operation of the MSWLF represents a long-term, moderate impact. However, the abundance and availability of undisturbed grassland in the adjacent area, outside of the fenced MSWLF, is anticipated to be sufficient for continued elk grazing and use by other wildlife.

3.2 ATMOSPHERIC CONDITIONS

According to the National Oceanic and Atmospheric Administration National Centers for Environmental Information (NOAA, 2024), South Dakota is in the North Great Plains at the transition to the semi-arid western United States. Because of its geographic location, South Dakota experiences temperature extremes. Temperatures of 100 degrees Fahrenheit (°F) or more occur every year. The lack of mountain ranges to the north exposes the state to arctic air masses in the winter. The City of Eagle Butte is warm and mostly clear in the summers with cold and snowy winters. Over the course of the year, the average temperature typically varies from 10 °F to 87 °F. Rainfall usually occurs during spring and early summer. The average annual rainfall is 19 inches. The average annual snowfall is 38 inches. High winds are common year round.

The greatest contributors from the Project to atmospheric conditions are dust and landfill gas emissions². The proximity of the proposed on-site MSWLF operations to receptors (e.g., residences, schools, parks, etc.) is approximately 1.3 miles northwest of the proposed MSWLF.

3.2.1 Air Quality

Ambient air quality is protected by federal and state regulations and is defined as a measurement of pollutants in ambient air. The Clean Air Act (CAA) of 1970 requires that states adopt ambient air quality standards (National Ambient Air Quality Standards [NAAQS]). The CAA (42 USC 7401 et seq.) establishes NAAQS, permit requirements for both stationary and mobile sources. The standards were established to protect the public from potentially harmful amounts of pollutants. Under the CAA, the U.S. Environmental Protection Agency (USEPA) establishes primary and secondary air quality standards. Primary air quality standards protect public health, including the health of “sensitive populations, such as people with asthma, children, and older adults” (42 USC 7401 et seq.). Secondary air quality standards protect public welfare by promoting ecosystem health and preventing decreased visibility and damage to crops and buildings. Areas meeting the NAAQS are termed attainment areas, and areas not meeting the NAAQS are termed nonattainment areas. If an area was in nonattainment but now attains the standard and has a USEPA-approved plan to maintain the standard, it is designated a maintenance area. The Cheyenne River Reservation is in an attainment area (USEPA, 2024a).

The Tribe’s Department of Environmental and Natural Resources has implemented an Air Pollution Project to monitor air quality on the reservation, including monitoring of fine particulate matter (PM_{2.5}). Samples from the air monitoring unit are sent to a laboratory for analysis once per week.

The proposed MSWLF will produce methane, carbon dioxide, and trace non-methane organic compounds (NMOC) from the decomposition of waste organic material. During operations, these gases will vent directly into the atmosphere through the daily and intermediate cover of the active landfill phases. In areas that have reached final permitted grades and have been closed, landfill; gases will be vented through vents into the atmosphere.

² According to the USEPA (2024), landfill gas “is a natural byproduct of the decomposition of organic material in landfills. Landfill gas is composed of roughly 50 percent methane (the primary component of natural gas), 50 percent carbon dioxide (CO₂) and a small amount of non-methane organic compounds.

The management of landfill gas under the New Source Performance Standards (NSPS) for MSWLF (40 CFR Part 60) requires NMOC emission rates annually or at a five-year interval if the estimated NMOC emission rate is below the emission rate threshold. Landfill gas emission rates will be calculated during the permitting phase of the Project.

The need for a landfill gas collection and control system is not anticipated for the proposed MSWLF. The proposed design capacity is less than the 2.5 million metric tons threshold as defined by the USEPA New Source Performance Standards for municipal solid waste landfills.

3.2.2 Impacts and Mitigation

Alternative 1

Alternative 1 would have no new impacts on air quality. Current emissions are expected to continue at a similar rate.

Alternative 2

Construction of the Project would result in temporary and localized increases of tailpipe emissions from mobile diesel- and gasoline-fueled equipment. In addition, temporary increases in fugitive dust emissions would result from construction-related surface disturbances and construction vehicle travel on unpaved roads.

Exhaust emissions from diesel- and gasoline-fueled construction equipment and vehicle engines would be minimized by federal design standards imposed at the time of manufacture of the vehicles and would comply with EPA mobile and non-road emission regulations (40 CFR Parts 85, 86, and 89). Emissions would also be controlled by purchasing commercial gasoline and diesel fuel products whose specifications are controlled by federal and state air pollution control regulations applicable to fuel suppliers and distributors. The Tribe would minimize engine and commuting emissions, and dust generation by:

- requiring construction equipment and supporting vehicles to adhere to EPA rules regulating engine emission standards and sulfur concentration in diesel fuels;
- requiring proper maintenance of construction equipment and use of low-sulfur diesel fuel;
- limiting idling of construction vehicles; and
- regularly applying dust suppressants or hard surfacing the roadway.

Project construction would result in temporary and localized impacts on air quality from increases of mobile diesel- and gasoline-fueled equipment tailpipe emissions, fugitive dust emissions from surface disturbance and construction vehicle travel on unpaved roads. Emissions generated during construction of the Project are not anticipated to have a significant impact on air quality.

The annual waste acceptance rate of the proposed MSWLF is anticipated to increase 1 percent annually and the number and type of operating equipment is not anticipated to change from the current equipment. During Project operation, if the calculated NMOC emission rate exceeds the threshold defined by NSPS at any time during the MSWLF operating life, the MSWLF will be required to install a landfill gas collection and control system. Emissions generated during Project operations would not be anticipated to have a significant impact on air quality.

3.3 HYDROLOGIC CONDITIONS/WATER QUALITY

This section discusses the affected environment and potential impacts on surface waters, groundwater, wetlands, and floodplains within the Project Area. A field survey to identify and delineate wetlands and waterbodies was conducted and the letter report presenting the field results is included in Appendix B.

3.3.1 Surface Waters

The CWA regulates discharges of pollutants into surface waters of the United States. Jurisdictional waters, including surface water resources as defined in 33 Code of Federal Regulations § 328.3, are regulated under § 401 and § 404 of the CWA and § 10 of the Rivers and Harbors Act. Man-made features not directly associated with a natural drainage, such as upland stock ponds and irrigation canals constructed in uplands, are generally not considered jurisdictional waters. The CWA establishes federal limits, through the National Pollutant Discharge Elimination System (NPDES) permit process, for regulating point (end of pipe) and nonpoint (e.g., stormwater) discharges of pollutants into the waters of the United States and quality standards for surface waters.

Surface waters consist of streams, lakes, ponds, and certain man-made impoundments and conveyance features. Streams can be further characterized by the flow regime:

- Perennial: Surface water flowing continuously year-round.
- Intermittent: Surface water flowing continuously during certain times of the year and more than in direct response to precipitation (e.g., seasonally when the groundwater table is elevated or when snowpack melts).
- Ephemeral: Surface water flowing or pooling only in direct response to precipitation, such as rain or snow fall.

There are portions of major watersheds on the Cheyenne River Reservation - the Cheyenne River watershed, the Belle Fourche watershed, the Grand-Moreau watershed, and the Missouri-Oahe watershed. The Cheyenne River is the lower boundary of the reservation, and the Moreau River runs through the northern portion of the reservation; both of these rivers flow to the Missouri River. Other water features include Lake Oahe, which is a reservoir on the Missouri River, Thunder Butte Creek, and Cherry Creek.

The U.S. Geological Survey (USGS) manages the Watershed Boundary Dataset, which organizes hydrologic units into successively smaller levels of subdivisions using hydrologic unit codes (HUCs). Table 3-1 lists the HUCs in which the Project is located.

TABLE 3-1 Watershed Crossed by the Project					
Region (HUC 2)	Sub-Region (HUC 4)	Basin (HUC 6)	Sub-Basin (HUC 8)	Watershed (HUC 10)	Sub-Watershed (HUC 12)
Missouri Region (10)	Missouri-Oahe (1013)	Grand-Moreau (101303)	Lower Lake Oahe (10130105)	Herbert Creek (1013010512)	Upper Herbert Creek (101301051201)

Source: USGS, 2024

An evaluation of surface water resources was performed through an examination of topographic maps, the National Hydrography Dataset (NHD), and National Wetlands Inventory (NWI) data, and field delineation survey. This survey included the 80-acre Project Area as well as the adjacent streams encompassing approximately 160 acres (see Appendix B). The survey identified one pond and two ephemeral streams. These features are located outside of the 80-acre Project Area.

3.3.2 Wetlands

Wetlands are an important natural system and habitat because of the diverse biologic and hydrologic functions they perform. These functions include water quality improvement, groundwater recharge and discharge, pollution mitigation, nutrient cycling, wildlife habitat detention, and erosion protection. Wetlands are protected as a subset of the “the waters of the United States” under Section 404 of the CWA. Section 404(b)(1) of the CWA directs the USEPA to develop guidelines for the placement of dredged or fill material (33 U.S.C. § 1341[b]). These guidelines developed by USEPA are known as the “404(b)(1) Guidelines” and are located at 40 CFR Part 230. The stated purpose of the Guidelines is to “restore and maintain the chemical, physical, and biological integrity of waters of the United States through the control of discharges of dredged or fill material” (40 CFR § 230.1[a]). Federal protection of wetlands under EO 11990, Protection of Wetlands, includes the reduction of adverse impacts associated with the destruction or modification of wetlands. This order directs federal agencies to provide leadership in minimizing the destruction, loss, or degradation of wetlands. The USACE administers Section 404 of the CWA and in South Dakota has primary jurisdictional authority to regulate wetlands and waters of the United States.

A combination of desktop data sources and field delineation were used to evaluate the presence of wetlands in the Project Area. The desktop sources included USGS 7.5-minute topographic maps, NWI and NHD data, U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) 2019 Soil Survey Geographic (SSURGO) digital data for Zeibach County, South Dakota and 2021 National Agriculture Imagery Program (NAIP) aerial photography.

A field survey was conducted in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual and the 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region – Version 2.0 (Regional Supplement). Eight palustrine emergent (PEM) wetlands were recorded outside of the 80-acre Project Area. No wetlands occur in the Project Area.

3.3.3 Floodplains

According to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps, the Project footprint is located within FEMA Flood Designation Zone “X” or an area of minimal flood hazard and is not anticipated to impact the 100-year floodplain (FEMA, 2020 and 2024).

3.3.4 Groundwater

Groundwater exists in the saturated zone below the ground surface that collects and flows through permeable zones in aquifers. Groundwater discharges to surface water supplying baseflow and is used for drinking, irrigation, and industrial purposes. Groundwater typically can be described in terms of depth from the surface, aquifer or well capacity, water quality, and surrounding geologic formations (see Section 3.4, Geology and Soils).

Groundwater quality and quantity are regulated under several federal and state programs. Groundwater resources are regulated on the federal level by the USEPA under the Safe Drinking Water Act (SDWA), 42 U.S.C. § 300f et seq. The South Dakota Department of Agriculture and Natural Resources Drinking Water Program reviews projects for the potential to impact public drinking water sources (groundwater wells and surface water intakes) and sets standards for groundwater to protect human health.

The Project is located in the Northern Great Plains aquifer (Upper Cretaceous) system. The aquifer system extends approximately 300,000 square miles, underlying most of North Dakota and South Dakota, and parts

of Montana and Wyoming (USGS, 1996). Well depth to these aquifers is typically at least 40 feet but can reach depths up to several thousand feet.

Sixteen geotechnical test borings were drilled to depths of 40 feet to 60 feet below surface grade in December 2023. No groundwater was identified. Twelve of the boreholes were finished with standpipe piezometers to facilitate long-term groundwater monitoring at the proposed MSWLF (Core Engineering & Consulting, Inc., 2024).

3.3.5 Water Intakes

The Cheyenne River Reservation and adjacent counties are served by the Mni Wašté Water Company located in Eagle Butte, South Dakota. The Mni Wašté Rural Water System serves Dewey, Meade, and Ziebach counties and drinking water is sourced from surface water sources. Mni Wašté Water Company installed a water intake on the Missouri River; a new water treatment plan will be developed to help alleviate the problems with unsafe drinking water on the Reservation.

No drinking water intakes are located within or adjacent to the Project (Tri-County/Mni Wašté Rural Water System, 2023).

3.3.6 Impacts and Mitigation

Alternative 1

Under the No Action Alternative, no landfill construction would occur. Because control measures are not in place at the existing landfill site, pollutants (e.g., leachate) and contaminated stormwater could come in contact with surface water and groundwater during the use life of the landfill. The effects could range minor to major depending on the type and volume of contaminants in the leachate and the volume of contaminated stormwater runoff.

Alternative 2

Under Alternative 2, temporary construction impacts to surface water and stormwater quality would be minimized by installing temporary erosion and sediment control measures (e.g. silt fence) before construction and maintaining these measures throughout construction.

Well-proven engineering designs would be implemented to minimize impacts to water resources during MSWLF operation. A bottom liner system would be constructed to mitigate leachate migration. Leachate is produced when water percolates through the waste or is generated by the waste itself. The leachate would be diverted to a leachate collection pond where it would be managed.

Stormwater is precipitation that falls on the site and does not infiltrate. The clean stormwater would be diverted to a stormwater sedimentation pond to control flow and remove sediment, and would then be discharged to the adjacent stream.

Also during MSWLF operations, the placement of daily and intermediate cover would minimize leachate production and seeps. Placement of final covers restricts infiltration and provides drainage control. Stormwater runoff from areas of the MSWLF with final cover does not come into contact with refuse.

Groundwater monitoring would occur at specified monitoring points and using standard practices to confirm the performance of the containment systems of the MSWLF cells as well as the leachate management system.

In case of an emergency such as a leachate line breach or spill, protocols for community notification would be developed in the event of any contamination or contaminants found to have migrated offsite.

With the implementation of best management practices, surface water and groundwater impacts during either construction or operation would be negligible and not significant. Additionally, the proposed MSWLF would be beneficial for the community.

3.4 GEOLOGY AND SOILS

3.4.1 Geological Resources

The Proposed Action is within the Great Plains Physiographic Province. The Great Plains spans 450,000 square miles of flat “high plains” bordered to the west by the Rocky Mountains. The eastern border with the Central Lowlands is less distinct; the separation is characterized by the rainfall divide and changes in vegetation and soils. The Great Plains slope downward to the east, with maximum heights in the foothills of the Rockies at 5,500 feet above mean sea level decreasing to about 2,000 feet above mean sea level. The bedrock is horizontal beds of sandstones, shales, limestones, conglomerates, and lignite. In the northern Great Plains, glacial till overlies the Mesozoic bedrock. This area is also populated by small mountain groups caused by igneous activity and uplift. Most notable of these is the Black Hills about 150 miles southwest of the Proposed Action, which is a region of forested slopes with deep valleys cut by streams rising strikingly from the surrounding semiarid plains (National Park Service, 2021).

The bedrock geology of the Project Area is characterized by Cretaceous sedimentary formations. The Fox Hills formation (sandstone and shale) overlies the Pierre shale and/or the Niobrara Formation. The local topography in the Project Area is characterized as rolling uplands bordering deep natural drainages with elevations ranging from approximately 510 feet above mean sea level to approximately 610 feet above mean sea level between streams.

3.4.2 Geologic Hazards

Geologic hazards are physical and natural conditions that can result in damage to land and structures or injury to people. Potential geologic hazards in the Project Area include earthquakes, landslides and ground subsidence.

3.4.2.1 Earthquakes

The terrain at the proposed MSWLF is geologically stable. The potential seismic hazard was assessed by evaluating the U.S. Geological Survey (USGS) Seismic Hazard Map (2024b). According to the Seismic Hazard Map, an earthquake that has a 2 percent chance of being exceeded in a 50-year period would result in peak ground accelerations of 2 to 4 percent gravity. Additionally, using the interactive site probabilistic seismic hazard module provided by the 2014 USGS Unified Hazard Tool (Version 4.2) with the conterminous United States update, the peak horizontal ground acceleration within lithified material at the proposed MSWLF is 0.038 gravitational pull for a seismic event with a two percent probability of being exceeded in 50 years.

An earthquake of this magnitude may cause slight perceived shaking, but is not expected to cause structural damage. The low seismic hazard of the Project Area is further supported by the relatively low number of earthquakes that have historically occurred in South Dakota (USGS 2024c).

3.4.2.2 Landslides

Landslides are gravity-induced downward and outward movement of slope-forming materials and pose the greatest risk to facilities that are on steep slopes or on soils that are prone to failure due to heavy precipitation or earthquakes. The National Resources Conservation Service (NRCS) Soil Survey indicate that the dominant soil units of the proposed MSWLF are Dupree clay and Pierre-Samsil clays, and all soils are classified as non-hydric. Based on a review of the USGS Landslide Inventory Map, only one recorded landslide has occurred in South Dakota (USGS, 2024d). The proposed MSWLF is in area of relatively low landslide risk (USGS, 2024d).

3.4.2.3 Karst and Subsidence

Karst is a terrain characterized by the presence of sinkholes, caverns, and a highly irregular bedrock surface. Karst terrain develops from the dissolution of soluble bedrock, such as limestone, dolomite, marble, or gypsum. Based on a review of mapping from the USGS (2020), no potential karst terrain is located near Eagle Butte, South Dakota.

Land subsidence may be caused by mining, underlying karst features, and extraction of fluids, such as groundwater or oil/gas. No surface subsidence effects are expected to be incurred in the proposed MSWLF site because no mines, oil/gas wells, water wells, or karst development have been identified in the Project Area.

Geotechnical testing will be conducted during the permitting stage of the Project to assess potential geologic hazards.

3.4.3 Impacts and Mitigation

Alternative 1

Due to the limited potential for large, seismically induced ground movements and absence of karst, no impacts associated with geohazards are anticipated under Alternative 1.

Alternative 2

Due to the limited potential for large, seismically induced ground movements, no impacts associated with seismic activity within the Project Area are anticipated during construction of Alternative 2. Similarly, due to the lack of karst features and mining/oil and gas operations, and the low risk of landslides in the vicinity of the proposed MSWLF, no impacts associated with subsidence or landslides are anticipated during construction and operation of Alternative 2.

No mitigation measures, beyond designing the MSWLF to currently accepted industry specifications and RCRA requirements, are necessary.

3.4.4 Soils

Soil characteristics were identified and assessed using the Web Soil Survey (WSS) (USDA, 2019). The WSS provides soil data and information generated by the National Cooperative Soil Survey and is operated by the NRCS. The website is updated and maintained online as the single authoritative source of soil survey information.

Table 3-2 identifies the soil mapping units and selected characteristics of these soils. The soil characteristics for each soil series, specifically wind and water erodibility, hydric characteristics, revegetation potential, and drainage characteristics are also provided in Table-3-2.

Slope Class and Erodibility

Factors that influence the erosion potential of soils include soil texture, structure, length and percent of slope, vegetative cover, and rainfall or wind intensity. Soils most susceptible to erosion by water are typified by bare or sparse vegetation cover; non-cohesive, fine textured particles with low infiltration rates; and soils with moderate to steep slopes. Wind erosion processes are less affected by slope.

The Tribe evaluated the percent and length of slopes within the Project using the average of the NRCS slope ranges (as classified in SSURGO) for each soil series. The NRCS classifies slope classes into multiple ranges. Soils within and adjacent to the proposed MSWLF have varying slopes, as detailed in Table 3-2.

Erodibility was determined from water erosion factors and wind erodibility group (as classified by SSURGO) for each soil series. In general, most soil series in this area have moderate erodibility, as classified in Table 3-x.

Hydric Soils

Hydric soils are those soils that are saturated or flooded for a significant amount of time such that they develop anaerobic conditions near the soil surface that favor the growth of hydrophytic vegetation (Soil Survey Division Staff, 2019). According to the NRCS, the soil map units at the MSWLF are not hydric (NRCS, 2024).

TABLE 3-2							
Soil Map Units in Project							
Map Unit Symbol	Soil Mapping Unit	Percent Slope Class	Approximate Acreage Within Project	Erodibility		Hydric	Drainage Characteristics
				Wind	Water		
DuC	Dupree clay	3-15	63.7	Moderate	Moderate	No	Well drained
PmD	Pierre-Samsil clay	9-30	16.3	Moderate	Moderate	No	Well drained

Source: USDA, 2019

3.4.5 Impacts and Mitigation

Alternative 1

Under Alternative 1, construction or surface disturbance would not be required. Therefore, there would be no impacts on soils and the area would continue to be grassland.

Alternative 2

Long-term effects, could occur as a result of the Project. During construction of the MSWLF site, large volumes of soil will be moved during excavation and preparation of the MSWLF. The excavated soil will be stockpiled in various locations on the MSWLF property and used for daily cover during operations. Therefore, non-vegetated areas are vulnerable to soil erosion. Erosion control mitigation would include:

- soil stabilization using seeding and/or mulch;
- erosion control blankets and silt fencing;
- direct stormwater through the stormwater sedimentation pond
- implement a Stormwater Pollution Prevention Plan during construction.

If stockpiled soil remained after final closure, the surplus soil would be graded on site or removed. If additional soil is needed for final filling and closure operations would be imported from off site.

To limit impacts, the Tribe would promote revegetation for final closure and implement the following measures:

- selection and application of appropriate seed mixes;
- performing seeding of permanent vegetation within the recommended seeding dates;
- implementation of temporary stabilization measures (e.g., using mulch in upland areas);
- follow-up monitoring after the first growing season, and if necessary, the second growing season to determine success of revegetation.

3.5 VEGETATION

The Project is located in the northwestern Great Plains Ecoregion, which includes most of western South Dakota with the exception of the Black Hills, and encompasses the Missouri Plateau. This ecoregion is characterized by unglaciated rolling plains of sandstone, shale, and siltstone punctuated with buttes and badlands. The Cheyenne River Reservation is situated in an ecotone between the tall grass and short grass regions of the ecoregion. Native grassland (short and mid-grass prairie) generally occurs in areas that have not been developed or converted to agricultural crops or hayland/pasture (USEPA, 2024b). The common grasses on the Reservation are western wheatgrass (*Pascopyrum smithii*), green needle grass (*Nassella sp.*), needle-and-thread grass (*Hesperostipa comata*), and blue gramma (*Bouteloua gracilis*); common forbs include fringed sagewort (*Artemisia frigida*), wild parsley (*Anthriscus sylvestris*), and gumbo lily (*Oenothera caespitosa*).

Based on field observations, the Project Area is characterized as open grassland. Typical upland plants identified in the Project Area during the field investigation included smooth brome (*Bromus inermis*), Canada goldenrod (*Solidago canadensis*), creeping thistle (*Cirsium arvense*), white sweet clover (*Melilotus albus*), western wheatgrass (*Elymus smithii*), and tufted wheatgrass (*Agropyron cristatum*). Typical herbaceous wetland plants associated with the drainages adjacent to the Project Area included prairie cordgrass (*Sporobolus michauxianus*), common spikerush (*Eleocharis palustris*), foxtail barley (*Hordeum jubatum*), triangle orache (*Atriplex prostrata*), and bulrushes (*Typha latifolia*).

3.5.1 Impacts and Mitigation

Alternative 1

Under Alternative 1, construction or surface disturbance would not be required. Therefore, no impacts on vegetation would occur.

Alternative 2

Under Alternative 2, construction and surface disturbance would be required. Impacts are expected to be long-term but localized, and of moderate intensity given that impacts would be perceptible and would result in an overall change in the vegetation character.

To limit impacts, the Cheyenne River Sioux Tribe would promote revegetation for final closure and implement the measures described under Alternative 2 in Section 3.4.4 and the MSWLF's Closure/Post-Closure Plan.

3.6 WILDLIFE RESOURCES

Game and nongame-wildlife species inhabit the Cheyenne River Reservation. Many of these species are common throughout South Dakota.

3.6.1 Wildlife

Wildlife consists of both terrestrial and aquatic wildlife that are dependent on habitat. The grasslands and adjacent impounded stream are capable of supporting several species. Common wildlife that may utilize the area include bird species such as the red-tailed hawk (*Buteo jamaicensis*), mallard (*Anas platyrhynchos*), blue-winged teal (*Spatula discors*), canvasback (*Aythya valisineria*), ring-necked pheasant (*Phasianus colchicus*), downy woodpecker (*Picoides pubescens*), least flycatcher (*Empidonax minimus*), cliff swallow (*Petrochelidon pyrrhonota*), white breasted nuthatch (*Sitta carolinensis*), eastern bluebird (*Sialia sialis*), warbling vireo (*Vireo gilvus*), and bobolink (*Dolichonyx oryzivorus*) (SDGFP, 2014).

Common mammals throughout South Dakota include the white-tailed deer (*Odocoileus virginianus*), mule deer (*Odocoileus hemionus*), coyote (*Canis latrans*), red fox (*Vulpes vulpes*), eastern cottontail (*Sylvilagus floridanus*), white-tailed jackrabbit (*Lepus townsendii*), thirteen-lined ground squirrel (*Ictidomys tridecemlineatus*), western harvest mouse (*Reithrodontomys megalotis*), white-footed mouse (*Peromyscus leucopus*), and the meadow vole (*Microtus pennsylvanicus*). Wildlife with habitat requirements more specific to the Cheyenne River Reservation include the bison (*Bison bison*), antelope (*Antilocapra americana*), wild turkey (*Meleagris gallopavo*), raccoon (*Procyon lotor*), least chipmunk (*Neotamias minimus*), yellow-bellied marmot (*Marmota flaviventris*), badger (*Taxidea taxus*), porcupine (*Erethizon dorsatum*), and mountain lion (*Puma concolor*) (SDFGP, 2014).

Elk (*Cervus elaphus*) have been restocked on the Cheyenne River Reservation. In the early 1990s, the Theodore Roosevelt National Park and Wind Cave National Park provide the Cheyenne River Sioux Tribe 94 elk. The Cheyenne River Sioux Tribe Game, Fish & Parks Department manages the herd. The elk are currently in enclosed pasture of approximately 2,840 acres that overlaps with the Project Area.

3.6.2 Threatened, Endangered and Special Status Species

Threatened, endangered, and other special status species are those with specific regulatory protection under the federal protected species laws. Pursuant to the federal Endangered Species Act, the USFWS, and the National Marine Fisheries Service have authority over projects that may result in take of a species listed as threatened or endangered under the act. The Bald and Golden Eagle Protection Act (BGEPA, 16 USC 668-668c), administered by the USFWS, and its implementing regulations, provide additional protection for bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*). In April 2024, the USFWS Information for Planning and Consultation (IPaC) project planning tool was accessed to generate a list of

federally listed species, critical habitat, and other listed species and resources under USFWS jurisdiction that are known to occur in the Project Area.

Table 3-3 lists the federally listed species that have the potential to occur in the Project vicinity according to IPaC.

TABLE 3-3 Federally Listed Threatened and Endangered Species Potentially Occurring Within the Project Area				
Species	Federal Status ^a	Brief Habitat Description	Suitable Habitat Present in Project ^b	Suitable Habitat Present in Vicinity ^b
Northern long-eared bat (Myotis septentrionalis)	E	Overwinters in large caves and abandoned mines. Summer roosts in trees with cavities, crevices, or peeling bark.	No	No
Tricolored bat (Perimyotis subflavus)	PE	Forested habitats. Roosts in trees among leaves.	No	No
Black-footed Ferret (Mustela nigripes)	EP	Prairies inhabited by prairie dogs	No	No
Piping Plover (Charadrius melodus)	T	Shorelines of rivers and wetlands in areas with sparse vegetation.	No	No
Rufa Redknot (Charadrius melodus)	T	Shorelines of large lakes and freshwater marshes	No	No
Whooping Crane (Grus americana)	E	Stopover habitat in wetlands, marshes, and open fields.	Yes	Yes
Monarch Butterfly (Danaus plexippus)	C	Eggs laid on milkweed; butterflies feed on nectar sources in grasslands	Yes	Yes

^a Information from USFWS IPaC (2024); E = Federally Endangered, PE = Federally Proposed Endangered, T = Federally Threatened, EP = Experimental Population, Non-Essential, C= Candidate

^b Based on IPaC results and USFWS species profiles.

3.6.3 Federally Listed Species

The IPaC search results indicated that two endangered, two threatened, one proposed endangered, one candidate, and one Experimental Population, Non-Essential species are potentially present within the general Project vicinity. No critical habitat was identified within or adjacent to the Project Area. Additionally, field survey was conducted to assess habitat in the Project Area and the letter report presenting the field results and agency comments are included in Appendix B.

The northern long-eared bat is a wide-ranging species, known to be potentially present within the entire upper Midwest, Mid-Atlantic, and New England regions. It is designated as a federally protected species due to the prevalence of white-nose syndrome, a fungal disease known to affect bats. Suitable winter habitat (hibernacula) for the northern long-eared bat includes underground caves and cave-like structures (abandoned or active mines, and railroad tunnels). During summer, northern long-eared bat roosts singly or in colonies and in cavities, underneath bark, crevices, or hollows of both live and dead trees and/or snags typically three inches in diameter at breast height or greater. Males and non-reproductive females may also roost in cooler places, like caves and mines. This bat species seems opportunistic in selecting roosts, using tree species based on presence of cavities or crevices or presence of peeling bark. The Project is in grassland and no tree clearing is needed under the Proposed Alternative; therefore, there will be no effect on this species.

The tricolored bat is a wide-ranging species across the eastern and central United States and portions of southern Canada, Mexico, and Central America. White-nose syndrome has led to a 90 to 100 percent decline in tricolored bat winter colony abundance at sites impacted by the disease. It is designated as a federally proposed endangered species. Tricolored bats winter in caves and mines and spend the rest of the year in

forested habitats where they roost primarily among tree leaves. The field survey did not identify karst features or trees in the Project Area. Therefore, the Proposed Alternative would have no effect on the tricolored bat.

The black-footed ferret is a small mammal which historically ranged across the western United States and Canada. Black-footed ferrets were re-introduced into South Dakota in 1994, and all populations in South Dakota are designated as Experimental, Non-Essential. The black-footed ferret resides in prairies that are inhabited by prairie dogs, and they exclusively rely on prairie dog colonies for food, shelter, and dens. Prairie dog control programs and conversion of prairie to agricultural lands, coupled with the high sensitivity of black-footed ferrets to sylvatic plague have been the primary drivers of the black-footed ferret's decline.

In 2000, the USFWS, in cooperation with the Tribe, reintroduced black-footed ferrets onto the reservation (National Wildlife Federation, 2011). The ferret recovery produced a self-sustaining population of ferrets by 2004 and produced 164 kits in that year. However, an epidemic of sylvatic plague among black-tailed prairie dogs had, by 2012-2014, diminished the prairie dog acreage by an estimated 80-90 percent. This led to a reduction of the ferret population to numbers unable to sustain the species, even with supplemental kit releases from the National Black-Footed Ferret Conservation Center (West River Eagle, 2018). In 2020, the Cheyenne River Sioux Tribe Prairie Management Program was able to release five black-footed ferrets on prairie dog colonies. The Cheyenne River Sioux Tribe's ongoing Black-Footed Ferret recovery project intends to achieve a permanent self-sustaining population on the Cheyenne River Reservation. In 2022, the Tribe received a USFWS award that will enhance this ongoing recovery project (USFWS, 2022).

During a field survey to assess habitat, there was no evidence of prairie dog colonies within the Project Area. Also, the Project does not overlap with designated Critical Habitat for the black-footed ferret. Therefore, the Proposed Alternative would have no effect on the black-footed ferret.

The Survey Area is within the breeding range of the piping plover, which is found in the Great Plains, Great Lakes, and Atlantic/Gulf Coasts of North America. During the breeding season, piping plovers nest above high-water lines along shorelines of rivers and wetlands in areas with sparse vegetation. The Survey Area does not overlap with any designated critical habitat for this species, and the nearest critical habitat for this species is located more than 14 miles east and south of the Survey Area along the Missouri River. Given the lack of rivers and large streams in the Project Area and more suitable habitats located in the greater region, it is unlikely that the species would be present in the Project Area as permanent residents. Therefore, the Proposed Alternative would have no effect on the piping plover.

The Survey Area is within the migratory range of the rufa red knot, which is a threatened subspecies of red knot. The rufa red knot typically occupies shallow shorelines of lakes, rivers, and oceans. During its 9,000 mile migration, the rufa red knot stops over at a variety of wetland habitats to forage for small bivalves and invertebrates. Rufa red knots which migrate through the interior of North America typically forage and roost along the shorelines of large lakes and freshwater marshes. This subspecies has potential to occur in the Survey Area during the spring and fall, and suitable stopover habitat within the Survey Area includes emergent wetlands and other water bodies. However, because the subspecies is a long-distance migrant and the Survey Area is already heavily disturbed by dumping activities, occurrences are unlikely and any stopovers are likely to be rare and brief. Therefore, the Proposed Alternative would have no effect on the rufa red knot.

The whooping crane is a large migratory bird that temporarily occurs in South Dakota during the spring and fall migrations. Whooping cranes used to range across much of eastern and central North America, but the loss of wetland habitats due to European settlement destroyed nearly all of the species' breeding

grounds and the majority of suitable stopover habitat along their migration routes. They were extirpated across nearly their entire range, leaving only one naturally occurring population. This population has grown steadily since the species' listing, and this Aransas-Wood Buffalo Population (AWBP) is now comprised of 543 individuals. The AWBP nests in prairie wetlands in Saskatchewan, Canada, and migrates south to winter on the gulf coast of Texas. During migration, stopover sites typically consist of shallow surface water wetlands. The USFWS, in conjunction with the USGS, developed the whooping crane observation corridor to document where most whooping cranes were observed. The Survey Area is entirely within the 75 percent core area of the corridor, meaning that 75 percent of all species observations occur within this corridor. The Survey Area does not overlap with any designated critical habitat for this species; however, given the presence of wetlands, marshes, and open fields, there is a possibility of the species being present during migration stopovers. Therefore, the Project may affect, but is unlikely to adversely affect the whooping crane.

Monarch butterflies range throughout North and Central America and are present in the Survey Area during two of their three summer generations. Monarch butterfly eggs are laid singly on a number of milkweed (*Asclepias*) species found throughout the monarch's range, and the caterpillars feed exclusively on these plants. Following hatching and metamorphosis, adult butterflies feed on a variety of nectar sources in grasslands. Milkweed and flowering plants occur across the Project Area. The area outside of the project footprint would continue to be a source nectar for the butterfly and the Proposed Alternative is unlikely to adversely affect the species. The monarch butterfly is not afforded federal protections as a candidate species; therefore, no further actions are currently required. If the species is uplisted to Threatened or Endangered species status prior to Project completion, further assessment may be considered.

3.6.4 State-Listed Species

The South Dakota Game Fish & Parks (SDGFP) Environmental Review Tool (ERT) was used to determine whether the Project may impact any protected lands, natural resources, or protected species as designated by SDGFP. The Survey Area does not overlap with the breeding ranges of any state-listed Threatened & Endangered Birds, although as noted above the Survey Area is within the migratory range of the whooping crane. There were no recorded occurrences of species designated as threatened or endangered by SDGFP in the township according to South Dakota's Natural Heritage Database, further indicating that no state protected species are likely to be impacted by the Project.

The ERT indicated that almost the entirety of the Survey Area lies within The Tier 3 area for both Greater Prairie-Chicken Habitat Prioritization and Sharp-tailed Grouse Habitat Prioritization. These areas were designated under the Prairie Grouse Action Plan (SDGFP) and are meant to identify regions which contain suitable habitat for prairie grouse species or may become suitable with appropriate habitat improvement activities such as grassland restoration and tree removal. Tier 3 designated areas will not necessarily be occupied by prairie grouse, but instead represent habitat that can support these species. Neither these species are listed as threatened or endangered species under the South Dakota endangered species law.

3.6.5 Migratory Birds

The Migratory Bird Act of 1981 prohibits, among other things, activities that take, capture, kill, or attempt to take, capture, or kill any migratory bird, or any part, nest, or egg of a migratory bird (16 USC § 703). Two avian species protected under the MBTA were determined to potentially occur within the Project Area, including the California gull (*Larus californicus*) and lark bunting (*Calamospiza melanocorys*).

California gulls are an omnivorous species that forage in a wide variety of habitats and the Survey Area lies within this species' migratory range. During migration, California gulls typically roost on islands in the

middle of inland lakes and rivers, and will forage in a variety of habitats including agricultural fields, garbage dumps, meadows, scrublands, and aquatic environments. While daily cover on the MSWLF may deter the gulls from feeding and removing waste from the MSWLF, the open grassland surrounding the MSWLF would likely provide adequate foraging grounds for this species during its migration.

Lark buntings nest and forage almost exclusively in shrubby grassland areas, and the Project Area lies within this species' breeding range. Lark buntings are a ground-nesting species and typically construct their nests at the base of shrubs or large clumps of grasses. This species has been infrequently observed near the Project Area over the last 5 years (eBird 2023), and while shrubby grassland habitat is present within the Project Area, heavy disturbance associated with the active landfill has likely deterred potential nesting by this species within the adjacent Project Area.

3.6.6 Fisheries

Streams near Eagle Butte have the potential to support fish populations. Fish species found on the reservation include channel catfish (*Ictalurus punctatus*), largemouth bass (*Micropterus salmoides*), smallmouth bass (*Micropterus dolomieu*), rainbow trout (*Oncorhynchus mykiss*), Chinook salmon (*Oncorhynchus tshawytscha*), northern pike (*Esox lucius*), yellow perch (*Perca flavescens*), bluegill (*Lepomis macrochirus*), black crappie (*Pomoxis nigromaculatus*), bullhead (*Ameiurus nebulosus*), and walleye (*Sander vitreus*) (Cheyenne River Sioux Game, Fish & Parks, 2022b)

The closest federal and state fish hatchery locations include Gavins Point National Fish Hatchery adjacent to the Missouri River near Yankton, South Dakota and the McNenny State Fish Hatchery in Spearfish, South Dakota. Both of these fish hatcheries are located more than 200 miles from the Project.

3.6.7 Impacts and Mitigation

Alternative 1

Under the No Action Alternative, no construction activities would occur. Continued use of the existing landfill could impact terrestrial and aquatic habitat and associated wildlife as a result of leachate seep or contaminated stormwater. The effects could range minor to major depending on the type and volume of contaminants in the leachate and the volume of contaminated stormwater runoff.

Alternative 2

Based on the USFWS comments, Alternative 2 would have not adversely effect federally listed species. No state-listed species are present within the Project Area based on ERT review.

The Proposed Alternative involves construction activities; therefore, vegetation communities and other wildlife using the area could be affected during construction. Noise from construction could disturb nearby wildlife causing some wildlife to move away. Some wildlife would likely relocate to other habitats in or near the MSWLF during construction and return to the area once construction activity is complete.

The Tribe would implement a Spill Prevention Control and Countermeasure Plan and project-specific Stormwater Pollution Prevention Plan, and best management practices to minimize construction stormwater runoff from entering adjacent waterways.

During operation, noise would occur over a long period of time. However, wildlife using the area around the existing landfill site coexist with noise and human activity and operational activities would be similar

to the existing conditions. Further, when the MSWLF operations cease and the disturbed area is revegetated, wildlife use of the site may increase.

Leachate and stormwater would be managed during Project operation to prevent impacts on water resources near the Project. Further, leachate and contaminated stormwater would not be discharged to local receiving waters.

Construction and operation impacts are expected to be long-term but localized, and of moderate intensity given that impacts would be perceptible, but the impacts are not expected to be significant given the likelihood of wildlife to coexist with the MSWLF.

3.7 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

Socioeconomic analyses generally include a review of the population, income, employment, and housing conditions of a community or region. The socioeconomic conditions of a region could be affected by changes in the rate of population growth, changes in the demographic characteristics of a region, or changes in employment caused by the implementation of a Proposed Action. The sections below identify the demographic and economic characteristics of the Cheyenne River Reservation based on the U.S. Census Bureau, American Community Survey, 5-Year Estimates (2018-2022) and use the state as the comparative population.

“Environmental justice” (EJ) means the just treatment and meaningful involvement of all people, regardless of income, race, color, national origin, Tribal affiliation, or disability, in agency decision-making and other Federal activities that affect human health and the environment so that people:

- are fully protected from disproportionate and adverse human health and environmental effects (including risks) and hazards, including those related to climate change, the cumulative impacts of environmental and other burdens, and the legacy of racism or other structural or systemic barriers; and
- have equitable access to a healthy, sustainable, and resilient environment in which to live, play, work, learn, grow, worship, and engage in cultural and subsistence practices (USEPA, 2024c).

EJ communities include populations of color, low-income populations, Federally Recognized Tribes, and/or indigenous communities. The term “EJ community” includes disadvantaged communities that have been historically marginalized and overburdened by pollution.

In conducting NEPA reviews federal agencies follow Executive Order 12898 and Executive Order 14096³, which direct the agencies to identify and address disproportionate and adverse human health or environmental effects of its programs, policies, and activities on populations of color and low-income populations (i.e., environmental justice communities). Executive Order 14008⁴ also directs agencies to develop “programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate- related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts.”

Consistent with *Promising Practices for EJ Methodologies in NEPA Reviews* (*Promising Practices*, 2016), and Executive Orders 12898 and 14096, the Project was reviewed to assess if its resulting impacts would be disproportionate and adverse on populations of color and low-income populations and also whether impacts would be significant. *Promising Practices* provides that agencies can consider any of a number of conditions in

³ Executive Order No. 12,898, 59 Fed. Reg. 7629, at 7629, 7632 (Feb. 11, 1994); Executive Order No. 14,096, 88 Federal Register 25251.

⁴ Executive Order No. 14,008, 86 Federal Register 7619, at 7629.

this determination and the presence of any of these factors could indicate a potential disproportionate and adverse impact. For this analysis, a disproportionate and adverse effect on an environmental justice community means the adverse effect is predominantly borne by such population. Tables 3-4 and 3-5 identify the populations of color by race and ethnicity and low-income populations within South Dakota, Dewey and Zeibach counties, and census tracts crossed by the Cheyenne River Reservation.

The Cheyenne River Reservation includes 4,259 mi² of land (1,450,644 trust acres) in Dewey and Ziebach counties, South Dakota. Enrolled membership is estimated to be 15,993 with a population of 7,715 on the Reservation (Bureau of Indian Affairs, 2024; U.S. Census Bureau, 2022). The middle of the main channel of the Missouri River is the eastern boundary of the Reservation and the Cheyenne River forms its southern boundary.

The Project would be constructed on the Cheyenne River Reservation, where the population is predominantly tribal members (consider an EJ community) compared to 8 percent in the state of South Dakota (Table 3-4). The Cheyenne River Sioux Tribe consists of the Minneconjou, SiHaSapa, Oohenumpa, and Itazipco bands of the Lakota Nation. Approximately 36 percent of population over 16 years is employed and the median household income is \$51,944. About 27 to 33 percent of the residents were below poverty level in 2022 (U.S. Census Bureau, 2022), compared to four percent in the state of South Dakota.

TABLE 3-4										
Demographic Indicators										
State, County, Census Tract ID	Total Population	Race and Ethnicity Columns ^a								
		White – Not Hispanic (%)	Black or African American (%)	American Indian and Alaskan Native (%)	Asian (%)	Native Hawaiian and Other Pacific Islander (%)	Some Other Race Alone (%)	Two or More Races (%)	Hispanic or Latino (%)	Total Populations of Color (%)
South Dakota	890,342	81	2	8	1	0.1	0	4	4	19
<i>Dewey County</i>	5,275	19	0	77	0	0.6	0	2	1	81
CT 9415	2,457	4	1	92	0	1	0	1	2	96
CT 9417	2,818	32	0	64	0	0	0	3	1	68
<i>Ziebach County</i>	2,455	25	0	67	0	0.2	0	1	7	75
CT 9416	2,455	25	0	67	0	0.2	0	1	7	75
Source: US Census Bureau (2022). American Community Survey, 2022 (5-Year Estimates), File # B03002.										
^a Population of color refers to people who reported their ethnicity and race as something other than non-Hispanic White.										
Notes: Due to rounding differences in the dataset, the totals may not reflect the sum of the addends.										

TABLE 3-5

Demographic and Socioeconomic Indicators

	Population for whom Poverty Status is Determined	Population at or Below Poverty Level (count)	Population at or Below Poverty Level (%)	American Indian and Alaskan Native (count)	American Indian and Alaskan Native (%)	American Indian and Alaskan Native at or Below Poverty Level (count)	American Indian and Alaskan Native at or Below Poverty Level (count) (%)
State of South Dakota	860,878	105,542	12	67,048	8	31,671	4
<i>Dewey County</i>	5,204	1,609	31	4,050	78	1,555	30
CT 9415	2,421	813	34	2,254	93	799	33
CT 9417	2,783	796	29	1,796	65	756	27
<i>Ziebach County</i>	2,455	1,015	41	1,669	68	786	32
CT 9416	2,455	1,015	41	1,669	68	786	32
Source: U.S. Census Bureau (2022a). Poverty Status in the Past 12 Months, American Community Survey, 5-Year Estimates (2018-2022), Table S1701.							

3.7.1 Impacts and Mitigation

Alternative 1

As described throughout this EA, Alternative 1 is anticipated to have a range of impacts on the environment. As indicated in Tables 3-4 and 3-5, the tribal community and therefore disproportionate and adverse impacts under Alternative 1 would be predominantly borne by an EJ community. The range of impact intensity would be dependent on the type and volume of pollutants leaked by the landfill site into terrestrial and aquatic habitat.

Alternative 2

As described throughout this EA, Alternative 2 is anticipated to improve environmental outcomes as a result of the implementation engineering practices that follow the requirements of RCRA regulations at 40 CFR Part 258 Subtitle D and best management practices for the design, operation, and maintenance of environmental control systems, including leachate and stormwater systems. Project temporary impacts during construction and the permanent operational impacts would be less than significant. Therefore, the construction and operations impacts would not be disproportionate and adverse impacts on EJ communities.

3.8 CULTURAL RESOURCES

Section 106 (36 C.F.R. 800) of the National Historic Preservation Act (NHPA) of 1966 (16 U.S.C. 470, *et seq.*) as amended, requires federal agencies to consider the effects of proposed undertakings on historic properties listed or eligible for listing in the National Register of Historic Places (NRHP) (including archaeological resources, prehistoric and historic structures, and cultural landscapes). Section 106 also requires federal agencies to offer the Advisory Council on Historic Preservation an opportunity to comment on any adverse effects.

Cultural Resources include, but are not limited to, the following types of resources:

- Archaeological (i.e., prehistoric or historic sites where human activity has left physical evidence of that activity, but no structures remain standing);

- Architectural (i.e., buildings or other structures or groups of structures, or designed landscapes that are of historic or aesthetic significance); and
- Traditional Cultural Property (resources of traditional, religious, or cultural significance to Native American Tribes and other communities).

3.8.1 Cultural Resources Review

South Dakota exhibits extreme physiographic diversity, encompassing such landscapes as the Black Hills and Badlands in the west; the Missouri River Trench center-state, the Prairie Pothole Region in the northeast; and the James and Big Sioux River valleys in the east. As such, human groups developed special patterns of adaptation to survive in each of these unique environments. South Dakota was home to diverse lifeways covering a time span of some 14,000 years.

A desktop archaeological review was completed using publicly available information, and on cultural resource data available through the South Dakota State Historical Society (SDSHS) Archaeological Research Center (ARC) at the South Dakota State Historic Preservation Office (SDSHPO). It characterizes previously recorded cultural resources in the Project Area, and the discusses limitations of these data. The results of previous investigations, along with a desktop analysis of the landforms crossed by the Project, land use history of the Project Area, and historic era maps and aerial imagery are used to inform archaeological site potential within the Project Area.

Cultural resource information was collected through a Level I Records Search performed by staff at the SDSHS ARC in August 2023. The following data sources were also reviewed for cultural resources:

- National Park Service NRHP FOCUS database
- Bureau of Land Management (BLM) General Land Office (GLO) Records
- South Dakota State Register of Historic Places
- Historic era county plats and atlases searched and viewed on [Historicmapworks.com](https://www.historicmapworks.com) and [Historicaerials.com](https://www.historicaerials.com) database

The Level I Records Search identified eleven cultural resource surveys that had been previously conducted within 1 mile of the MSWLF. One previously documented cultural site was identified within the one-mile review area and is recorded as an isolated Native American find.

A review of historic era aerial imagery, topographic maps, and county atlases did not identify any historic-age buildings, structures, or other features depicted or visible within the Project Area.

On May 24, 2024, the Cheyenne River Sioux Tribe Tribal Historic Preservation Officer (THPO) conducted a review of the desktop review under Section 106 of the NHPA and determined that no historic properties would be affected by the MSWLF (Appendix C). Pursuant to the Tribe's Ordinance 57 Cultural Resource Protection Act, The THPO requested onsite Traditional Cultural Specialist/Monitor(s) during any ground disturbing activities to identify and assess cultural resources identified. Significant impacts on cultural resources is not anticipated.

3.8.2 Impacts and Mitigation

Alternative 1

Under Alternative 1, no ground disturbance or operational activities are planned that would impact cultural resources.

Alternative 2

A cultural resources desktop to review was completed to identify previous surveys and known cultural resources within one mile of the Project Area. The summary of findings was provided to the THPO for review and comment. The THPO and determined that no historic properties would be affected by the MSWLF. However, to ensure that cultural resources identified during construction are identified and treated in accordance with Ordinance 57 Cultural Resource Protection Act, Traditional Cultural Specialist/Monitor(s) would be present during any ground disturbing activities. With this recommended mitigation, the Project would be unlikely to result in impacts on cultural resources.

3.9 VISUAL RESOURCES

Visual impacts are those that diminish the public enjoyment of the character or quality of a special resource, place or landscape. The visual setting of the Project Area is characterized as rolling hills with open vistas and surrounded by grassland. Eagle Butte is approximately 2.4 miles to the northwest of the Project. The Project is surrounded by grassland used for elk grazing. The nearest residential homes are approximately 1.3 miles northwest of the Project north of Foxridge Road (also Route 19A). The existing landfill is located south of Foxridge Road along the Landfill Road.

Alternative 1

The existing landfill is visible in the distance from the nearest residential community. This landfill has become an established and acknowledged part of the landscape since the 1980s. No visual change would result under Alternative 1.

Alternative 2

The Project would not change the elevation of the existing landform. Additionally, Alternative 2 will not produce vapor plumes or glare from lighting, which would be faced toward the MSWLF. Screening will include a privacy fence on the west side of the MSWLF and by to be determined vegetation on the remaining sides. The surrounding landscape would retain its integrity because the open sky, topography, and existing patterns of land use would remain dominant.

Impacts are expected to be long-term but localized, and of moderate intensity given that impacts would be perceptible and would result in an overall change in land use. These changes would not be significant because the surrounding landscape would retain integrity.

3.10 HEALTH AND SAFETY

For a human health risk to exist, two components must be present: 1) hazard or toxicity (the potential for and degree of harm that a chemical, pathogen, or physical effect may inflict) and 2) an exposure or pathway (the degree to and manner in which humans come into contact with and absorb a chemical or pathogen, or is affected by a physical effect [e.g., noise]). Risk defines the likelihood of experiencing harm from a

chemical, pathogen, or physical effect. A description of the affected environment for human health risks requires identification of potential exposure pathways to potentially exposed populations. The primary potential exposure pathways relevant to the Project include noise, water (surface and groundwater), and air toxics.

Sound is a sequence of pressure waves that propagates through compressible media such as air or water. When sound becomes excessive, annoying, or unwanted, it is referred to as noise. Decibels are the units of measurement used to quantify the intensity of noise. To account for the human ear's sensitivity to low-level noises, the decibel values are corrected for human hearing to weighted values known as dBA. The USEPA has set values that should not be exceeded. The USEPA has indicated that a day-night average sound level (Ldn) of 55 dBA protects the public from indoor and outdoor activity interference. Noise sensitive areas (e.g., residences, schools, places of worship) are defined as areas where elevated noise would interfere with normal activities associated with its use.

Temporary noise impacts associated with construction activities would primarily result from the use of heavy construction equipment and machinery. Typically, the most prevalent sound source during construction would be the internal combustion engines used to power the construction equipment. Noise levels of major construction equipment including trucks have a measured sound level of 85 A-weighted decibels (dBA)⁵ at 50 feet from the source, diminishing with distance. The nearest noise sensitive area is about 1.3 miles to the northwest.

Potential impacts of surface and stormwater runoff would be related to potential landfill contamination entering wetlands or waterbodies. Potential impacts on humans could include heavy metals contamination or toxic organics contamination. Potential impacts on groundwater would be related to potential landfill contamination entering groundwater used for drinking water.

Air quality impacts are typically associated with toxic compounds contained in landfill gas. Populations potentially affected by air contamination are onsite workers and nearby residents. With sufficient exposure, air contaminants have the potential to cause human health effects. The known sources of emissions at the current landfill site includes the generation of landfill gases from the decomposition of solid wastes and the combustion of fuels from equipment used during waste transportation and landfill operations. Additionally, emissions are generated from the purchase of electricity used for operating the equipment building and auxiliary equipment.

Alternative 1

Under Alternative 1, there would be no change to noise and air quality. The current leachate generation and disposal is currently unknown. Because control measures are not in place at the existing landfill site, pollutants (e.g., leachate) and contaminated stormwater could come in contact with surface water and groundwater during the use life of the landfill. No impacts on drinking water are anticipated because there are no drinking water intakes in the existing facility.

Alternative 2

Under Alternative 2, potential construction noise impacts to onsite workers or nearby residences would be primarily resulting from the use of heavy construction equipment and machinery. These noise impacts will end with completion of the MSWLF construction. Construction will be of a short duration. Noise impacts resulting from Alternative 2 would be localized, minor, and temporary. During construction and operation,

⁵ A-weighted decibels represent the relative loudness of sounds as perceived by the human ear.

noise-related measures would be used when operating equipment (i.e., adequate mufflers, proper earplugs for operators, etc.). Therefore, noise impacts would not be significant.

Project construction would result in temporary and localized impacts on air quality from increases of mobile diesel- and gasoline-fueled equipment tailpipe emissions, fugitive dust emissions from surface disturbance and construction vehicle travel on unpaved roads. Emissions generated during construction of the Project are not anticipated to have a significant impact on air quality. MSWLF operation would be similar to the existing conditions at the existing landfill and with similar emission levels.

Under Alternative 2, a MSWLF liner system would be constructed to prevent leachate migration beyond the MSWLF and into surface water and groundwater. Leachate generated by stormwater percolating through the refuse would be collected by a leachate collections system composed of perforated pipes within the MSWLF and solid pipe draining via gravity to a leachate collection pond located on the south end of the MSWLF. The leachate collection system serves not only to drain leachate from the MSWLF but also to protect the integrity of the liner system by minimizing liquid levels (hydraulic head) impinging on the liner system, thus reducing the potential for leakage. No impacts on drinking water are anticipated because there are no drinking water intakes in the Project.

4.0 Cumulative Impacts

Cumulative impacts are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.” Cumulative effects may result from individually minor, but collectively significant actions taking place over a period of time. The temporal boundaries considered include past, present, and future. Cumulative impacts are analyzed in terms of the specific resource, ecosystem, and human community being affected and are considered meaningful impacts. Typically, actions not included in the proposed action or alternatives that are having or will have impacts on the same resources that are likely to be affected by the proposed action and alternatives are considered in cumulative impacts.

At this time, no present or future actions were identified in the vicinity of the proposed action that would affect the resource conditions described in this Environmental Assessment. Because the currently operating municipal landfill would close and a new RCRA-compliant MSWLF would be constructed implementing best management and engineering practices in the design, operation, and maintenance of the MSWLF, no significant cumulative impacts are anticipated. The environmental and social impacts of the Project would be beneficial to the community.

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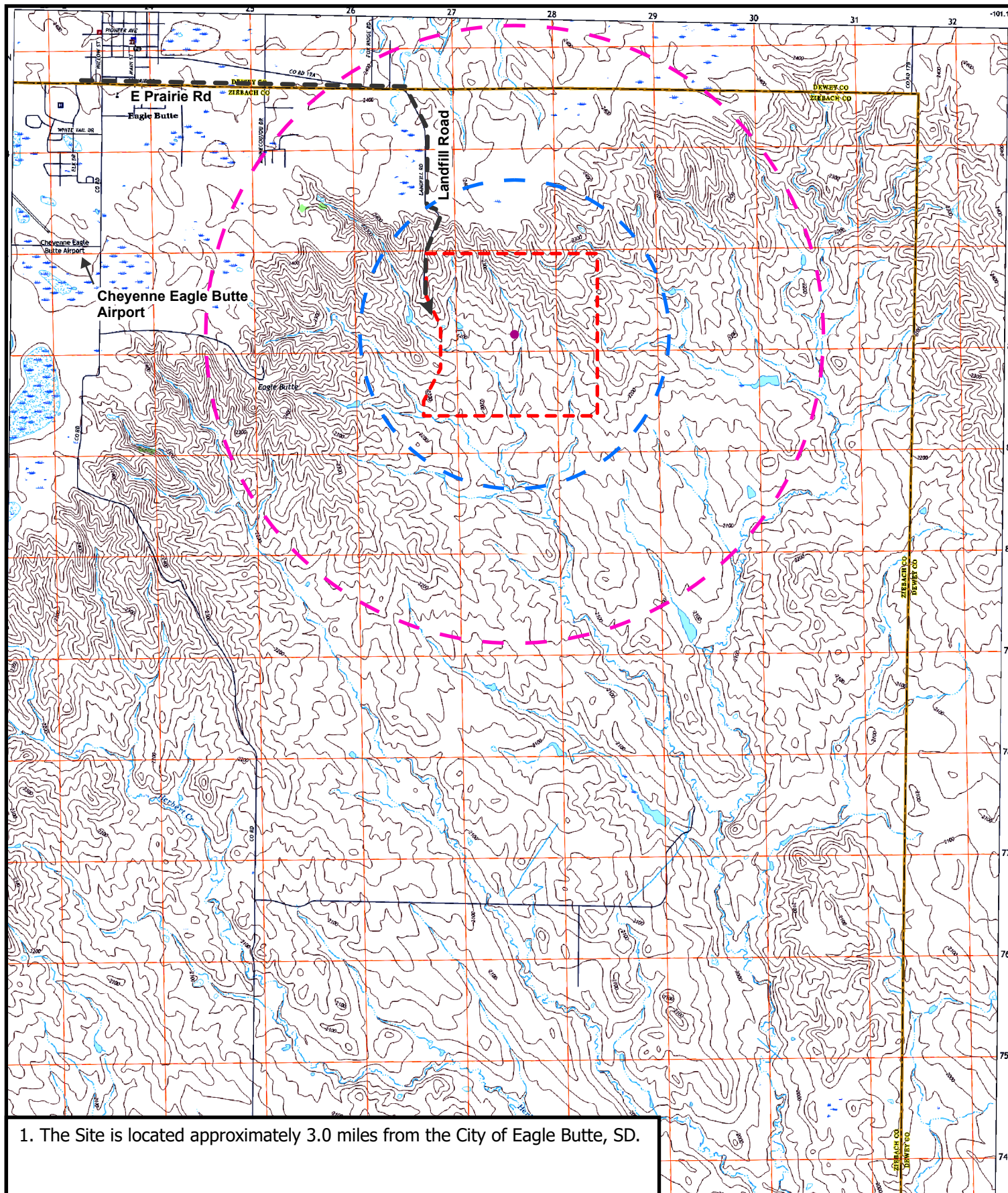
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Cheyenne River Sioux Tribe

Sanitary Landfill

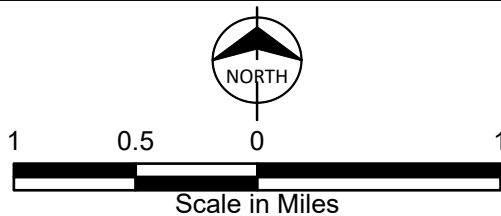
APPENDIX A

Figures



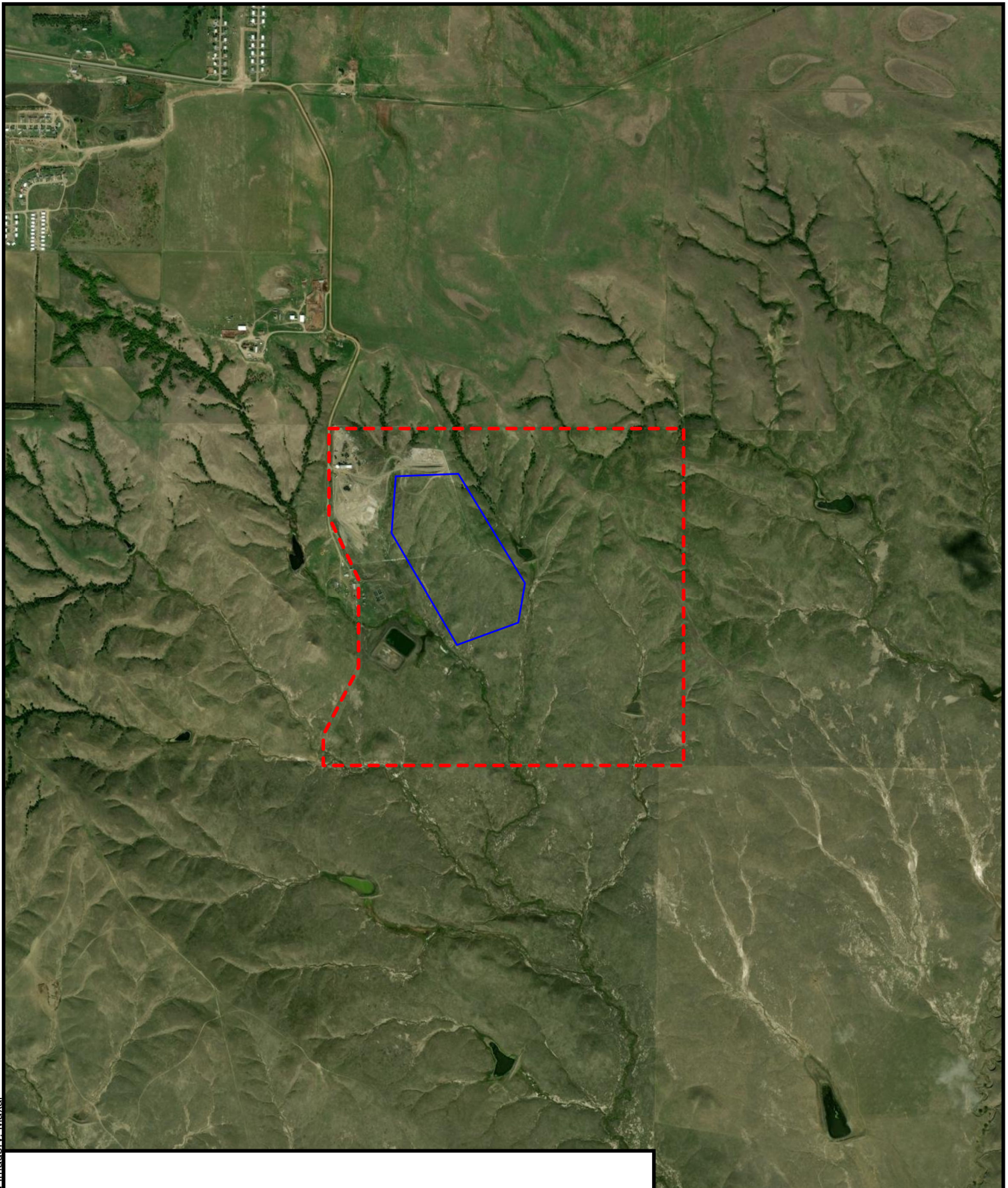
1. The Site is located approximately 3.0 miles from the City of Eagle Butte, SD.

- Approximate Site Boundary
- Access Route
- 5000 ft ROI
- 10000 ft ROI



BURNS
MCDONNELL

Figure 1
Site Location Map
CRST Landfill
Ziebach County, South Dakota



-  Approximate Site Boundary, ~640 acres
-  Approximate Landfill Footprint, ~80 acres

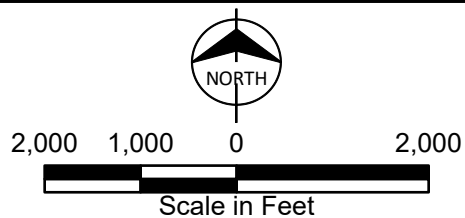
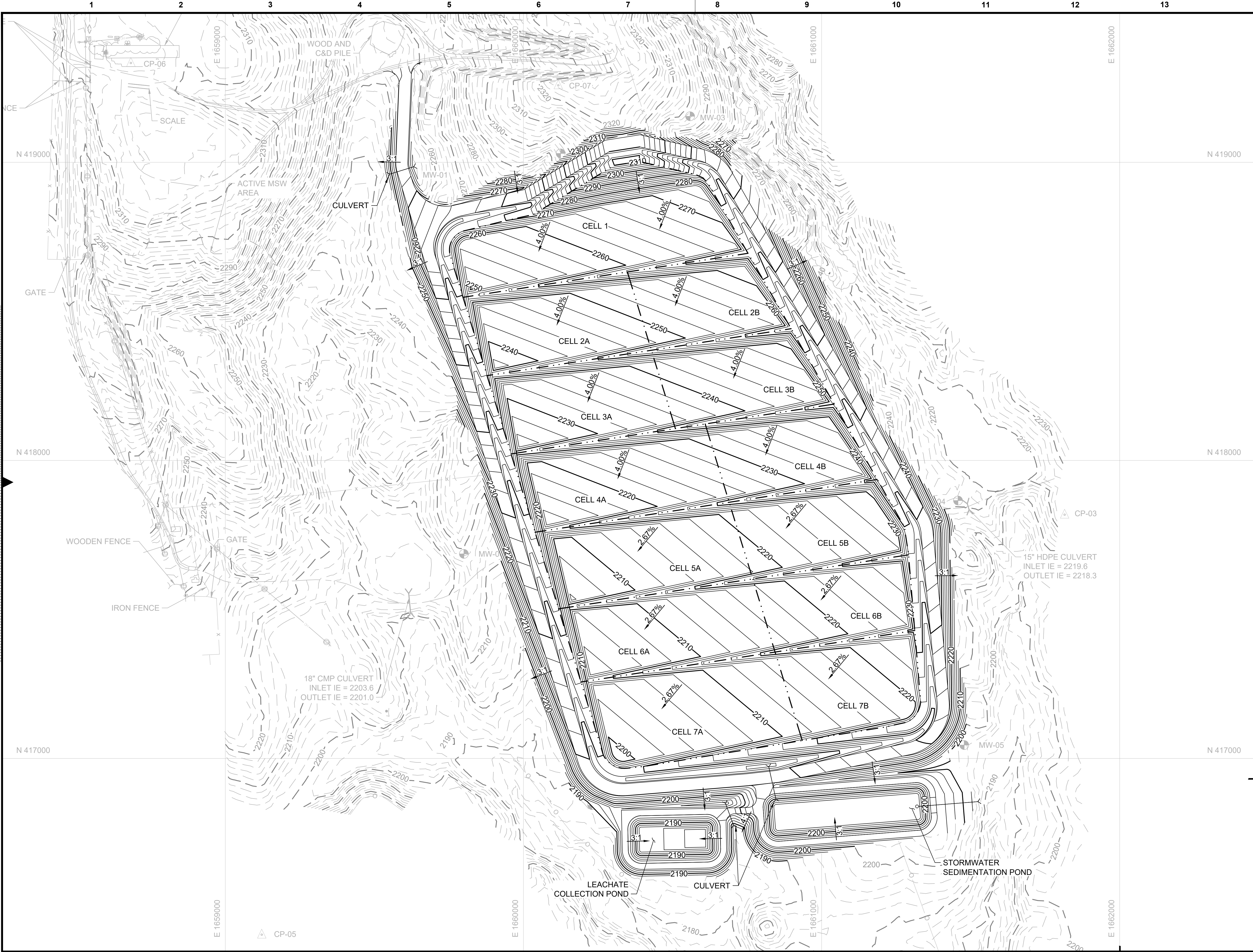


Figure 2
Proposed Landfill Footprint
CRST Landfill
Ziebach County, South Dakota



no.	date	by	ckd	description
A	06/24/24	PRF	LAR	ISSUED FOR REVIEW

- NOTES:**
- SITE TOPOGRAPHY IS BASED ON SURVEY COMPLETED DECEMBER 7TH, 2023 BY JSA CONSULTING ENGINEERS/LAND SURVEYORS, INC., SIOUX FALLS, SD.
 - CONTOUR INTERVAL IS 2-FEET.
 - PROPOSED BASE GRADES SHOWN WITHIN THE LANDFILL BOUNDARY AND LEACHATE POND REPRESENT TOP OF COMPACTED CLAY LINER ELEVATIONS. PROPOSED BASE GRADES OUTSIDE THESE BOUNDARIES REPRESENT GENERAL GRADES (I.E., TOP OF TOPSOIL, TOP OF SURFACING, ETC.).

APPROXIMATE CELL AREA (ACRES):	
CELL 1	- 6.1
CELL 2A	- 3.5
CELL 2B	- 2.8
CELL 3A	- 3.5
CELL 3B	- 3.2
CELL 4A	- 4.1
CELL 4B	- 2.9
CELL 5A	- 4.0
CELL 5B	- 3.2
CELL 6A	- 3.8
CELL 6B	- 2.9
CELL 7A	- 4.7
CELL 7B	- 3.1

FOR PERMITTING PURPOSES ONLY



6909 S. LYNCREST PL., SUITE 120
SIOUX FALLS, SD 57108
605-271-4097
Burns & McDonnell Engineering Co, Inc.

date	JUNE 2024	detailed	D. KAMBLE
designed	P. RUIZ FABIAN	checked	L. RODIG



ZIEBACH COUNTY, SD

**CHEYENNE RIVER SIOUX TRIBE
SANITARY LANDFILL
PROPOSED BASE GRADES**

project	158757	contract	
drawing	Figure 3 — A		rev.
sheet	of	sheets	
file :C003 Proposed Base Grades_EA.dwg			

Cheyenne River Sioux Tribe

Sanitary Landfill

APPENDIX B

Water Resources and Habitat Assessment



The U.S. Fish and Wildlife Service concurs with your conclusion that this project as described will not adversely affect federally listed or proposed species and/or designated critical habitat(s). If the project changes or new information becomes available, please contact this office again so potential impacts to federally listed species and other trust resources may be reevaluated.

Field Supervisor, South Dakota Ecological Services Date

April 17, 2024

U.S. Fish & Wildlife Service – South Dakota Ecological Services Field Office
420 South Garfield Avenue, Suite 400
Pierre, South Dakota 57501-5408

Re: Federally Protected Species and Habitat Assessment for The Cheyenne River Sioux Tribe
Solid Waste Landfill in Ziebach County, South Dakota

Dear Sir or Madam:

Burns & McDonnell Engineering, Inc. (Burns & McDonnell) was hired by the Cheyenne River Economic Development Corporation (CREDCO) and the Cheyenne River Sioux Tribe (CRST), to assist with the site assessment, permitting, and design of a new Sanitary Landfill (Project) in Ziebach County, South Dakota. Burns & McDonnell has conducted a preliminary environmental review of the proposed 640-acre sanitary landfill (Survey Area) located southeast of Eagle Butte, South Dakota as part of initial municipal solid waste landfill permitting requirements. Additional Project information is provided in the attached habitat assessment report (Attachment A).

The U.S. Fish & Wildlife Service (USFWS) Information, Planning, and Consultation (IPaC) System was queried to determine which federally protected species under the Endangered Species Act may be present within the general Project region. The IPaC search results indicate that the black-footed ferret (*Mustela nigripes*), northern long-eared bat (*Myotis septentrionalis*), tricolored bat (*Perimyotis subflavus*), piping plover (*Charadrius melodus*), rufa red knot (*Calidris canutus rufa*), and whooping crane (*Grus americana*) may potentially occur within the general Project region. One federal candidate species, the monarch butterfly (*Danaus plexippus*), potentially occurs within the general Project region. No critical habitat was identified for any potentially present species within or adjacent to the Survey Area.

In addition to the above species, the California gull (*Larus californicus*) and lark bunting (*Calamospiza melanocorys*) protected under the Migratory Bird Treaty Act were determined to potentially occur within the Survey Area.

On June 29, 2023, Burns & McDonnell conducted an onsite habitat assessments, which determined that suitable habitat for federally protected species is likely not present within the Project area. The habitat assessment is provided in Attachment A. Based on the IPaC System results and the attached habitat assessment, it is Burns & McDonnell's opinion that the Project is unlikely to affect or otherwise impact federally protected species or suitable habitat.

While Project design is still being considered, anticipated construction activities will predominantly occur on lands previously disturbed by waste disposal, with the intent to minimize environmental impacts to the greatest extent practicable. To support this Project, Burns & McDonnell submits this request to the USFWS for concurrence that the Project is unlikely to



U.S. Fish & Wildlife Service – South Dakota Ecological Services Field Office
April 17, 2024
Page 2

affect or otherwise impact federally protected species or suitable habitat. A similar concurrence request has been submitted to the South Dakota Game, Fish, & Parks Department (SDGFP) with the same assessment as provided in Attachment A.

Burns & McDonnell, CREDCO, and CRST appreciate the USFWS taking time to review the Project and the corresponding habitat assessment. Please advise if you concur with our determination. Please do not hesitate to contact me at tbeemer@burnsmcd.com with any questions following your review of this information.

Sincerely,

Burns & McDonnell Engineering Company, Inc.

A handwritten signature in black ink, appearing to read "Tyler Beemer". The signature is fluid and cursive, written over a light gray rectangular background.

Tyler Beemer, WDCP, PWS
Associate Environmental Scientist

Enclosures
Attachment A – Species and Habitat Assessment

Attachment A - **SPECIES AND HABITAT ASSESSMENT**



April 16, 2024

J.D. Williams
Cheyenne River Economic Development Corporation
PO Box 590
Eagle Butte, South Dakota 57625

Re: Federal and State Protected Species and Habitat Assessment for The Cheyenne River Sioux Tribe Solid Waste Landfill in Ziebach County, South Dakota

Mr. Williams:

Burns & McDonnell Engineering, Inc. (Burns & McDonnell) was hired by the Cheyenne River Economic Development Corporation (CREDCO) and the Cheyenne River Sioux Tribe (CRST), to assist with the site assessment, permitting, and design of a new Sanitary Landfill (Project) in Ziebach County, South Dakota. Burns & McDonnell has conducted an environmental review of the proposed 640-acre sanitary landfill (Survey Area) located southeast of Eagle Butte, South Dakota (Appendix A, Figure 1).

The following sections discuss the assessment methods used to determine if the Survey Area has wetlands or other waters present and if there is potential for the Project to contain suitable habitat for protected species or otherwise potentially impact protected species.

DESKTOP ANALYSIS

Burns & McDonnell reviewed available background information for the proposed Survey Area prior to conducting field surveys, including:

- Federal Emergency Management Agency (FEMA) flood maps
- U.S. Geological Survey (USGS) 7.5-minute topographic maps (Eagle Butte, SD)
- U.S. Fish & Wildlife Service (USFWS) National Wetlands Inventory (NWI) maps
- USGS National Hydrography Dataset (NHD)
- 2019 National Agriculture Imagery Program (NAIP) aerial photography
- U.S. Department of Agriculture (USDA) 2019 National Land Cover Dataset (NLCD)
- USFWS Information for Planning and Consultation (IPaC)
- South Dakota Game Fish & Parks (SDGFP) Environmental Review Tool (ERT)

FEMA flood maps confirmed that the Survey Area does not overlap with mapped floodplains. Topographic maps depict the Survey Area as having undulating topography, with elevations generally decreasing from north to south by one to two hundred feet, with converging southward flowing drainages (Figure 2).

NWI data shows there are three palustrine emergent persistent wetlands, one palustrine aquatic bed, and two riverine intermittent stream beds present within the Survey Area, and NHD data supports the existence of southward flowing drainages (Figure 2).

Land cover in the Survey Area is predominantly characterized as grassland/herbaceous, with lesser areas of shrub/scrub, open water, developed lands, and barren land. Aerial imagery shows that the Survey Area is located in a predominantly grassland area (Figure 3). Trees are largely absent throughout the Survey Area. Additionally, there is widespread debris from existing municipal waste use within the Survey Area.

FIELD INVESTIGATION

Waylon Hirst, a Senior Environmental Scientist with Burns & McDonnell, conducted the onsite assessment of the Survey Area on June 29, 2023.

The Survey Area is largely comprised of open grassland with wetland vegetation in lower areas associated with streams and drainages. Typical upland plants observed within the Survey Area included smooth brome (*Bromus inermis*), Canada goldenrod (*Solidago canadensis*), creeping thistle (*Cirsium arvense*), white sweet clover (*Melilotus albus*), western wheatgrass (*Elymus smithii*), and tufted wheatgrass (*Agropyron cristatum*). Typical herbaceous wetland plants within the Survey Area sample plots included prairie cordgrass (*Sporobolus michauxianus*), common spikerush (*Eleocharis palustris*), foxtail barley (*Hordeum jubatum*), triangle orache (*Atriplex prostrata*), and bulrushes (*Typha latifolia*). Eight palustrine emergent (PEM) wetlands were found across all portions of the Survey Area as a result of the onsite wetland delineation, as well as one pond in the northeast portion of the Survey Area. Two ephemeral streams were also identified during the onsite delineation as supported by NHD and NWI data. Photos depicting typical site conditions and identified water resources are provided in Appendix B.

Analysis of Federally Protected Species and Habitat

The USFWS Information, Planning, and Conservation (IPaC) System was queried to determine which federally protected species under the Endangered Species Act may be present within and adjacent to the Survey Area (Appendix C)¹. IPaC search results indicated the potential presence of a proposed threatened and an experimental population, non-essential mammal species, two threatened and one endangered avian species, and one candidate insect species. No critical habitat for any potentially present species within or adjacent to the Survey Area. IPaC results also indicated that two species protected under the Migratory Bird Treaty Act may occur within or adjacent to the Survey Area.

ESA protected species potentially occurring within or adjacent to the Survey Area:

- 1) **Black-footed ferret (*Mustela nigripes*)**: The black-footed ferret is a small mammal which historically ranged across the western United States and Canada. Black-footed ferrets were re-introduced into South Dakota in 1994, and all populations in South Dakota are

¹ IPaC document in Appendix C shows a USFWS autogenerated figure with only a partial Project area, but the actual IPaC results are representative of the entire Project area, not just the area shown on the IPaC figure.

designated as Experimental, Non-Essential. The black-footed ferret resides in prairies that are inhabited by prairie dogs, and they exclusively rely on prairie dog colonies for food, shelter, and dens. Prairie dog control programs and conversion of prairie to agricultural lands, coupled with the high sensitivity of black-footed ferrets to sylvatic plague have been the primary drivers of the black-footed ferret's decline. There was no evidence of prairie dog presence within the Survey Area, and the Survey Area does not overlap with designated Critical Habitat for the black-footed ferret. Given the lack of prairie dog colonies in the Survey Area, it is Burns & McDonnell's opinion that the Project will have **no effect** on the black-footed ferret.

- 2) Northern long-eared bat (*Myotis septentrionalis*): The northern long-eared bat is classified as Endangered under the ESA due to the spread of white-nose syndrome and habitat loss. During spring, summer, and fall this species is found across the eastern and north-central United States and Canada and roosts in trees, caves, and occasionally manmade structures. Northern long-eared bats seem to choose roost trees based on suitability to retain bark or provide cavities or crevices. Given the lack of forested areas, rock outcroppings, or karst features in the Survey Areas, it is Burns & McDonnell's opinion that the Project will have **no effect** on this species. Additionally, Burns & McDonnell used the species specific USFWS determination key, which resulted in a preliminary determination of "No Effect" (Appendix D). Accordingly, it is Burns & McDonnell's opinion that the Project will have no effect on this species.
- 3) Tricolored bat (*Perimyotis subflavus*): The tricolored bat is a widespread, previously common species with a range spanning from Central America to southern Canada. This species' decline is primarily due to widespread fatalities associated with the introduction and spread of white-nose syndrome among populations in the eastern United States and Canada. During the winter, tricolored bats are found in caves and mines, and along road-associated culverts in areas where caves are not common. During the spring, summer and fall, tricolored bats are found in forested habitats where they roost in trees, primarily among leaves. This species typically forages over waterways and forest edges and is an opportunistic feeder consuming small insects including caddisflies, moths, beetles, wasps, flying ants and flies. Given the lack of karst features and trees in the Survey Area, it is Burns & McDonnell's opinion that the Project will have **no effect** on the tricolored bat.
- 4) Piping Plover (*Charadrius melodus*): The Survey Area is within the breeding range of the piping plover, which is found in the Great Plains, Great Lakes, and Atlantic/Gulf Coasts of North America. During the breeding season, piping plovers nest above high-water lines along shorelines of rivers and wetlands in areas with sparse vegetation. The Survey Area does not overlap with any designated critical habitat for this species, and the nearest critical habitat for this species is located more than 14 miles east and south of the Survey Area along the Missouri River. Given the lack of rivers and large streams in the Survey

Area and more suitable habitats located in the greater region, it is unlikely that the species will be present in the Survey Area as permanent residents. It is Burns & McDonnell's opinion that the Project will have **no effect** on the piping plover.

- 5) Rufa Red Knot (*Calidris canutus rufa*): The Survey Area is within the migratory range of the rufa red knot, which is a threatened subspecies of red knot. The rufa red knot typically occupies shallow shorelines of lakes, rivers, and oceans. During its 9,000 mile migration, the rufa red knot stops over at a variety of wetland habitats to forage for small bivalves and invertebrates. Rufa red knots which migrate through the interior of North America typically forage and roost along the shorelines of large lakes and freshwater marshes. This subspecies has potential to occur in the Survey Area during the spring and fall, and suitable stopover habitat within the Survey Area includes emergent wetlands and other water bodies. However, because the subspecies is a long-distance migrant and the Survey Area is already heavily disturbed by dumping activities, occurrences are unlikely and any stopovers are likely to be rare and brief. Therefore, it is Burns & McDonnell's opinion that the Project will have **no effect** on the rufa red knot.
- 6) Whooping Crane (*Grus americana*): The whooping crane is a large migratory bird that temporarily occurs in South Dakota during the spring and fall migrations. Whooping cranes used to range across much of eastern and central North America, but the loss of wetland habitats due to European settlement destroyed nearly all of the species' breeding grounds and the majority of suitable stopover habitat along their migration routes. They were extirpated across nearly their entire range, leaving only one naturally occurring population. This population has grown steadily since the species' listing, and this Aransas-Wood Buffalo Population (AWBP) is now comprised of 543 individuals. The AWBP nests in prairie wetlands in Saskatchewan, Canada, and migrates south to winter on the gulf coast of Texas. During migration, stopover sites typically consist of shallow surface water wetlands. The USFWS, in conjunction with the USGS, developed the whooping crane observation corridor to document where most whooping cranes were observed. The Survey Area is entirely within the 75% core area of the corridor, meaning that 75% of all species observations occur within this corridor. The Survey Area does not overlap with any designated critical habitat for this species; however, given the presence of wetlands, marshes, and open fields, there is a possibility of the species being present during migration stopovers. It is Burns & McDonnell's opinion that the Project **may affect, but is unlikely to adversely affect** the whooping crane.
- 7) Monarch Butterfly (*Danaus plexippus*): Monarch butterflies range throughout North and Central America and are present in the Survey Area during two of their three summer generations. Monarch butterfly eggs are laid singly on a number of milkweed (*Asclepias*) species found throughout the monarch's range, and the caterpillars feed exclusively on these plants. Following hatching and metamorphosis, adult butterflies feed on a variety of nectar sources in grasslands. Given the presence of milkweed and flowering plants across

the Survey Area, it is Burns & McDonnell's opinion that the Project **may affect, but is unlikely to adversely affect** the monarch butterfly. Furthermore, the monarch butterfly is not afforded federal protections as a candidate species; therefore, no further actions are currently required. If the species is uplisted to Threatened or Endangered species status prior to Project completion, further assessment may be considered.

MBTA protected species potentially occurring within or adjacent to the Survey Area:

In addition to the above species, the following two avian species protected under the Migratory Bird Treaty Act were determined to potentially occur within the Survey Area:

California Gull (*Larus californicus*): California Gulls are an omnivorous species that forage in a wide variety of habitats and the Survey Area lies within this species' migratory range. During migration, California gulls typically roost on islands in the middle of inland lakes and rivers, and will forage in a variety of habitats including agricultural fields, garbage dumps, meadows, scrublands, and aquatic environments. The construction of a new landfill, while potentially impacting the existing environment, may still provide adequate foraging grounds for this species during its migration. It is Burns & McDonnell's opinion that the Project may impact this species.

Lark Bunting (*Calamospiza melanocorys*): Lark Buntings nest and forage almost exclusively in shrubby grassland areas, and the Survey Area lies within this species' breeding range. Lark buntings are a ground-nesting species and typically construct their nests at the base of shrubs or large clumps of grasses. This species has been infrequently observed near the Survey Area over the last 5 years (eBird 2023), and while shrubby grassland habitat is present within the Survey Area, heavy disturbance associated with active dumping activities has likely deterred potential nesting by this species within the Survey Area. It is Burns & McDonnell's opinion that the Project may impact this species.

Analysis of State Protected Species and Habitat

The South Dakota Game Fish & Parks (SDGFP) Environmental Review Tool (ERT) was used to determine whether the Project may impact any protected lands, natural resources, or protected species as designated by SDGFP. The Survey Area does not overlap with the breeding ranges of any state-listed Threatened & Endangered Birds, although as noted above the Survey Area is within the migratory range of the whooping crane. There were no recorded occurrences of species designated as threatened or endangered by SDGFP in the township according to South Dakota's Natural Heritage Database (Appendix 4), further indicating that no state protected species are likely to be impacted by the Project.

The ERT indicated that almost the entirety of the Survey Area lies within The Tier 3 area for both Greater Prairie-Chicken Habitat Prioritization and Sharp-tailed Grouse Habitat Prioritization. These areas were designated under the Prairie Grouse Action Plan (SDGFP) and are meant to identify regions which contain suitable habitat for prairie grouse species or may become suitable with appropriate habitat improvement activities such as grassland restoration

Cheyenne River Economic Development Corporation

April 16, 2024

Page 6

and tree removal. Tier 3 designated areas will not necessarily be occupied by prairie grouse, but instead represent habitat that can support these species. Neither these species are listed as threatened or endangered species under the South Dakota endangered species law and Survey Area was found to have typical vegetative and habitat conditions. Accordingly, it is Burns & McDonnell's opinion that the Project is unlikely to affect these species.

SUMMARY

Based on this habitat assessment, it is Burns & McDonnell's opinion that no unique habitat was identified within the Survey Area that would likely support federally or state protected species. Only the USFWS and SDGFP have authority to officially determine that the Project is unlikely to affect federally or state protected species, respectfully. Accordingly, Burns & McDonnell recommends this report be submitted to both USFWS and SDGFP for official review and concurrence. Please do not hesitate to contact me at whirst@burnsmcd.com with any questions following your review of this species and habitat report.

Sincerely,



Waylon Hirst, P.G.

Senior Environmental Scientist

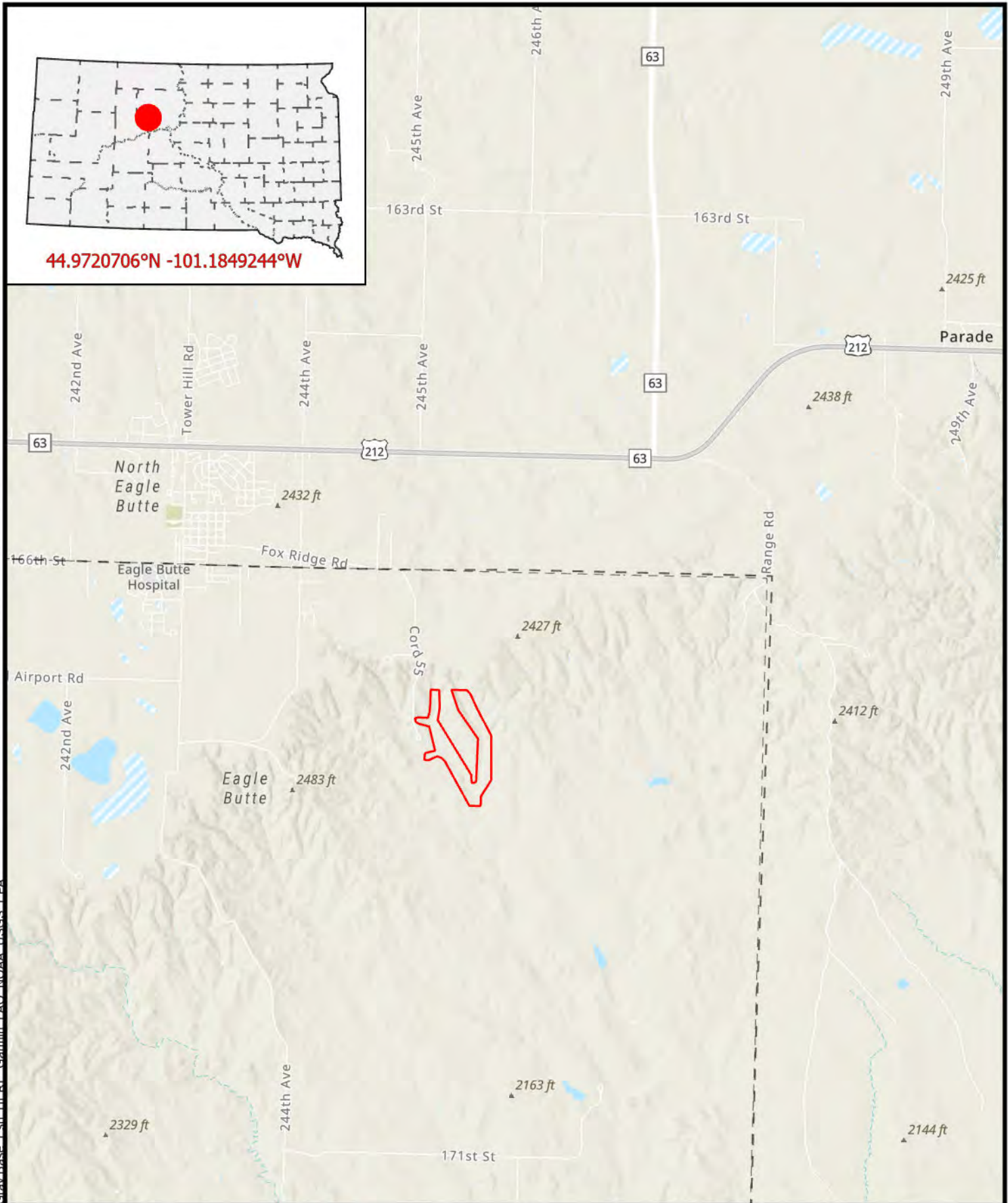
Attachments:

- Appendix A - Figures
- Appendix B - Field Photos
- Appendix C - USFWS IPaC Resource List and Northern Long-eared Bat Determination Key Results
- APPENDIX D - South Dakota ERT Element Occurrences

eBird. 2021. eBird: An online database of bird distribution and abundance [web application].

eBird, Cornell Lab of Ornithology, Ithaca, New York. Available: <http://www.ebird.org>.

APPENDIX A - FIGURES



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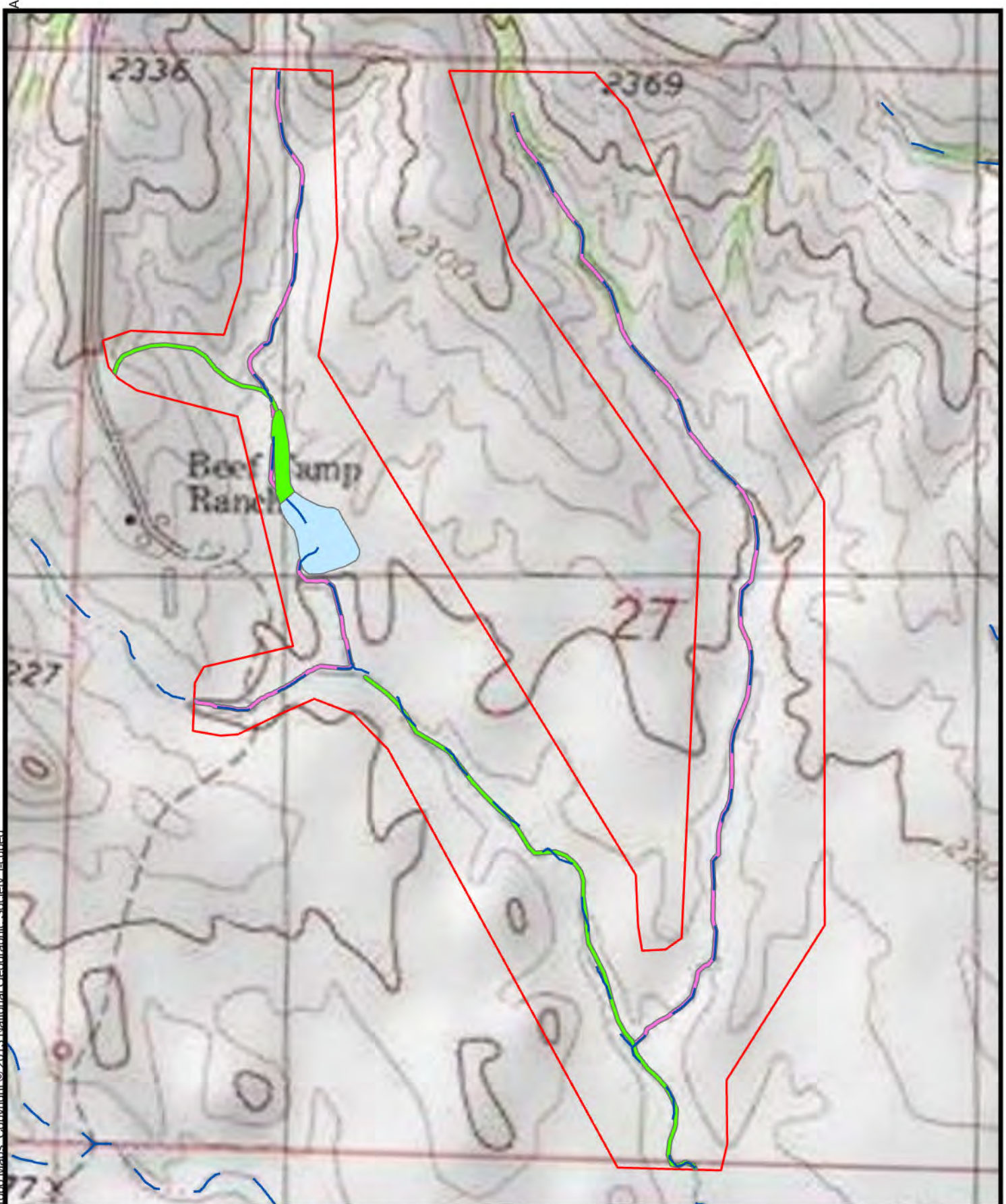


Scale in Feet

- Survey Area
- County Boundaries
- State Boundaries



Figure 1: Project Location
Cheyenne River Economic
Development Corporation Landfill
Ziebach County, South Dakota

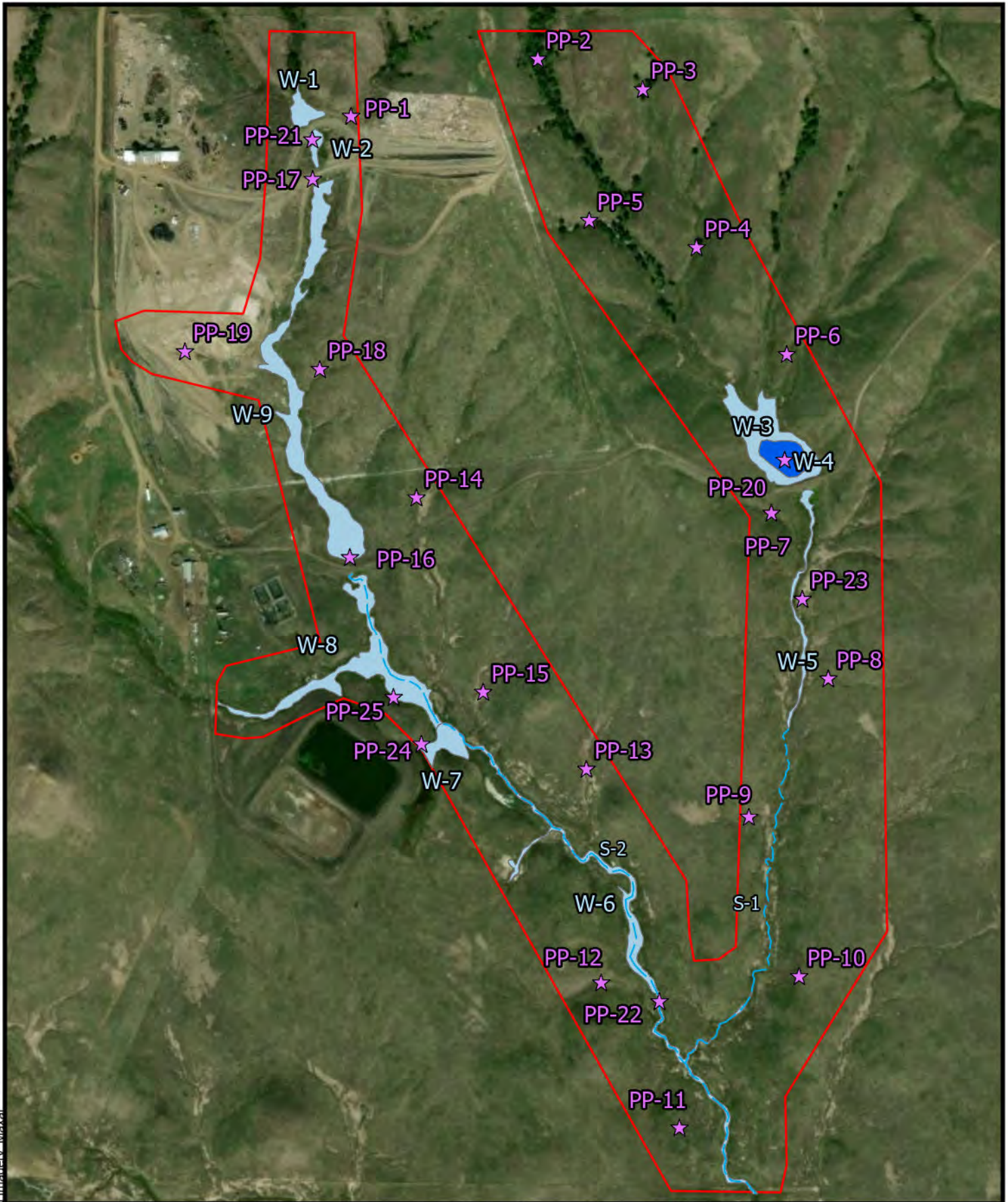


- ▬ Survey Area
- - NHD Flowlines
- ▬ NWI Riverine
- ▬ NWI Freshwater Emergent Wetland
- ▬ NWI Freshwater Pond

*No FEMA floodplains present in the Survey Area

**BURNS
MCDONNELL**

Figure 2: Topographic Map &
NWI/NHD Wetlands and Streams
Cheyenne River Economic
Development Corporation Landfill
Ziebach County, South Dakota



500 250 0 500



Scale in Feet

- Survey Area
- ★ Photo Points
- Delineated PEM Wetland
- Delineated PUB Pond
- Delineated Ephemeral Stream



Figure 3: Habitat Assessment Results
 Cheyenne River Economic
 Development Corporation Landfill
 Ziebach County, South Dakota

APPENDIX B - FIELD PHOTOS



Photograph 1: View of Photo Point (PP)-1, upland area, looking east.



Photograph 2: View of PP-2, upland drainage area, looking south.

Cheyenne River Economic
Development Corporation
Landfill



Representative Photographs
June 29th, 2023
Ziebach County, South Dakota



Photograph 3: View of PP-3, upland area, looking south.



Photograph 4: View of PP-4, upland drainage area, looking southwest.

Cheyenne River Economic
Development Corporation
Landfill



Representative Photographs
June 29th, 2023
Ziebach County, South Dakota



Photograph 5: View of PP-5, upland drainage area (with debris), looking southeast.



Photograph 6: View of PP-6, upland drainage area, looking southwest.

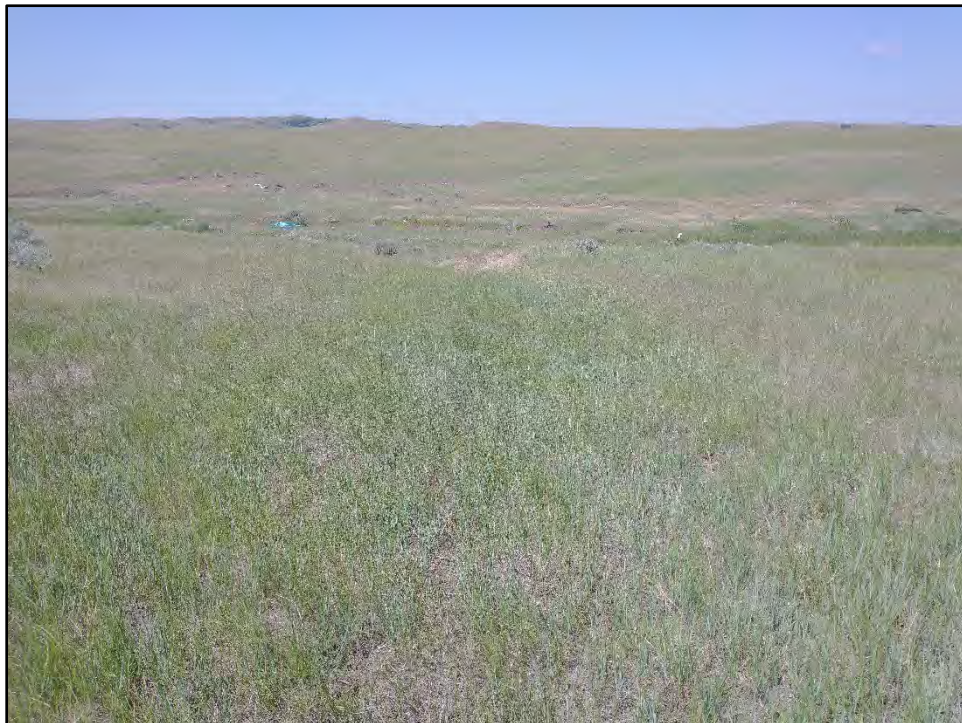
Cheyenne River Economic
Development Corporation
Landfill



Representative Photographs
June 29th, 2023
Ziebach County, South Dakota



Photograph 7: View of PP-7, upland drainage area, looking southeast.



Photograph 8: View of PP-8, upland area, looking west.

Cheyenne River Economic
Development Corporation
Landfill



Representative Photographs
June 29th, 2023
Ziebach County, South Dakota



Photograph 9: View of PP-9, upland drainage area (with debris), looking east.



Photograph 10: View of PP-10, upland area, looking southwest.

Cheyenne River Economic
Development Corporation
Landfill



Representative Photographs
June 29th, 2023
Ziebach County, South Dakota



Photograph 11: View of PP-11, upland area, looking southeast.



Photograph 12: View of PP-12, upland drainage area, looking east.

Cheyenne River Economic
Development Corporation
Landfill



Representative Photographs
June 29th, 2023
Ziebach County, South Dakota



Photograph 13: View of PP-13, upland area, looking south.



Photograph 14: View of PP-14, upland area, looking south.

Cheyenne River Economic
Development Corporation
Landfill



Representative Photographs
June 29th, 2023
Ziebach County, South Dakota



Photograph 15: View of PP-15, upland area, looking southwest.



Photograph 16: View of PP-16, existing culvert access road, looking south.

Cheyenne River Economic
Development Corporation
Landfill



Representative Photographs
June 29th, 2023
Ziebach County, South Dakota



Photograph 17: View of PP-17, existing access road in dump area, looking east.



Photograph 18: View of PP-18, upland drainage area, looking southwest.



Photograph 19: View of PP-19, existing dump area, looking east.



Photograph 20: View of PP-20, delineated pond (PUB), looking south.

Cheyenne River Economic
Development Corporation
Landfill



Representative Photographs
June 29th, 2023
Ziebach County, South Dakota



Photograph 21: View of PP-21, upland to W-2, facing south.



Photograph 22: View of PP-22, upland to W-6, facing south.

Cheyenne River Economic
Development Corporation
Landfill



Representative Photographs
June 29th, 2023
Ziebach County, South Dakota



Photograph 23: View of PP-23, W-5 PEM, facing south.



Photograph 24: View of PP-24, W-7 PEM, facing east.

Cheyenne River Economic
Development Corporation
Landfill



Representative Photographs
June 29th, 2023
Ziebach County, South Dakota



Photograph 25: View of PP-25, W-8 PEM, facing east.

**APPENDIX C - USFWS IPAC RESOURCE LIST AND NORTHER LONG-EARNED BAT
DETERMINATION KEY RESULTS**



United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Dakota Ecological Services Field Office
420 South Garfield Avenue, Suite 400
Pierre, SD 57501-5408
Phone: (605) 224-8693 Fax: (605) 224-1416



In Reply Refer To:
Project Code: 2024-0077715
Project Name: CRST Landfill

04/16/2024 16:26:55 UTC

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through IPaC by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: <https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see [Migratory Bird Permit | What We Do | U.S. Fish & Wildlife Service \(fws.gov\)](#).

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see <https://www.fws.gov/library/collections/threats-birds>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

South Dakota Ecological Services Field Office

420 South Garfield Avenue, Suite 400

Pierre, SD 57501-5408

(605) 224-8693

PROJECT SUMMARY

Project Code: 2024-0077715

Project Name: CRST Landfill

Project Type: Landfill - Solid Waste

Project Description: Landfill to be constructed in late 2024/early 2025.

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@44.97182925,-101.19250497715657,14z>



Counties: Ziebach County, South Dakota

ENDANGERED SPECIES ACT SPECIES

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 2 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Black-footed Ferret <i>Mustela nigripes</i> Population: U.S.A. (WY and specified portions of AZ, CO, MT, SD, and UT, see 17.84(g)(9)) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6953	Experimental Population, Non-Essential
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: This species only needs to be considered if the project includes wind turbine operations. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: This species only needs to be considered if the project includes wind turbine operations. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

NAME	STATUS
Piping Plover <i>Charadrius melodus</i> Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Rufa Red Knot <i>Calidris canutus rufa</i> There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Whooping Crane <i>Grus americana</i> Population: Wherever found, except where listed as an experimental population There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/758	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Sam Weaver
Address: 8201 Norman Center D
City: Bloomington
State: MN
Zip: 55437
Email: sbweaver@burnsmcd.com
Phone: 9526562690

LEAD AGENCY CONTACT INFORMATION

Lead Agency: U.S. Fish and Wildlife Service



United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Dakota Ecological Services Field Office
420 South Garfield Avenue, Suite 400
Pierre, SD 57501-5408
Phone: (605) 224-8693 Fax: (605) 224-1416



In Reply Refer To:
Project code: 2024-0077715
Project Name: CRST Landfill

04/16/2024 18:00:17 UTC

Federal Nexus: yes
Federal Action Agency (if applicable): U.S. Fish and Wildlife Service

Subject: Record of project representative's no effect determination for 'CRST Landfill'

Dear Sam Weaver:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on April 16, 2024, for 'CRST Landfill' (here forward, Project). This project has been assigned Project Code 2024-0077715 and all future correspondence should clearly reference this number. **Please carefully review this letter.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (Dkey), invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.***

Determination for the Northern Long-Eared Bat

Based upon your IPaC submission and a standing analysis, your project has reached the determination of "No Effect" on the northern long-eared bat. To make a no effect determination, the full scope of the proposed project implementation (action) should not have any effects (either positive or negative), to a federally listed species or designated critical habitat. Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A

consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. (See § 402.17).

Under Section 7 of the ESA, if a federal action agency makes a no effect determination, no consultation with the Service is required (ESA §7). If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required except when the Service concurs, in writing, that a proposed action "is not likely to adversely affect" listed species or designated critical habitat [50 CFR §402.02, 50 CFR§402.13].

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Black-footed Ferret *Mustela nigripes* Experimental Population, Non-Essential
- Monarch Butterfly *Danaus plexippus* Candidate
- Piping Plover *Charadrius melodus* Threatened
- Rufa Red Knot *Calidris canutus rufa* Threatened
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered
- Whooping Crane *Grus americana* Endangered

You may coordinate with our Office to determine whether the Action may affect the animal species listed above and, if so, how they may be affected.

Next Steps

Based upon your IPaC submission, your project has reached the determination of "No Effect" on the northern long-eared bat. If there are no updates on listed species, no further consultation/coordination for this project is required with respect to the northern long-eared bat. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place to ensure compliance with the Act.

If you have any questions regarding this letter or need further assistance, please contact the South Dakota Ecological Services Field Office and reference Project Code 2024-0077715 associated with this Project.

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

CRST Landfill

2. Description

The following description was provided for the project 'CRST Landfill':

Landfill to be constructed in late 2024/early 2025.

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@44.97182925,-101.19250497715657,14z>



DETERMINATION KEY RESULT

Based on the information you provided, you have determined that the Proposed Action will have no effect on the Endangered northern long-eared bat (*Myotis septentrionalis*). Therefore, no consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required for those species.

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

No

2. The action area does not overlap with an area for which U.S. Fish and Wildlife Service currently has data to support the presumption that the northern long-eared bat is present. Are you aware of other data that indicates that northern long-eared bats (NLEB) are likely to be present in the action area?

Bat occurrence data may include identification of NLEBs in hibernacula, capture of NLEBs, tracking of NLEBs to roost trees, or confirmed NLEB acoustic detections. Data on captures, roost tree use, and acoustic detections should post-date the year when white-nose syndrome was detected in the relevant state. With this question, we are looking for data that, for some reason, may have not yet been made available to U.S. Fish and Wildlife Service.

No

3. Does any component of the action involve construction or operation of wind turbines?

Note: For federal actions, answer 'yes' if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

No

4. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

Yes

5. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) funding or authorizing the proposed action, in whole or in part?

No

6. Are you an employee of the federal action agency or have you been officially designated in writing by the agency as its designated non-federal representative for the purposes of Endangered Species Act Section 7 informal consultation per 50 CFR § 402.08?

Note: This key may be used for federal actions and for non-federal actions to facilitate section 7 consultation and to help determine whether an incidental take permit may be needed, respectively. This question is for information purposes only.

No

7. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)? Is the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC) funding or authorizing the proposed action, in whole or in part?

No

8. Is the lead federal action agency the Federal Energy Regulatory Commission (FERC)?

No

9. Have you determined that your proposed action will have no effect on the northern long-eared bat? Remember to consider the [effects of any activities](#) that would not occur but for the proposed action.

If you think that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, answer “No” below and continue through the key. If you have determined that the northern long-eared bat does not occur in your project’s action area and/or that your project will have no effects whatsoever on the species despite the potential for it to occur in the action area, you may make a “no effect” determination for the northern long-eared bat.

Note: Federal agencies (or their designated non-federal representatives) must consult with USFWS on federal agency actions that may affect listed species [50 CFR 402.14(a)]. Consultation is not required for actions that will not affect listed species or critical habitat. Therefore, this determination key will not provide a consistency or verification letter for actions that will not affect listed species. If you believe that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, please answer “No” and continue through the key. Remember that this key addresses only effects to the northern long-eared bat. Consultation with USFWS would be required if your action may affect another listed species or critical habitat. The definition of [Effects of the Action](#) can be found here: <https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions>

Yes

PROJECT QUESTIONNAIRE

Will all project activities be completed by April 1, 2024?

No

IPAC USER CONTACT INFORMATION

Agency: Private Entity

Name: Sam Weaver

Address: 8201 Norman Center D

City: Bloomington

State: MN

Zip: 55437

Email: sbweaver@burnsmcd.com

Phone: 9526562690

LEAD AGENCY CONTACT INFORMATION

Lead Agency: U.S. Fish and Wildlife Service

APPENDIX D - SOUTH DAKOTA ERT ELEMENT OCCURRENCES

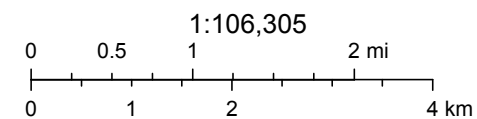
South Dakota ERT Threatened and Endangered Species Occurrences



August 10, 2023

 Township level Element Occurrences

 Survey Area



Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA,

Sam Weaver

Cheyenne River Sioux Tribe

Sanitary Landfill

APPENDIX C

Correspondence with the Tribal Historic Preservation Office

Mnicoujou

Itazipco

CHEYENNE RIVER SIOUX TRIBE

Cultural Preservation Office
PO BOX 590 98 S. Willow St.
Eagle Butte, South Dakota 57625
Telephone: (605) 964-7554
Fax: (605) 964-7552



Steven Vance
Tribal Historic Preservation Officer
steve.vance@crstmail.com

Siha Sapa

Oohenumpa

Date: May 24, 2024

Amanda L. Williams
Project Engineer, Indian Health Service
Office of Environmental Health & Engineering
Cheyenne River Health Center
24276 166th Street Airport Road
PO Box 1012
Eagle Butte, SD 57625

**Re: CRST Landfill Project, (CREDCO Project Title) IHS Project CR2023-SW-1;
Sec. 27, T. 12N, R. 24E; (80 acres).**

Section 106 Determination

The CRST – Tribal Historic Preservation Officer (THPO) concurs that consultation was initiated under the National Historic Preservation Act (NHPA), with regards to the CRST Landfill Project. Based on the information that was submitted to this office, that with the comments and recommendations being adhered to, we conclude the determination of “**no historic properties affected**”.

Section 106 Consultation

Concurrence of the THPO does not relieve the project official from consulting with other appropriate parties, as described in 36 CFR Part 800.2 (c).

CRST Ordinance 57 Cultural Resource Protection Act

We request onsite a Traditional Cultural Specialist/Monitor(s) during any ground disturbance. The Cultural Preservation Office has a list of qualified individuals.

Confidentiality of Sensitive Cultural Resources/Sacred Sites

All field books/notes, photographs, GPS points, or other information gathered must be submitted for review by the THPO, prior to distribution.

It is illegal for collecting or digging of artifacts within the exterior boundaries of the Cheyenne River Sioux reservation.

Archeological Resource Protection Act (ARPA)

In the unlikely event that cultural resources are encountered within the project during ground-disturbing activities, all work will cease. Notification of any discovery will be made to the Cultural Preservation Office. A qualified archaeologist, who meets the Secretary of Interior Standards, will document and evaluate the resources for eligibility on the National Register of Historic Places, in compliance with Section 106 of the NHPA.

Native American Graves Protection and Repatriation Act (NAGPRA)

According to Section 3 of NAGPRA and its implementing regulations (43 CFR PART 10), IHS will be responsible for compliance with the provisions on Federal land.

Inadvertent Discovery (NAGPRA)

In the event human remains, associated funerary objects, or Native American sacred objects are discovered, all work will cease and the provisions of NAGPRA will be implemented immediately. These procedures include but are not limited to:

- Within 24 hours contact the Cheyenne River Law Enforcement
- Contact the Cheyenne River THPO
- Determination of the nature of the remains by a qualified archaeologist (crime scene, prehistoric/Native American remains)
- Contact the South Dakota State Historic Preservation Officer (SHPO) if the remains are determined to be part of a larger archaeological site.

Should you need further information contact our office.

Respectfully

A handwritten signature in black ink, appearing to be a stylized 'S' or 'D' followed by a horizontal line.

Cc; file

This message and accompanying documents are covered by the electronic Communications Privacy Act, 18 U.S.C. 2510-2521, and may contain confidential information intended for the specified individual(s) only. If you are not the intended recipient or an agent responsible for delivering it to the intended recipient, you are hereby notified that you have received this document in error and that any review, dissemination, copying, or the taking of any action based on the contents of this information is strictly prohibited. If you have received this communication in error, please notify us immediately by E-mail, and delete the original message.