Appendix B

Supplemental Environmental Screening Report

SUPPLEMENTAL ENVIRONMENTAL SCREENING REPORT

SD 44 Platte-Winner Bridge Additional Areas
Three areas south of SD Highway 44 east of Lake Francis in Sections 14, 15, and 23
Township 99N, Range 70W

CHARLES MIX COUNTY, SOUTH DAKOTA

SUBMITTED ON:
February 17, 2023

SUBMITTED TO:

South Dakota Department of Transportation
700 East Broadway Avenue
Pierre, SD 57501

Federal Highway Administration
South Dakota Division
116 East Dakota Avenue, Suite A
Pierre, SD 57501

As consistent with 23 CFR 450

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INTRODUCTION

The purpose of this Supplemental Environmental Screening Report (SESR) is to provide project background and context, identify known and potential environmental resources, environmentally sensitive areas, and identify the potential for environmental consequences within three areas near the proposed South Dakota Department of Transportation (SDDOT) South Dakota Highway 44 (SD44) Platte-Winner Bridge project – SDDOT Project: P0044(207)290, PCN 05X0. The three areas are outside of the area of potential effect (APE) being evaluated for the Platte-Winner Bridge Project environmental assessment (EA) study. The three study areas for the SESR are:

- Study Area 1. A proposed recreational vehicle dump station mitigation area at West Platte Game Production Area (GPA) abutting the south right-of-way of SD44 approximately 1.4 miles east of the Snake Creek Recreation Area (SCRA) entrance. Study Area 1 is 28.1 acres. The existing dump station at SCRA will need to be removed for the Platte-Winner Bridge project.
- Study Area 2. An area approximately 3,000 feet southwest of Study Area 1. Study Area 2 is outside but abuts the West Platte GPA. Study Area 2 was identified as a potential element of the dump station mitigation. Study Area 2 is 33.8 acres.
- Study Area 3 is a SD44 landslide mitigation area south and west of Study Area 1 immediately outside of the southern limit of the Platte-Winner Bridge EA APE. Study Area 3 was excluded in previous studies completed for the EA. Study Area 3 is 0.8 acres.

PROJECT BACKGROUND

The three study areas are approximately 13 miles west of Platte, South Dakota in Charles Mix County. SDDOT is completing this ESR to evaluate these areas adjacent to APE being evaluated for the SD44 Platte-Winner Bridge Project EA. The results of ESR may ultimately be used to support National Environmental Policy Act (NEPA) and Section 4(f) decisions and final design. This ESR identifies environmental resources and environmentally sensitive areas in the three study areas. This screening report is comprised of readily-available data and limited field survey information.

The purpose of this screening report is to identify resources early in the planning process to avoid fatal flaws and to consider sensitive environmental resources in the study areas. The intent of this screening report is not to identify impacts but rather to identify potential resource areas for use in alternatives analysis to avoid and minimize impacts to resources during subsequent study phases while developing alternatives that meet the project's purpose and need.

Initial discussions for the dump station relocation began in November of 2021 to evaluate the potential of offsite locations for the dump station. Included in these efforts was coordination with South Dakota Game, Fish and Parks (SDGFP) for the potential of constructing a dump station on SDGFP administered land at the West Platte Game Production Area (GPA) approximately 1.3 miles east of the entrance to Snake Creek Recreation Area (SCRA). It was concluded on March 21, 2022 that the dump station mitigation relocation site is to be included in the Environmental Assessment (EA) as the mitigation to the impact of the 4(f) resource. Concurrent to the completion of this ESR, FHWA approved a Section 4(f) exception request to use a portion of West Platte Game Production Area for the dump station on December 22, 2022. The Dump Station Mitigation area is included in the SESR, however, it was determined that with Exemption (g), the Dump Station Mitigation area is not required, and thus will not be included in in the EA.

PROJECT LOCATION

Study Areas 1-3 are south of SD44 in Charles Mix County approximately 13 miles west of Platte, SD. The locations of additional study areas are shown in Figure 1 and further described in Table 1.

Table 1: Study Area Locations

Study Area	Description	Latitude, Longitude (dec. deg.)	Section, Township, Range	Area (acres)
1	Dump Station	43.39044328, -99.09368066	Mid 14, 99 N, 70 W	28.1
2	Dump Station Mitigation	43.38323485, -99.10085356	NW¼ 23, 99 N, 70 W	33.8
3	Landslide Mitigation	43.39127061, -99.11049548	Mid 15, 99 N, 70 W	0.8

PRELIMINARY NEEDS, PURPOSE, AND GOALS/OBJECTIVES

The purpose of the Platte-Winner bride project is to replace the existing SD44 Platte-Winner Bridge over the Missouri River to maintain the regional connectivity along SD44 in South Dakota.

The project is needed to address several critical issues associated with the existing bridge constructed in 1966. The SDDOT's *Major Bridge Investment Study* and the *SD44 Platte-Winner Bridge Corridor Study,* identified the following issues with the existing bridge that combined threatened the long-term viability of the bridge. These concerns have lead the SDDOT to program the Platte-Winner Bridge for replacement in 2024 as part of SDDOT major bridge replacement program. The proposed project is needed for the following reasons:

- Overall aging infrastructure of the bridge and long-term maintenance costs
- Risk of future ice jams damaging the bridge piers and foundation
- Narrow bridge width that does not meet current geometric design standards

The purpose of this SESR is to review what environmental resources are located within the additional three study areas.

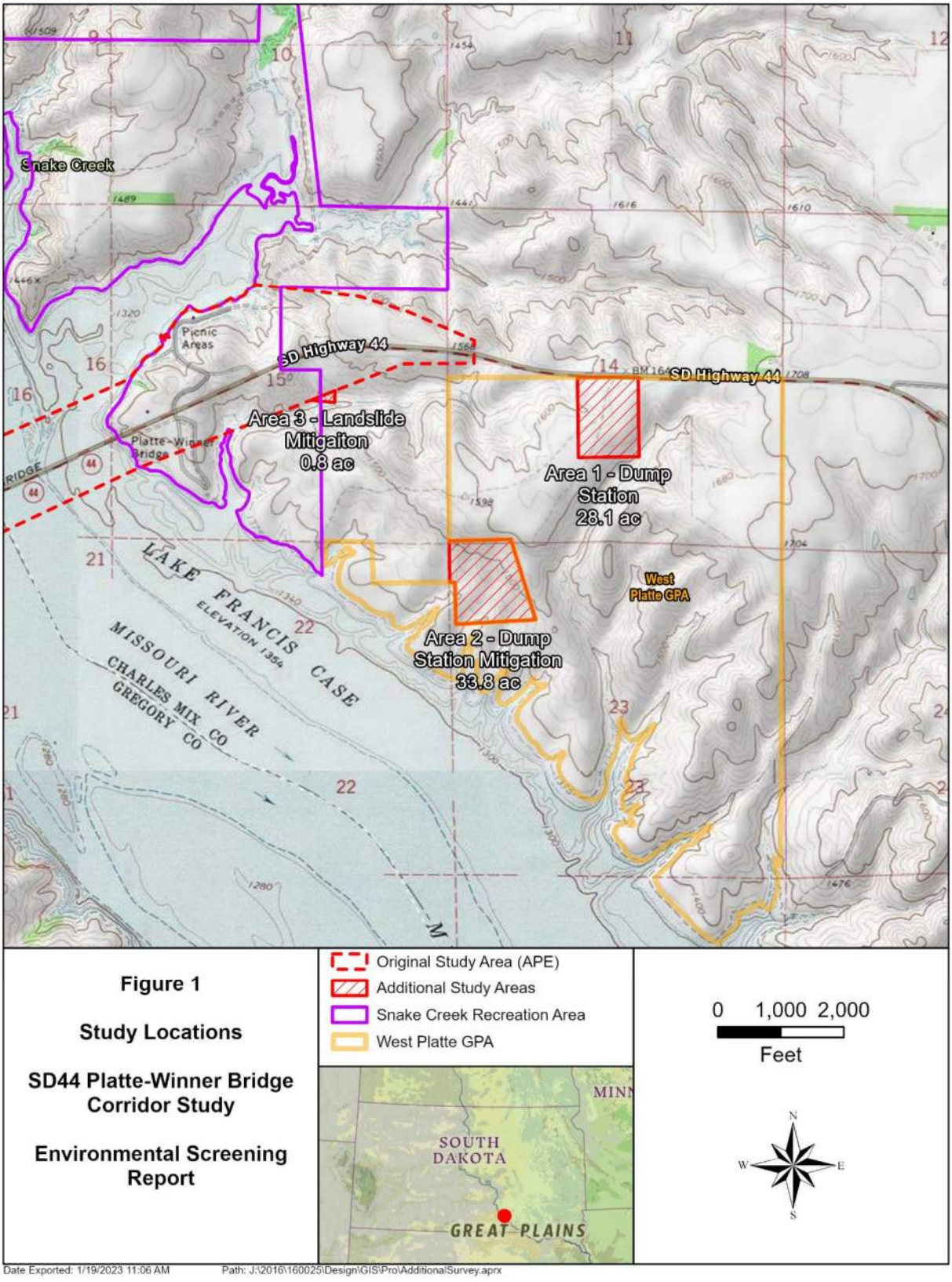
Snake Creek
Picnic Areas
SD Highway 44
SD Highway 44
Area 3 - Landslide Mitigaiton 0.8 ac
Area 1 - Dump Station 28.1 ac
Area 2 - Dump Station Mitigation 33.8 ac
West Platte GPA
Platte-Winner Bridge
LAKE FRANCIS CASE
ELEVATION 1354
MISSOURI RIVER
CHARLES MIX CO
GREGORY CO
Original Study Area (APE)
Additional Study Areas
Snake Creek Recreation Area
West Platte GPA
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Figure 1
Study Locations
SD44 Platte-Winner Bridge Corridor Study
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RANGE OF ALTERNATIVES

Two alternatives were evaluated for relocation of the dump station located within SCRA. Alternative A includes relocating the dump station to another location within the SCRA. Alternative B includes relocating the dump station 1.3 miles to the east to be located within Study Area 1 in the West Platte GPA. Alternative B's evaluation includes an additional area, Study Area 2, as potential mitigation for impacts to the West Platte GPA at Study Area 1.

There were no alternatives discussed for the landslide area at Study Area 3. Study Area 3 is defined by the need for soil stabilization for SD44 due to recent landslide issues.

ENVIRONMENTAL RESOURCES AND ISSUES

WATER RESOURCES, INCLUDING WATERS OF THE U.S., WATERS OF THE STATE, WETLANDS, STORM WATER, AND FLOODPLAINS

All waters in South Dakota fall into one of two categories: Waters of the United States and waters of the state. According to the Clean Water Act (CWA), waters are regulated in one of the following ways:

(1) Permit for dredge or fill material from United States Army Corps of Engineers (USACE) or the state agency, as appropriate (Section 404)
(2) National Pollutant Discharge Elimination System (NPDES) permit and other discharge permits are to be acquired from the U.S. Environmental Protection Agency (USEPA) or South Dakota Department of Agricultural and Natural Resources (Section 402)
(3) Water quality certification is required from state water resource agency, or for projects impacting tribal lands from the USEPA (Section 401)
(4) Consistency with the state nonpoint source pollution management program (Section 319)

Aquatic resources that are considered "jurisdictional" are subject to the multiple regulatory requirements set forth with Section 404 of the CWA. The CWA additionally requires that each state develop standards for their aquatic resources to ensure the beneficial uses are protected. South Dakota has developed surface water quality standards for all waters of the state. If water resources are determined to be non-jurisdictional the regulatory requirements are subject to guidance set forth by the state and Executive Order 11990 Protection of Wetlands. The environmental analysis of aquatic resources encompasses many types of resources that may be encountered in the planning, construction, and maintenance of transportation projects.

Methodology

HR Green reviewed available online data for the additional study areas. These resources included the USGS 7.5" Quadrangle, Natural Resources Conservation Services (NRCS) Web Sol Survey data, National Wetland Inventory, National Hydrography Dataset, Federal Emergency Management Agency (FEMA)National Flood Hazard Layer, Lidar elevation data, and available historic imagery via Google Earth.

Existing Conditions

The three study areas are northeast of the Lake Francis Case in Charles Mix County, SD. Generally, the study areas' elevations range from 1,400 to 1,630 feet above mean sea level. The elevation decreases with increasing proximity to Lake Francis which has an approximate pool elevation of 1,342 feet above mean sea level.

Floodplains

The study areas are fully within Zone X (area of minimal flood hazard) outside of any mapped floodplains according to the FEMA National Flood Hazard Layer. See Figure 2. The study areas are outside of any mapped floodplains.

Wetlands

Review of available online data was conducted to evaluate the potential existence of wetlands within the three study areas. An intermittent stream is apparent immediately south, but outside of the south edge of Study Area 3 in the USGS quadrangle. There are no mapped hydric soils within any of the study areas. Similarly, there are no NWI mapped wetlands within the study areas. No hydrography features intersected the study areas. Lake Francis Case is southwest of the study areas and all areas slope towards Lake Francis Case through upland drainage pathways (Figure 3). No wetlands were apparent in the desktop review of the study areas.

Storm Water

The soils within in the study area are classified as "well drained" except for one soil which is "moderately well drained". Well drained soil map units comprise greater than 99% of the study areas. Stormwater will likely infiltrate or flow towards Lake Francis Case via several mapped intermittent streams outside of the study areas.

Next Steps

No additional steps are needed since the resource is not located within the study areas.

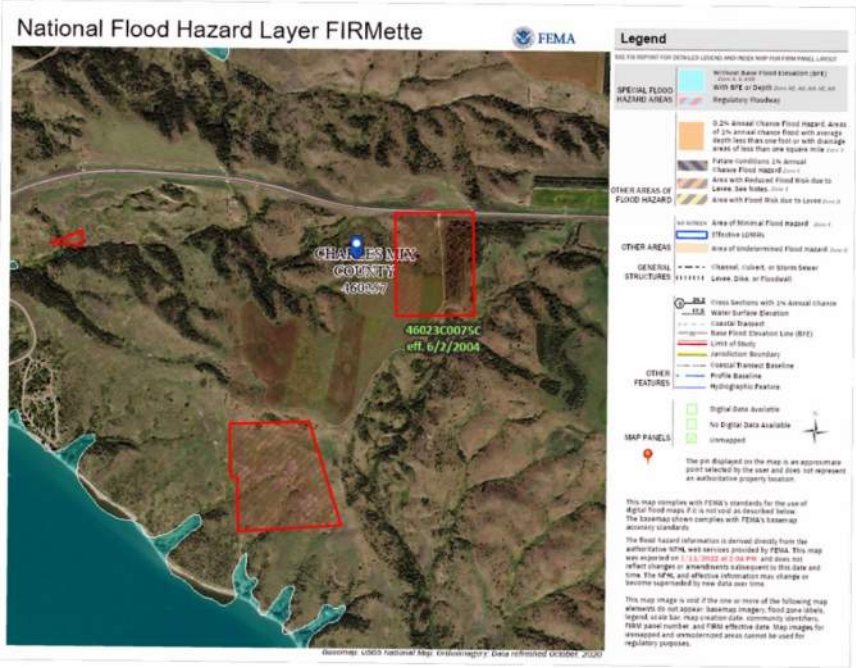

Figure 2: National Flood Hazard Layer from FEMA

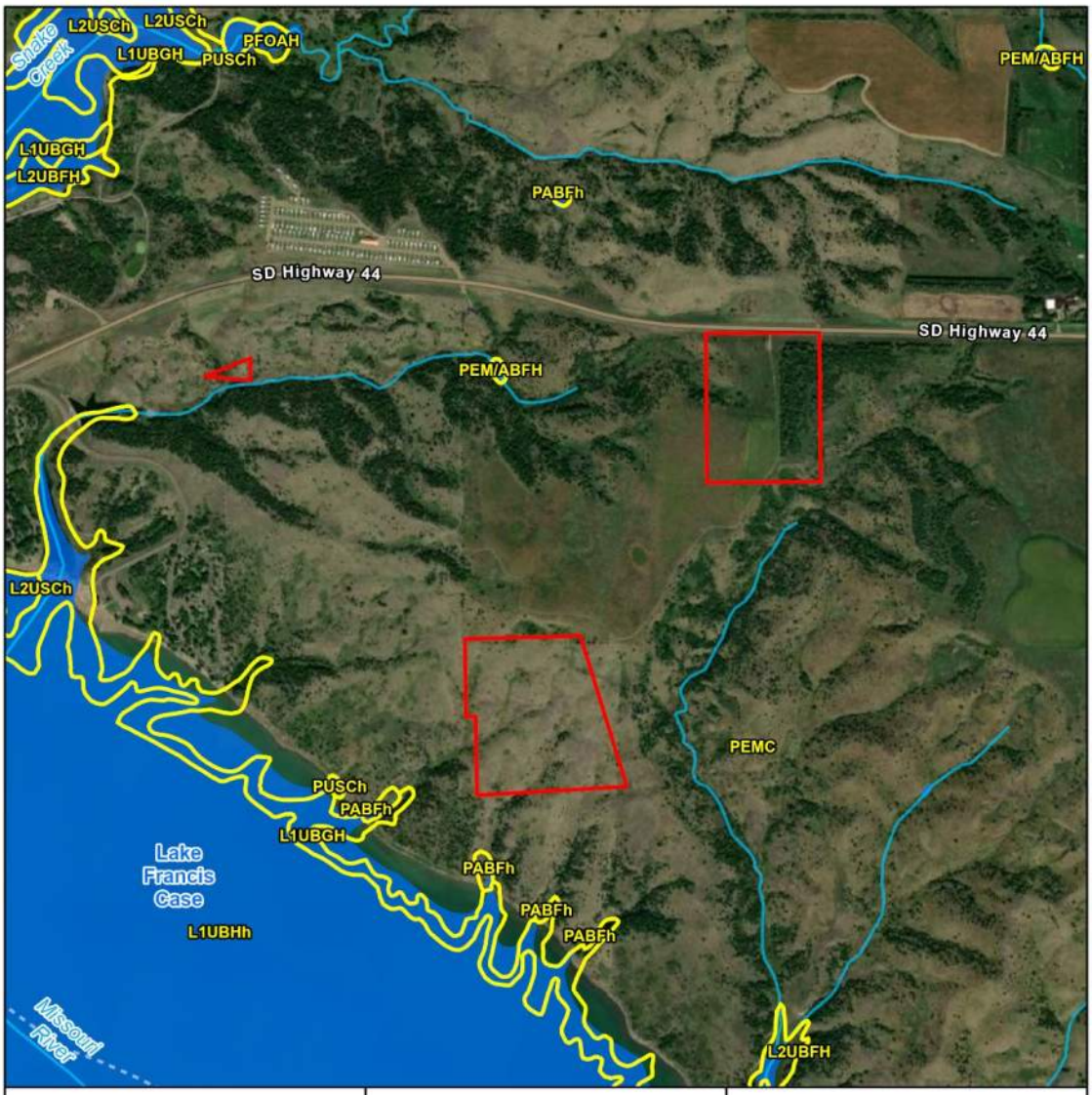

Figure 3

Water Resources

SD44 Platte-Winner Bridge Corridor Study

Environmental Screening Report

- Additional Study Areas
- NHD Streams and Rivers
- NHD Waterbodies
- National Wetland Inventory

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WILD AND SCENIC RIVERS

The National Wild and Scenic Rivers System was created by Congress in 1968 (Public Law 90-542; 16 U.S.C. 1271 et seq.) to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations. The Act is notable for safeguarding the special character of these rivers, while also recognizing the potential for their appropriate use and development. South Dakota has approximately 9,513 miles of river, of which 93 miles are designated as wild & scenic, less than 1% of the state's river miles. The Missouri River is designated from Gavins Point Dam, South Dakota, downstream to Ponca State Park, Nebraska; and from Fort Randall Dam to Lewis and Clark Lake.

Methodology

Reviewed existing Wild and Scenic Rivers of South Dakota to determine location in relation to study areas.

Existing Conditions

There are no existing Wild and Scenic Rivers within or intersecting with the study areas.

Next Steps

No additional steps are needed since the resource is not located within the study areas.

THREATENED AND ENDANGERED SPECIES, MIGRATORY BIRDS, EAGLES, AND UNIQUE WILDLIFE HABITAT

NEPA requires the identification and assessment of reasonable alternatives that will avoid and minimize adverse effects on the quality of the human environment, which includes species and habitats protected under the Endangered Species Act (ESA), the Migratory Bird Treaty Act (MBTA), and the Bald and Golden Eagle Protection Act (BGEPA). Protecting threatened and endangered species in the planning, construction, and maintenance of transportation projects is an important step in complying with the ESA.

Methodology

The Official Species List for Charles Mix County from the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) system was reviewed.

Additionally, SSDGFP provided a list of state listed Threatened and Endangered Species. Sensitive sites for eagles and other raptors as well as areas of wildlife/fish concerns for the study area.

Existing Conditions

The current physical setting and condition of the study areas are predominantly undeveloped grassland with small portions of row crop agriculture and forested areas in Study Area 1. There are no critical habitats in the study areas.

The United States Fish and Wildlife Service (USFWS) Planning and Consultation (IPaC) species list for the study areas was reviewed. See Appendix A. There are six threatened, endangered, or candidate species that may exist in the study areas based on the geographic area. See Table 2.

Table 2 - IPaC Species List for the Study Areas

Species	Scientific Name	Critical Habitat in Study Area	Federal Status
Northern Long-Eared Bat (NLEB)	Myotis septentrionalis	No critical habitat designated for species	Endangered
Piping Plover	Charadrius melodus	No critical habitat in study areas	Threatened
Red Knot	Calidris canutus rufa	Proposed critical habitat not in study areas	Threatened
Whooping Crane	Grus americana	No critical habitat in study areas	Endangered
Pallid Sturgeon	Scaphirhynchus albus	No critical habitat designated for species	Endangered
Monarch Butterfly	Danaus plexippus	No critical habitat designated for species	Candidate

Bald Eagles may be present in the study area and are protected under the Bald and Golden Eagle Protection Act.

Next Steps

There is no critical habitat for listed species located within the additional study areas. The results of this study will be included in the EA document for this project.

Topography, Soils, Geology, and Groundwater

Methodology

Available online sources including the NRCS Web Soil Survey, USGS 7.5" topographic maps, geologic maps, and well logs were reviewed.

Existing Conditions

The USGS 7.5" quadrangle topographic map was reviewed. The three study areas are on the eastern side of Lake Francis Case where and the topographic pattern generally slopes towards the lake. Several unnamed intermittent streams are apparent downgradient and outside of the study areas, but no wetlands, streams, forests, or other habitat areas are apparent within the study areas on the quadrangle.

A web soil survey was reviewed for the project study area. Five soil unit are mapped in the study areas. See Table 3 for soil descriptions. See Figure 4 and Appendix B for further details.

Table 3: NRCS Soils in Study Area

Map Unit Symbol	Map Unit Name	Area (acres)	% of Study Area
DbF	Betts-Ethan loams, 15 to 40 percent slopes	7.5	12.0
LoB	Lowry silt loam, 3 to 6 percent slopes	22.0	35.1
LoC	Lowry silt loam, 6 to 9 percent slopes	0.01	0.00
SnF	Sansarc clay, 6 to 35 percent slopes	20.2	32.2
SoF	Sansarc-Boyd complex, 15 to 40 percent slopes	13.0	20.7

Source: USDA Web Soil Survey, NRCS SSURGO GIS Dataset for Charles Mix County, SD

Geologic maps show Pierre shale generally closer to Lake Francis Case while glacial till exists at higher elevations within the study areas.

SDDANR Water Well Completion Reports for wells near the study areas were reviewed to evaluate groundwater elevations in the area. While several closer wells did not record a static water level, a well approximately 3 miles to the southeast of the study areas had a static water level 75 feet below ground surface and an approximate elevation of 1,660 feet at the surface.

Next Steps

No additional steps are expected regarding topography, soils, geology, and groundwater.

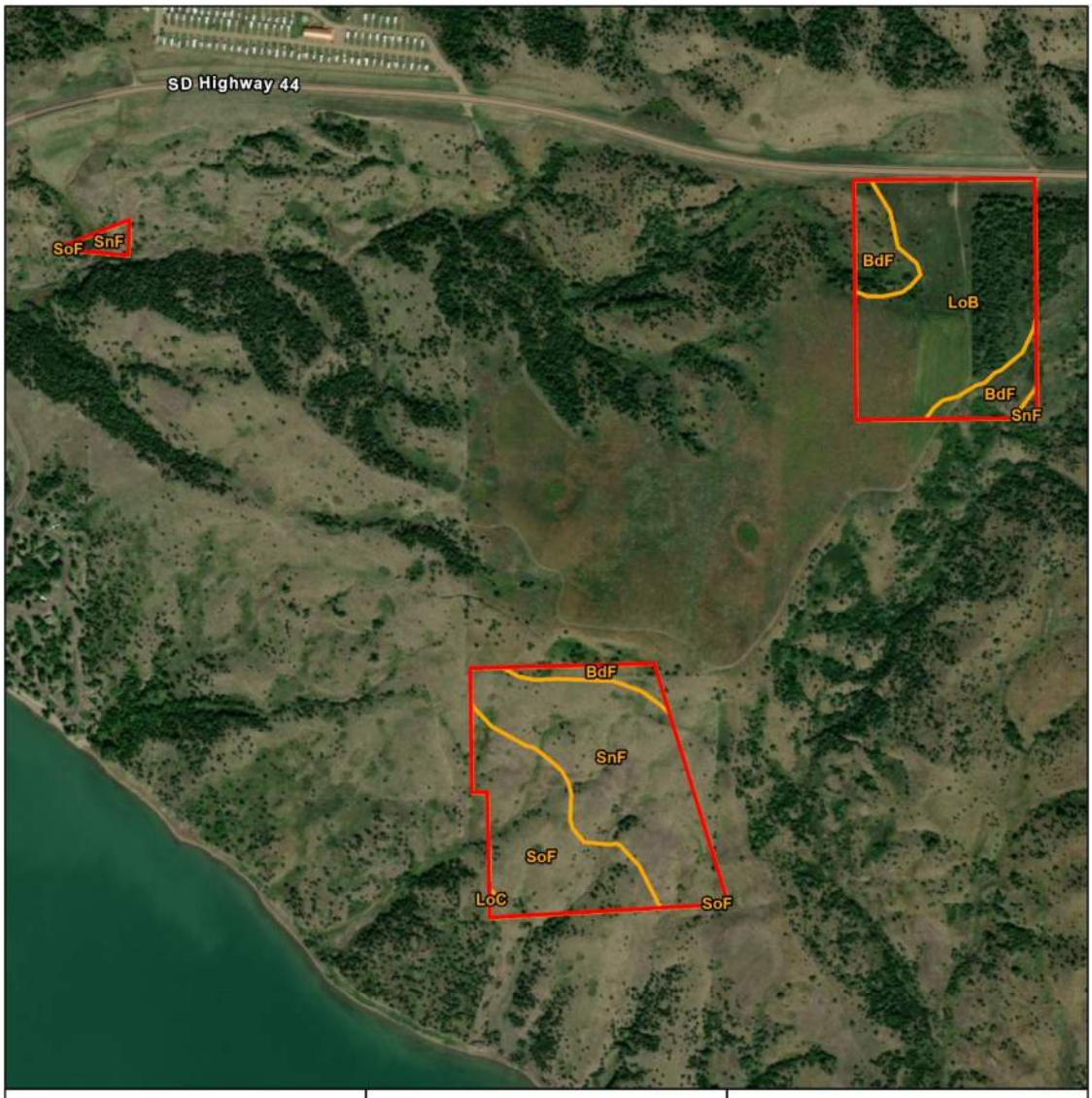

Figure 4

NRCS Web Soil Survey

SD44 Platte-Winner Bridge Corridor Study

Environmental Screening Report

Additional Study Areas
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CULTURAL RESOURCES

Section 106 of the National Historic Preservation Act (NHPA), as amended, guides the process of considering the effects of federal undertakings on historic properties. As such, Section 106 applies to federal agencies and to projects that are carried out with federal financial assistance; or those requiring a federal permit, license, or approval. Section 106 seeks to accommodate historic preservation concerns with the needs of federal undertakings through consultation among the agency officials and other parties with an interest in the effects of the undertaking on historic properties. This section defines key terms used in the protection of historic properties, introduces the applicable authorities, and describes the environmental commitments established for compliance with Section 106.

Section 4(f) of the U.S. Department of Transportation (USDOT) Act of 1966 provides protection to publicly owned parks, recreation areas (including recreational trails), wildlife or wildfowl refuges, or any publicly or privately-owned historic site listed or eligible for listing on the National Register of Historic Places (NRHP). Compared to the many procedural environmental laws that apply to federal highway actions, Section 4(f) is a substantive law that precludes project approval if there is a use of a Section 4(f) property when a prudent and feasible avoidance alternative is available. Additional information on the correlation between Section 106 and Section 4(f) will be provided in the Section 4(f) and Section 6(f) section.

Methodology

A Level III Cultural Resources Investigation and Geoarcheological Evaluation of the three studies was completed in September 2022.

Existing Conditions

No cultural resources were documented within the study areas during the Level III investigation. The negative results of the Level III investigation, coupled with supporting soils and geomorphological evidence and the results of numerous prior investigations and documented site localities, suggests the study areas settings are unlikely to harbor intact cultural resources of historic significance.

Next Steps

The investigation recommended no further cultural resources work for the three investigated parcels. See Appendix C. SHPO will review the Level III Cultural Resources Investigation as part of the ongoing environmental assessment for the Platte-Winner Bridge. No concurrence has been received to date.

SECTION 4(F) AND SECTION 6(F) RESOURCES

Section 4(f) of the USDOT Act of 1966 provides protection to publicly owned parks, recreation areas (including recreational trails), wildlife or wildfowl refuges, or any publicly or privately-owned historic site listed or eligible for listing on the NRHP. The law only applies to USDOT agencies. Compared to the many procedural environmental laws that apply to federal highway actions, Section 4(f) is a substantive law that precludes project approval if there is a use of a Section 4(f) property when a prudent and feasible avoidance alternative is available.

Some park and recreational resources are also regulated under the Land and Water Conservation Fund (LWCF) Act of 1965 which established a federal funding program to assist states in developing

outdoor recreation sites. Section 6(f) of LWCF ensures that a recreational area funded with LWCF assistance is continually maintained in public outdoor recreation use unless National Park Service (NPS) approves the conversion in accordance with the Statewide Comprehensive Outdoor Recreation Plan (SCORP) (36 CFR 59.3). When a Section 6(f) land conversion is proposed for a highway project, replacement land will be necessary. Coordination for Section 6(f) projects is done with the SDGFP Grants Coordinator. SDGFP will consult with the NPS Midwest Regional Director or designee to make a determination on the potential impacts on Section 6(f) properties and replacement properties.

Methodology

A review of Section 4(f) resources within the additional study areas was conducted as well as potential impacts to the resources as it relates to the scope of the project.

Existing Conditions

Within the SD44 Platte-Winner Bridge project area there are numerous publicly owned, publicly used, recreational areas that are subject to protection under Section 4(f). These include state owned parks, recreation areas, game production areas, and potential historic resources such as the existing SD44 bridge and archaeological sites. Park resources include the SCRA, Buryanek GPA, West Bridge Recreation Area (RA), and West Platte GPA.

Section 4(f)

The proposed dump station location within Study Area 1 would impact the West Platte GPA which is as a Section 4(f) resource. The existing West Platte GPA is undeveloped land that is publicly-owned and publicly used for hunting, habitat for game and non-game species, and passive recreation. A grass/dirt vehicle path within the site allows access into the West Platte GPA for permitted vehicles. The facility includes food plots and coniferous and deciduous tree shelterbelts managed for wildlife production.

The FHWA approved a Section 4(f) exception for Transportation Enhancement Activities, Transportation Alternatives Projects, and Mitigation Activities [23 CFR 774.13(g)] request to use a portion of the West Platte GPA for the dump station on December 22, 2022. It was determined that having a defined access and parking spaces would enhance user experience at West Platte GPA. Other enhancements could include planting trees, shrubs, other types of vegetation and food plots near the new dump station that enhances the quality of habitat for game species and other wildlife.

Section 6(f)

There are no Section 6(f) resources located within the West Platte GPA.

Next Steps

In general, the use of the West Platte GPA property is solely for the purpose of enhancing an activity, feature, or attribute that qualifies the property for Section 4(f) protection. Based on the scope of the project and type of work, the construction activities of the dump station are solely being completed for the purpose enhancing the protected recreational activities, features, or attributes associated with the West Platte GPA that qualifies the property for Section 4(f) protection.

PALEONTOLOGICAL RESOURCES

Paleontological resources are the fossilized remains of prehistoric plant and animal organisms, as well as the mineralized impressions (trace fossils) left as indirect evidence of the form and activity of such organisms. These non-renewable resources may be scientifically significant.

Methodology

A paleontological survey is not part of this study.

Existing Conditions

No known paleontological resources have been documented at this time within the study area.

Next Steps

If any identified cultural resources are discovered during survey or construction notification to the SDDOT environmental office would occur.

LAND USE AND ECONOMIC RESOURCES

Land use affects the quality of life and environment of the community. Land use designations often include zoning, future land use and growth management areas, conservation easements, urban infrastructure service boundaries, and annexation plans as well as past, existing, and future development trends. Incorporating current and future land use and forecasting land use and trends are a key consideration in transportation planning, design, and construction.

Economic resources are viewed through the lens of population, household, and employment trends for the study area. It is complemented by depictions and descriptions of current and future land uses that provide an understanding of areas of future growth.

Methodology

A review should be conducted of existing and proposed land use in the study area and any anticipated changes in land use, including but not limited to the following information: municipal/county planning documents, zoning maps and master plans, aerial photographs, USGS and other maps, digital orthographic quadrangle images, and GIS data.

Coordination letters may be sent to the local governments, Tribes, or economic development corporations to determine any potential land use or social/economic impacts.

Existing Conditions

These study areas are with the nearest incorporated community of Platte 13 miles to the east. The 2019 National Land Cover Dataset (NLCD) was used to determine the most current land use for the study areas (Figure 5).

It was determined that a majority of the study areas are classified as grasslands, with small portions of

hay/pasture and row crop. There are no structures or residences in any of the study areas as shown the example photo. See Figure 6 for a photograph of general land use in the study areas.

Next Steps

The proposed project would not substantially change the existing land use of the three study areas. Approximately one acre of the West Platte GPA would be used for a new dump station. The remaining acres within the three study areas would remain as grasslands with small portions of hay/pasture and row crops.

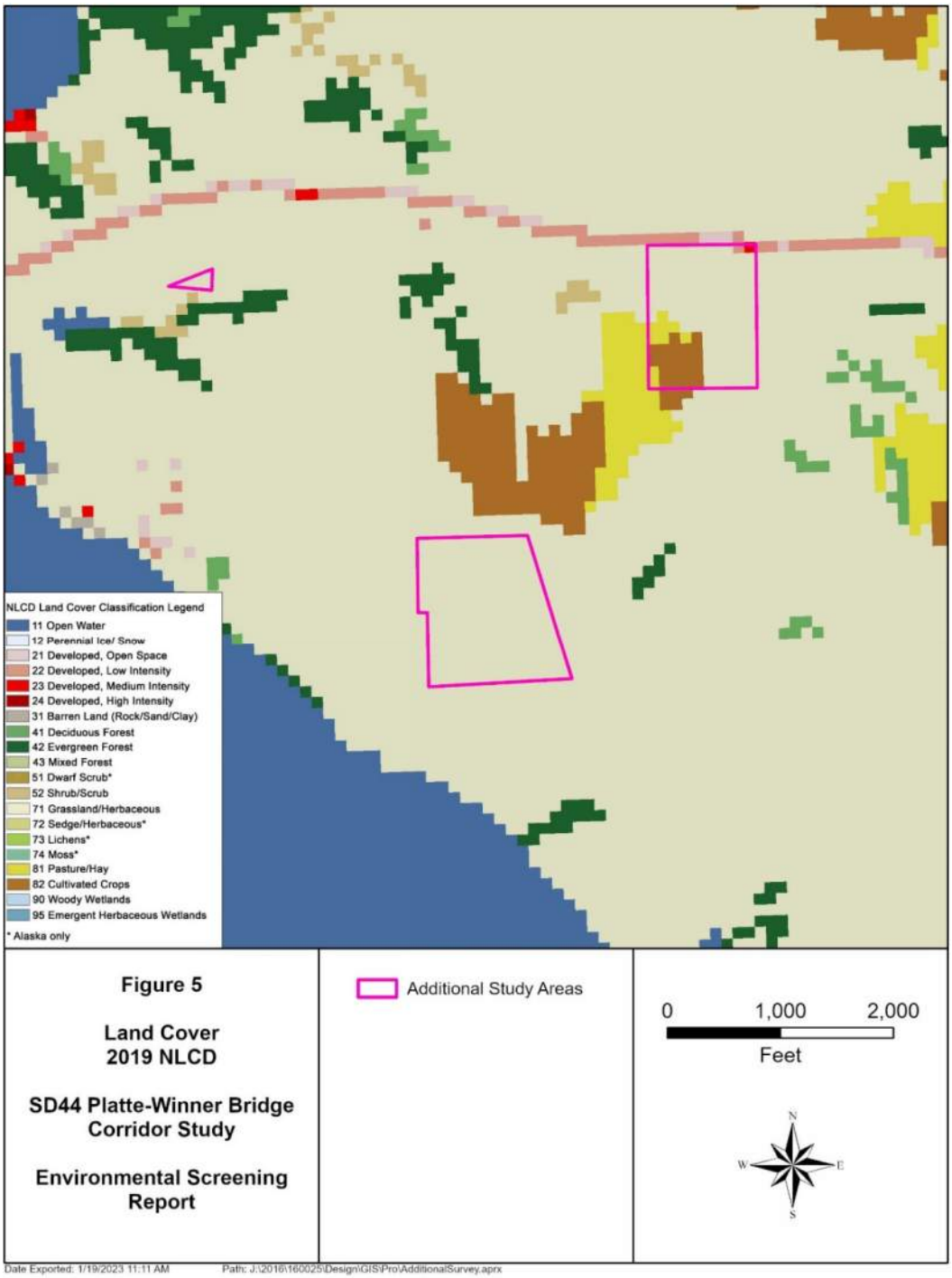

Figure 6: Example of landcover and topography near additional study areas

COMMUNITY AND SOCIAL RESOURCES

Transportation provides mobility and access for the daily activities of a community. As such, major changes to the transportation system may affect the various aspects of a community. The magnitude of the projected change is evaluated for each of the following social characteristics: population, public services and facilities, community character and cohesion, and traffic circulation.

Methodology

A desktop review was conducted to identify community and social data for the study areas.

Existing Conditions

The SD44 Platte-Winner Bridge serves as a critical connection for the rural communities in the region. The communities of Winner, Colome, Dallas, Gregory, and Burke are located on the west side of the Missouri River. Economically, these communities depend on each other for products and services especially in regards to the agricultural industry. Businesses such as agricultural equipment dealers and service providers, livestock auctions, grocery stores, other services and jobs are located east of the river in Platte. All of the communities work together and rely on each other to sustain the region economically, which would not be possible without the connection that the SD44 Platte-Winner Bridge provides.

The three study areas do not influence the social and economic interconnections of the communities within the region.

Next Steps

No impacts to the social or economics of the region would occur within the additional study areas.

TITLE VI/ENVIRONMENTAL JUSTICE

In compliance with Executive Order 12898, SDDOT is required to reach out to minority and low-income populations with meaningful and expanded processes during transportation projects funded by FHWA. The Executive Order requires federal agencies to achieve environmental justice by identifying and addressing disproportionately high and adverse human health or environmental effects, including the interrelated social and economic effects of their programs, policies, and activities, on minority populations and low-income populations in the United States.

Methodology

A desktop review was conducted to identify minority and low-income populations using tools such as the Department of Health and Human Services poverty guidelines, census data, and the USEPA EJSCREEN to identify environmental justice populations within the additional study areas.

Existing Conditions

EJSCREEN was accessed on March 13, 2020 to identify minority and low income demographics for the study area. No greater than 50% minority or low-income populations are present in the two census block groups within the study area – 460539711001 in Gregory County or 460239701001 in Charles Mix County. The EJ Screen Report (Version 2019) combines block group data and showed a minority population of 4% versus a state average of 17% for the study area, putting the study area in the 19th percentile for the state of South Dakota. Low Income population is 26% of the study area versus 32%, putting the study area in the 45th percentile for the state of South Dakota. This information is shown in Table 4. See Appendix D for EJ Screening report.

No sensitive populations are directly impacted by the project. Access to commerce and emergency services will be improved since the construction will leave a Missouri River crossing open and improve the safety, function, and bridge life expectancy versus the existing bridge.

Table 4: Block Group Information

Block Group (BG) and State	Percent Minority	Percent Low Income	Percentile Minority	Percentile Low Income
BG 460539711001	7%	34%		
BG 460239701001	4%	26%		
EJ Screen Project Area	4%	26%	19th (in state)	32nd (in state)
South Dakota	17%	32%	9th (in USA)	44th (in USA)
USA	39%	33%		

Source: https://www.census.gov/quickfacts/SD

The Platte community is in a county considered “Areas of Persistent Poverty” as defined by the U.S. Census Bureau..

No environmental justice communities are located within the three additional study areas.

Next Steps

No environmental justice communities would be impacted by the proposed project and incorporation of the three study areas.

CLIMATE CHANGE/EQUITY

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. Extreme weather or environmental conditions can pose threats to transportation infrastructure and those that depend on it. Sustainability addresses current needs in consideration of future needs by balancing economic, environmental, and social values.

The Executive Order on Advancing Racial Equity and Support for Underserved Communities Through the Federal Government (EO 13985) pursues a comprehensive approach to advancing equity for all, including individuals who have been historically underserved and adversely affected by persistent poverty or income inequality. An important area for focus is the disproportionate, adverse safety impacts that affect certain groups on our roadways.

Methodology

A desktop review was conducted to identify climate change and equity for this analysis.

Existing Conditions

There will be a temporary increase in greenhouse gas emissions during construction of the bridge. Also, the proposed dump station at West Platte GPA is 1.3 miles west of the existing dump station. Recreational vehicles using the existing dump station arrive at Snake Creek Recreation Area (SCRA) from the Platte (east) side and Winner (west) side. The majority of recreational vehicles arrive from the more populous Platte side via SD44 through Charles Mix County and use the dump station only when leaving the campground facilities at SCRA.

Next Steps

If the Recommended Alternative is constructed there would be a slight increase in carbon dioxide emissions annually because of the increase of traffic traveling over the bridge anticipated to increase each year. However, there would not be any additional miles traveled, additional gallons of gasoline consumed, and additional carbon dioxide emitted to access another Missouri River crossing at a different location and travel back to SD44. Construction of the bridge would create a temporary increase in greenhouse emissions due to the transport of materials to and from the site and the construction equipment operation. However, this would not be a long-term impact as the construction is anticipated to take two to three years to complete.

Recreational vehicles arriving at Snake Creek Recreation Area from the Winner (west side) would need to travel an additional 2.6 miles to use the dump station facilities at West Platte GPA (1.3 miles each

way) where there would be no additional miles traveled for the existing condition. These additional miles are not expected to increase greenhouse gas emissions significantly since the majority of dump station users will pass the station returning from SCRA to Platte and other areas accessible by traveling east on SD44. Additionally, the proposed dump station will increase the servicing capacity potentially reducing fuel burned idling while waiting to access the smaller existing dump station facility.

BICYCLE AND PEDESTRIAN FACILITIES

Bicycle and pedestrian facilities are important components in a community's transportation infrastructure. Promoting development of facilities for use by pedestrians and bicycles is an important consideration during transportation planning. Existing and planned bicycle and pedestrian facilities are summarized in this section.

Methodology

A desktop was conducted to identify existing pedestrian/bicycle facilities located within the study area and determine the locations of existing sidewalks, pedestrian bridges, footpaths, bike routes, and designated trails. The tools used include maps, design plans, and aerial photos.

Existing Conditions

There are no existing sidewalks, pedestrian bridges, bike paths or designated trails within the study areas.

Next Steps

No additional steps are needed since the resource is not located within the study areas.

VISUAL RESOURCES AND AESTHETICS

Visual resources are the natural and cultural features of the landscape that define its aesthetic quality and form the overall impression, or visual character, of an area. Visual impacts can generally be defined in terms of the relationship between the area’s physical characteristics, the presence and location of viewers, and the character and quality of the environment in which a project is located.

Methodology

The methodology can include a description of the study area’s topography, as well as current and future land use including:

- Residential (urban, suburban, rural) uses
- Commercial, industrial, and municipal uses
- Parks, recreational areas, and trails
- Water and natural resources
- Agricultural open space and undeveloped lands

Existing Conditions

The study areas are topographically compared with other relatively flat areas of Charles Mix County. Approaching the Platte-Winner bridge, elevations decrease towards Lake Francis Case making providing vistas of the Missouri River valley and hillier west river areas. . Currently, the study area lands are predominantly grasslands with small portions of forest and row crop agriculture near SD44. It is unexpected that mitigation and stabilization efforts will impact the overall aesthetics of the area.

See Figure 7 for a photo of the existing dump station. The existing dump station does not add to the aesthetic character of the area.

Figure 6: Existing Dump Station

Next Steps

The visual characterization and aesthetics within the three study areas will not change as a result of the construction of the project outside of the developed character of the new dump station area.

PRIME AND UNIQUE FARMLANDS

Protecting farmland from conversion from agricultural use to build infrastructure during the planning, construction, and maintenance of transportation projects is an important step in complying with the provisions of 7 CFR 658 et seq. Farmland Protection Policy Act (FPPA). In accordance with the FPPA, important farmland includes all land that is defined as prime, unique, or farmlands of statewide or local importance based on soil types. SDDOT identifies important farmland from currently published or interim soil survey maps and data produced and certified by the NRCS National Cooperative Soil Survey Program.

Methodology

The NRCS Web Soil Survey was used to identify types of soil within the study area, including prime, unique, and statewide and locally important farmlands.

Existing Conditions

Using the NRCS Web Soil Survey, soils were mapped for the three study areas. The Lowry silt loam, 3 to 6 percent slopes (LoB) is classified as *Prime farmland if irrigated.* No irrigation structures were apparent in aerial photographs. LoB results in 35.1% of the total study area. The Lowry silt loam, 6 to 9 percent slopes (LoC) is classified as *Farmland of statewide importance,* but is <0.1 % of the study area. See Figure 4 and the soils report in Appendix B. All other soil units in the study area are classified as *Not prime farmland*.

Next Steps

The land within the three additional study areas is not planned for irrigation and is not considered prime farmland. No other prime farmland exists within the three study areas.

AIR QUALITY

Protecting air quality in the planning, construction, and maintenance of transportation projects is an important step in complying with provisions of 42 USC 7401 et seq., the Clean Air Act (CAA). The SDDANR Air Quality Program is responsible for maintaining air quality levels in South Dakota. It is responsible for air quality levels that protect human health, safety and welfare, and the National Ambient Air Quality Standards (NAAQS) established through the CAA.

Methodology

A desktop study of SDDANR and U.S. EPA's Enviromapperwas used to determine the potential for air quality issues that could exist in the study areas.

Existing Conditions

The three study areas have no air quality source issues.

Next Steps

No additional steps are needed since the resource is not located within the study areas.

HAZARDOUS MATERIALS

Hazardous materials include substances or materials which have been determined by the EPA to be capable of posing an unreasonable risk to health, safety, or property. Hazardous materials may exist within the study area at facilities that generate, store, or dispose of these substances, or at locations of past releases of these substances. Examples of hazardous materials include asbestos, lead-based paint, heavy metals, dry-cleaning solvents, and petroleum hydrocarbons (e.g., gasoline and diesel

fuels), all of which could be harmful to human health and the environment. The SDDANR Hazardous Waste Section is responsible for providing technical assistance as well as regulating the storage, treatment, transport, and disposal of hazardous waste in the state of South Dakota.

Methodology

A desktop study review was completed to determine if hazardous materials are located in or near the three study areas.

Existing Conditions

There are no active or inactive above ground storage tanks or underground storage tanks recorded in the study areas. A 2017 Environmental Database Report (EDR) used for the Phase I Environmental Site Assessment for the SD44 Bridge study area indicates historic and active storage tanks in the SCRA. The SDDANR Tanks, Spills and Environmental Events Map indicates one active above ground tank, one above ground inactive tank, and one underground inactive tank. In addition, two spill events were recorded. The first, a gasoline spill that contaminated soil in the area, however through soil removal, it was determined that no further action was needed in 1996. The second was reported during the removal of old underground storage tanks, and it was determined no further action was required in 2000. These sites are similarly downgradient from the current study area, and thus do not represent concern for petroleum contamination in the study areas. See Appendix E for spill records.

Next Steps

No additional steps are needed since the resource is not located within the study areas.

NOISE

Noise from highway traffic and construction is an important environmental consideration in transportation projects. SDDOT applies 23 CFR 772 for noise analysis and abatement procedures.

Highway projects fall into three types:

Type I projects are defined as federal-aid highway projects in a new location or the physical alteration of an existing highway that significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes. Type I projects can also include new or altered weigh stations, rest stops, ride-share lots, or toll plazas. Noise analysis is not required for the no-build alternative or other eliminated alternatives. SDDOT uses this definition to determine whether or not a project is Type I.

Type II projects are defined as federal-aid highway projects for noise abatement on an existing Highway. For a Type II project to be eligible for Federal-aid funding, the highway agency must develop and implement a Type II program in accordance with section 772. 7(e). Type II programs are voluntary, and SDDOT has elected not to have a Type II program.

Type III projects are defined as federal-aid highway projects that do not meet the classifications of a Type I or Type II project. Type III projects do not require a noise analysis.

Methodology

For the purposes of this environmental screening, no noise study was conducted. No noise receptors were identified near the three study areas.

Existing Conditions

This project is defined as type III since it is not in a new location or new vertical or horizontal alignment. Similarly, this portion of the project does not require noise abatement for an existing highway. Therefore, no noise analysis is required.

Next Steps

No additional steps are needed since the resource is not located within the study areas.

RIGHT-OF-WAY, ACQUISITION, AND RELOCATION POTENTIAL

The potential of right-of-way (ROW), acquisition, and relocation impacts are described in this section to evaluate how property owners and tenants (e.g., residential, business, non-profit, farm, ranch) may be directly and indirectly impacted by proposed right-of-way acquisition and associated business and residential displacements and relocations. The impacts may occur as a result of acquisition of specific businesses and residences or through disruption of business activity and neighborhood/community interaction characteristics that result in relocations.

Methodology

While specific ROW acquisitions or relocations are not known in the Environmental Screening phase, a desktop review was conducted to identify existing land use in the area for potential ROW uses in the NEPA project(s) phase.

Existing Conditions

Study Area 1 is part of West Platte GPA owned by South Dakota Game Fish and Parks. A two-track informal road extends from Study Area 1 onto adjacent private property. Study Area 2 is privately owned. Study Area 3 is both privately owned and part of SCRA. No residential relocation potential exists within the three study areas.

Next Steps

Study Area 1 is publicly-owned and no change acquisition would be required. Study Area 2, if acquired, may need to be evaluated for its impacts on farming and hunting versus the existing condition. No change is expected at Study Area 3.

UTILITIES

Aboveground and buried utilities within the study area are outlined in this section.

Methodology

A desktop review was conducted to identify existing utilities in the area including, but not limited to, electric, gas, water, and wastewater.

Existing Conditions

There are water main lines owned by RAN Randall Community Water District approximately six feet below the surface within Study Area along SD44. No known utilities are in Study Area 2 and 3. The potential for gas and electric along SD44 exists but likely not within Study Area 1.

Next Steps

No additional steps are needed since the resource is not located within the study areas.

OTHER ISSUES

There are no other federal or state regulations, special or unique resources in the area, or stakeholder concerns that are known at this time.

MITIGATION STRATEGIES

Mitigation for the game production area (GPA) will be required as the construction of the dump station would use approximately one acre of land. Potential mitigation options for this course of action include planting shrubs and trees to improve the quality of the game production area for game species and other wildlife adjacent to the new dump station. Purchasing private property within Study Area 2 to mitigate for the West Platte GPA land use loss to the dump station would be an additional mitigation strategy.

STAKEHOLDER AND PUBLIC INVOLVEMENT

No separate meetings or communications have occurred regarding the three additional study areas.

CONCLUSION

The additional areas for the construction of a dump station and mitigation land for the station have the potential to impact different environmental resources. The three study areas are east of SCRA, south of SD44, approximately 13 miles west of Platte, SD.

The three additional study areas were evaluated for following resources that might reside within their boundaries:

- Water resources
- Threatened and Endangered Species
- Topography, Soils, Geology, and Groundwater
- Section 4(f) and 6(f) Resources
- Visual and Aesthetics
- Prime and Unique Farmlands
- Utilities

After the analysis, it was determined that no water resources, threatened and endangered species, topography, soils, geology, and groundwater were located within the study areas. The potential exists for impacts to occur to Section 4(f) resources, visual and aesthetics, prime and unique farmlands, and utilities.

The dump station mitigation area located within West Platte GPA Study Area 1 has been approved under Section 4(f) Exception for Transportation Enhancement Activities [23 CFR 774.13(g)].

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U.S. Geological Survey National Land Use and Land Cover Database, Accessed July 14, 2022, https://www.mrlc.gov/

U.S. Natural Resources Conservation Service Web Soil Survey, Accessed July 11, 2022, https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

Appendix A: Information Planning and Consultation (IPaC)

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
https://www.fws.gov/office/south-dakota-ecological-services

In Reply Refer To: January 20, 2023
Project Code: 2022-0062330
Project Name: SD44 Platte-Winner Additional Areas

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 ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system 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/media/endangered-species-consultation-handbook

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 https://www.fws.gov/law/bald-and-golden-eagle-protection-act, https://www.fws.gov/media/endangered-species-act-1, and/or https://www.fws.gov/law/migratory-bird-treaty-act-1918.

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/birds/bird-enthusiasts/threats-to-birds.php.

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/law/migratory-birds

Please be aware that bald and golden eagles are protected under the Migratory Bird Treaty Act (16 U.S.C. §§ 703-712, as amended), as well as the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). Projects affecting these species may benefit from the development of an Eagle Conservation Plan (ECP), see guidance at this website (https://www.fws.gov/node/266177). An ECP can assist developers in achieving compliance with regulatory requirements, help avoid “take” of eagles at project sites, and

provide biological support for eagle permit applications. Additionally, we recommend wind energy developments adhere to our Land-based Wind Energy Guidelines for minimizing impacts to migratory birds and bats.
We have recently updated our guidelines for minimizing impacts to migratory birds at projects that have communication towers (including meteorological, cellular, digital television, radio, and emergency broadcast towers). These guidelines can be found at:

https://www.fws.gov/story/incidental-take-beneficial-practices-communication-towers
http://www.towerkill.com

According to National Wetlands Inventory maps, (available online at https://www.fws.gov/library/collections/national-wetland-inventory) wetlands exist adjacent to the proposed construction corridor. If a project may impact wetlands or other important fish and wildlife habitats, the U.S. Fish and Wildlife Service (Service), in accordance with the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347) and other environmental laws and rules, recommends complete avoidance of these areas, if possible. If this is not possible, attempts should be made to minimize adverse impacts. Finally if adverse impacts are unavoidable, measures should be undertaken to replace the impacted areas. Alternatives should be examined and the least damaging practical alternative selected. If wetland impacts are unavoidable, a mitigation plan addressing the number and types of wetland acres to be impacted, and the methods of replacement should be prepared and submitted to the resource agencies for review.

Please check with your local wetland management district to determine whether Service interest lands exist at the proposed project site, the exact locations of these properties, and any additional restrictions that may apply regarding these sites. The Offices are listed below. If you are not sure which office to contact, we can help you make that decision.

U.S. Fish and Wildlife Service, Huron Wetland Management District, Federal Building, Room 309, 200 4th Street SW, Huron, SD 57350; telephone (605) 352-5894. Counties in the Huron WMD: Beadle, Buffalo, Hand, Hughes, Hyde, Jerauld, Sanborn, Sully.

U.S. Fish and Wildlife Service, Lake Andes Wetland Management District, P O Box 18, Pickstown, South Dakota, 57367; telephone (605) 487-7603. Counties in the Lake Andes WMD: Aurora, Brule, Charles Mix, Davison, Douglas.

U.S. Fish and Wildlife Service, Madison Wetland Management District, P.O. Box 48, Madison, South Dakota, 57042, telephone (605) 256-2974. Counties in the Madison WMD: Bon Homme, Brookings, Clay, Deuel, Hamlin, Hanson, Hutchinson, Kingsbury, Lake, Lincoln, McCook, Miner, Minnehaha, Moody, Turner, Union, Yankton.

U.S. Fish and Wildlife Service, Sand Lake Wetland Management District, 39650 Sand Lake Drive, Columbia, South Dakota, 57433; telephone (605) 885-6320. Counties in the Sand Lake WMD: Brown, Campbell, Edmunds, Faulk, McPherson, Potter, Spink, Walworth.

U.S. Fish and Wildlife Service, Waubay Wetland Management District, 44401 134A Street, Waubay,

South Dakota, 57273; telephone (605) 947-4521. Counties in the Waubay WMD: Clark, Codington, Day, Grant, Marshall, Roberts.

You are welcome to visit our website (https//www.fws.gov/office/southdakota-ecological-services) or to contact our office/staff at the address or phone number above for more information.

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
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

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:

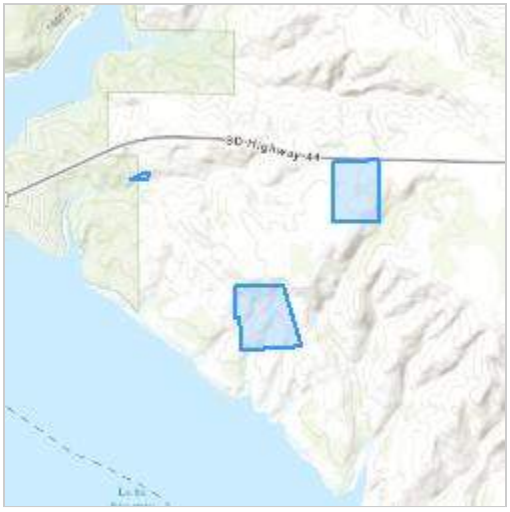
South Dakota Ecological Services Field Office
420 South Garfield Avenue, Suite 400
Pierre, SD 57501-5408
(605) 224-8693

Project Summary

Project Code: 2022-0062330
Project Name: SD44 Platte-Winner Additional Areas
Project Type: Road/Hwy - Maintenance/Modification
Project Description: Selected areas will be used for mitigation for a project replacing a bridge over Lake Francis Case and approaches.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@43.38327005,-99.10092025187299,14z



Counties: Charles Mix County, South Dakota

Endangered Species Act Species

There is a total of 6 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.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], 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.

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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
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered

Birds

NAME	STATUS
Piping Plover *Charadrius melodus* 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
Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Whooping Crane *Grus americana* 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

Fishes

NAME	STATUS
Pallid Sturgeon *Scaphirhynchus albus*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/7162

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

Critical habitats

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

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Dec 1 to Aug 31
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

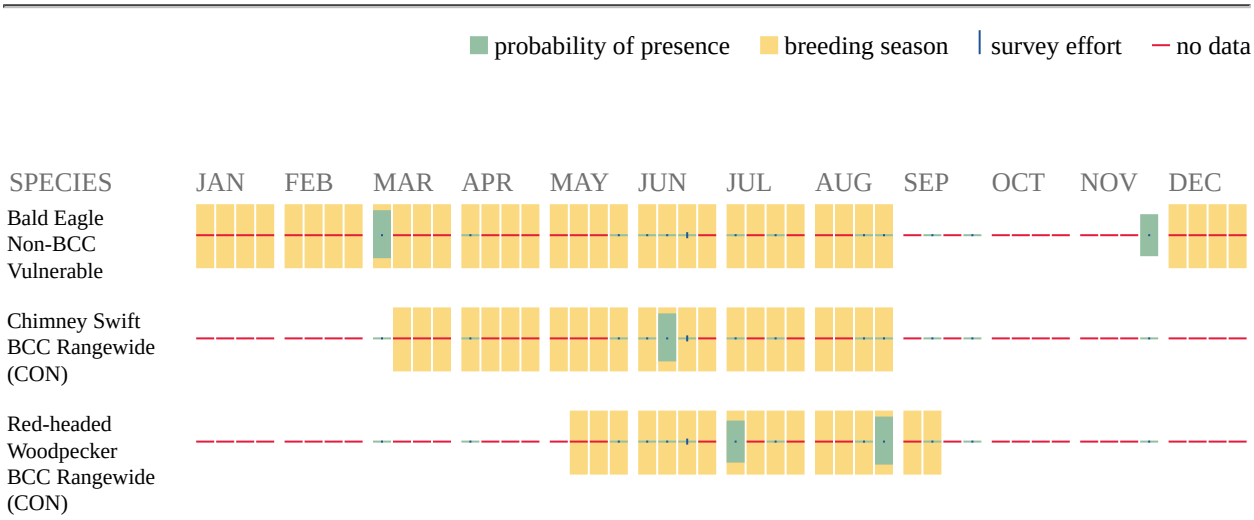
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

IPaC User Contact Information

Agency: HR Green, Inc.
Name: Ted McCaslin
Address: 2550 University Ave W, STE 400N
City: St. Paul
State: MN
Zip: 55114
Email tmccaslin@hrgreen.com
Phone: 6516597708

Lead Agency Contact Information

Lead Agency: Federal Highway Administration

Appendix B: NRCS Soils Report

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Charles Mix County, South Dakota

July 11, 2022

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

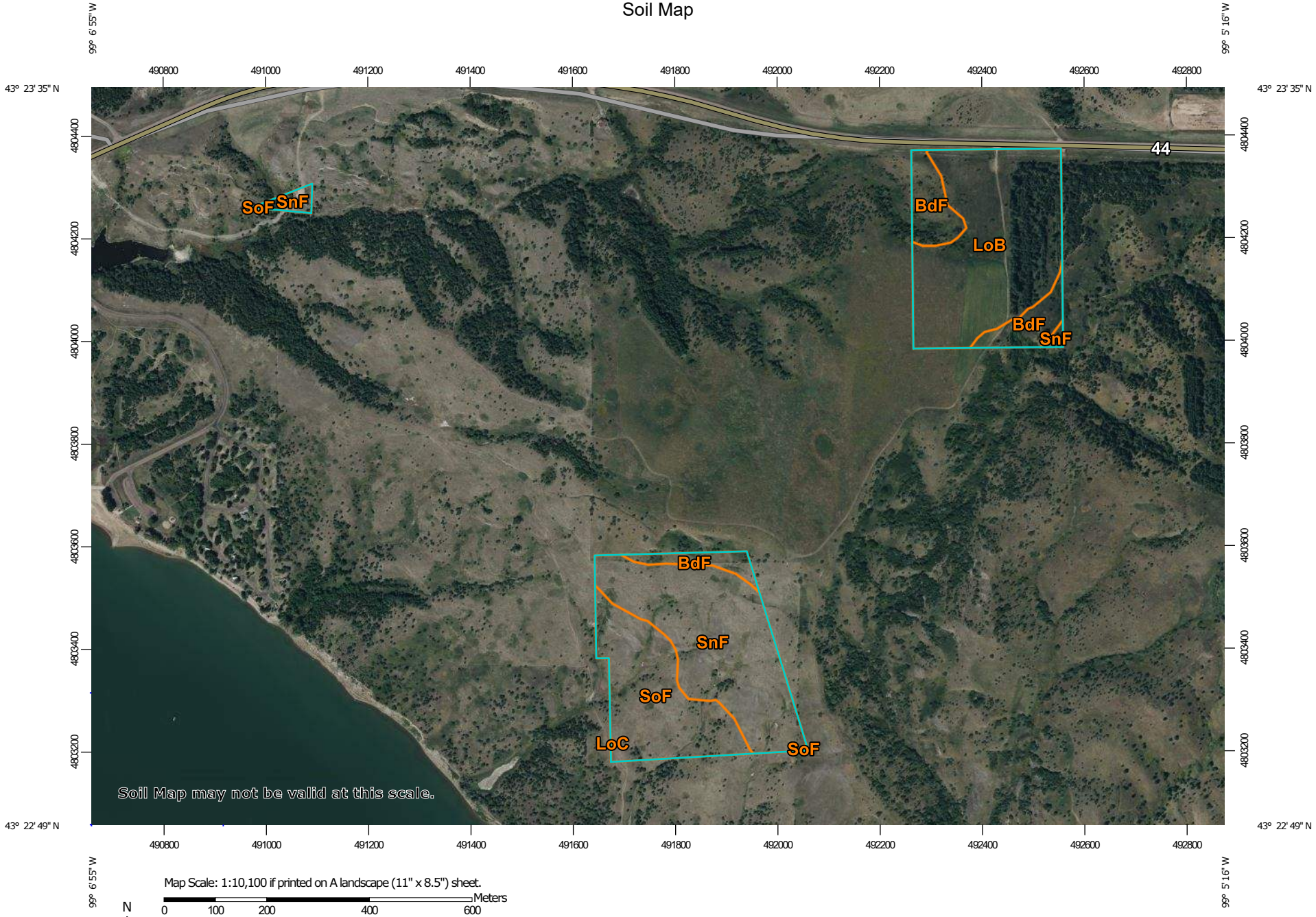
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:10,100 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 450 900 1800 2700

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Charles Mix County, South Dakota
Survey Area Data: Version 29, Sep 13, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 1, 2021—Oct 25, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BdF	Betts-Ethan loams, 15 to 40 percent slopes	7.5	12.0%
LoB	Lowry silt loam, 3 to 6 percent slopes	22.0	35.1%
LoC	Lowry silt loam, 6 to 9 percent slopes	0.0	0.0%
SnF	Sansarc clay, 6 to 35 percent slopes	20.2	32.2%
SoF	Sansarc-Boyd complex, 15 to 40 percent slopes	13.0	20.7%
Totals for Area of Interest		**62.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Charles Mix County, South Dakota

BdF—Betts-Ethan loams, 15 to 40 percent slopes

Map Unit Setting

National map unit symbol: 2wkq9
Elevation: 1,120 to 2,230 feet
Mean annual precipitation: 16 to 28 inches
Mean annual air temperature: 43 to 52 degrees F
Frost-free period: 120 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Betts and similar soils: 55 percent
Ethan and similar soils: 35 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Betts

Setting

Landform: Ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Fine-loamy till

Typical profile

A - 0 to 3 inches: loam
Bk - 3 to 31 inches: clay loam
C - 31 to 79 inches: clay loam

Properties and qualities

Slope: 15 to 40 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: R055CY012SD - Thin Upland
Forage suitability group: Not suited (G055CY000SD)
Other vegetative classification: Not suited (G055CY000SD)
Hydric soil rating: No

Description of Ethan

Setting

Landform: Ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Fine-loamy till

Typical profile

Ap - 0 to 7 inches: loam
Bk - 7 to 33 inches: clay loam
C - 33 to 79 inches: clay loam

Properties and qualities

Slope: 15 to 40 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: R055CY012SD - Thin Upland
Forage suitability group: Limy Upland (G055CY400SD)
Other vegetative classification: Limy Upland (G055CY400SD)
Hydric soil rating: No

Minor Components

Clarno

Percent of map unit: 4 percent
Landform: Ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R055CY010SD - Loamy
Other vegetative classification: Loam (G055CY100SD)
Hydric soil rating: No

Talmo

Percent of map unit: 2 percent
Landform: Ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R055CY016SD - Very Shallow
Other vegetative classification: Not suited (G055CY000SD)

Hydric soil rating: No

Davis

Percent of map unit: 2 percent
Landform: Ground moraines
Landform position (three-dimensional): Base slope, talf
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: R055CY020SD - Loamy Overflow
Other vegetative classification: Loam (G055CY100SD)
Hydric soil rating: No

Ethan, very stony

Percent of map unit: 1 percent
Landform: Ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R055CY012SD - Thin Upland
Other vegetative classification: Not suited (G055CY000SD)
Hydric soil rating: No

Betts, very stony

Percent of map unit: 1 percent
Landform: Ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R055CY012SD - Thin Upland
Other vegetative classification: Not suited (G055CY000SD)
Hydric soil rating: No

LoB—Lowry silt loam, 3 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2ym7w
Elevation: 1,210 to 2,660 feet
Mean annual precipitation: 16 to 21 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 100 to 150 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Lowry and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lowry

Setting

Landform: Plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Silty loess

Typical profile

Ap - 0 to 8 inches: silt loam
Bw - 8 to 15 inches: silt loam
Bk - 15 to 41 inches: silt loam
Ab - 41 to 79 inches: silty clay loam

Properties and qualities

Slope: 3 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 8.0
Available water supply, 0 to 60 inches: Very high (about 13.0 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: R063AY010SD - Loamy
Forage suitability group: Loam (G063AY100SD)
Other vegetative classification: Loam (G063AY100SD)
Hydric soil rating: No

Minor Components

Reliance

Percent of map unit: 4 percent
Landform: Plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R063AY010SD - Loamy
Other vegetative classification: Loam (G063AY100SD)
Hydric soil rating: No

Agar

Percent of map unit: 3 percent
Landform: Plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R063AY010SD - Loamy
Other vegetative classification: Loam (G063AY100SD)

Hydric soil rating: No

Mobridge

Percent of map unit: 3 percent
Landform: Plains
Microfeatures of landform position: Swales
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R063AY010SD - Loamy
Other vegetative classification: Loam (G063AY100SD)
Hydric soil rating: No

LoC—Lowry silt loam, 6 to 9 percent slopes

Map Unit Setting

National map unit symbol: 2ym7x
Elevation: 1,250 to 2,020 feet
Mean annual precipitation: 16 to 21 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 100 to 150 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Lowry and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lowry

Setting

Landform: Plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Silty loess

Typical profile

Ap - 0 to 8 inches: silt loam
Bw - 8 to 15 inches: silt loam
Bk - 15 to 41 inches: silt loam
Ab - 41 to 79 inches: silty clay loam

Properties and qualities

Slope: 6 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 8.0
Available water supply, 0 to 60 inches: Very high (about 13.0 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: R063AY010SD - Loamy
Forage suitability group: Loam (G063AY100SD)
Other vegetative classification: Loam (G063AY100SD)
Hydric soil rating: No

Minor Components

Mobridge

Percent of map unit: 5 percent
Landform: Plains
Microfeatures of landform position: Swales
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R063AY010SD - Loamy
Other vegetative classification: Loam (G063AY100SD)
Hydric soil rating: No

Sully

Percent of map unit: 5 percent
Landform: Plains
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R063AY012SD - Thin Upland
Other vegetative classification: Limy Upland (G063AY400SD)
Hydric soil rating: No

Agar

Percent of map unit: 5 percent
Landform: Plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R063AY010SD - Loamy
Other vegetative classification: Loam (G063AY100SD)
Hydric soil rating: No

SnF—Sansarc clay, 6 to 35 percent slopes

Map Unit Setting

National map unit symbol: 2v675
Elevation: 1,260 to 2,490 feet
Mean annual precipitation: 16 to 21 inches
Mean annual air temperature: 43 to 50 degrees F

Frost-free period: 100 to 150 days
Farmland classification: Not prime farmland

Map Unit Composition

Sansarc and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sansarc

Setting

Landform: Hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Residuum weathered from shale

Typical profile

A - 0 to 4 inches: clay
AC - 4 to 10 inches: parachannery clay
C - 10 to 14 inches: very parachannery clay
Cr - 14 to 34 inches: bedrock

Properties and qualities

Slope: 6 to 35 percent
Depth to restrictive feature: 11 to 20 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 6 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Very low (about 1.3 inches)

Interpretive groups

Land capability classification (irrigated): 7e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: R063AY017SD - Shallow Clay
Forage suitability group: Not suited (G063AY000SD)
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

Minor Components

Promise

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave

Across-slope shape: Linear
Ecological site: R063AY011SD - Clayey
Other vegetative classification: Clayey Subsoil (G063AY210SD)
Hydric soil rating: No

Opal

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R063AY011SD - Clayey
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

Bullcreek

Percent of map unit: 3 percent
Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R063AY018SD - Dense Clay
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

Badland

Percent of map unit: 2 percent
Landform: Hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear, convex
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

SoF—Sansarc-Boyd complex, 15 to 40 percent slopes

Map Unit Setting

National map unit symbol: cxgv
Elevation: 1,310 to 1,640 feet
Mean annual precipitation: 17 to 25 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 135 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Sansarc and similar soils: 50 percent
Boyd and similar soils: 30 percent

Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sansarc

Setting

Landform: Hills
Landform position (two-dimensional): Shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Clayey residuum weathered from shale

Typical profile

H1 - 0 to 4 inches: clay
H2 - 4 to 13 inches: clay
Cr - 13 to 60 inches: weathered bedrock

Properties and qualities

Slope: 25 to 40 percent
Depth to restrictive feature: 4 to 20 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: R063BY017SD - Shallow Clay
Forage suitability group: Not suited (G063BY000SD)
Other vegetative classification: Not suited (G063BY000SD)
Hydric soil rating: No

Description of Boyd

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey residuum weathered from shale

Typical profile

H1 - 0 to 5 inches: silty clay
H2 - 5 to 23 inches: clay
H3 - 23 to 31 inches: clay
Cr - 31 to 60 inches: weathered bedrock

Properties and qualities

Slope: 15 to 25 percent

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: R063BY011SD - Clayey
Forage suitability group: Not suited (G063BY000SD)
Other vegetative classification: Not suited (G063BY000SD)
Hydric soil rating: No

Minor Components

Gavins

Percent of map unit: 7 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R063BY012SD - Thin Upland
Other vegetative classification: Not suited (G063BY000SD)
Hydric soil rating: No

Betts

Percent of map unit: 7 percent
Landform: Moraines
Landform position (two-dimensional): Shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R063BY012SD - Thin Upland
Other vegetative classification: Not suited (G063BY000SD)
Hydric soil rating: No

Sully

Percent of map unit: 6 percent
Landform: Plains
Landform position (two-dimensional): Shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R063BY012SD - Thin Upland
Other vegetative classification: Limy Upland (G063BY400SD)
Hydric soil rating: No

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Appendix C: Cultural Resources Report

A Level III Cultural Resources Investigation and Geoarcheological Evaluation of South Dakota Department of Transportation's Proposed SD Highway 44 Platte-Winner Bridge Corridor Study and Environmental Assessment, Charles Mix and Gregory Counties, South Dakota

Addendum 3

SHPO R&C No.:

Austin A. Buhta

Archeological Contract Series 297d

Project Nos: HP5596(19) P and P0044(207)290 N

PRIVILEGED INFORMATION – DO NOT RELEASE

ARPA Permit No. DACW45-3-21-6036

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On Behalf Of:
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A Level III Cultural Resources Investigation and Geoarcheological Evaluation of South Dakota Department of Transportation's Proposed SD Highway 44 Platte-Winner Bridge Corridor Study and Environmental Assessment, Charles Mix and Gregory Counties, South Dakota

Addendum 3

Sections 14, 15, and 23, T99N, R70W

SHPO R&C No.:

Fort Randall Archaeological Region

Austin A. Buhta

Archeological Contract Series 297d

Project Nos: HP5596(19) P and P0044(207)290 N

Austin A. Buhta, M.A.
(Principal Investigator)

PRIVILEGED INFORMATION – DO NOT RELEASE

ARPA Permit No. DACW45-3-21-6036

September 2022

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ABSTRACT

This report is the third addendum to the report: A Level III Cultural Resources Investigation and Geoarcheological Evaluation of South Dakota Department of Transportation's Proposed SD Highway 44 Platte-Winner Bridge Corridor Study and Environmental Assessment, Charles Mix and Gregory Counties, South Dakota. *The lead federal agency responsible for National Historic Preservation Act Section 106 review and compliance for this undertaking is the US Army Corps of Engineers. Investigations were carried out under Archeological Resources Protection Act Permit No. DACW45-3-21-6036 and Permit No. SP-22-008 as issued by the South Dakota State Historical Society, Archaeological Research Center. This addendum addresses Level III intensive investigations at three separate parcels that are to be added to the project Area of Potential Effect (APE). These additional parcels, which include a proposed dump station and acquisition area, as well as a landslide mitigation area, will add a total of 62.66 acres to the APE. Investigations were undertaken on September 9, 2022. No cultural resources were documented as a result of the current investigation. No further cultural resources work is recommended for the three investigated parcels.*

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1.0 PROJECT OVERVIEW

This report is the third addendum to the report: *A Level III Cultural Resources Investigation and Geoarcheological Evaluation of South Dakota Department of Transportation's Proposed SD Highway 44 Platte-Winner Bridge Corridor Study and Environmental Assessment, Charles Mix and Gregory Counties, South Dakota* (Buhta and Mandel 2018). It addresses Level III intensive investigations at three separate parcels that are to be added to the larger project Area of Potential Effect (APE) of the SD Highway 44 Platte-Winner Bridge Corridor Study and Environmental Assessment (SD44 Platte-Winner Bridge) project (Figures 1–3). These additional parcels consist of a combination of property under both public and private ownership. Public lands within the investigated parcels are administered by the South Dakota Game, Fish, and Parks (SDGF&P) as part of their West Platte Game Production Area (GPA) and include a small area within Title VI lands. US Army Corps of Engineers (USACE) maintains National Historic Preservation Act (NHPA) oversight of the Title VI lands as defined by the Water Resources Development Act (1999), Title VI Section 605 (h) (US Congress 1999). Therefore, the lead federal agency responsible for NHPA Section 106 review and compliance for this undertaking is USACE. Individual parcels investigated include a proposed SDGF&P dump station site, a parcel of private property that SDGF&P intends to consider acquiring for inclusion in the West Platte GPA, and a small parcel scheduled for landslide mitigation. In total, these parcels will add approximately 62.66 acres to the larger project APE.

Four previous cultural resources reports have been written as part of the SD44 Platte-Winner Bridge undertaking. These previous reports discuss archeological sites and surveys present in the larger APE and surrounding area (Buhta and Mandel 2018, 2019a, 2019b), as well as the results of cultural resource monitoring for geotechnical boring within the APE (Anton 2021). To view a summary of the full archeological record search associated with the APE, see Buhta and Mandel (2018). Because this report of investigations represents an addendum, components such as general environmental and cultural backgrounds are omitted; this information is also available in the report by Buhta and Mandel (2018). The APE, previously identified archeological sites, and prior cultural resource investigations are depicted relative to the three newly examined parcels in Figure 1–3 on the pages that follow.

Investigations were carried out under Archeological Resources Protection Act (ARPA) Permit No. DACW45-3-21-6036 (see Appendix A) and Permit No. SP-22-008 as issued by the South Dakota State Historical Society, Archaeological Research Center (ARC) (see Appendix B). Personnel from the Archeology Laboratory, Augustana University (Augustana), Sioux Falls, South Dakota completed investigations of the three parcels on September 9, 2022. No cultural resources were documented as a result of the current investigation. No further cultural resources work is recommended for the three investigated parcels.

1.1 Project Scope-of-Work and Investigated Localities

The proposed dump station parcel is presently part of the West Platte GPA. It provides sufficient space for a proposed SDGF&P dump station and parking area intended to enable service for recreational vehicles and enhance access to the GPA. While the actual dump station lot is much smaller (approximately 2 acres), the site work to build a new dump station would require an approximate 5-acre footprint of ground disturbance to prepare the land and install drainfield infrastructure to enable wastewater treatment from the dump station. Anticipated ground disturbance at the proposed dump station parcel includes wildlife mitigation plantings, landform grading, and excavations within the footprints of two 80-foot-by-100-foot drainfield localities and the proposed dump/fish cleaning station (see Section 2.1, below).

In response to recent landslide activity that impacted the SD44 highway corridor, SDDOT is implementing a set of mitigation activities to stabilize the surrounding landscape and reduce the likelihood of future landslides in the area. This portion of the study area is at the edge of the improvements being installed along the highway embankment. Anticipated impacts in this area are primarily expected to be topsoil grading and finishing of stabilization measures (see Section 2.2, below).

The proposed acquisition parcel is private land identified by SDGF&P for consideration to be folded into the existing West Platte GPA. Such actions are uncommon. However, given the unique circumstances of the SD44 Platte-Winner Bridge project and recreational resource impacts/mitigation, this area was incorporated into the study as a proactive measure, taking advantage of the availability of cultural resource professionals to evaluate candidate lands. If acquired, no physical impacts to the land will occur. The property, or portions thereof, will be incorporated into the larger West Platte GPA (see Section 2.3, below).

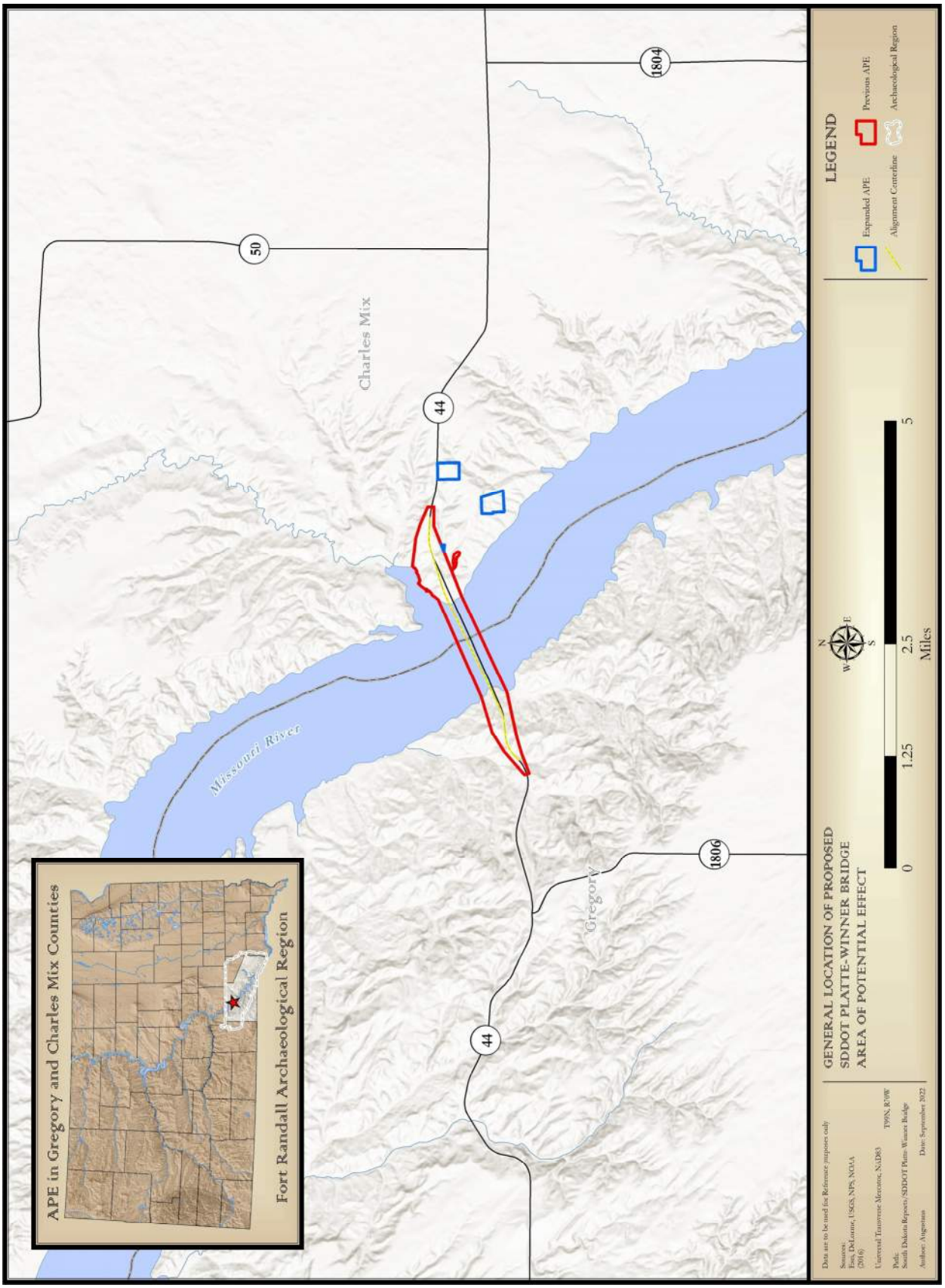

Figure 1. SD Highway 44 Platte-Winner Bridge project area depicting expanded portions of APE in Charles Mix County, South Dakota.

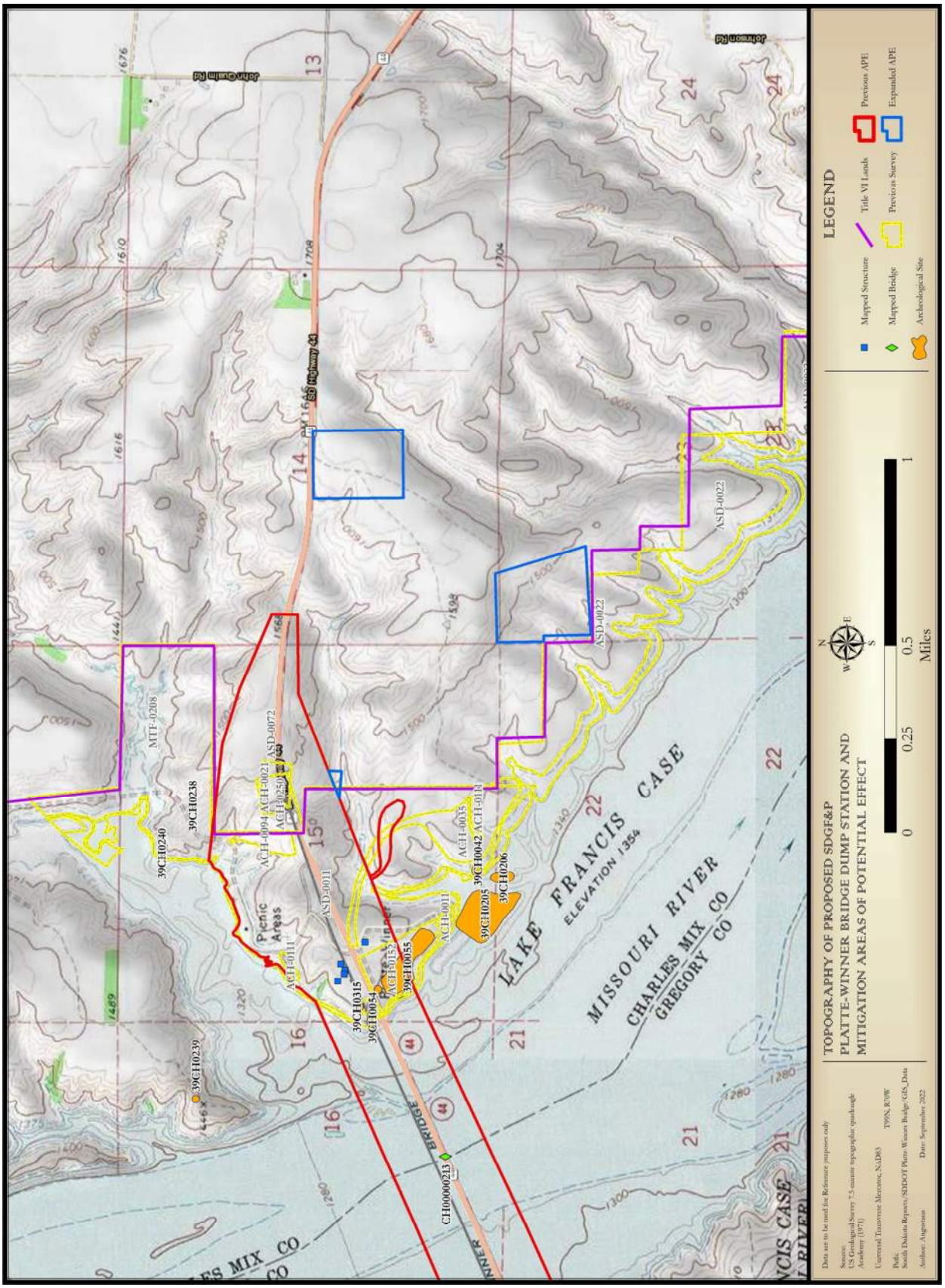

Figure 2. Topography of the expanded APE.

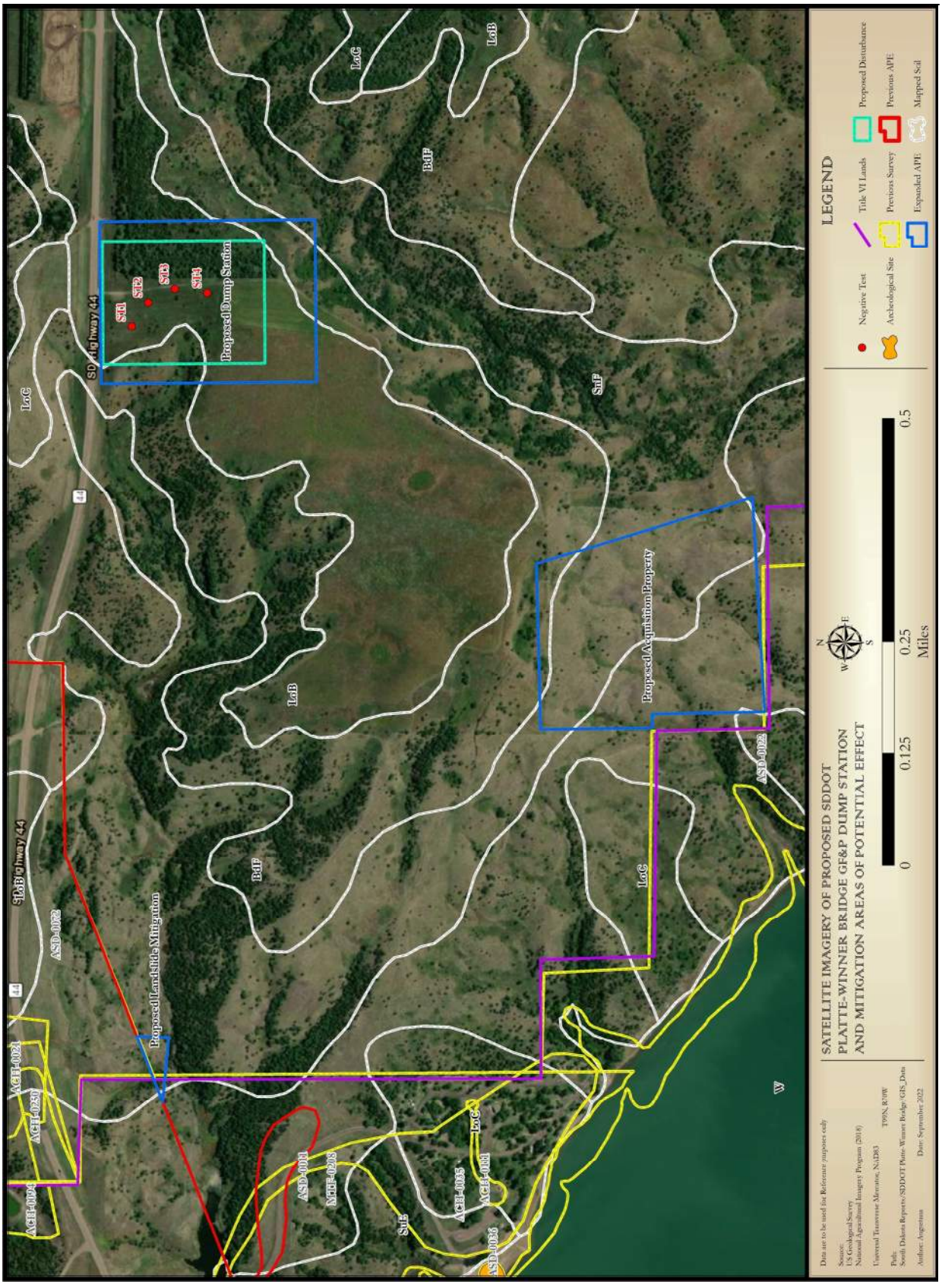

Figure 3. Satellite imagery of the expanded APE.

2.0 ADDITIONAL LEVEL III INVESTIGATIONS

Current investigations were conducted for the dual purpose of assessing the potential for buried archeological deposits in the three parcels comprising the expanded portion of the APE and identifying any cultural resources that might be impacted by the proposed undertaking. The location of the three project parcels, together with accompanying maps and shapefile data, was provided by HR Green, Inc. personnel prior to commencement of field investigations. Archival research was conducted on June 23, 2022, prior to field investigations; formal records search results were provided on this same date by Amber Odom, GIS Specialist, ARC (see Appendix C). A total of 62.66 acres was investigated as part of the current Level III survey. Individual acreage for each of the three parcels, together with narrative descriptions, is provided under the appropriate subheading in the discussion, below.

The Level III investigations in support of the proposed undertaking incorporated surface survey and subsurface testing components that conformed to governing state (SHPO 2021) and federal (Advisory Council on Historic Preservation 2012) standards for the survey, management, and protection of cultural resources. Augustana personnel Aaron J. Mayer, Alexander T. Anton, and Danny R. Kenyon completed on-the-ground investigations of the three parcels on September 9, 2022; researchers were accompanied by Tribal Cultural Resource Monitor Terry Bruguier during field investigations.

The proposed dump station, acquisition, and landslide mitigation parcels were investigated by means of an intensive, Level III pedestrian survey carried-out in the form of parallel, linear transects spaced at approximately 15-meter intervals. Geomorphological evaluations designed to augment the pedestrian survey component varied by individual parcel. In each instance, methodology was formulated through consideration of landform setting, soils data, approximated ground surface visibility, and project scope-of-work for each locality; ARCs shovel testing methodology was adhered to per Permit No. SP-22-008 (see Appendix B). Collectively, geomorphological evaluations incorporated examinations of both published and field-observed soils data (Soil Survey Staff 2022), hand-excavated subsurface tests, inspection of animal burrows and their associated backdirt piles, and documentation of areas of pronounced erosion and/or hillslope gradients.

2.1 Proposed SDGF&P Dump Station Parcel

This parcel is the site chosen by SDGF&P's for relocating their Snake Creek Recreation Area Sanitary Dump and Fish Cleaning Station. It sits atop a prominent upland bluff approximately three-quarter-mile northeast of the Missouri River and immediately adjacent to the existing SD44 corridor. It ranges in elevation from 1,600 to 1,620 feet amsl. The area is presently within the West Platte GPA with access in the form of a maintained, graded two-track extending south into the parcel from the adjacent roadway (Figures 4 and 5; see Figures 2 and 3). The parcel investigated measures 28.06 acres; however, SDGF&P has identified a smaller footprint within which ground disturbing construction activities will be confined. This area of proposed disturbance measures 15.93 acres. Furthermore, it is anticipated that the extent of construction within the parcel will be smaller. All grading, planting, drainfield, roadwork, and dump/fish cleaning station facility work is proposed to be confined to an area measuring approximately 6.52 acres (Figure 6).

Figure 4. Overviews of proposed SDGF&P dump station locality, facing south (left) and southwest (right).

Figure 5. Overviews of proposed SDGF&P dump station locality among sorghum food plot, facing north (left) and near southern end of parcel, facing east-southeast (right).

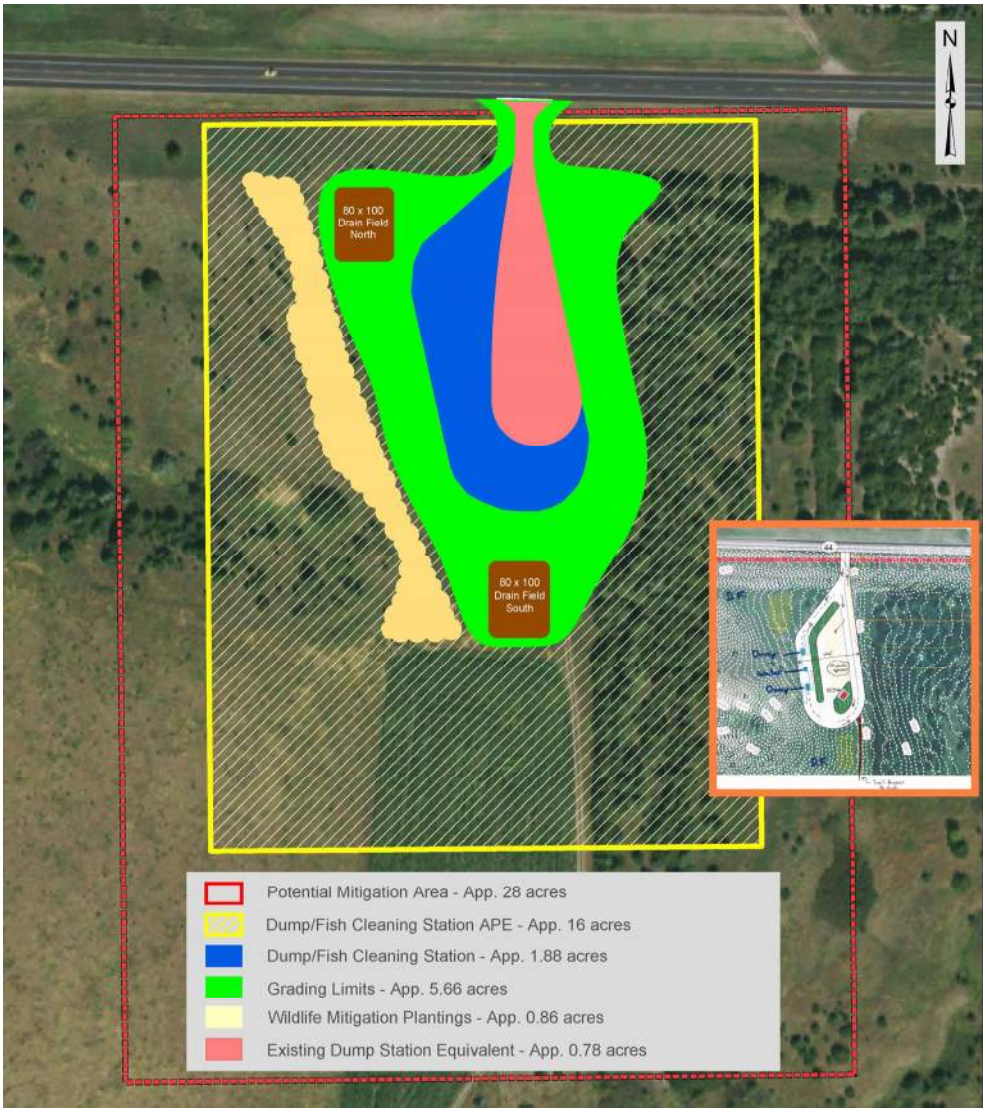

Figure 6. Proposed SDGF&P dump station concept footprint depicting areas of proposed ground disturbance relative to the entirety of the investigated parcel.

Vegetation throughout the parcel consists of a combination of bromegrass and mixed prairie grasses, cedar stands, and a small cultivated plot planted to sorghum. Ground surface visibility varied between 15 and 30 percent throughout the parcel at the time of the investigation; however, visibility averaged approximately 20 percent or less. Noted ground disturbances documented throughout the parcel include road ditch excavation along SD44, the graded two-track, cultivation for the food plot, wind and water erosion, particularly in the areas of steeper relief, and animal burrowing.

Soils in the dump station parcel are predominantly mapped as Lowry silt loam, 3 to 6 percent slopes (map unit *LoB*; see Figure 3). Lowry soils formed in late-Wisconsinan/early Holocene aeolian loess as part of the Oahe Formation originally defined by Clayton (1972) (see Buhta and Mandel 2018:8–9 for more details on the Oahe Formation). A small area in the northwestern corner of the parcel includes soils mapped as Betts-Ethan loams, 15–40 percent slopes (map unit *BdF*; see Figure 3). These soils formed in loamy glacial till on upland ground moraines. Finally, soils in the very southeastern-most corner of the parcel are mapped as Sansarc clay, 6 to 35 percent slopes (map unit *SnF*; see Figure 3). These soils formed in clayey residuum weathered from Pierre Shale. Landform erosion has advanced to such a degree in this area that parachannery clay is typically present beneath a thin surface veneer of clay. Sansarc soils typically exhibit A–C profiles indicative of unstable landforms with little to no soil development. Potential for buried, intact archeology in areas associated with this soil is considered very low and offers little to no potential for buried cultural resources.

Augustana excavated four subsurface shovel tests in the proposed SDGF&P dump station parcel. Testing efforts specifically targeted the area of anticipated ground disturbance as illustrated in Figure 6 (see also Figure 3). Testing was conducted as a means of assessing the validity of mapped soils, exploring the potential for buried cultural resources, compensating for reduced levels of ground surface visibility, and ascertaining the relative thickness of topsoil development and the extent to which erosion has impacted the locality. Tests were designated Subsurface Tests 1–4 (ST1–ST4); all yielded no cultural resources. Soils profiled in the tests correspond with those mapped in the area (Soil Survey Staff 2022) and revealed sterile subsoil deposits at shallow depths of between 14 and 24 cmbs (Figure 7; Table 1).

Table 1. Soil Profiles of Subsurface Tests 1–4, Proposed SDGF&P Dump Station.

Test No.	Test Diameter (cm)	Mapped Soil (Map Unit) and Geomorphological Correlate	Horizon Depth (cmbs)	Horizon Munsell Results	Cultural Resources
1	40	Lowry silt loam, 3 to 6 percent slopes (LoB)	0-17 (A)	Brown (10YR 4/3) silty loam, fine subangular blocky structure, dry, friable, very few small pebbles, very compact, gradual boundary	Negative
		Oahe Formation Loess	17-44 (B)	Grayish brown (10YR 5/2), silty loam, fine subangular blocky structure, dry, friable, very few small pebbles, calcium carbonate concentrations 30-40 cmbs-<1 mm in size, impenetrable hardpan encountered at 40 cmbs	
2	50	Lowry silt loam, 3 to 6 percent slopes (LoB)	0-12 (A1)	Dark grayish brown (10YR 4/2) silt loam, platy structure, dry, moderately hard, clear boundary	Negative
		Oahe Formation Loess	12-24 (A2)	Dark grayish brown (10YR 4/2) silt loam, prismatic parting to medium granular structure, dry, slightly hard, clear boundary	
			24-33 (Bw)	Dark grayish brown (10YR 4/2) silt loam, fine granular structure, dry, friable, hard, impenetrable hardpan encountered at 33 cmbs	
3	40	Lowry silt loam, 3 to 6 percent slopes (LoB)	0-14 (A)	Brown (10YR 4/3) silty loam, fine subangular blocky structure, dry, friable, very few small pebbles, very compact, gradual boundary	Negative
		Oahe Formation Loess	14-42 (B)	Grayish brown (10YR 5/2) silty loam, fine subangular blocky structure, dry, friable, very few small pebbles, calcium carbonate concentrations 30-40 cmbs-<1 mm in size, impenetrable hardpan encountered at 40 cmbs	
4	40	Lowry silt loam, 3 to 6 percent slopes (LoB)	0-15 (A)	Brown (10YR 4/3) silty loam, fine subangular blocky structure, dry, friable, very few small pebbles, very compact, gradual boundary	Negative
		Oahe Formation Loess	15-44 (B)	Dark grayish brown (10YR 4/2) silty loam, fine subangular blocky structure, dry, friable, very few small pebbles, calcium carbonate concentrations 30-40 cmbs-<1 mm in size, impenetrable hardpan encountered at 40 cmbs	

Figure 7. Close-up of Subsurface Tests 1–4, Proposed SDGF&P dump station. Tests are depicted numerically from top left to bottom right.

2.2 Proposed Landslide Mitigation Parcel

This parcel is the site of a proposed landslide mitigation project. It is located on an eroded hillslope in the Missouri River breaks approximately 200 meters south of the existing SD44 corridor. It is a steeply sloping setting along an upland drainageway with elevations ranging from 1,470 to 1,450 feet amsl. The area is predominantly confined to private property; however, a small portion at the westernmost end of the parcel lies within Title VI lands that are presently part of the SDGF&P-administered Snake Creek Recreation Area (Figures 8 and 9; see Figures 2 and 3). The parcel investigated measures 0.83 acre.

Vegetation throughout the parcel consists of a combination of bromegrass, mixed prairie grasses, and forbs. Ground surface visibility averaged approximately 35 percent in the parcel at the time of the investigation. Ground disturbance documented throughout the parcel is both extensive and severe; it is largely a product of extensive wind and water erosion due to the steep relief and erodible nature of the soil mapped there. However, a formerly graded area, likely an abandoned dirt roadway, passed through the parcel (see Figure 8). Some minor animal burrowing was also noted.

Soils in the landslide mitigation parcel are mapped, almost entirely, as Sansarc clay, 6 to 35 percent slopes (map unit *SnF*); a very small area at the west end of the parcel is mapped as Sansarc-Boyd complex, 15 to 40 percent slopes (map unit *SoF*; see Figure 3). Both Sansarc and Boyd soils formed in clayey residuum weathered from Pierre Shale. Approximately 30 percent of soils in this complex are Boyd. Landform erosion has advanced to such a degree in this area that parachannery clay is typically present beneath a thin surface veneer of clay in the Sansarc series. Sansarc soils typically exhibit A–C profiles indicative of unstable landforms with little to no soil development. Boyd series soils are more stable and typically exhibit some degree of intact B-horizon. The steeply sloping setting and advanced state of erosion observed strongly suggest that Sansarc is the predominant soil series present throughout the parcel. Potential for intact, buried

archeology in areas associated with Sansarc soils is considered very low; the area offers no potential for buried cultural resources. The steeply sloping landform, ample ground surface visibility, and heavily deflated nature of the soils comprising the parcel obviated the need for augmentative subsurface testing in this area.

Figure 8. Overview of proposed landslide mitigation locality depicting part of graded area in right foreground, facing south-southwest.

Figure 9. Close-up of detached slump block depicting Pierre shale residuum (left) and subsoil exposed on ground surface illustrating the extent to which erosion has impacted the parcel (right).

2.3 Proposed SDGF&P Acquisition Parcel

This parcel, currently under private ownership, is targeted for potential acquisition by SDGF&P as a means of replacing the game production area acreage lost in the relocation of the Snake Creek Recreation Area dump and fish cleaning station (see Section 2.1, above). It is located in the Missouri River breaks approximately 300 meters northeast of the shores of Lake Francis Case. It is a steeply sloping setting with pronounced relief; elevations range from 1,590 to 1,450 feet amsl. The area was utilized as livestock pasture previously; however, it is unclear whether it still serves this purpose (Figure 10; see Figures 2 and 3). The parcel is the largest of the three investigated, measuring 33.77 acres.

Vegetation throughout the parcel consists of a combination of bromegrass, mixed prairie grasses, and forbs. Ground surface visibility varied between 10 and 100 percent throughout the parcel, but averaged approximately 30 percent at

the time of the investigation. Ground disturbance documented throughout the parcel is both extensive and severe. Similar to the landslide mitigation parcel, disturbance throughout this area is largely a product of extensive wind and water erosion due to the steep relief and erodible nature of the soil mapped there. Additionally, evidence of animal burrowing is pervasive throughout the parcel (Figure 11).

Figure 10. Overview of proposed SDGF&P acquisition locality, facing southwest.

Figure 11. Examples of ground disturbance documented throughout the acquisition parcel. Depictions include animal burrows and backdirt mounds comprised of Pierre shale parent material (left) and denuded ridgelines with exposed parent material on ground surface (right).

Soils in the landslide mitigation parcel are mapped, almost entirely, as Sansarc clay, 6 to 35 percent slopes (map unit *SnF*) and Sansarc-Boyd complex, 15 to 40 percent slopes (map unit *SoF*; see Figure 3). A small area at the north end of the parcel is mapped as Betts-Ethan loams, 15 to 40 percent slopes (map unit *BdF*). The Betts and Ethan soils formed in loamy glacial till on upland ground moraines; these soils are confined to the steep slopes immediately below the bluff edge. Both Sansarc and Boyd soils formed in clayey residuum weathered from Pierre Shale. Approximately 30 percent of soils in this complex are Boyd. Landform erosion has advanced to such a degree in this area that parachannery clay is typically present beneath a thin surface veneer of clay in the Sansarc series. Sansarc soils typically exhibit A–C profiles indicative of unstable landforms with little to no soil development. Boyd series soils are more stable and typically exhibit some degree of intact B-horizon. The steeply sloping setting and advanced state of erosion observed strongly suggest that Sansarc is the predominant soil series present throughout the parcel. Potential for intact, buried archeology in areas associated with Sansarc series soils is considered very low; the area offers little to no potential for buried cultural resources. As a means of augmenting the pedestrian investigation, Augustana personnel inspected numerous animal burrows and backdirt mounds, as well as deflated ridges in the parcel. This examination revealed the presence of Pierre shale parent material in surface-exposed contexts across the majority of the property.

3.0 REPORT SUMMARY AND RECOMMENDATIONS

On September 9, 2022, Augustana personnel completed a Level III cultural resources investigation of three separate parcels incorporated into the larger APE of the SD Highway 44 Platte-Winner Bridge Corridor Study and Environmental Assessment project. A total of 62.66 acres was investigated as part of the current study. Field personnel were accompanied by Tribal Cultural Resources Monitor Terry Bruguier during the survey. Investigations were carried out under ARPA Permit No. DACW45-3-21-6036 (see Appendix A) and Permit No. SP-22-008 as issued by ARC (see Appendix B).

No cultural resources were identified during the investigation. An evaluation of published soils data (Soil Survey Staff 2022), 1-m LiDAR data, on-the-ground observations, and results from profiled subsurface tests, animal burrows, and erosional exposures reveal a steeply sloping, highly erodible landscape setting in an advanced state of deflation. Such settings typically possess little to no potential for harboring intact, buried cultural resources. The general, regional project area, in close proximity to the Missouri River trench, suggests a setting with elevated precontact archeological site potential. However, in the investigated parcels, the steeply sloping landscape coupled with strong geomorphological evidence suggests a project setting with more limited site potential. This evidence is further supported by data from previous cultural resource investigations and documented archeological sites in the vicinity. Previously documented site data relative to prior cultural resources investigations reveals a clear trend in the location of the majority of precontact sites either immediately adjacent to the river trench or along tributary valleys near the river confluence (see Buhta and Mandel 2018:12–13).

The negative results of the current Level III investigation, coupled with supporting soils and geomorphological evidence and the results of numerous prior investigations and documented site localities, suggest a setting unlikely to harbor intact cultural resources of historic significance. Augustana recommends no further cultural resources work for the three investigated parcels.

Although the unintentional discovery of isolated buried cultural features, such as burials, hearths, or pits, within the three expanded parcels comprising the APE is considered unlikely, this does not preclude such features from being uncovered during the course of construction activities. In the event that such an incident occurs, the South Dakota SHPO should be notified.

4.0 ATTACHMENTS

- Appendix A: Archeological Resource Protection Act Permit
- Appendix B: South Dakota State Historical Society, Archaeological Research Center Permit
- Appendix C: Records Search Results

5.0 REFERENCES CITED

Advisory Council on Historic Preservation
2012 Section 106 Regulations: Text of ACHP's Regulations, "Protection of Historic Properties" (36 CFR Part 800) (incorporates amendments effective August 5, 2004). Electronic document, http://www.achp.gov/regs-rev04.pdf, accessed October 1, 2012. Advisory Council on Historic Preservation, Washington, DC.

Anton, Alexander T.
2021 *Cultural Resources Monitoring of Geotechnical Bore Localities for the South Dakota Department of Transportation's Proposed SD Highway 44 Platte-Winner Bridge Corridor Study and Environmental Assessment, Charles Mix and Gregory Counties, South Dakota*. Archeological Contract Series 297c. Archeology Laboratory, Augustana University, Sioux Falls, South Dakota.

Buhta, Austin A., and Rolfe D. Mandel
2018 *A Level III Cultural Resources Investigation and Geoarcheological Evaluation of South Dakota Department of Transportation's Proposed SD Highway 44 Platte-Winner Bridge Corridor Study and Environmental Assessment, Charles Mix and Gregory Counties, South Dakota*. Archeological Contract Series 297. Archeology Laboratory, Augustana University, Sioux Falls, South Dakota.
2019a *A Level III Cultural Resources Investigation and Geoarcheological Evaluation of South Dakota Department of Transportation's Proposed SD Highway 44 Platte-Winner Bridge Corridor Study and Environmental Assessment, Charles Mix and Gregory Counties, South Dakota: Addendum 1*. Archeological Contract Series 297a. Archeology Laboratory, Augustana University, Sioux Falls, South Dakota.
2019b *A Level III Cultural Resources Investigation and Geoarcheological Evaluation of South Dakota Department of Transportation's Proposed SD Highway 44 Platte-Winner Bridge Corridor Study and Environmental Assessment, Charles Mix and Gregory Counties, South Dakota: Addendum 2*. Archeological Contract Series 297b. Archeology Laboratory, Augustana University, Sioux Falls, South Dakota.

Clayton, L.
1972 *Roadlog*. Miscellaneous Series No. 50. North Dakota Geological Survey, Grand Forks, North Dakota.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture
2022 Web Soil Survey. Electronic document, http://websoilsurvey.sc.egov.usda.gov/, accessed June 23, 2022.

South Dakota State Historical Society, State Historic Preservation Office (SHPO)
2021 *South Dakota Guidelines for Complying with Federal and State Preservation Laws*. South Dakota State Historical Society, Cultural Heritage Center, Pierre, South Dakota.

United States Congress
1999 Water Resources Development Act of 1999. Electronic document, https://www.govinfo.gov/app/details/PLAW-106publ53, accessed June 23, 2022.

APPENDIX A

Archeological Resources Protection Act Permit

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
1616 CAPITOL AVENUE
OMAHA NE 68102-4901

REPLY TO
ATTENTION OF
REAL ESTATE DIVISION

August 30, 2022

SUBJECT: Fort Randall Project, South Dakota, Permit No. DACW45-3-21-6036, Augustana University, Archelogy Laboratory

Augustana University, Archelogy Laboratory
ATTN: Austin Buhta
2032 South Garage Avenue
Sioux Falls, South Dakota 57105

Dear Mr. Buhta:

By direction of the District Engineer, Condition No. 5 of subject permit is hereby amended to include Exhibit "B" and "C" situated within the Fort Randall Project Boundary. Except as amended above, all other provisions and conditions of said permit shall remain in full force and effect. Please carry a copy of the subject permit along with this letter when working on Project Lands.

In accordance with Special Conditions h. and j. of the Permit, it is required that the Fort Randall Project Archeologist, Mr. Bill Chada, and the Omaha District Archeologist, Ms. Sandra Barnum, be contacted prior to the commencement of any fieldwork. You may contact Mr. Chada by mail at the Fort Randall Project Office, 399 Powerhouse Road (P.O. Box 199), Pickstown, South Dakota 57367, or by telephone (605) 487-7845, email bill.r.chada@usace.army.mil and Ms. Barnum by mail at the Omaha District Office, 1616 Capitol Avenue, Omaha, Nebraska 68102, or by telephone (402) 995-2674, email sandra.v.barnum@usace.army.mil. Please ensure that individuals conducting the field work carry a copy of the permit, a copy of this letter and any subsequent amendments to the permit while working on Project lands.

If you have any questions, please write to me at the above address or telephone Katie Bullard of my staff at (402) 995-2838 or by email Katelyn.M.Bullard@usace.army.mil.

Sincerely,

Ryan Vaughan

Ryan J. Vaughan
Civil Branch Chief, Real Estate Division
Real Estate Contracting Officer

Enclosures

Dump Station:
Alternative "A"

3

Dump Station:
Alternative "B"

SD HWY 44

1

2

Access Trail

EXHIBIT “B” ATTACHED TO AND MADE A PART OF DACW45-3-21-6036

Legend

- Dump Station Alternative A
- Dump Station Alternative B
- Recommended Alternative
- Study Area (APE)
- West Platte Game Production Area
- Cultural Resource Concern
- South Campground
- North Campground
- Existing Dump Station
- Fishing Pond
- Maintenance Shop
- Scenic Overlook
- Boat Ramp Parking
- Park Manager Residence
- Snake Creek Recreation Area

SD DOT

HRGreen

N

0 350 700 Feet

\\hrgreen.com\HRG\Data\2016\160025\Design\GIS\MXD\map-working-Dump_Station_Figure_1.mxd

SD HWY 44

Alternative B Design Concept

EXHIBIT "C" ATTACHED TO AND MADE A PART OF DACW45-3-21-6036

Legend

- Dump Station Alternative B
- West Platte Game Production Area

SD DOT

HRGreen

0 200 400 Feet

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APPENDIX B

South Dakota State Historical Society, Archaeological Research Center Permit

south dakota
STATE HISTORICAL SOCIETY
DEPARTMENT OF EDUCATION

July 19, 2022

Aaron J. Mayer
Archaeology Laboratory, Augustana University
2032 S. Grange Ave
Sioux Falls, SD 57105

RE: Request for State Permit under the Archaeological Exploration Act (SDCL 1-20) and the Cemetery and Burial Records Act (SDCL 34-27) to conduct cultural resources survey and limited testing on State Owned Lands within Charles Mix County for the 2022 calendar year.

Dear Mr. Mayer:

The Archaeological Research Center (ARC), a program of the South Dakota State Historical Society, has received your request for a state permit to conduct survey and limited testing on State Owned Lands (South Dakota Game, Fish & Parks) in Charles Mix County in Sections 14, 15, and 23, T99N R70W on the USGS 7.5' Academy Quadrangle.

Please consider this letter as your notice to proceed under Permit No. **SP-22-008** under SDCL 1-20 and SDCL 34-27 with the following stipulations:

1. In general, exposed cultural materials should be delineated through use of hand-excavated shovel tests for the purposes of site boundary identification. Further, positive shovel tests should also be delineated. If it is not feasible to delineate exposed cultural materials or positive subsurface tests as part of the current project, appropriate recommendations for avoidance of cultural materials or positive tests should be provided.
    a. ARC's shovel testing methodology should be followed (see Attachment 1).
2. All diagnostic surface artifacts and any subsurface artifacts recovered are to be collected for curation at the ARC, per your curation agreement provided by the ARC Repository Manager.
3. Should any archaeological features be identified, you are authorized as Principal Investigator to recover data and to address the features archaeologically at your discretion. However, please contact this office if this occurs.
4. Please send a copy of the draft report for this office to review. Upon receipt we will have 15 business days to review and comment.

5. Per SDCL 1-20-33, once a final draft of the report is complete, the following information must be provided to the ARC by mail, either on a DVD or flash drive. We no longer accept emailed submittals of digital data:
    a. Final Report, including all appendices and site forms: hard color copy and compiled into single pdf (unprotected version of the pdf, please, as we add the Report Archive number to this document)
    b. Final Site Forms, as a separate set of hard color copies
    c. Table cross-referencing field site numbers and Smithsonian site numbers
    d. Shapefiles for final site boundaries in NAD83 UTM Coordinate System.
        i. Newly recorded sites should either be in separate shapefiles or clearly delineated as "new site" in the attribute table.
    e. Site Boundary Modification Form and shapefile, as needed, for recommended changes to the boundary of previously recorded sites on state and private lands; this form is optional for site boundary changes on Federal and Tribal lands.
    f. Final Shapefile(s) for survey/project boundary
    g. Accessioned collections and documentation

Thank you for your continued support in the identification and protection of the cultural resources of South Dakota. Please reach out with any questions or concerns.

Sincerely,

Cassie Vogt, MS
Senior Archaeologist
605.209.1443
Cassie.Vogt@state.sd.us

Attachment 1. ARC Shovel Testing Methodology

- Testing should cover all deposits that may date to the period of human occupation. Generally, this means that test units extend down to culturally sterile soils, bedrock, or glacial till, depending on the vertical APE.
- Discretion should be used when employing shovel testing at a known or newly recorded site so as not to alter the site's known or potential integrity (i.e. refrain from "swiss cheesing" the site).
- Shovel tests are typically excavated to a depth of at least 50 centimeters below surface (cmbs), regardless of the depth of culturally sterile soil or unless an impasse (i.e., tree roots, bedrock) is encountered at a shallower depth. Depending on the presence of cultural material, landscape, setting, or other factors, shovel tests may be excavated deeper than 50 cmbs.
- Shovel tests are generally circular, unless otherwise decided, and should be 40–50 cm in diameter. Tests should be excavated in controlled, 10 cm levels (0-10 cmbs, 10-20 cmbs, etc.). By nature, shovel tests must be hand excavated with all contents screened through at least ¼ inch mesh. Auger tests will not be accepted.
- If cultural material is encountered to a depth where shovel testing is no longer feasible, the test may be expanded to a larger test unit, or additional testing strategies may be required.
- Soil data and photographic evidence should be collected for all shovel tests.
    - For all soil profiles, describe at minimum the soil Munsell color, texture, and depth of each stratum.
    - Each shovel test should be photographed with a north arrow and scale in both plan and profile views. If necessary, the test should be shaded to prevent wash-out from excessive sunlight. Overview photos of the general area are also useful.

APPENDIX C

Records Search Results

Snake Creek Recreation Area Sanitary Dump and Fish Cleaning Station, Charles Mix County			
A.Odom 06/23/2022			
Within a 1 Mile Radius			
Sites			
Site No.	**Description**	**NR Status Recommended**	**SHPO Determination**
39CH0042	american indian burial	Not eligible	Not eligible
39CH0054	american indian burial, prehistoric artifact scatter	Not eligible	Unevaluated
39CH0055	american indian burial, prehistoric artifact scatter	Not eligible	Unevaluated
39CH0205	init. middle mo. earthlodge village	Unevaluated	
39CH0206	american indian village	Unevaluated	
39CH0238	american indian artifact scatter	Unevaluated	
39CH0240	prehistoric artifact scatter	Unevaluated	
39CH0315	prehistoric artifact scatter	Unevaluated	
39CH0316	prehistoric artifact scatter	Unevaluated	
Surveys			
Archive No	**Author(s)**	**Year**	**Report Title**
ACH-0011	Nowak, Timothy	1983	Archeological Testing Within the Snake Creek Recreation Area, Lake Francis Case, Charles Mix County, South Dakota. Cost-Share Lakeshore Development Contract
ACH-0021	Flemmer, Dan	1988	An Intensive Cultural Resources Survey of the Proposed Slide Repair in Section 15, T99N, R70W, Charles Mix County, South Dakota. SDDOT Project No. F 0044(67)292 PCEMS 1254. CIS No. 436
ACH-0035	Shierts, Brenda A.	1995	An Intensive Cultural Resource Survey of the Proposed Construction Impacts of the Snake Creek Recreation Area, Charles Mix County, South Dakota, SDDOT/SDGF&P Project PCEMS 3842. CIS No. 1338
ACH-0094	Molyneaux, Brian	2003	A Cultural Resource Assessment of Sewage Lagoon System Expansion, T99N, R70W, Section 15, Snake Creek Recreation Area, Charles Mix County, South Dakota
ACH-0111	Holst, David	2005	Intensive Cultural Resources Survey of Proposed Park Improvements at Snake Creek (Recreation) Area, Charles Mix County, South Dakota. CIS No. 1969

ACH-0152	Carpenter, Mark	2008	Level III Cultural Resources Inventory South Dakota Game, Fish & Parks Snake Creek Campground 2008 Electrical Improvements, T99N, R70W, Section 15, Charles Mix County, South Dakota. QSI Project No. SD0808. COE Permit No. DACW45-3-07-6023
ACH-0178	Donohue, James	2011	An Intensive Cultural Resources Survey of the Proposed Platt-Winner Bridge ESS Tower Site, Charles Mix County, South Dakota. CIS No. 2564
ACH-0250	Lloyd, Dustin	2020	An Intensive Cultural Resources Survey for SDDOT Project Snake Creek Slide Area, Charles Mix County, South Dakota. CIS No. 3925
ASD-0011	Clark, Andrew, Ned Hanenberger, James Haug, Adrienne Kerst, Sarah Laundry, Erin Bradley, Terri Bruce, Dave Nonnast, Dave Holst, Roger Williams, Paul V. Miller, Peter Metzger, Rose Fosha, Andrew Martin, and Jason Goldbach	2008	An Intensive Cultural Resource Survey of Title VI Lands, Located along Lewis & Clark Lake, Lake Sharpe, Lake Francis Case, and Lake Oahe, Transferred to the SD Dept of GFP, Division of Parks & Rec from the US Army COE. Volume III: Francis Case; Ft Randall
ASD-0022	Clark, Andrew, Katherine Lamie, Carey Priebe, Matthew D. Busch, Sarah Laundry, Adrienne Kerst, Roger Williams, Rose Fosha, Juanita Short, Sheena Harms, David Williams, Ned Hanenberger, and Andrew Martin	2010	An Intensive Cultural Resource Survey of Selected Title VI Lands Located Along Lewis and Clark Lake, Lake Francis Case, Lake Sharpe, and the Oahe Reservoir in South Dakota. Volume III: Lake Francis Case, Fort Randall Dam. CIS No. 2408
ASD-0036	Clark, Andrew, Matthew Busch, Laura Bender, Richard E. Berg, Katie Lamie, Roger Williams, Laura Clark, Laura Mounce, and Adam Wiewel	2016	Archaeological Site Damage Assessment Related to the 2011 Missouri River Flooding. Appendices B-H: Assessment Reports. Contract No. W9128F-12-C-0087
ASD-0072	Buhta, Austin A., and Rolfe D. Mandel	2019	A Level III Cultural Resources Investigation and Geoarchaeological Evaluation of South Dakota Department of Transporation's Proposed SD Highay 44 Platte-Winner Bridge Corridor Study and Environmental Assessment, Charles Mix and Gregory Counties, SD
MTF-0208	Olson, Gary D. Dr., and Dr. Larry J. Zimmerman	1979	A Cultural Resources Reconnaissance of the Federal Lands on the East Bank of Lake Francis Case, SD, Volumes 1 and 2. An Archaeological, Historical & Ecological Reconnaissance of the Missouri River/Lake Francis Case Reservoir. Contract DACW45-78-C-0018
Structures			
SHPO ID	**Category**	**Eligibility**	**NR Status**
CH00500001		Not Eligible	
CH00500002		Not Eligible	
CH00500003		Not Eligible	
CH00500004		Not Eligible	
CH00500005		Not Eligible	

Appendix D: Environmental Justice Report

EJSCREEN Report (Version 2019)

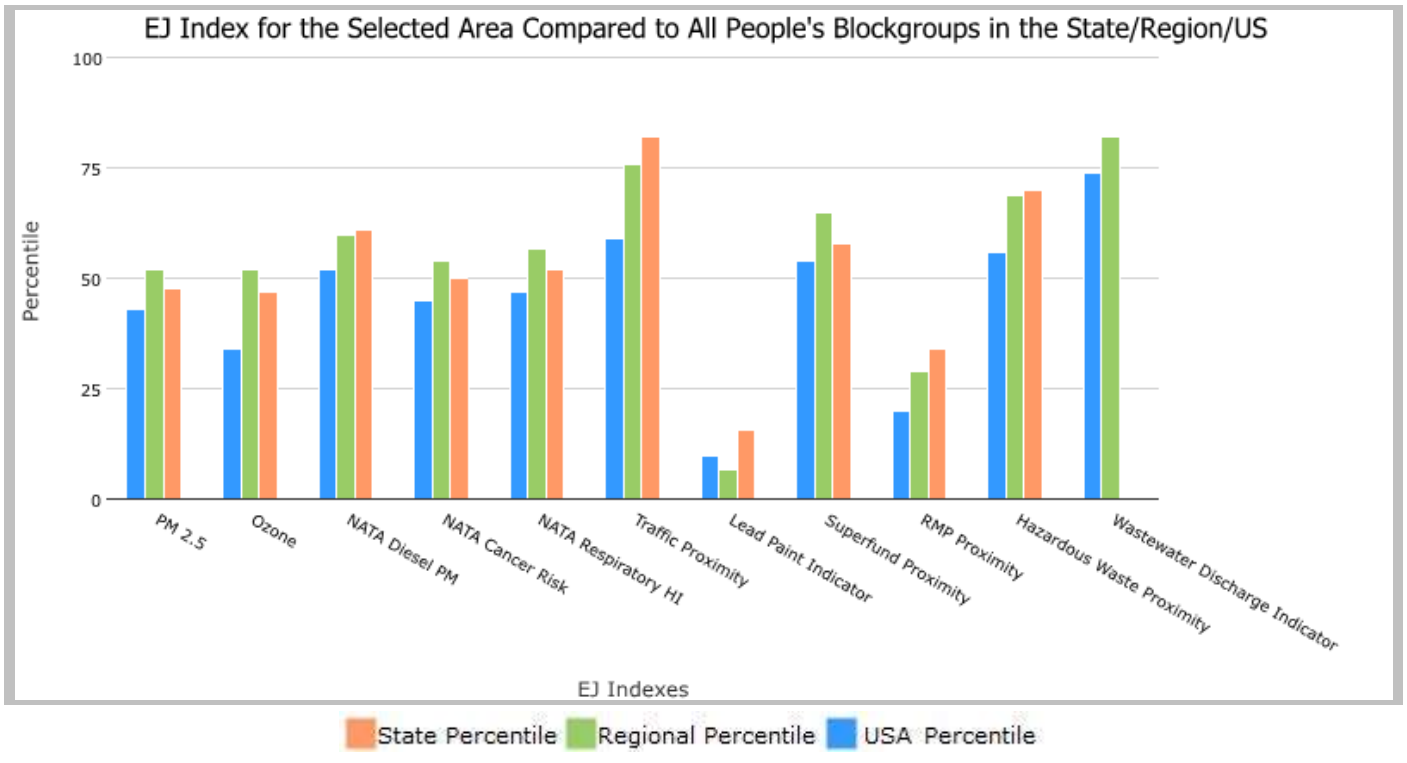
the User Specified Area, SOUTH DAKOTA, EPA Region 8

Approximate Population: 6

Input Area (sq. miles): 36.92

SD 44 Bridge

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	48	52	43
EJ Index for Ozone	47	52	34
EJ Index for NATA* Diesel PM	61	60	52
EJ Index for NATA* Air Toxics Cancer Risk	50	54	45
EJ Index for NATA* Respiratory Hazard Index	52	57	47
EJ Index for Traffic Proximity and Volume	82	76	59
EJ Index for Lead Paint Indicator	16	7	10
EJ Index for Superfund Proximity	58	65	54
EJ Index for RMP Proximity	34	29	20
EJ Index for Hazardous Waste Proximity	70	69	56
EJ Index for Wastewater Discharge Indicator	N/A	82	74



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

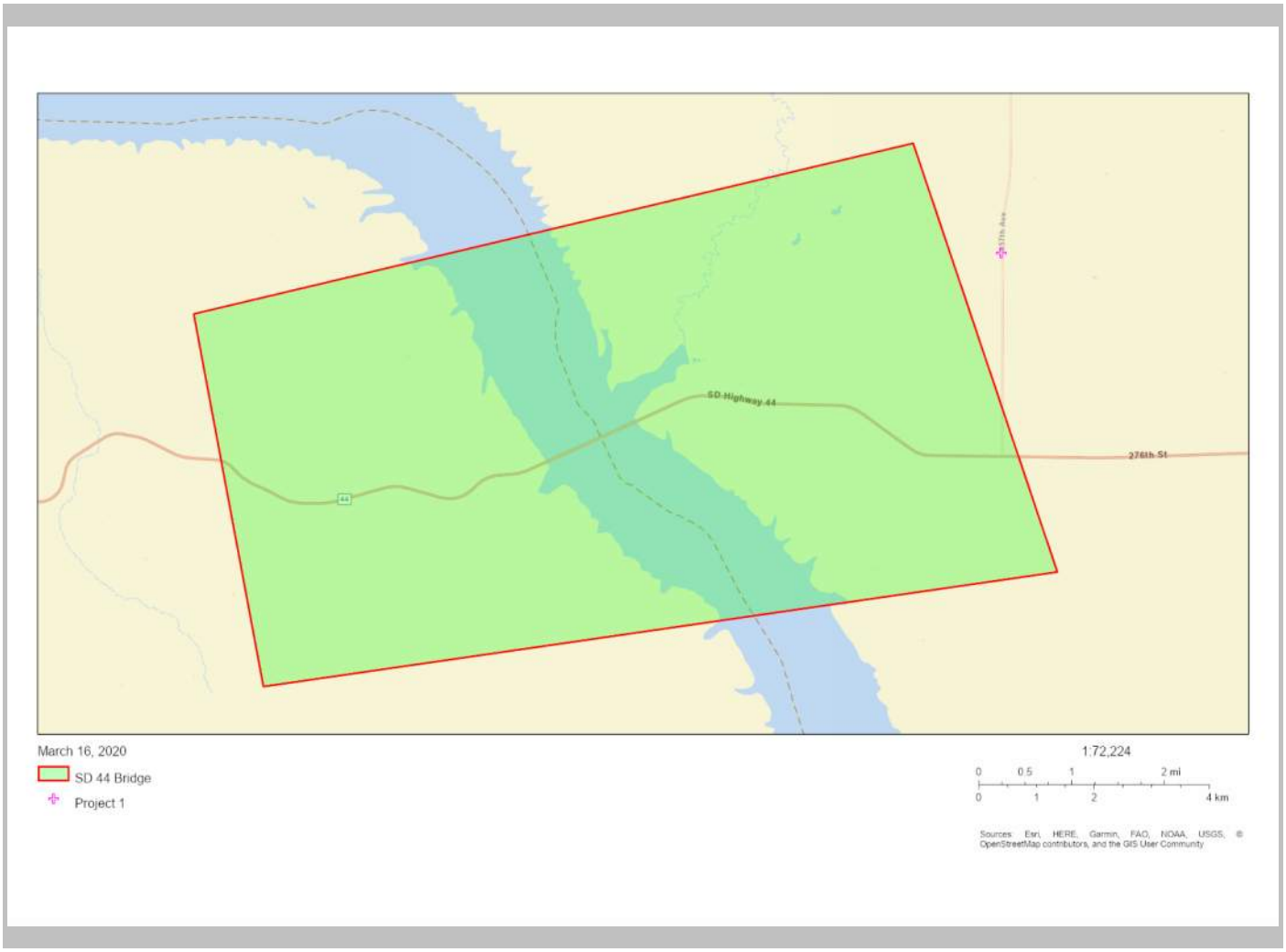
EJSCREEN Report (Version 2019)

the User Specified Area, SOUTH DAKOTA, EPA Region 8

Approximate Population: 6

Input Area (sq. miles): 36.92

SD 44 Bridge



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

EJSCREEN Report (Version 2019)

the User Specified Area, SOUTH DAKOTA, EPA Region 8

Approximate Population: 6

Input Area (sq. miles): 36.92

SD 44 Bridge

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m^3)	5.03	5.31	37	6.4	21	8.3	1
Ozone (ppb)	41.9	42.1	33	49.2	15	43	38
NATA* Diesel PM (µg/m^3)	0.0662	0.191	20	0.423	<50th	0.479	<50th
NATA* Cancer Risk (lifetime risk per million)	15	18	21	23	<50th	32	<50th
NATA* Respiratory Hazard Index	0.17	0.23	19	0.31	<50th	0.44	<50th
Traffic Proximity and Volume (daily traffic count/distance to road)	0	190	5	460	2	750	4
Lead Paint Indicator (% Pre-1960 Housing)	0.51	0.32	77	0.22	85	0.28	77
Superfund Proximity (site count/km distance)	0.0054	0.023	24	0.11	9	0.13	1
RMP Proximity (facility count/km distance)	0.48	0.61	67	0.62	63	0.74	59
Hazardous Waste Proximity (facility count/km distance)	0.013	0.4	13	0.63	6	4	0
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0	56	N/A	80	35	14	37
Demographic Indicators							
Demographic Index	15%	24%	37	26%	28	36%	19
Minority Population	4%	17%	19	24%	7	39%	9
Low Income Population	26%	32%	45	29%	51	33%	44
Linguistically Isolated Population	1%	1%	79	2%	66	4%	52
Population With Less Than High School Education	4%	9%	31	8%	41	13%	25
Population Under 5 years of age	3%	7%	16	7%	18	6%	23
Population over 64 years of age	24%	15%	85	13%	90	15%	87

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice

Appendix E: Leaking Underground Storage Tank Records

SD SPILL REPORT FORM **DEPARTMENT of ENVIRONMENT and NATURAL RESOURCES**

State Case No _____ 1. Case No 96.151

2 Reported (mm/dd/yr) 5-30-96 | 3 Time 11:30 am | Recorded By Kristi Honeywell

4 ☐ Through NRC | 5 NRC Case No

A. REPORTER

6 Reported By Kristi Honeywell

7 Organization Name SD DENR

8 Organization ☐ 9 discharger ☐ 10 public ☑ 11 state ☐ 12 local ☐ 13 federal

14 Address

15 City | 16 County | 17 State

18 Zip | 19 Phone ( )

B. DISCHARGER (Responsible Party)

20 ☐ As Above on A if 9 applies | 21 Name SD Game, Fish, & Parks (Contact = Dennis Willian

22 Address 523 E Capital

23 City Pierre | 24 County Hughes | 25 State SD

26 Zip 57501 | 27 Phone ( )

C. INCIDENT LOCATION

28 ☐ As Above on B | 29 Street or Approx Location Snake Creek Recreation Area

Survey Description ___ ___ Sec ___ T ___ R ___

30 City Platte | 31 County Charles Mix | 32 State SD

D. DATE

33 Spill Date (mm/dd/yr) 4-25-96 | 34 Spill Time

E. MATERIAL

Material Type (Code/Name)	☐ Hazardous substance ☐ oil ☐ other	35 Material Unknown	CAS/ DOT No	CAS No	CHRIS Code	Quantity Spilled	Q. Spilled in water	Units (Circle 1)
36 gas			37	38	39	40		41 lb bbl gal oth
42			43	44	45	46		47 lb bbl gal oth
48			49	50	51	52		53 lb bbl gal oth

F. SOURCE

Source of Spill ☐ 54 highway ☐ 55 air transport ☐ 56 railroad ☐ 57 vessel ☑ 58 fixed facility ☐ 59 pipeline ☐ 60 offshore | 61 Vehicle ID or Carrier No

62 Description

G. MED

Medium Affected ☐ 63 air ☑ 64 land ☐ 65 water ☐ 66 groundwater ☐ 67 within facility only

68 Waterways Affected | Waterbody Code ☐☐☐

H. CAUSE

Reported Cause ☐ 69 transportation accident ☑ 70 equipment failure ☐ 71 operational error ☐ 72 natural phenomenon ☐ 73 dumping ☐ 74 unknown ☐ 75 other

76 Description leaking product lines

I. DAMAGES

77 no of injuries ___ | 78 no of deaths ___ | ☐ 79 property damage > $50,000

J. ACTIONS

80 ☐ Evacuation | 81 Response Action Taken excavation, tank removal

K. NOTIFIED

Caller Has Notified ☐ 82 state local ☐ 83 discharger ☐ 84 USCG ☐ 85 other ☐ 86 unknown

Agency Name

L. COMMENTS

87 Comments during removal of tanks (UST's) contamination was encountered. Removed approximately 300 yds. ☐ Additional Information

M. REGIONAL DATA FIELDS

Responding Agency ☐ state ☐ local ☐ discharger ☐ federal ☐ EPA ☐ unknown

Agency Name

Agencies Notified by EPA

Internal Notifications

Referral Planned? | Comments

Kristi will write letter to them

Replace pkz

Closure
96.151

7-26-96

DEPARTMENT of ENVIRONMENT and NATURAL RESOURCES
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3181

July 26, 1996

Dennis Williamns
South Dakota Department of Game, Fish, and Parks
523 East Capitol
Pierre, SD 57501

Re: Closure of Department of Environment and Natural Resources File Number 96.151 pertaining to a release at Snake Creek Recreation Area

Dear Mr. Williams:

The Department of Environment and Natural Resources has conducted a review of the data collected from the underground storage tank removal and Tier 2 assessment. As a result of this review process, the Department has determined that work at this site can end, and that the file can be closed.

Based upon the information available, it appears that soil contaminant levels are above the Tier 1 corrective action level at depth in the tank excavation. Excavation removed approximately 300 yds ^{3} and ground water was not encountered. A Tier 2 assessment did not identify any completed exposure pathways at this site.

Therefore, the Department of Environment and Natural Resources will not require that you conduct any additional testing or remediation. However, you should be aware that if future problems arise as a result of the remaining contamination, that the South Dakota Department of Game, Fish, and Parks may be responsible for conducting additional assessment or remediation.

Should you have any questions or concerns about any issue in this letter, please don't hesitate to contact Kristi Honeywell of my staff. Thank you for your cooperation, and for the steps you took to ensure that the water resources of the state of South Dakota were protected.

Sincerely,

Bill Markley

Bill Markley, Administrator
Ground Water Quality Program
Division of Environmental Regulation
Phone: (605) 773-3296

cc: Bill Youngstrom, Charles Mix County Emergency Management
Dennis Rounds, Petroleum Release Compensation Fund

South Dakota Department of Environment and Natural Resources
Joe Foss Building, Pierre, South Dakota 57501

CHAIN OF CUSTODY RECORD

PROJ. NO. ( )

PROJECT NAME: Snake Creek Rec. Area

SAMPLERS (Signature): Dennis W. Williams

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	BTEX, gro	REMARKS
	4-25	1:55		✓	1 - Snake Creek	1	✓	Please send report to:
	4-25			✓	level w/ tank bottom	1	✓	Kristi Honeywell
	4-25	~~5:~~		✓	3 - 1' below tanks	1	✓	DENR
	4-25	6:00		✓	4	1	✓	523 E. Capitol - Pierre SD
	4-25	7:00		✓	5	1	✓	
								Bill + send report to:
								Dennis Williams
								Game Fish + Parks
								523 E Capitol -
								Pierre SD 57501

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Dennis W. Williams	4/26 5:30 pm	Kristi Honeywell			
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by (Signature)
Kristi Honeywell	4-26 11:30				
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks:	
		Marcia Sprague	4-30-96 9:45		

Distribution: Original Accompanies Shipment, First Copy to Coordinator Field Files, Second Copy to Representative of Inspected Facility

Seal Samples: ☐ Accepted ☐ Declined _____ Signature

South Dakota Department of Environment and Natural Resources
Joe Foss Building, Pierre, South Dakota 57501

CHAIN OF CUSTODY RECORD

PROJ. NO.

PROJECT NAME: Snake Creek Rec. Area

SAMPLERS (Signature)

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	BTEX, TPH
	4-30-96	14:40		✓	Beneath 560 gallon tank	1	✓

REMARKS

Send results & bill to:
Dennis Williams
GF&P
Joe Foss Bldg
523 E Capitol
Pierre SD 57501

Send results to:
Kristi Honeywell
DENR
523 E Capitol
Pierre SD 57501

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[illegible]	5/1/96 10:00	Kristi Honeywell
Kristi Honeywell	5/1/96 10:15	
[illegible]		

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	5/2/96 10:35	[illegible]

Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time
[illegible]		Marcia Sprague	5-2-96 10:00

Remarks:

Sent Samples
☐ Accepted ☐ Declined _____
Signature

Distribution: Original Accompanies Shipment, First Copy to Coordinator Field Files, Second Copy to Representative of Inspected Facility

ENERGY LABORATORIES, INC.
P.O. BOX 2470 • RAPID CITY, SD 57709 • PHONE (605) 342-1225
610 FARNWOOD STREET • RAPID CITY, SD 57701 • FAX (605) 342-1397

Kristi Honeywell
SD DENR
523 E. Capitol
Pierre, SD 57501

Snake Creek Rec. Area

Sampled: 04-25-96

May 10, 1996
96-23071-75
Submitted: 04-30-96

Site	Depth	Lab No.	Methodology	Analysis	Results	Units	Analyzed
Soil Analysis							
1-Snake Creek		96-23071	EPA 8020	Benzene	2.5	µg/g ppm	DM:05-07-96
				Toluene	1.5		
				Ethylbenzene	17		
				Xylenes	66		
			California USGS	TPH as Gasoline	950	µg/g ppm	DM:05-07-96
Level w/ tank Bottom		96-23072	EPA 8020	Benzene	0.5	µg/g ppm	DM:05-07-96
				Toluene	<0.2		
				Ethylbenzene	<0.2*		
				Xylenes	0.8		
			California USGS	TPH as Gasoline	19	µg/g ppm	DM:05-07-96
3 - 1' below tanks		96-23073	EPA 8020	Benzene	0.7	µg/g ppm	DM:05-07-96
				Toluene	0.2		
				Ethylbenzene	0.2		
				Xylenes	0.2		
			California USGS	TPH as Gasoline	<10	µg/g ppm	DM:05-07-96
4		96-23074	EPA 8020	Benzene	<.1	µg/g ppm	DM:05-07-96
				Toluene	<0.2		
				Ethylbenzene	<0.2		
				Xylenes	<0.2		
			California USGS	TPH as Gasoline	<10	µg/g ppm	DM:05-07-96
5		96-23075	EPA 8020	Benzene	0.5	µg/g ppm	DM:05-07-96
				Toluene	<0.2		
				Ethylbenzene	1.7		
				Xylenes	1.7		
			California USGS	TPH as Gasoline	170	µg/g ppm	DM:05-07-96

* Present but less than the practical quantitation limit.

Kurt R. Slentz
Laboratory Manager

MAY 1998
RECEIVED
DENR
Ground Water
Quality Program

ENERGY LABORATORIES, INC.
RAPID CITY, SD

TPH AS GASOLINE & MBTEX
PID SURROGATE RECOVERY

LAB NUMBER	PID SURROGATE RECOVERY	
	TRIFLUOROTOLUENE	4-BROMOFLUORO-BENZENE
96 23071	115	111
96 23072	101	101
96 23073	111	120
96 23074	102	100
96 23075	115	113

CERTIFIED KNOWN DATA

Compound	Known	Lot #	True Value	Conc.	% Recovery	TFT % Rec	BFB % Rec	QC Limits
GAS	ERA	40002	510 ug/L	392 ug/L	77	121	100	60-140%

ENERGY LABORATORIES, INC.
P.O. BOX 2470 • RAPID CITY, SD 57709 • PHONE (605) 342-1225
610 FARNWOOD STREET • RAPID CITY, SD 57701 • FAX (605) 342-1397

Kristi Honeywell
SD DENR
523 E. Capitol
Rapid City, SD 57501

Snake Creek Rec. Area

Sampled: 04-30-96

May 10, 1996
96-23123
Submitted: 05-02-96

Site	Depth	Lab No	Methodology	Analysis	Results	Units	Analyzed
Soil Analysis							
Beneath 560 Gallon Tank		96-23123	EPA 8020	Benzene	<0.2	µg/g ppm	DM 05-09-96
				Toluene	<0.2		
				Ethylbenzene	<0.2		
				Xylenes	<0.2		
			California USGS	TPH as Gasoline	<10	µg/g ppm	DM 05-09-96

Kurt R. Sientz
Laboratory Manager

MAY 1996
RECEIVED
DENR
Ground Water
Quality Program

File Copy

DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3181

May 28, 1996

Raymond Roggow
Gregory County Highway Department
P O Box 425
Burke, SD 57523

Re: Pretreatment contaminant levels at Snake Creek Recreation Area, Platte, South Dakota

Dear Mr. Roggow:

Approximately 300 yds^3 of gasoline contaminated soil was removed from the Snake Creek Recreation Area on April 25, 1996. The soil was taken to the Gregory County landfarm for treatment. Five soil samples were taken from the bottom of the excavation to document remaining contaminant levels. The contaminant level of one of these samples was 950 ppm TPH (total petroleum hydrocarbons). Therefore, since no presite assessment was performed to verify that petroleum contamination was present before excavation, this sample will be used to verify contamination at this site.

I am enclosing a copy of the laboratory results for your records.

As discussed in our phone conversation, I am also enclosing a list of tank installers in the state. Thank you for your cooperation in this matter. If you have any questions, please feel free to contact this office.

Sincerely,

Kristi Honeywell

Kristi Honeywell
Ground Water Quality Program
Phone: (605) 773-3296

cc: Val Keller, DENR

enclosure: Tank Installers List
Laboratory Results

ENERGY LABORATORIES, INC.
RAPID CITY, SD

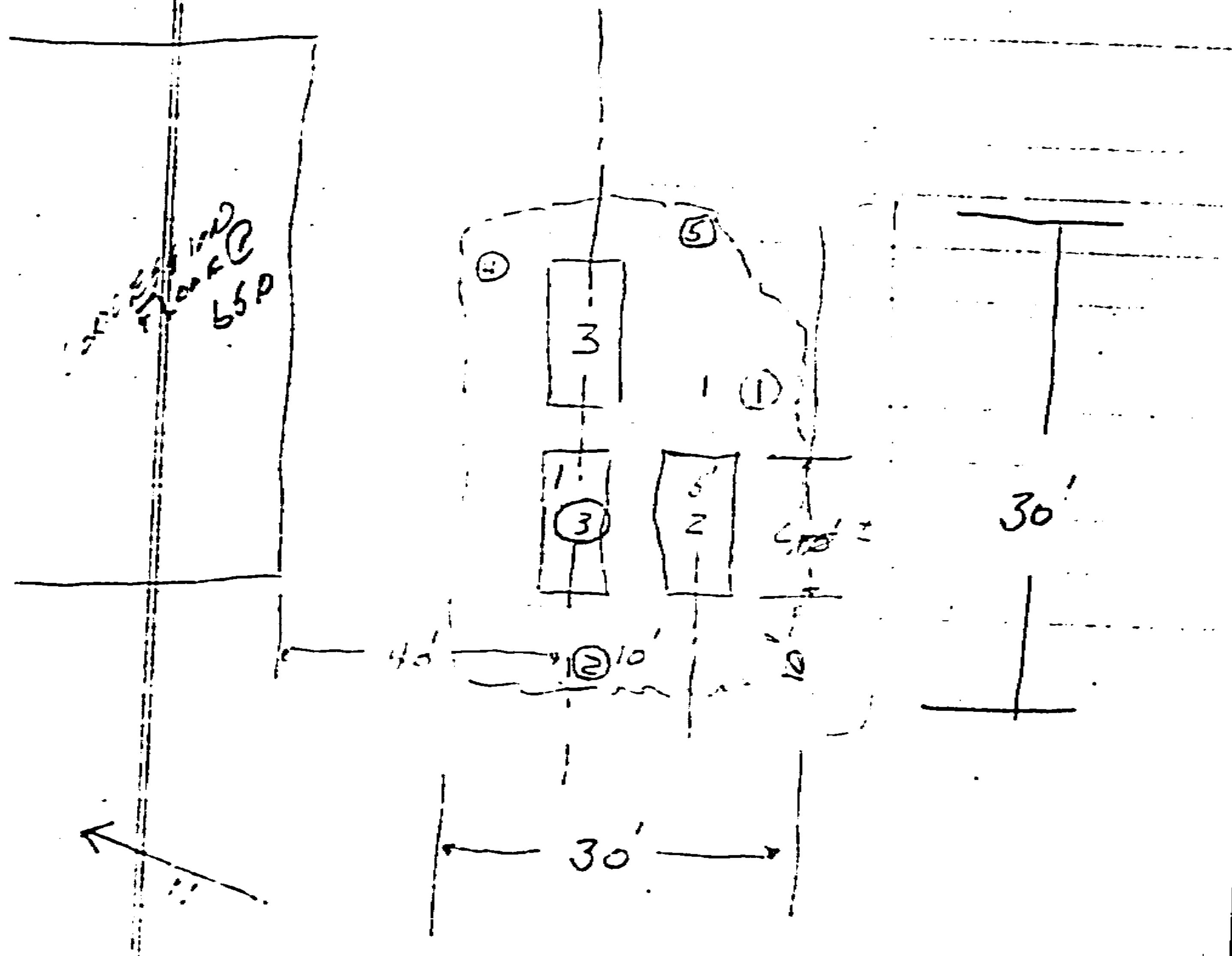
TPH AS GASOLINE & MBTEX
PID SURROGATE RECOVERY

LAB NUMBER	PID SURROGATE RECOVERY	
	TRIFLUOROTOLUENE	4-BROMOFLUORO-BENZENE
96 23123	103	102

CERTIFIED KNOWN DATA

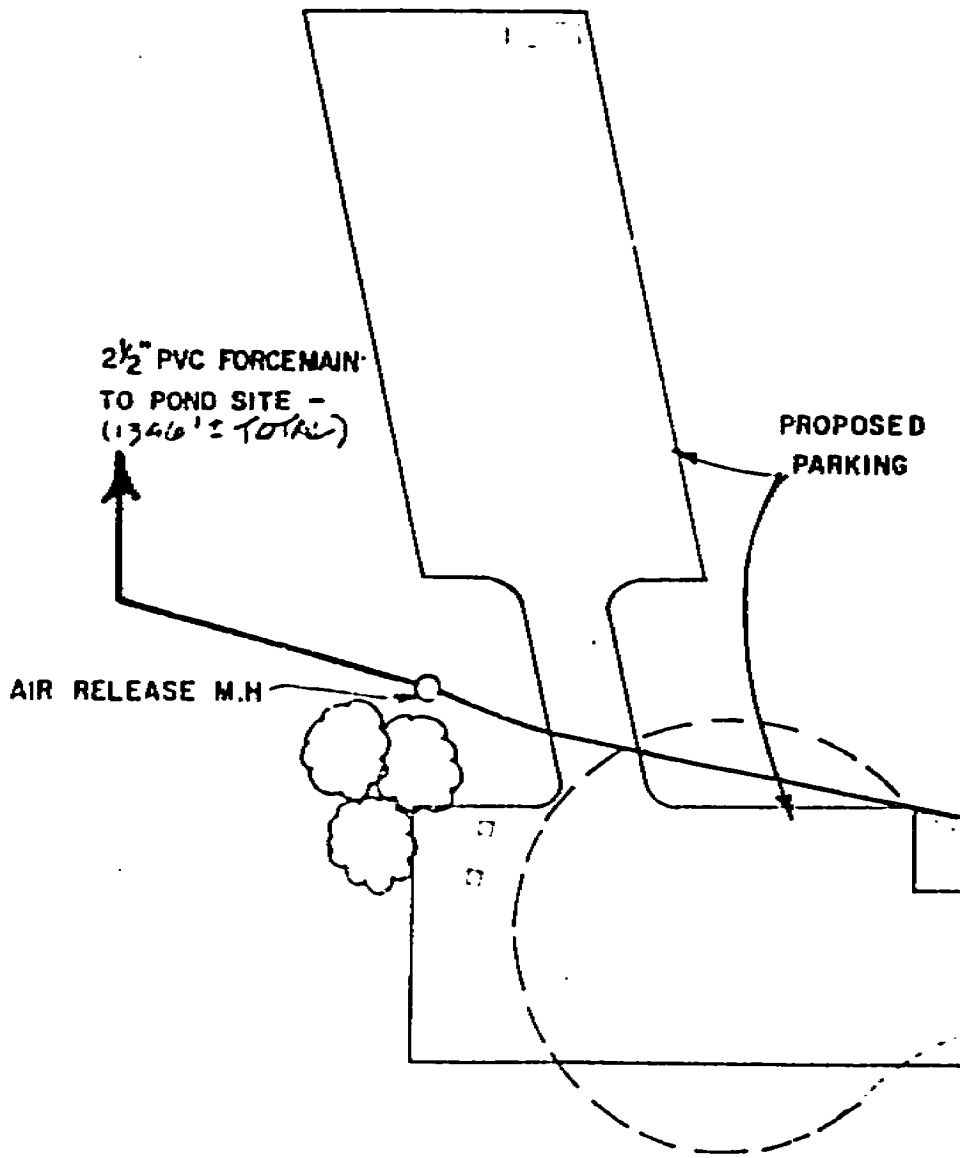
Compound	Known	Lot #	True Value	Conc.	% Recovery	TFT % Rec	BFB % Rec	QC Limits
GAS	ERA	40002	510 ug/L	392 ug/L	77	121	100	60-140%

SNAKE CREEK

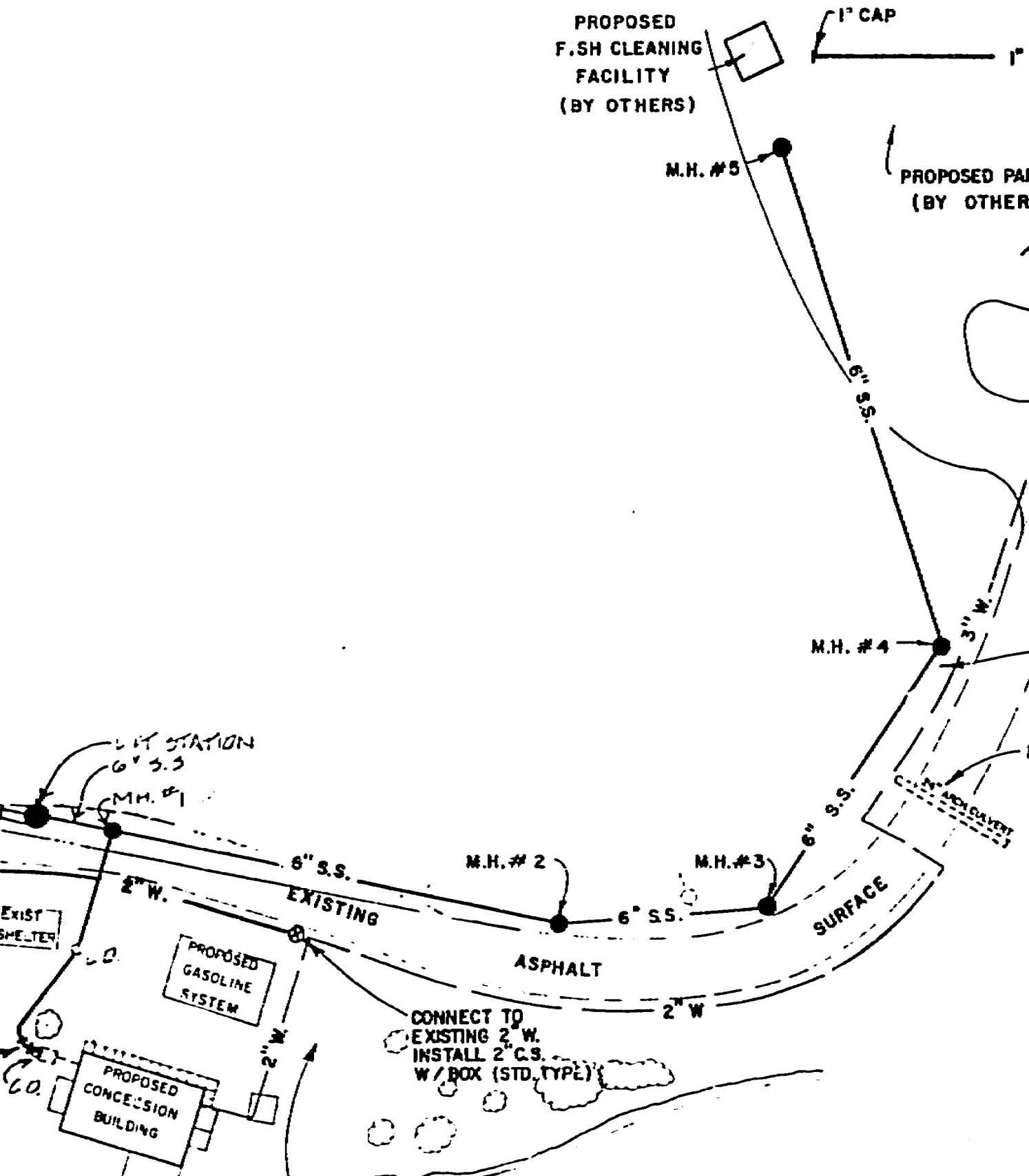


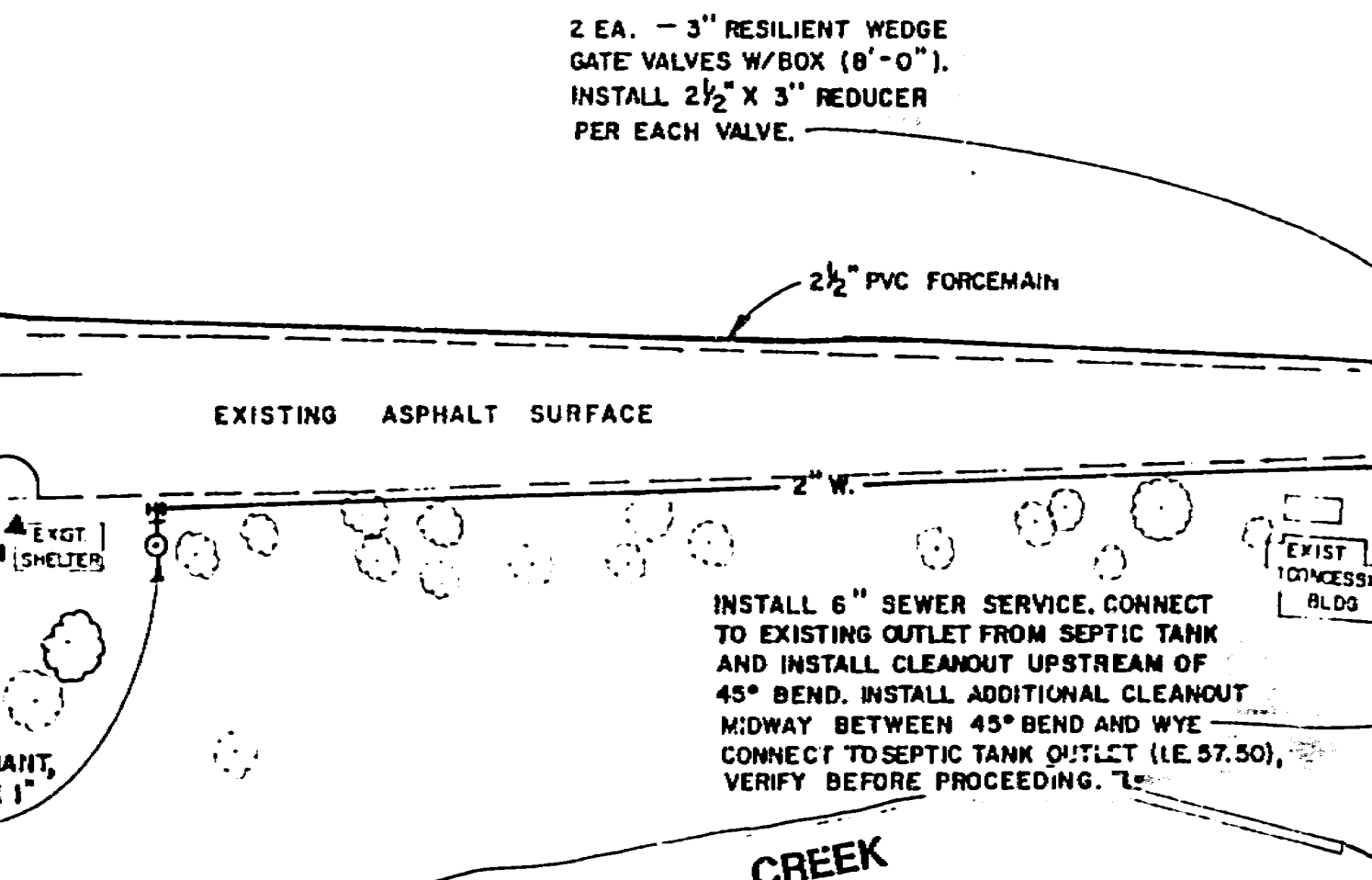
SAMPLES @ 8' DEEP. 1357 ELEVATIONS
LAKE LEVEL @ 1355

NOTE: GRADE FORCEMAIN TO MAINTAIN SLOPE BACK TO LIFT STATION FROM AIR RELEASE MANHOLE. KEEP CRESTS TO A MINIMUM AND INSTALL AIR RELEASE MANHOLES AT ALL CRESTS (2 ESTIMATED)



INSTALL H
2"TEE &
REDUCER


PROPOSED
F.SH CLEANING
FACILITY
(BY OTHERS)
1" CAP
1"
M.H. #5
PROPOSED PA
(BY OTHER
6" S.S.
3" W.
M.H. #4
LIFT STATION
6" S.S.
MH. #1
6" S.S.
M.H. # 2
M.H. #3
6" S.S.
2" W.
EXISTING
ASPHALT
SURFACE
2" W
EXIST
SHELTER
C.O.
PROPOSED
GASOLINE
SYSTEM
CONNECT TO
EXISTING 2" W.
INSTALL 2" C.S.
W/ BOX (STD. TYPE)
2" W
C.O.
PROPOSED
CONCESSION
BUILDING


2 EA. — 3" RESILIENT WEDGE
GATE VALVES W/BOX (8'-0").
INSTALL 2½" X 3" REDUCER
PER EACH VALVE.
2½" PVC FORCEMAIN
EXISTING ASPHALT SURFACE
2" W.
EXIST
SHELTER
EXIST
BLDG
INSTALL 6" SEWER SERVICE. CONNECT
TO EXISTING OUTLET FROM SEPTIC TANK
AND INSTALL CLEANOUT UPSTREAM OF
45° BEND. INSTALL ADDITIONAL CLEANOUT
MIDWAY BETWEEN 45° BEND AND WYE
CONNECT TO SEPTIC TANK OUTLET (LE 57.50),
VERIFY BEFORE PROCEEDING.
CREEK

CONNECT TO EXISTING 3" WATERLINE. INSTALL 3" TEE W/ REPAIR SLEEVES. INSTALL 1" CURB STOP W/ BOX (STOP & WASTE DESIGN) AND 3"X 1" REDUCER.

NTAIN 10'
EARANCE (MIN)

EXISTING
ERT

Fed. Proj. No.

GENERAL NOTES:

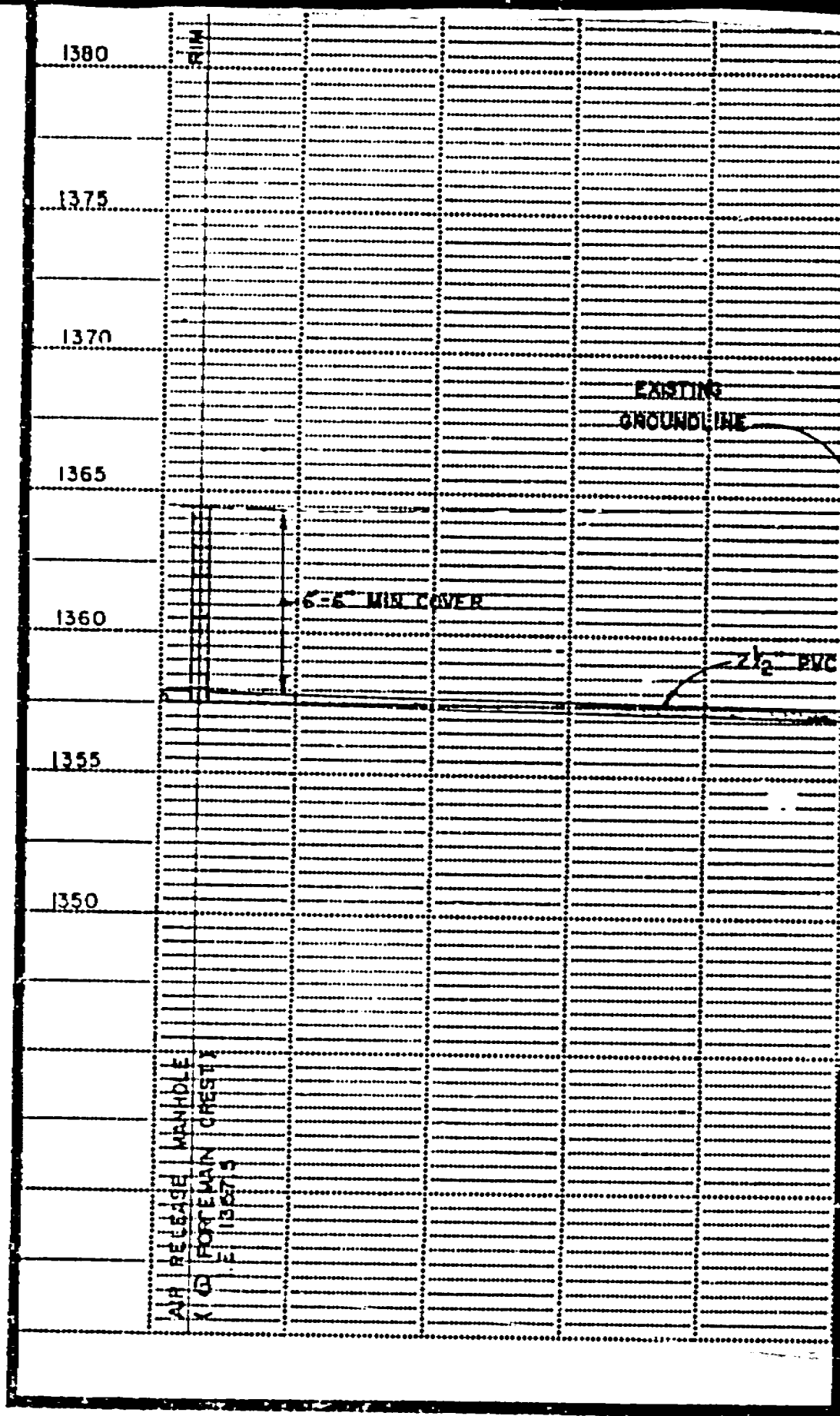
1. Underground electric, telephone, etc., exists in the area of this work. The Contractor shall have all such utilities located and protect from damage. Overhead power also exists in the concession area.

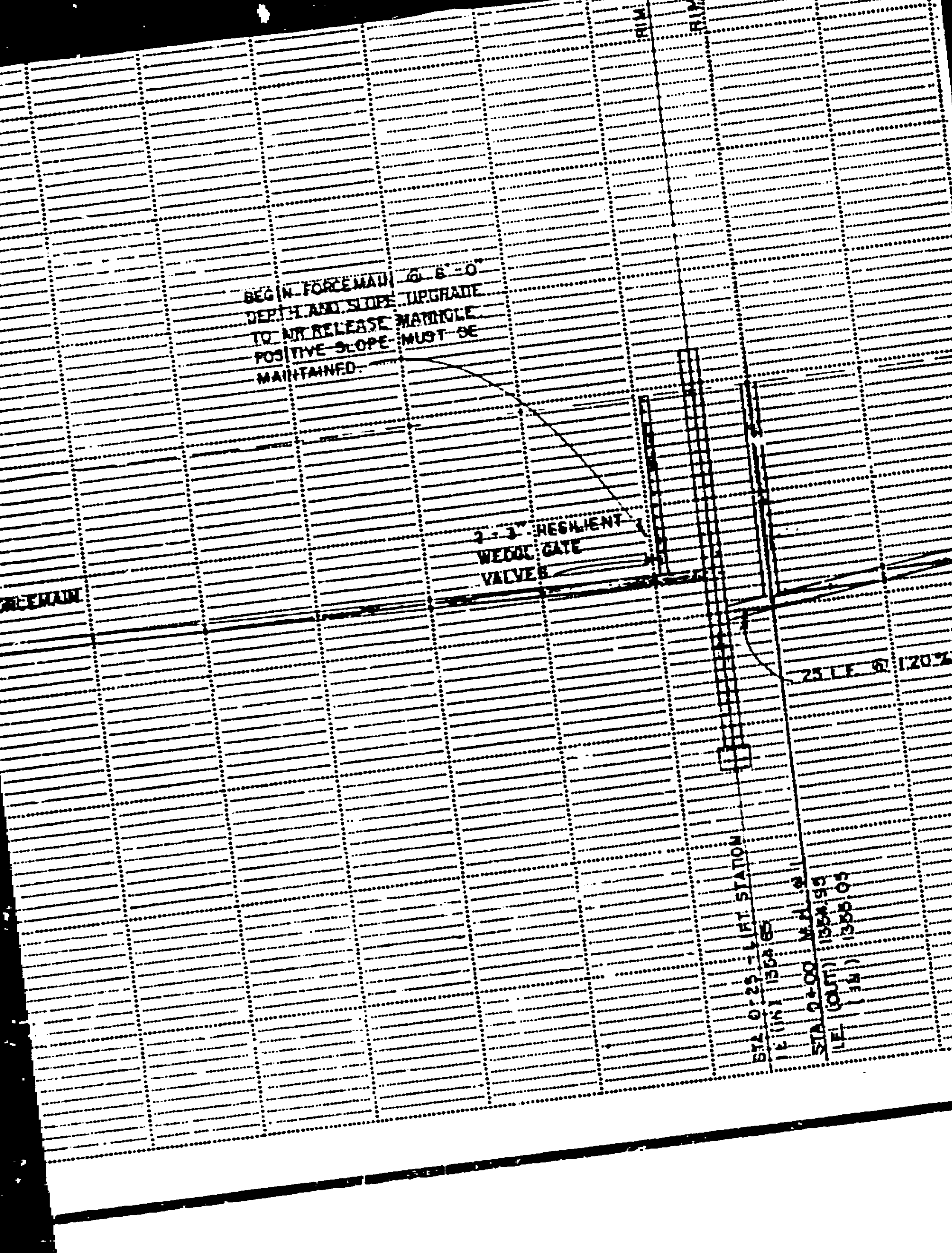
2. Work to be performed by others includes buildings, roads, electrical distribution and watermain installation. This Contractor shall work closely with other Contractors to minimize interference and maximize efficiency. Coordinate all work with one another.

3. Protect all trees, shrubs, buildings and other natural and fabricated items not specifically indicated to be disturbed. Replace all such items damaged or disturbed.

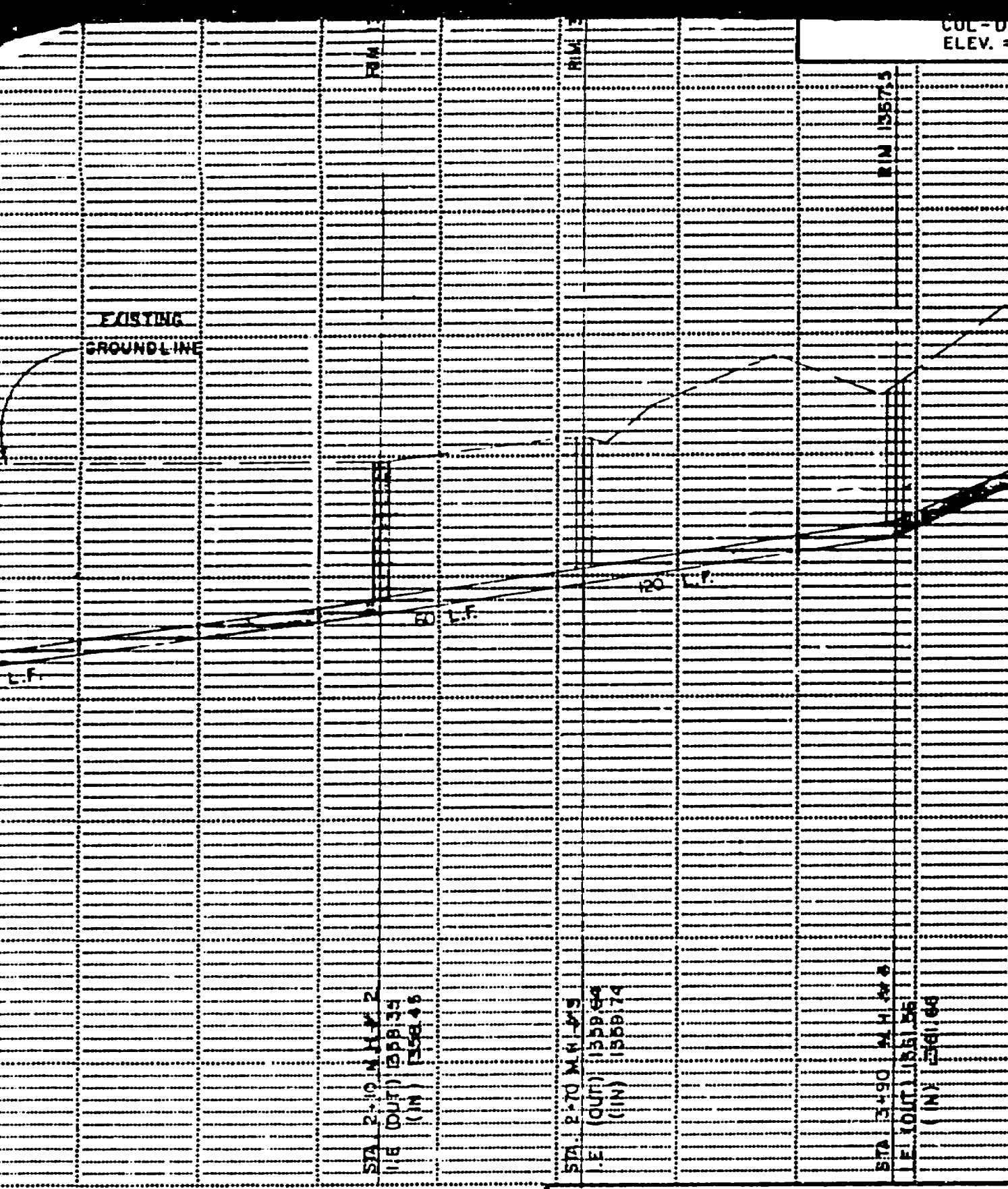
4. Compact all water and sewer trenches to 95% density.

SCALE: HORIZ. 1":50'

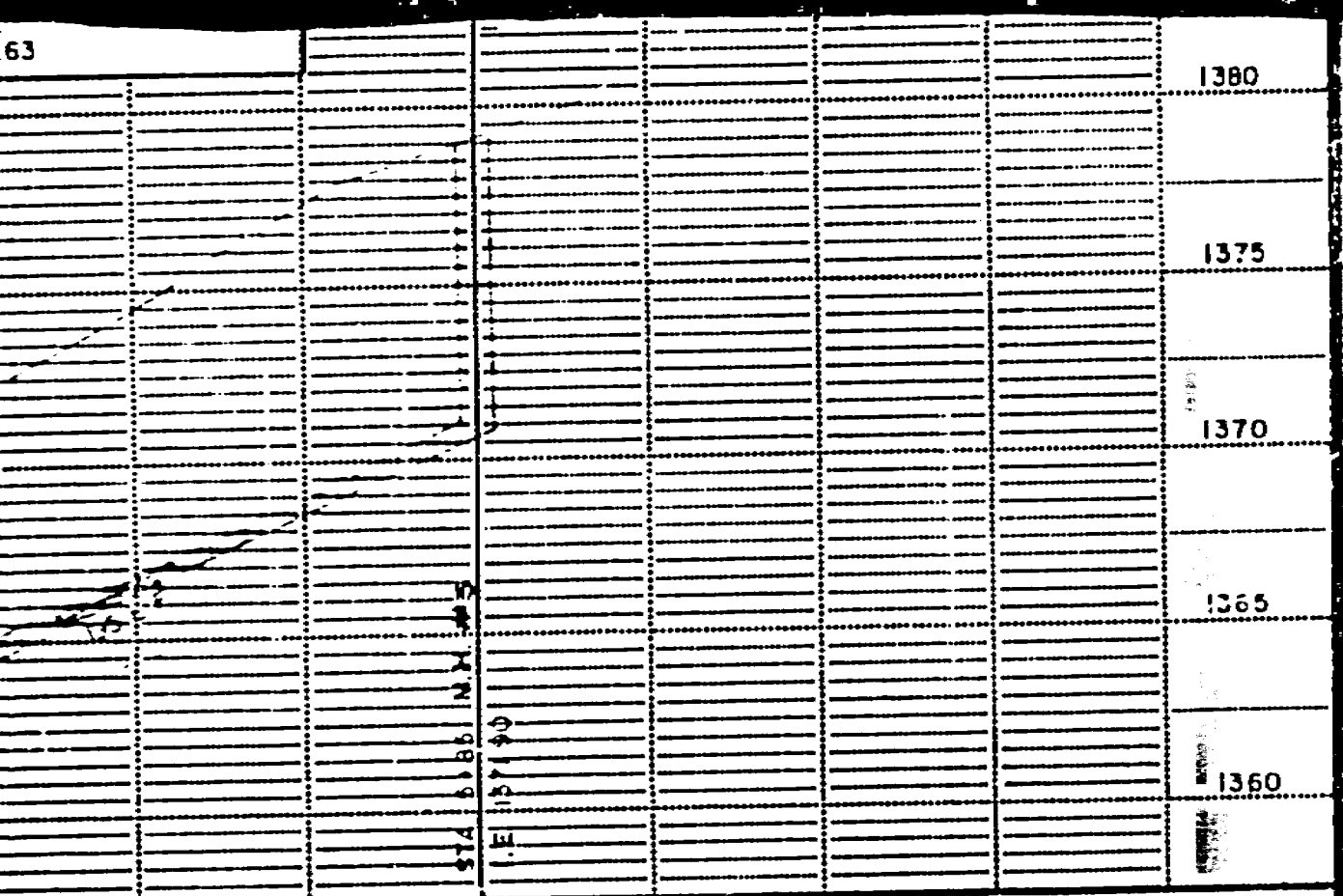

1380
1375
1370
1365
1360
1355
1350
RIM
EXISTING
GROUNDLINE
6'-6" MIN COVER
2½" PVC
AIR RELEASE MANHOLE
@ FOREMAIN CREST
EL 1357.5



RIM
RIM
BEGIN FORCEMAIN @ 6'-0"
DEPTH AND SLOPE UPGRADE
TO AIR RELEASE MANHOLE.
POSITIVE SLOPE MUST BE
MAINTAINED.
2 - 3" RESILIENT
WEDGE GATE
VALVES
RCEMAIN
25 L.F. @ 1.20%
STA 0+25 - LIFT STATION
I.E. (IN) 1354.65
STA 0+00 M.H. #1
I.E. (OUT) 1354.95
(IN) 1355.05



State Proi. No.



SEWER AND WATER LAYOUT

Naughton
Stockwell Engineers

1621 South Minnesota Avenue
Sioux Falls, South Dakota 57105
Telephone (605) 336-6632

Civil
Municipal
Environmental
Land Surveying

Project No. 8339
Drawn By KA
Checked By BWS
Date 2/14/84

Sheet No. 3 OF 5

RECORD DRAWING
9/17/84 BWS

ENERGY LABORATORIES, INC.
PO Box 2470 · 610 Farnwood Street · Rapid City SD 57709
Phone [illegible] · Fax [illegible]

CHAIN OF CUSTODY RECORD

PLEASE PRINT OR TYPE ALL INFORMATION EXCEPT SIGNATURES

P.O. #

Project Name / Address: Snake Creek UST Removal, Platte, SD 57369

Contact Name & Phone: Dave Enke 337-3494

Sampler's signature: Dave Enke

Invoice to: SD GFP, Capital Development/Engineering, Pierre, SD 57501

Report to:

DATE	TIME	composite	grab sample	SAMPLE ID	number of containers	Sample Type A W S V U O (Air Water Soils Solids Vegetation Urine Other)	Analysis Requested: Field Purks								Comments, Special Instructions, etc.
4/11															[illegible]

	Relinquished (signature)	Date	Time	Received by: (signature)
1.				
2.				
3.				
4.		4/11/96	10:05	Received for laboratory by (signature): Marcia Sprague

File Copy
96.151

DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3181

June 12, 1996

Dennis Williams
Department of Game, Fish, and Parks
Joe Foss Building
523 East Capitol
Pierre, SD 57501

Re: Excavation of Underground Storage Tanks, Snake Creek Recreation Area, Platte, South Dakota, DENR # 96.151

Dear Mr. Williams:

The South Dakota Department of Environment and Natural Resources (DENR) staff review of laboratory results collected from the underground storage tank excavation at Snake Creek Recreation Area has been completed. As a result of this review process, the following comments and concerns were noted.

It is the department's understanding that approximately 300 yds^3 of contaminated soils were removed during the tank excavation. Field observations indicated that the release may have occurred from leaking product lines. Additional excavation was performed to remove contamination in the lateral direction from the tanks. You told me that excavation was continued outward until the majority of contamination was removed. A small stringer of contamination may have remained but additional excavation was not appropriate.

The laboratory results from the bottom of the excavation indicate that the Tier I corrective action levels have been exceeded at the site. Therefore, the department will require that a Tier II assessment be performed to determine if completed exposure pathways are present. Possible transport mechanisms include ground water and underground utilities. Review of the concession building plans shows that a sewer line is present east of the building and approximately 50 feet from the excavation. Since local ground water flow direction is inferred to be north toward Snake Creek, impacts to the sewer should not be a concern at this site.

However, the plans show a water line directly south and west of the tank excavation. To ensure that the water line is not impacted, the department will require that a water sample be collected from the concessions tap. The water sample must be analyzed for (TPH) total petroleum hydrocarbons as gasoline and (BTEX) benzene, toluene, ethylbenzene, and xylene.

If laboratory analysis shows that the tap water is contaminated above state standards, the department will require additional remediation and may require additional assessment.

Thank you for your cooperation in protecting the ground water resources of South Dakota. Please contact this office within 30 days of receipt of this letter regarding your plans for this site. As always, if you have any questions or desire clarification of any item, please feel free to contact this office.

Sincerely,

Kristi Honeywell
Ground Water Quality Program
Phone: (605) 773-3296

Reviewed by:

Doug Miller
Certified Petroleum Release Remediator

cc: Dennis Rounds, Petroleum Release Compensation Fund

ENERGY LABORATORIES
ENERGY LABORATORIES, INC.
P.O. BOX 2470 • RAPID CITY, SD 57709 • PHONE (605) 342-1225
610 FARNWOOD STREET • RAPID CITY, SD 57701 • FAX (605) 342-1397

Dennis William, Supervisor of Engineering SD Game Fish and Parks 523 East Capitol Pierre, SD 57501	Snake Creek UST Removal Sampled: 06-17-96	July 2, 1996 96-24022 Submitted: 06-19-96

Site	Depth	Lab No	Methodology	Analysis	Results	Units	Analyzed

Water Analysis

RH 06 28 96

Snake Creek UST Removal 96 24022 8260 LONG

Talked to Kurt Slentz 7-17-96 he looked at the chromatogram, no petroleum peaks present

	µg/L		PQL
1,1 Dichloroethene	<1.0		1.0
Methylene Chloride	<1.0		1.0
trans-1,2 Dichloroethene	<1.0		1.0
1,1 Dichloroethane	<1.0		1.0
2,2 Dichloropropane	<1.0		1.0
cis-1,2 Dichloroethene	<1.0		1.0
Bromochloromethane	<1.0		1.0
Chloroform	84	[1]	1.0
1,1,1-Trichloroethane	<1.0		1.0
Carbon Tetrachloride	<1.0		1.0
1,1 Dichloropropene	<1.0		1.0
Benzene	<1.0		1.0
1,2 Dichloroethane	<1.0		1.0
Trichloroethene	<1.0		1.0
1,2 Dichloropropane	<1.0		1.0
Dibromomethane	<1.0		1.0
Bromodichloromethane	28	[1]	1.0
trans 1,3 Dichloropropene	<1.0		1.0
Toluene	<1.0		1.0
cis-1,3 Dichloropropene	<1.0		1.0
1,1,2 Trichloroethane	<1.0		1.0
Tetrachloroethene	<1.0		1.0
1,3 Dichloropropane	<1.0		1.0
Dibromochloromethane	4.7		1.0
1,2 Dibromoethane	<1.0		1.0
Chlorobenzene	<1.0		1.0
1,1,1,2 Tetrachloroethane	<1.0		1.0
Ethylbenzene	<1.0		1.0
M+P Xylenes	<1.0		1.0
O-Xylene	<1.0		1.0
Styrene	<1.0		1.0
Bromoform	<1.0		1.0
Isopropylbenzene	<1.0		1.0
Bromobenzene	<1.0		1.0
1,1,2,2-Tetrachloroethane	<1.0		1.0
1,2,3-Trichloropropane	<1.0		1.0
n Propylbenzene	<1.0		1.0
2 Chlorotoluene	<1.0		1.0
4 Chlorotoluene	<1.0		1.0
1,3,5 Trimethylbenzene	<1.0		1.0
tert Butylbenzene	<1.0		1.0
1,2,4-Trimethylbenzene	<1.0		1.0
sec Butylbenzene	<1.0		1.0
1,3 Dichlorobenzene	<1.0		1.0
1,4 Dichlorobenzene	<1.0		1.0
p Isopropyltoluene	<1.0		1.0
1,2 Dichlorobenzene	<1.0		1.0
n Butylbenzene	<1.0		1.0
1,2 Dibromo-3 Chloropropane	<1.0		1.0
1,2,4-Trichlorobenzene	<1.0		1.0
Naphthalene	<1.0		1.0
Hexachlorobutadiene	<1.0		1.0

Site	Depth	Lab No.	Methodology	Analysis	Results	Units	Analyzed

RH 08 29 96

Snake Creek UST Removal 96-24022 8260 LOW

	ppb	PQL
1,2,3-Trichlorobenzene	<1.0	1.0
Acetone	<20	20
Methyl Ethyl Ketone	<10	10
Dichlorodifluoromethane	<1.0	1.0
Chloromethane	<1.0	1.0
Vinyl Chloride	<1.0	1.0
Bromomethane	<1.0	1.0
Chloroethane	<1.0	1.0
Trichlorofluoromethane	<1.0	1.0
2 Chloroethylvinylether	<1.0	1.0
Carbon Disulfide	<1.0	1.0
Vinyl Acetate	<10	10
Methyl Isobutyl Ketone	<10	10
2 Hexanone	<10	10
Acrolein	<10	10
Acrylonitrile	<1.0	1.0
Methyltertiary Butyl Ether	<1.0	1.0
Iodomethane		

Surrogate Recoveries		% Recovery
1,2 Dichloroethane d4	118	
Toluene d8	93	
4 Bromofluorobenzene	114	

(1) Value derived from a 10x dilution.

Kurt R. Stentz
Laboratory Manager

Site	Depth	Lab No.	Methodology	Analysis	Results	Units	Analyzed

QUALITY ASSURANCE DATA

Method Blank **8260 LONG**

RH 06 29 94

	ug/L	PQL
1,1 Dichloroethene	<1.0	1.0
Methylene Chloride	<1.0	1.0
trans-1,2 Dichloroethene	<1.0	1.0
1,1 Dichloroethane	<1.0	1.0
2,2 Dichloropropane	<1.0	1.0
cis-1,2-Dichloroethene	<1.0	1.0
Bromochloromethane	<1.0	1.0
Chloroform	<1.0	1.0
1,1,1-Trichloroethane	<1.0	1.0
Carbon Tetrachloride	<1.0	1.0
1,1-Dichloropropene	<1.0	1.0
Benzene	<1.0	1.0
1,2 Dichloroethane	<1.0	1.0
Trichloroethene	<1.0	1.0
1,2 Dichloropropane	<1.0	1.0
Dibromomethane	<1.0	1.0
Bromodichloromethane	<1.0	1.0
Trans 1,3-Dichloropropene	<1.0	1.0
Toluene	<1.0	1.0
cis 1,3-Dichloropropene	<1.0	1.0
1,1,2 Trichloroethane	<1.0	1.0
Tetrachloroethene	<1.0	1.0
1,3 Dichloropropane	<1.0	1.0
Dibromochloromethane	<1.0	1.0
1,2 Dibromoethane	<1.0	1.0
Chlorobenzene	<1.0	1.0
1,1,1,2-Tetrachloroethane	<1.0	1.0
Ethylbenzene	<1.0	1.0
M & P Xylenes	<1.0	1.0
O-Xylene	<1.0	1.0
Styrene	<1.0	1.0
Bromoform	<1.0	1.0
Isopropylbenzene	<1.0	1.0
Bromobenzene	<1.0	1.0
1,1,2,2-Tetrachloroethane	<1.0	1.0
1,2,3-Trichloropropane	<1.0	1.0
n-Propylbenzene	<1.0	1.0
2-Chlorotoluene	<1.0	1.0
4-Chlorotoluene	<1.0	1.0
1,3,5-Trimethylbenzene	<1.0	1.0
tert-Butylbenzene	<1.0	1.0
1,2,4-Trimethylbenzene	<1.0	1.0
sec-Butylbenzene	<1.0	1.0
1,3-Dichlorobenzene	<1.0	1.0
1,4-Dichlorobenzene	<1.0	1.0
p-Isopropyltoluene	<1.0	1.0
1,2-Dichlorobenzene	<1.0	1.0
n-Butylbenzene	<1.0	1.0
1,2-Dibromo-3-Chloropropane	<1.0	1.0
1,2,4-Trichlorobenzene	<1.0	1.0
Naphthalene	<1.0	1.0
Hexachlorobutadiene	<1.0	1.0
1,2,3-Trichlorobenzene	<1.0	1.0
Acetone	<20	20
Methyl Ethyl Ketone	<10	10
Dichlorodifluoromethane	<1.0	1.0
Chloromethane	<1.0	1.0
Vinyl Chloride	<1.0	1.0
Bromomethane	<1.0	1.0
Chloroethane	<1.0	1.0
Trichlorofluoromethane	<1.0	1.0
2-Chloroethylvinylether	<1.0	1.0
Carbon Disulfide	<1.0	1.0
Vinyl Acetate	<1.0	1.0
Methyl Isobutyl Ketone	<10	10
2-Hexanone	<10	10
Acrolein	<10	10
Acrylonitrile	<10	10
Methyl-tertiary Butyl Ether	<1.0	1.0
Isobromethane	<1.0	1.0

Surrogate Recoveries

		% Recovery
1,2 Dichloroethane-d4	106	
Toluene-d8	101	

Site	Depth	Lab No.	Methodology	Analysis	Results	Units	Analyzed

QUALITY ASSURANCE DATA

Method Blank — **8260 LONG** — RH 06 29 94

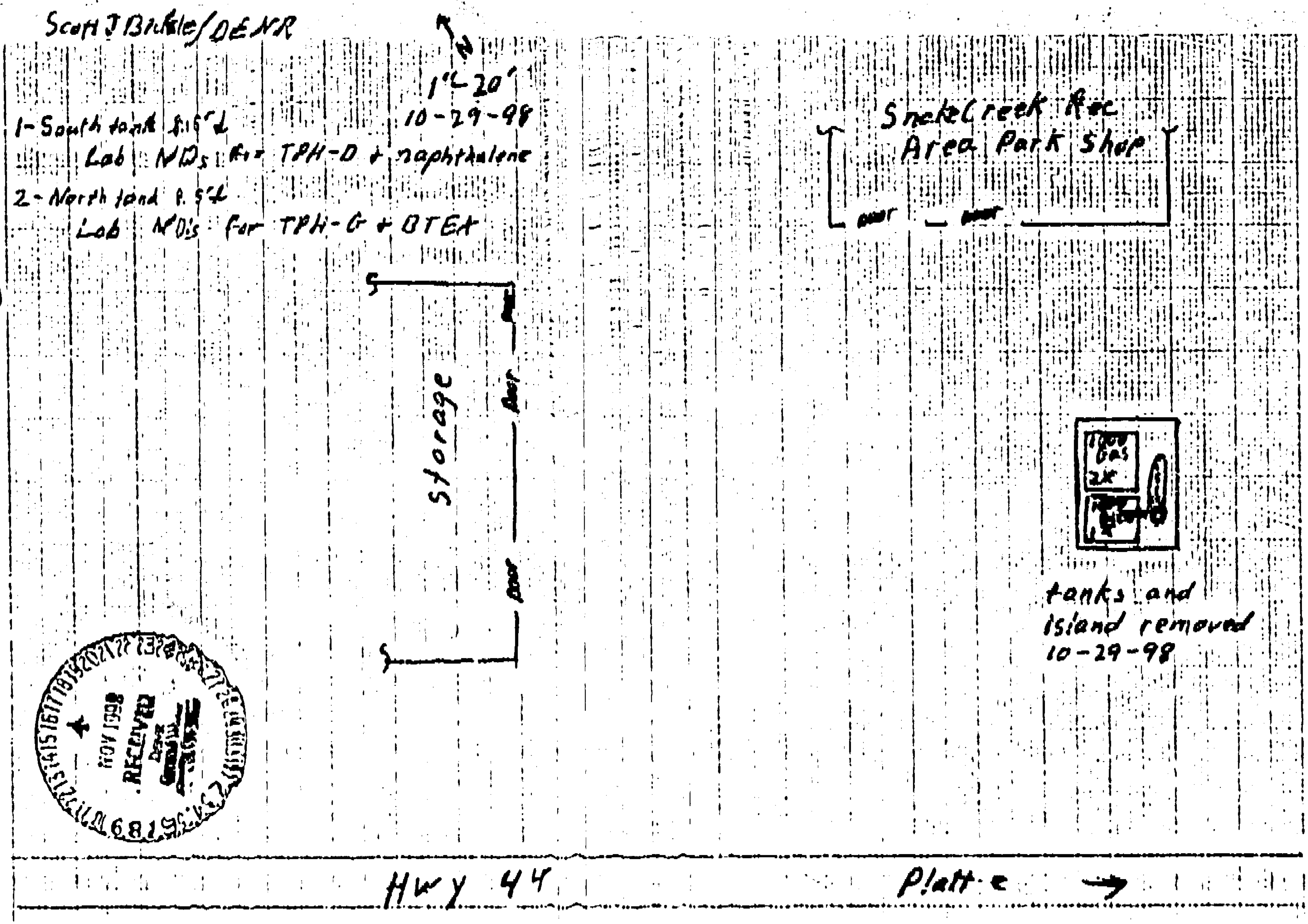
	ug/L	PQL
1,1 Dichloroethene	<1.0	1.0
Methylene Chloride	<1.0	1.0
trans 1,2 Dichloroethene	<1.0	1.0
1,1 Dichloroethane	<1.0	1.0
2,2 Dichloropropane	<1.0	1.0
cis-1,2 Dichloroethene	<1.0	1.0
Bromochloromethane	<1.0	1.0
Chloroform	<1.0	1.0
1,1,1-Trichloroethane	<1.0	1.0
Carbon Tetrachloride	<1.0	1.0
1,1 Dichloropropene	<1.0	1.0
Benzene	<1.0	1.0
1,2 Dichloroethane	<1.0	1.0
Trichloroethene	<1.0	1.0
1,2 Dichloropropane	<1.0	1.0
Dibromomethane	<1.0	1.0
Bromodichloromethane	<1.0	1.0
Trans 1,3-Dichloropropene	<1.0	1.0
Toluene	<1.0	1.0
cis 1,3-Dichloropropene	<1.0	1.0
1,1,2 Trichloroethane	<1.0	1.0
Tetrachloroethene	<1.0	1.0
1,3 Dichloropropane	<1.0	1.0
Dibromochloromethane	<1.0	1.0
1,2 Dibromoethane	<1.0	1.0
Chlorobenzene	<1.0	1.0
1,1,1,2-Tetrachloroethane	<1.0	1.0
Ethylbenzene	<1.0	1.0
M + P Xylenes	<1.0	1.0
O-Xylene	<1.0	1.0
Styrene	<1.0	1.0
Bromoform	<1.0	1.0
Isopropylbenzene	<1.0	1.0
Bromobenzene	<1.0	1.0
1,1,2,2-Tetrachloroethane	<1.0	1.0
1,2,3-Trichloropropane	<1.0	1.0
n-Propylbenzene	<1.0	1.0
2 Chlorotoluene	<1.0	1.0
4 Chlorotoluene	<1.0	1.0
1,3,5-Trimethylbenzene	<1.0	1.0
tert Butylbenzene	<1.0	1.0
1,2,4-Trimethylbenzene	<1.0	1.0
sec Butylbenzene	<1.0	1.0
1,3 Dichlorobenzene	<1.0	1.0
1,4 Dichlorobenzene	<1.0	1.0
p-Isopropyltoluene	<1.0	1.0
1,2-Dichlorobenzene	<1.0	1.0
n-Butylbenzene	<1.0	1.0
1,2 Dibromo-3-Chloropropane	<1.0	1.0
1,2,4-Trichlorobenzene	<1.0	1.0
Naphthalene	<1.0	1.0
Hexachlorobutadiene	<1.0	1.0
1,2,3-Trichlorobenzene	<1.0	1.0
Acetone	<20	20
Methyl Ethyl Ketone	<10	10
Dichlorodifluoromethane	<1.0	1.0
Chloromethane	<1.0	1.0
Vinyl Chloride	<1.0	1.0
Bromomethane	<1.0	1.0
Chloroethane	<1.0	1.0
Trichlorofluoromethane	<1.0	1.0
2 Chloroethylvinylether	<1.0	1.0
Carbon Disulfide	<1.0	1.0
Vinyl Acetate	<1.0	1.0
Methyl Isobutyl Ketone	<10	10
2 Hexanone	<10	10
Acrolein	<10	10
Acrylonitrile	<10	10
Methyltertiary Butyl Ether	<1.0	1.0
Isobromethane	<1.0	1.0

Surrogate Recoveries		% Recovery
1,2 Dichloroethane-d4	108	
Toluene-d8	101	
4 Bromofluorobenzene	111	

Patch II
10-0133

C.98.046

C98.046 SB



REPORT OF ANALYTICAL RESULTS

PROJECT # : 98-929-3

PROJECT:
SNAKE CREEK RECREATION AREA

CLIENT:
GAME, FISH & PARKS
523 E. CAPITOL
PIERRE, SD 57501
PHONE:

CHAIN OF CUSTODY # SFO-02-1998

DATE: November 05, 1998

SAMPLE MEDIUM: SOIL

DATE SAMPLED: October 30 , 1998
DATE RECEIVED: October 30, 1998
DATE ANALYZED: November 04 , 1998

SAMPLER: Scott Bickler SD DENR

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
S TANK 1000 GAL	4664-98					
		EPA 8020	Naphthalene	<1.0	mg/kg	1 mg/kg
		California USGS	TPH As Diesel	<10.0	mg/kg	10 mg/kg
N TANK 1000 GAL	4665-98					
		EPA 8020	Benzene	<0.2	mg/kg	0.2 mg/kg
		EPA 8020	Toluene	<0.2	mg/kg	0.2 mg/kg
		EPA 8020	Ethylbenzene	<0.2	mg/kg	0.2 mg/kg
		EPA 8020	Xylenes	<0.2	mg/kg	0.2 mg/kg
		California USCS	TPH as Gasoline	<10.0	mg/kg	10 mg/kg

Analysts: Katherine Howard and Jason Cook

Respectfully submitted

Katherine Howard , Laboratory Supervisor

GEOTEK ENGINEERING
& TESTING SERVICES, INC.
909 East 50th Street North
Sioux Falls, South Dakota 57104
605-335-5512 • FAX 605-335-0773

ANALYTICAL INVOICE

PROJECT #: 98-929-3 DATE: November 05, 1998

INVOICE #: SFO-08-1998

PROJECT:
SNAKE CREEK RECREATION AREA

CLIENT:
GAME, FISH & PARKS
523 E. CAPITOL
PIERRE, SD 57501

PHONE:

Description	Quantity	Unit Price	Extention
BTEX only	0	$50.00	$0.00
TPH As Gasoline plus BTEX	1	$100.00	$100.00
TPH As Diesel/Naphthalene Screen	1	$100.00	$100.00
		Invoice Total	$200.00

South Dakota Department of Environment and Natural Resources
Joe Foss Building, Pierre, South Dakota 57501

CHAIN OF CUSTODY RECORD

PROJ. NO.:

PROJECT NAME: Snake Creek Recreation Area

SAMPLERS (Signature): Scott Bickler

STAT. NO.	DATE 1998	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	TPH diesel	Naphthalene	TPH gasoline	BTEX			REMARKS
													Send bill to & results to
													Dennis Williams
(1)	10-28	12:46p		X	South Tank (500 gallon)	1	X	X					Engr. Sec.
													CF&F
(2)	10-28	1:08p		X	North tank (1000 gallon)	1			X	X			523 E Capitol Ave
													Pierre SD 57501-3182
													Copy results to
													Scott Bickler
													1148 Bailey
													Rapid City SD [illegible]

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Scott Bickler	10-29-98 9:15	Annie Bixler			
Relinquished by: (Signature)	**Date/Time**	**Received by: (Signature)**	**Relinquished by: (Signature)**	**Date/Time**	**Received by: (Signature)**
Relinquished by: (Signature)	**Date/Time**	**Received for Laboratory by: (Signature)**	**Date/Time**	**Remarks:**	

Split Samples ☐ Accepted ☐ Declined ____________ Signature

Distribution: Original Accompanies Shipment, First Copy to Coordinator Field Files, Second Copy to Representative of Inspected Facility

SPD-08-1198

FILE COPY C.98.046

DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3181
www.state.sd.us/denr

January 28, 2000

Department of Game, Fish, and Parks
ATTN: Dennis Williams
Foss Building
523 East Capitol
Pierre, SD 57501

Re: Closure of Department of Environment and Natural Resources File # C 98.046 pertaining to soil samples collected during the removal of one 1,000 gallon underground gasoline storage tank (UST) and one 1,000 gallon diesel UST , Snake Creek Recreation Area, Charles Mix County, South Dakota

Dear Mr. Williams:

The Department of Environment and Natural Resources has conducted a review of the soil laboratory results submitted to this office regarding the above referenced site. As a result of this review, the department has determined that work at this site can end, and the file can be closed.

Based on the information available, it appears that a release of petroleum has not occurred at this site. Therefore, the department will not require that you conduct any additional testing or remediation at this time. However, you should be aware that if problems should arise from contamination that may not have been detected, South Dakota Department of Game, Fish, and Parks may be held responsible for future testing or remediation.

Should you have any questions, please contact Chris Hanson of my staff. Thank you for your cooperation in protecting the ground water resources of South Dakota.

Sincerely,

Bill Markley

Bill Markley, Administrator
Ground Water Quality Program
Phone: (605) 773-3296

cc: Dennis Rounds, Petroleum Release Compensation Fund
Bill Youngstrom, Charles Mix County Emergency Management