A Class I and Class III Cultural Resources Inventory of the Bear Paw Energy Natural Gas Liquids Garden Creek Pipeline, U.S. Forest Service Lands, McKenzie County, North Dakota

Prepared for

E3 Environmental, LLC

Prepared by

SWCA Environmental Consultants

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A Class I and Class III Cultural Resources Inventory of the Bear Paw Energy Natural Gas Liquids Garden Creek Pipeline, U.S. Forest Service Lands, McKenzie County, North Dakota

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ABSTRACT

This report outlines the results of Class I and Class III cultural resources inventory conducted by SWCA Environmental Consultants (SWCA) between May 11 and May 27, 2011, on the behalf of E3 Environmental, LLC (E3) for the proposed Bear Paw Energy, LLC (Bear Paw) Garden Creek Natural Gas Liquids Pipeline project (Garden Creek). Bear Paw proposes to construct a 10-inch-diameter natural gas liquids (NGL) pipeline connecting the Garden Creek Gas Processing Plant, located northeast of Watford City, North Dakota, to the Riverview Terminal, located just southwest of Sidney, Montana. From the Riverview Terminal, the NGL would be shipped by rail to markets. In its proposed entirety, the Garden Creek project is approximately 63.17 miles long—40.49 miles (non-contiguous) of pipe would cross private lands in McKenzie County, North Dakota; 13.72 miles (non-contiguous) would cross U.S. Forest Service (USFS) lands (Dakota Prairie Grasslands, Little Missouri National Grasslands [DPG-LMNG]) in McKenzie County, North Dakota; and 8.96 miles would cross private lands in Richland County, Montana. The proposed pipeline would be constructed within a 95-foot-wide temporary construction right-of-way (ROW).

Although a cultural resources inventory was preformed for the entire pipeline corridor, this report focuses on the portion of the project (13.72 miles) that crosses the DPG-LMNG in McKenzie County, North Dakota, and falls under the jurisdiction of the USFS. E3 is assisting Bear Paw in acquiring all necessary permissions to construct the proposed pipeline. E3 retained SWCA to complete a Class I and Class III cultural resources inventory for the project, per the requirements of Section 106 of the National Historic Preservation Act.

The Class III inventory includes a 250-foot-wide survey corridor centered on the 13.72-mile-long proposed pipeline centerline (417.95 acres) located on USFS lands. Additional areas totaling 19.40 acres were surveyed on USFS lands for access roads (12.24 acres) and to provide alternate alignment options and extra work space (7.16 acres). In total, 437.35 acres were inventoried on USFS lands in North Dakota for the project. As proposed, the pipeline construction ROW, access roads, and workspace would remain within the inventoried area.

Four previously recorded cultural resources were revisited for the portion of the project that crosses USFS lands. One of the sites is an historic depression, rock pile, and cultural material scatter site (32MZ69); one is a prehistoric lithic scatter (32MZ168); one is a multicomponent historic and prehistoric cultural material scatter site (32MZ767); and one is a prehistoric lithic scatter (32MZ1562). 32MZ69, 32MZ168 and 32MZ1562 are recommended as not eligible for listing on the National Register of Historic Places (NRHP) due to poor preservation; no further work is recommended. 32MZ767 contains a prehistoric and an historic component. For the historic component, SWCA concurs with the previous recommendation of not eligible under all criteria. SWCA leaves unchanged the previous recommendation that the prehistoric component of the site is eligible for the NRHP under Criterion D. However, the site is bisected by an existing pipeline scar; this portion of the site has been significantly disturbed and therefore lacks integrity. This portion of the site is not likely to contribute to the overall eligibility of the site and is therefore recommended as a non-contributing portion. SWCA recommends additional impacts to the contributing portions of 32MZ767 be avoided pending subsurface testing. It is recommended that the construction corridor be necked-down to remain within the existing pipeline disturbance area (non-contributing portion of the site).

Furthermore, SWCA recommends that the edges of the necked-down construction corridor be fenced to ensure that all construction activities and vehicle traffic remain within the approved ROW and that a qualified archaeological monitor be present during all ground-disturbing activities adjacent to the site. With the above stipulations, it is recommended that a determination of *No Historic Properties Adversely Affected* be granted for the project to proceed as planned.

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INTRODUCTION

SWCA Environmental Consultants (SWCA) conducted a Class III cultural resources inventory between May 11 and 27, 2011, on the behalf of E3 Environmental, LLC (E3) for the proposed Bear Paw Energy, LLC (Bear Paw) Garden Creek Natural Gas Liquids Pipeline project (Garden Creek). Bear Paw proposes to construct one 10-inch-diameter natural gas liquids (NGL) pipeline connecting the Garden Creek Gas Processing Plant, located northeast of Watford City, North Dakota, to the Riverview Terminal, located just southwest of Sidney, Montana. From the Riverview Terminal, the NGL would be shipped by rail to markets throughout North America.

The Garden Creek project is approximately 63.17 miles long, spanning private lands in North Dakota; U.S. Forest Service (USFS) lands in North Dakota; and private lands in Montana (Figure 1). For the project, 40.49 miles (non-contiguous) of pipeline would cross private lands in McKenzie County, North Dakota; 13.72 miles (non-contiguous) would cross USFS lands (Dakota Prairie Grasslands, Little Missouri National Grasslands [DPG-LMNG]) in McKenzie County, North Dakota; and 8.96 miles would cross private lands in Richland County, Montana. The portion of the pipeline crossing the DPG-LMNG falls under the jurisdiction of the USFS. E3 is assisting Bear Paw in acquiring all necessary permissions to construct the proposed pipeline. E3 retained SWCA to complete a Class I and Class III cultural resources inventory for the project, per the requirements of Section 106 of the National Historic Preservation Act (NHPA).

The proposed 10-inch pipeline would be constructed within a 95-foot-wide temporary construction right-of-way (ROW). The ROW would be slightly offset on the centerline, with 45 feet of construction ROW on one side of the centerline and 50 feet of construction ROW on the other. The portion of the pipeline on USFS lands follows an existing pipeline ROW (Lewis and Clark Pipeline) (Figures 2–4), with the exception of the western approximately 3.5 miles, which follow a greenfield corridor. Where the pipeline is co-located, the pipeline centerline would be offset approximately 10 feet south of the existing Lewis and Clark Pipeline, and therefore the 95-foot-wide ROW would largely overlap with the existing pipeline disturbance. As proposed, additional disturbance would only occur on the southern and eastern sides of the pipeline centerline, as the northern and western portions of the construction ROW is contained within the 50-foot-wide permanent ROW for the Lewis and Clark Pipeline. Project ROW access would be limited to inventoried access roads and existing improved roads.

Although a cultural resources inventory was preformed for the entire pipeline corridor, this report focuses on the portion of the project that crosses the DPG-LMNG in McKenzie County, North Dakota, hereafter referred to as the project area. The Class III inventory includes a 250-foot-wide survey corridor centered on the 13.72-mile-long proposed pipeline centerline (417.95 acres) located on USFS lands. Additional areas totaling 19.40 acres were surveyed on USFS lands for access roads (12.24 acres) and to provide alternate alignment options and extra work space (7.16 acres). In total, 437.35 acres were inventoried on USFS lands in North Dakota for the project.

The inventoried area discussed herein is situated on the Sather Lake (1976), Phillip Spring (1975), Sheep Creek (1975), and Sidney SE (1975), North Dakota, U.S. Geological Survey (USGS) topographic quadrangles, as shown in Figures 5a through 5g, and includes parcels in Sections 23, 24, 26, 27, 32, 33, and 34 of Township (T) 148 North (N), Range (R) 103 West (W); in Sections 4, 5, 6, and 7 of T147N, R103W; Sections 7, 9, and 10 of T147N, R104W; in Sections 2, 11, and 12 of T147N, R105W; and in Sections 34 and 35 of T148N, R105W.

The cultural resource survey was conducted under SWCA's USFS permit for archaeological investigations (#MCK10008). For the cultural resources investigation, Scott Slessman and Judith Cooper served as Principal Investigators. Fieldwork was performed by Stephanie Lechert (authorized Field Director on USFS permit), Nicholas Smith, Joshua Boyd, and Jolene Schleicher (all of SWCA). All field notes and photographs are on file at SWCA's Bismarck, North Dakota, office under project number 17173. The USFS is the lead agency for the portion of the undertaking located on the DPG-LMNG in McKenzie County, North Dakota.

Contains Privileged Information -- Do Not Release

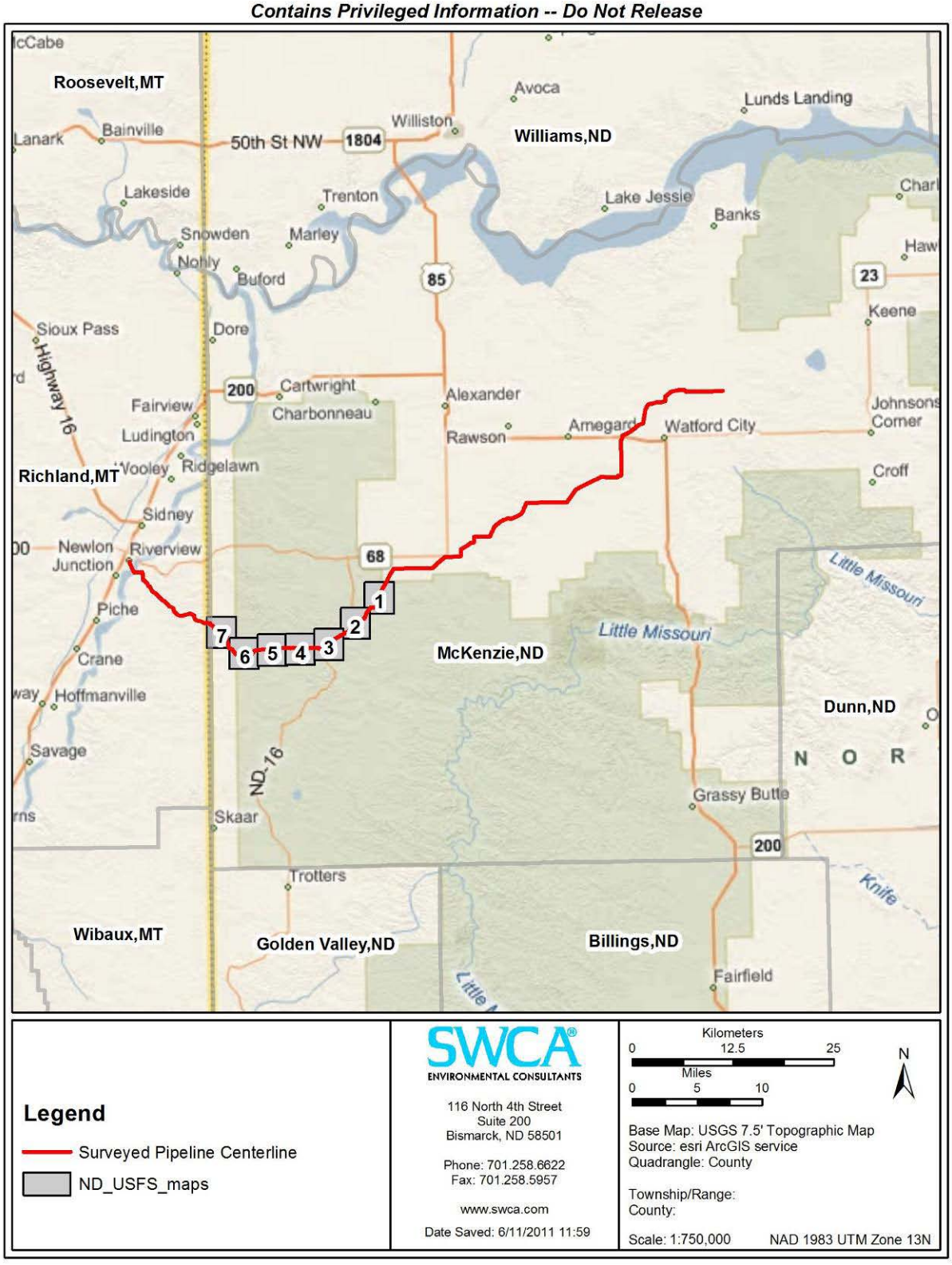

Figure 1. Project location overview map.

Figure 2. Existing pipeline scar, near milepost (MP) 37.5, facing west.

Figure 3. Existing pipeline scar, near MP 40, facing southwest.

Figure 4. Existing pipeline scar, central portion of project near MP 47, facing west.

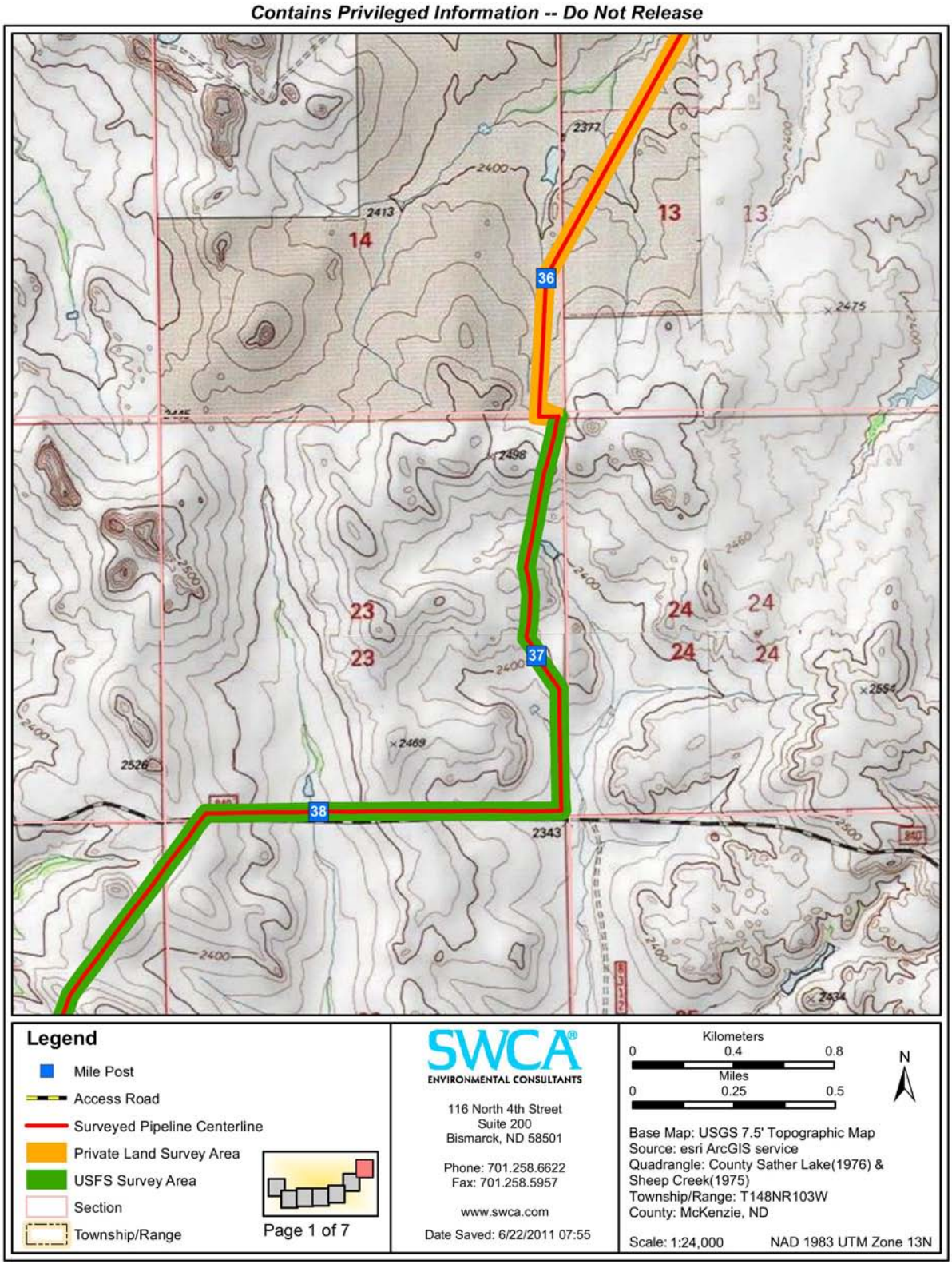

Figure 5a. Project area map 1 of 7.

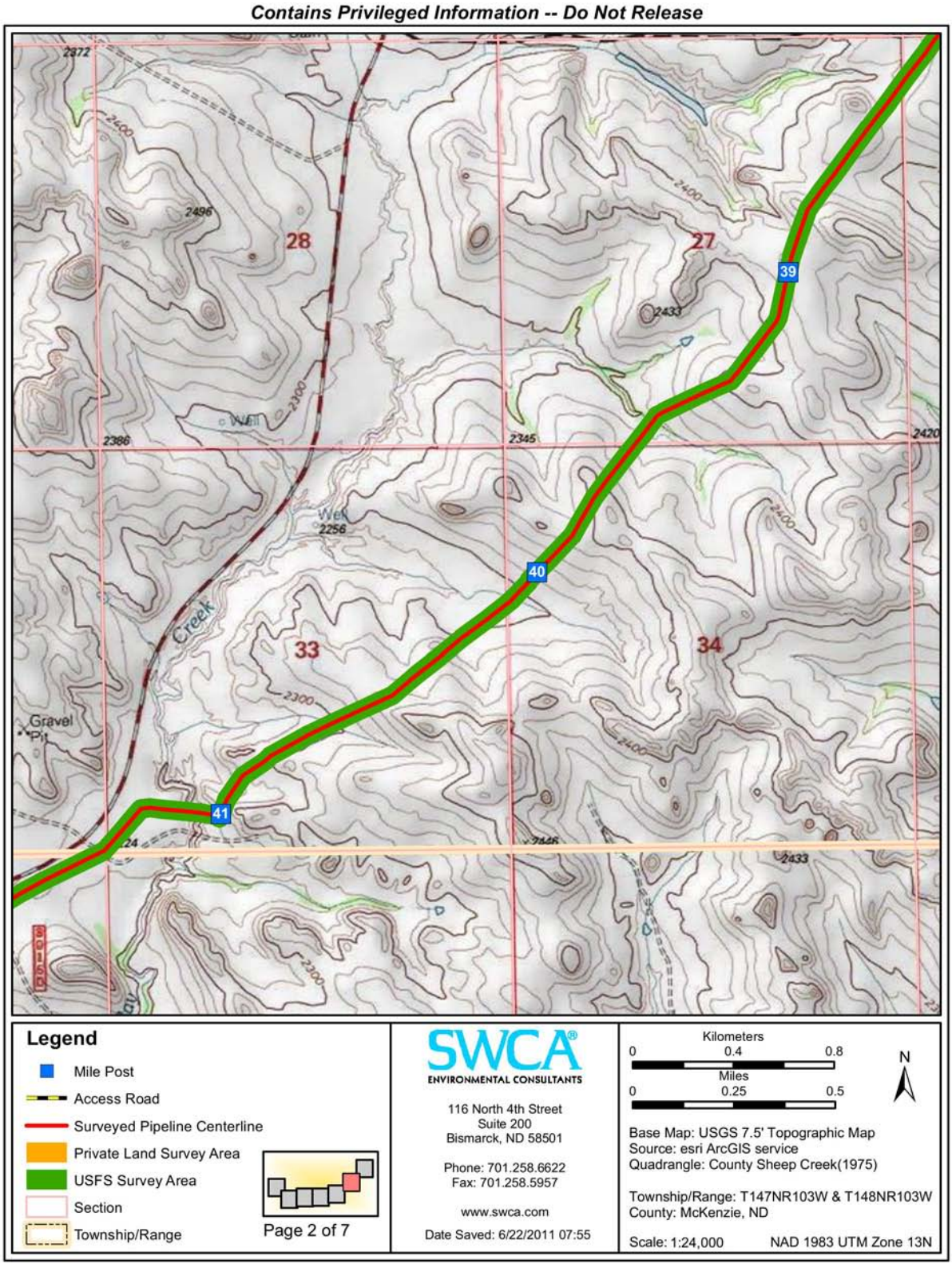

Figure 5b. Project area map 2 of 7.

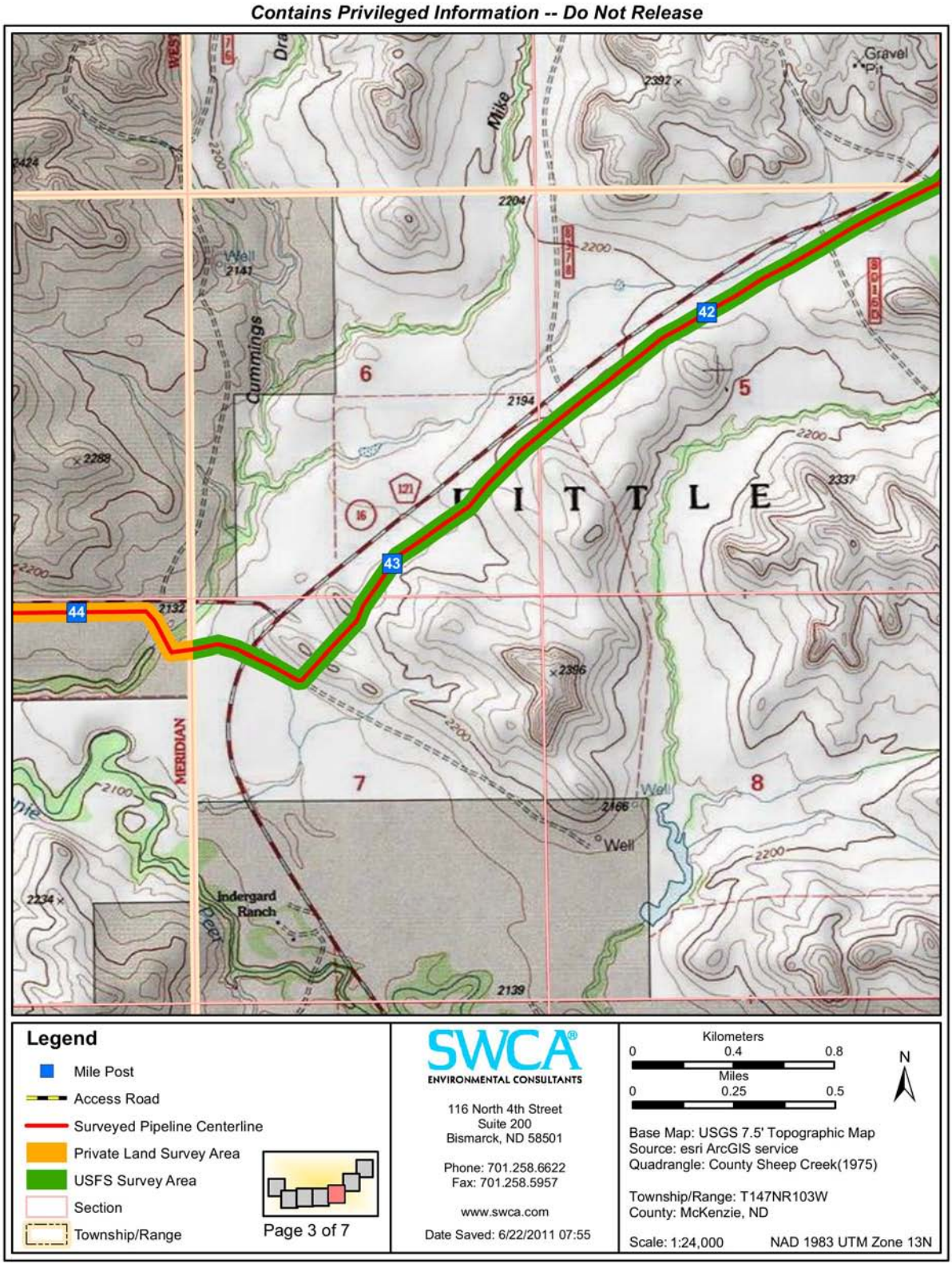

Figure 5c. Project area map 3 of 7.

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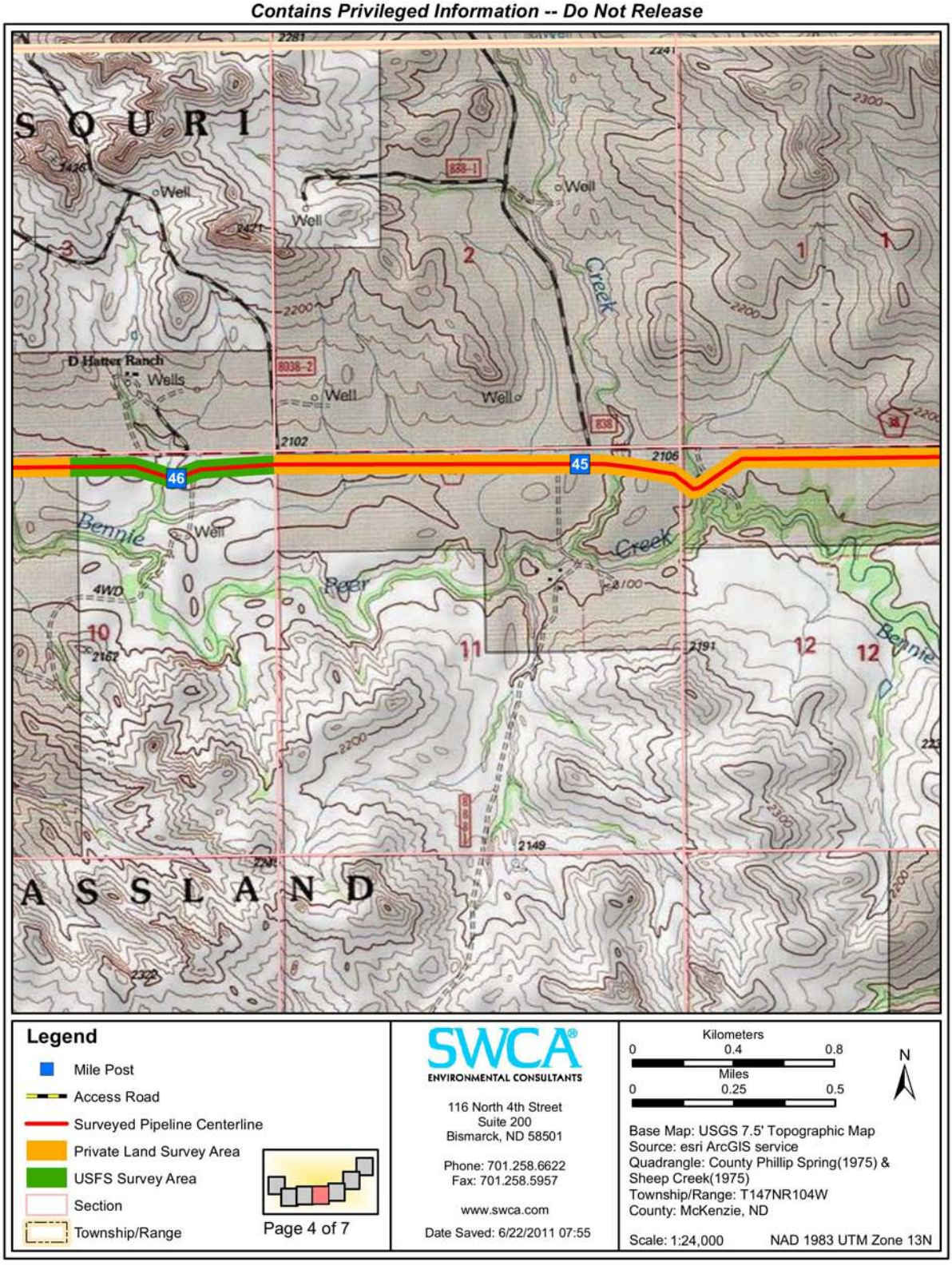

Figure 5d. Project area map 4 of 7.

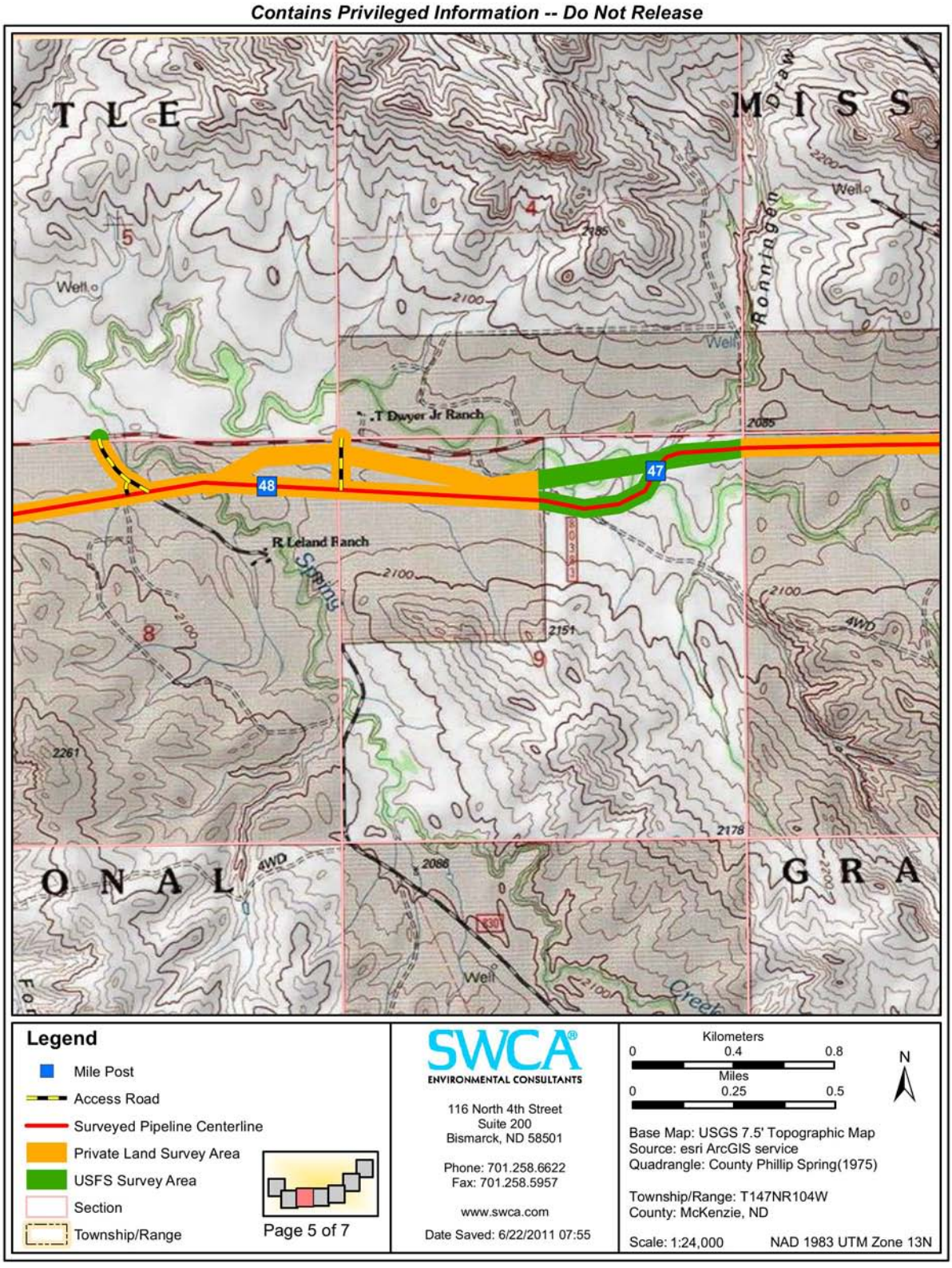

Figure 5e. Project area map 5 of 7.

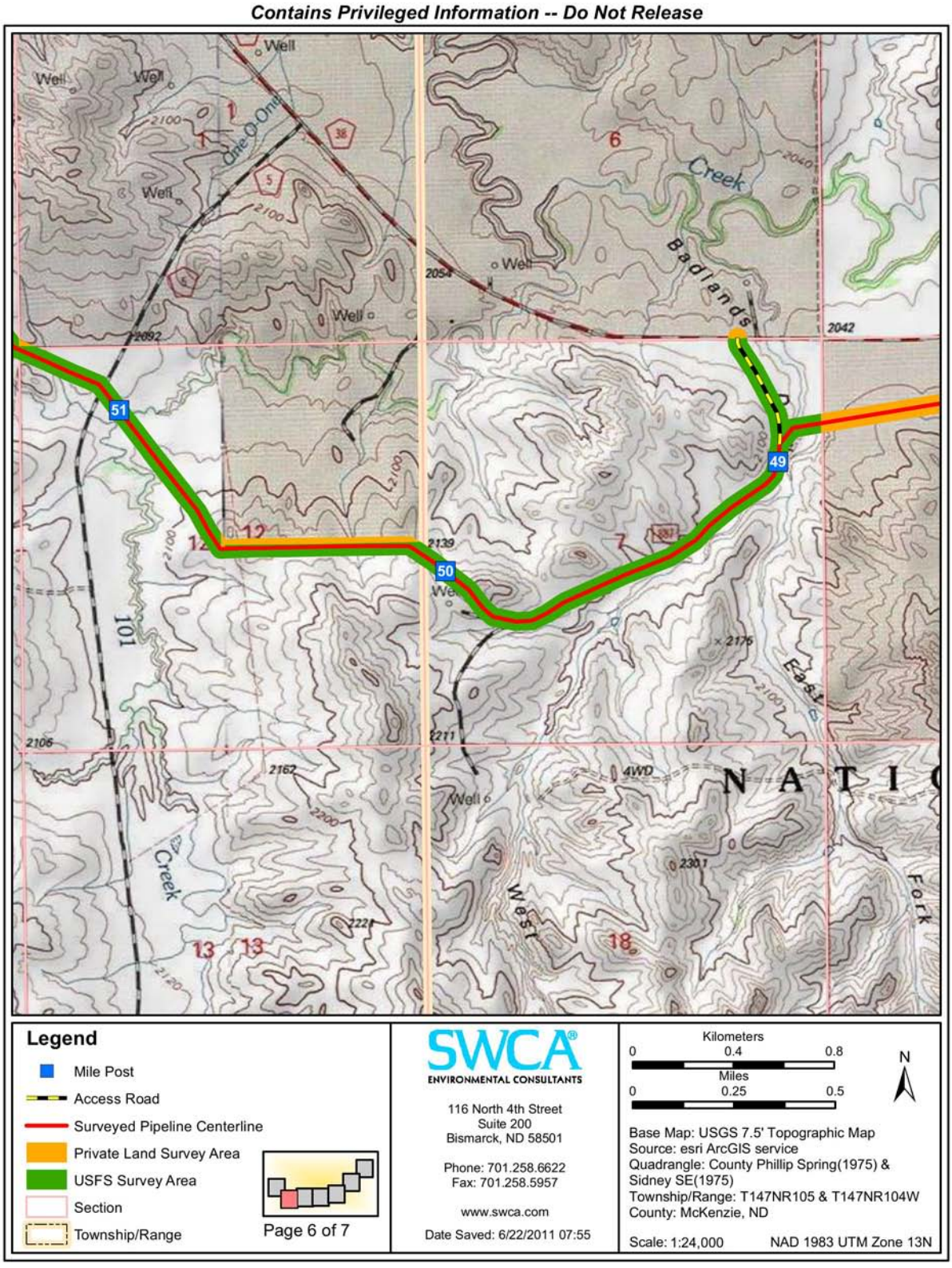

Figure 5f. Project area map 6 of 7.

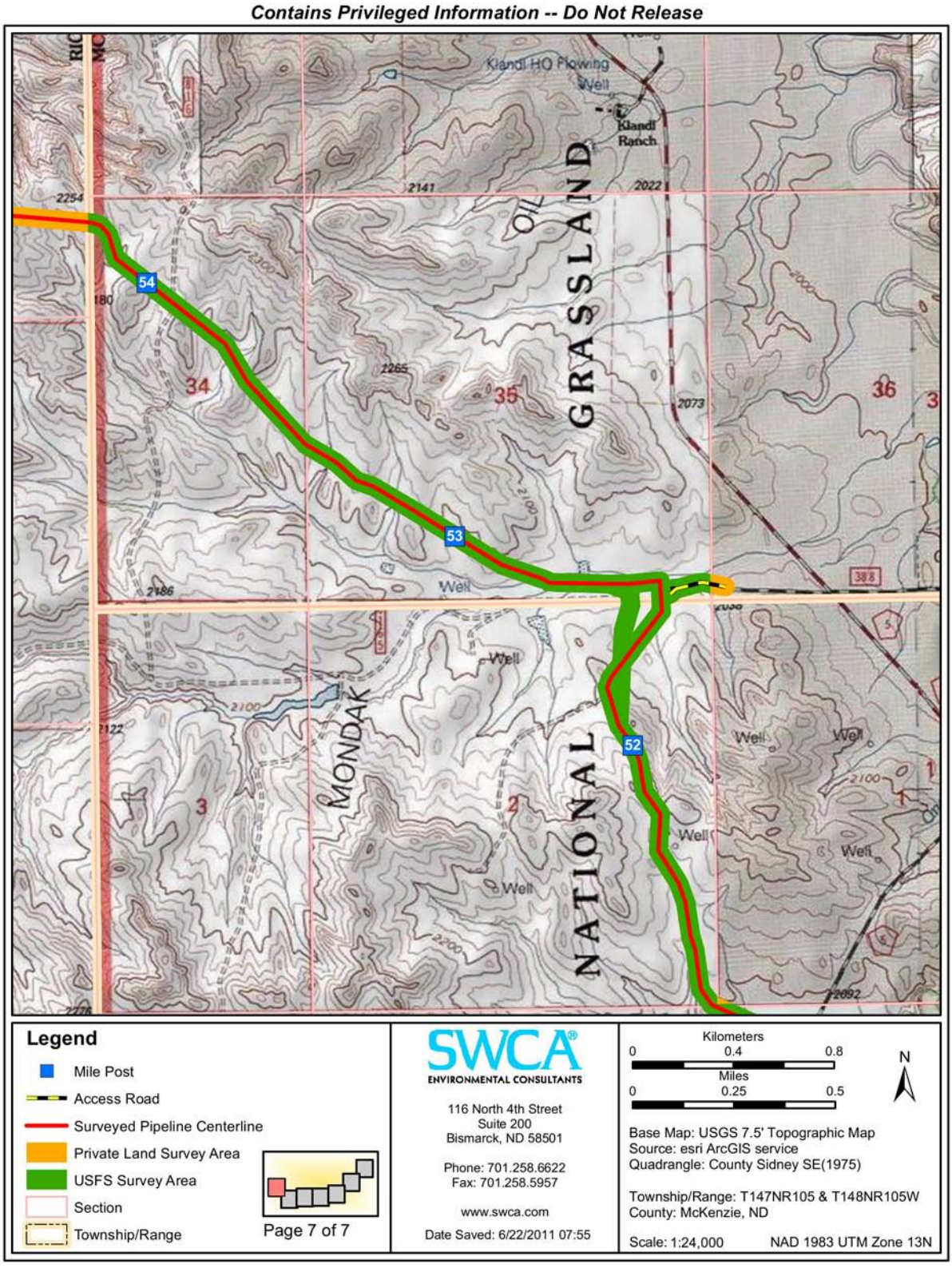

Figure 5g. Project area map 7 of 7.

PROJECT SETTING

TOPOGRAPHY

The project area is located in the glaciated Missouri Plateau and the River Breaks sections of the Great Plains physiographic province in western North Dakota (Fenneman 1931). The glaciated Missouri Plateau section is characterized by old plateaus and isolated mountains (Fenneman 1931). For the portion of the proposed project area located on the Missouri Plateau in the northwest Great Plains ecoregion, the general topography of the proposed project area is fairly consistent—semiarid rolling plains of shale, siltstone, and sandstone with the occasional butte (Bryce et al. 1998) (Figure 6). Largely unaffected by glaciation, this ecoregion retains its original soils and complex drainage system (Bryce et al. 1998). The general topography of the portion of the proposed project area located on the River Breaks, in the northwest Great Plains ecoregion, consists of highly dissected hills and uplands bordering major rivers and associated alluvial plains (Bryce et al. 1998) (Figure 7). The River Breaks form broken terraces and uplands that descend to the Missouri River and its major tributaries. They have formed particularly in soft, easily erodible strata, such as Pierre shale (Bryce et al. 1998).

The northern and eastern portions of the proposed pipeline project area are located on gently rolling plains and active agricultural fields, while the southern and western portions consist of increasingly dissected terrain interspersed with active agricultural fields (Figure 8). The elevation ranges from approximately 2,195 to 2,539 feet (669 to 774 meters [m]), with the highest elevations in the northern portion of the project area, and the lowest elevations in the southern portion of the project area, as the project area descends towards the Lower Yellowstone River valley.

Figure 6. Project area overview depicting general topography at north and east ends of project area on USFS lands, facing south.

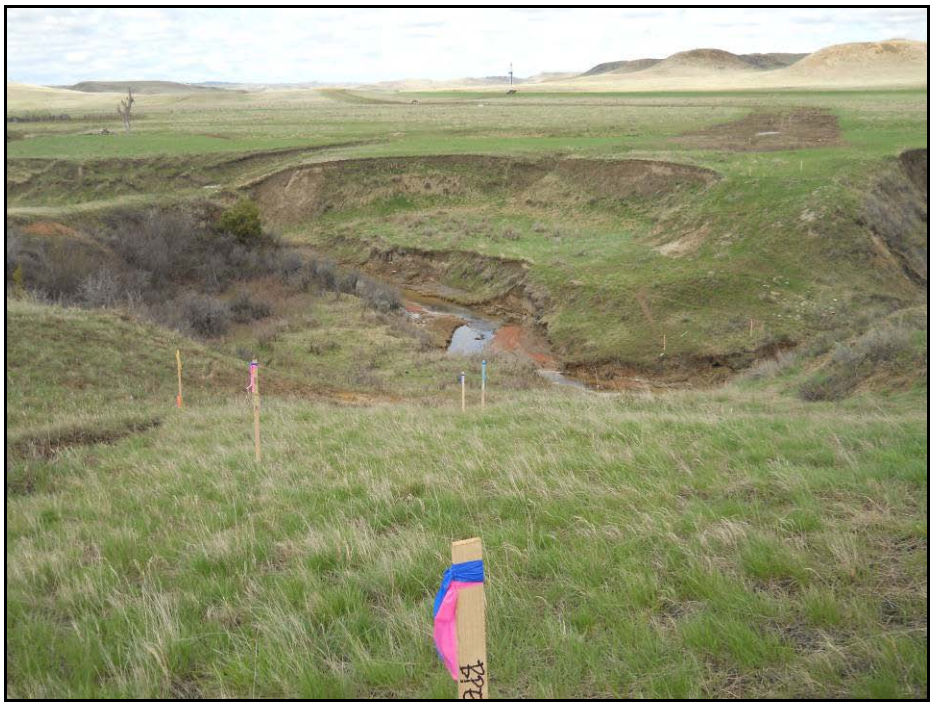

Figure 7. Project area overview depicting general topography near the middle segment of project area on USFS lands, facing west-southwest.

Figure 8. Project area overview depicting general topography toward the western portion of project area on USFS lands, facing north-northwest.

CLIMATE

The climate for northwest North Dakota is temperate. Based on climatic data collected from Watford City, North Dakota, between 1971 to 2000, January is the coldest month with a mean daily temperature of 8.2 degrees Fahrenheit (°F) while July is the warmest month with a mean daily temperature of 68.6°F (National Climatic Data Center [NCDC] 2009). Temperature extremes on record range from -43°F at the coldest to 111°F at the warmest. On average, 141 days are frost-free (28°F or above) and the average date of the first fall frost is September 25 and the average date of the last spring frost is May 6 (North Dakota Agricultural Statistics Service 2005). Per annum, Watford City receives 14.41 inches of precipitation (NCDC 2009). The wettest month is June, with an average of 3.05 inches of precipitation received; February is the driest, with only 0.39 inch of precipitation received on average. Thirty-five inches of snow are received annually, on average, with the highest accumulations (7.5 inches, on average) received in November (NCDC 2009). The highest monthly snow fall on record occurred in January at which time 22.3 inches of snow fell. Overall, northwest North Dakota, like much of the northwestern Great Plains, is characterized by a moderate to cool climate, with cold, dry winters and mild to warm, dry to moderately wet summers.

HYDROLOGY

The project area is located in the Bennie Peer Creek watershed, which is a located within the Lower Yellowstone River watershed. Bennie Peer is an approximate 30-mile-long perennial stream that originates in southern McKenzie County and flows north and northwest into the Yellowstone River. Along its course, several named and unnamed ephemeral and intermittent streams confluence with and contribute flow to Bennie Peer Creek, including West Hay Draw Creek, Sheep Creek, Bay Creek, Spring Creek, and One-O-One Creek.

GEOLOGY

In general, the geology of the project area is characterized primarily by Oahe Formation-River Sediment. Oahe Formation-River Sediment consists of dark, obscurely bedded clay and silt (overbank sediment), generally overlying cross-bedded sand (channel sediment) on floodplains of modern streams up to 10 m (30 feet) thick (Clayton 1980). A minor portion of the project area is characterized by the Bullion Creek Formation. The Bullion Creek Formation consists of yellow/brown silt, sand, clay, sandstone, and lignite; river, lake, and swamp sediment; and is up to 200 m (600 feet) thick (Clayton 1980).

SOILS

Twenty-two soil series are present in the project area (Natural Resources Conservation Service [NRCS] 2011). The project area is dominated by well-drained alluvium and residuum found on hills, knolls, ridges, rises, alluvial flats, alluvial fans, and swales. Glacial till comprises a minor portion of the soils in the project area. Table 1 lists the soils within the project area.

Table 1. Summary of Soil Series within the Project Area (NRCS 2011).

Soil Series	Parent Material	Drainage	Slope	Landform
Beisigl-Flasher-Tally complex	Alluvium, Residuum	Well drained; somewhat excessively drained	9%–70%	Ridges
Belfield-Grail silty clay loams	Alluvium	Moderately well drained	0–2%	Alluvial flats, swales
Belfield-Savage silty clay loams	Alluvium	Well drained	2%–6%	Alluvial fans
Brandenburg-Cabba-Dogtooth complex	Eolian, Residuum	Excessively drained; well drained	15%–70%	Ridges, hills
Brandenburg-Searing-Dogtooth complex	Eolian, Alluvium, Residuum	Excessively drained; well drained	6%–15%	Ridges, hills
Cabba-Badland, outcrop complex	Residuum	Well drained	9%–70%	Ridges
Cabba-Chama-Sen silt loams	Alluvium, Residuum	Well drained	9%–15%	Ridges, hills
Cabba-Sen-Chama silt loams	Alluvium, Residuum	Well drained	15%–70%	Ridges
Chama-Cabba-Sen silt loams	Alluvium, Residuum	Well drained	6%–9%	Knolls, hills
Cherry silt loam	Alluvium	Well drained	0–9%	Alluvial fans
Cherry-Cabba silt loams	Alluvium, Residuum	Well drained	9%–40%	Alluvial fans, ridges
Daglum-Belfield complex	Alluvium	Moderately well drained	0–6%	Alluvial fans
Dogtooth-Janesburg silt loams	Alluvium, Residuum	Well drained	0–6%	Pediments
Dogtooth-Janesburg-Cabba complex	Alluvium, Residuum	Well drained	6%–30%	Hills, ridges
Farnuf loam	Alluvium	Well drained	0–9%	Alluvial flats, ridges, hills, divides, alluvial fans, and stream terraces
Korchea loam	Alluvium	Well drained	0–2%	Floodplains
Maschetah silt loam	Alluvium	Well drained	0–2%, 2%–6%	Alluvial flats
Rhoades-Daglum complex	Alluvium	Moderately well drained	0–6%	Alluvial flats, alluvial fans
Savage silty clay loam	Alluvium	Well drained	0–9%	Alluvial flats, alluvial fans, hills, terraces, ridges, divides, and knolls

Soil Series	Parent Material	Drainage	Slope	Landform
Vebar-Flasher-Tally complex	Alluvium, Residuum	Well drained; somewhat excessively drained	9%–15%	Hills, ridges
Zahl-Cabba-Williams complex	Alluvium, Glacial Till	Well drained	9%–15%	Knolls and ridges on till-mantled residual uplands
Zahl-Williams-Cabba complex	Alluvium, Glacial Till	Well drained	6%–9%	Knolls and ridges on till-mantled residual uplands

FLORA AND FAUNA

In the DPG-LMNG, vegetation includes a mix of grassland, shrub steppe, and woodlands characteristic of the northwestern Great Plains. Grassland vegetation is generally categorized as northern mixed prairie, a transition zone between short and tall grass prairie. Grassland habitat types dominate the present landscape in the DPG-LMNG. The native rolling prairie is dominated by cool season mid-height grass species such as western wheatgrass (*Agropyron smithii*), green needlegrass (*Stipa viridula*), and needle and thread (*Stipa comata*). Shortgrass species, primarily blue grama (*Bouteloua gracilis*), and cool season sedges (*Carex* spp.) are also present. Shrublands of the LMNG are typically composed of shrubs, grasses, and forbs and are classified as arid or mesic. Arid shrublands include big sagebrush (*Artemisia tridentata*), silver sagebrush (*Artemisia cana*), and skunkbrush (*Rhus trilobata*) and are generally associated with dry river terraces and/or upland sites. Mesic shrublands include snowberry (*Symphoricarpos occidentalis*), woods rose (*Rosa woodsii*), and shrubby cinquefoil (*Potentilla fruitcosa*) and are often found on north-facing slopes, in draw bottoms, and in shallow depressions. Riparian areas in the rolling prairie generally contain wetland species such as prairie cordgrass (*Spartina pectinata*), Baltic rush (*Juncus balticus*), three square bulrush (*Scirpus pungens*), and spikerush (*Eleocharis palustris*); and, within saline riparian areas, inland saltgrass (*Distichlis spicata* var. *stricta*) and plain bluegrass (*Poa arida*). Plains cottonwood (*Populus deltoides*) is found in the floodplains as well. The project area crosses patches of woodlands, primarily in the badlands, which cover about 10 percent of the DPG-LMNG. These woodlands contain green ash (*Fraxinus pennsylanica*), snowberry, and chokecherry (*Prunus virginiana*). Rocky mountain juniper (*Juniperus scopularum*) is the dominant conifer woodland. Figures 9 and 10 illustrate the vegetation communities observed within the project area.

Figure 9. Overview of the vegetation characteristic of the northern and eastern portions of the project area located on USFS lands, facing south-southeast.

Figure 10. Overview of the vegetation characteristic of the southern and western portions of the project area located on USFS lands, facing south-southwest.

Approximately 160 wildlife species are resident or seasonal visitors to the Yellowstone River ecosystem, and hundreds of native fish species. Some of the animal species that would have been common and available for human use in the Yellowstone River Valley area—both prehistorically and historically—include fur bearing mammals such as beaver (*Castor canadensis*), muskrat (*Ondatra zibethicus*), eastern cottontail (*Sylvilagus floridanus*), elk (*Cervus elaphus*), moose (*Alces alces*), mule deer (*Odocoileus hemionus*), white-tailed deer (*Odocoileus virginianus*), pronghorn (*Antilocapra americana*), and bison (*Bison bison*); and bird and waterfowl species such as mallard (*Anas platyrhynchos*), Canada goose (*Branta canadensis*), sharp-tailed grouse (*Pedioecetes phasianellus campestris*), *g*olden eagle (*Aquila chrysaetos*), and bald eagle (*Haliaeetus leucocephalus*) (Seabloom et al. 1978). At present, federally listed threatened and endangered species that may reside in the area include whooping crane (*Grus Americana*), black-footed ferret (*Mustela nigripes*), piping plover (*Charadrius melodus*), interior least tern (*Sternula antillarum*), pallid sturgeon (*Scaphirhynchus albus*), and gray wolf (*Canis lupus*) (U.S. Fish and Wildlife Service 2010).

ENVIRONMENTAL CONSTRAINTS

Preservation (including both exposure and burial) of archaeological materials within or adjacent to the project area has been affected by numerous factors. These consist of natural erosion, including ongoing aeolian and colluvial processes, especially in portions of the project area that cross badlands; alluvial deposition along active stream channels; pipeline construction and maintenance; agricultural activities, including plowing and vehicle traffic; livestock grazing; vehicle traffic along two-track roads; road construction; fence line construction; and electrical transmission line construction.

In some places, these varied land uses have resulted in increased archaeological visibility through the surface exposure of buried materials and sediments (e.g., through plowing or pipeline trenching), and/or removal of overburden (e.g., through grading, crop removal, vehicle traffic, etc.) allowing for the identification of numerous sites and an interpretation of relatively high site density. For example, along the portions of the project area that follow an existing pipeline scar and cross agricultural fields, a higher number of sites is expected to be encountered compared to elsewhere along the corridor, due to the increased exposure of otherwise buried materials. In these areas, cultural material scatters, like lithic scatters, are expected to dominate, as plowing tends to expose these portable, yet durable, shallowly buried materials without causing significant damage to the artifacts themselves (although the spatial integrity of such sites is potentially significantly affected).

Conversely, these same activities also result in the destruction of other resources, such as sites containing stone features, hearths, and depressions. Plowing and grading activities tend to destroy, obscure, and/or dissemble such features and as a result, sites containing surface features are less likely to be identified along an existing pipeline scar and through agricultural fields.

For portions of the project area where native prairie remains, sites containing features are expected to dominate, as impacts to these areas have been minimal, generally limited to less destructive forces such as grazing and erosion (at least in the short-term). Such forces tend to have a less significant impact on surface features. On the other hand, cultural material scatters

are difficult to identify in areas characterized by native prairie, as less factors have contributed to the exposure of shallowly buried materials. Additionally, bare ground visibility tends to be lower due to denser vegetation cover; as a result, smaller artifacts comprising cultural material scatters are more difficult to identify.

Finally, in other cases, the aforementioned impacts have resulted in the complete removal or destruction of archaeological materials. Therefore, site densities are expected to vary significantly across the proposed pipeline corridor as preservation is contingent on the complex interplay of multiple natural and human-induced factors.

CULTURAL/HISTORIC OVERVIEW

PREHISTORIC CONTEXTS

The following discussion incorporates a variety of sources to develop a prehistoric overview for the work conducted for this project and includes information from the Yellowstone River Study Unit (YRSU) in which the project area is located (Gregg and Bleier 2008). As of 2007, 379 archaeological sites had been identified in the YRSU, the majority of which were identified on ridges (37.5 percent); hills, bluffs, and knolls (26.1 percent); and terraces (19.0 percent) (Gregg and Bleier 2008).

Paleoindian Tradition (ca. 11,500–7,900 years before present [B.P.])

Although speculation exists regarding the possibility of earlier habitation of the Great Plains, the Paleoindian tradition is the oldest of the region, and, in general, is associated with a hunting and gathering adaptation (Gregg 1985). The Paleoindian tradition is subdivided here into six main complexes: Clovis, Goshen, Folsom, Hell Gap/Agate Basin, Alberta/Cody, and Parallel Oblique Flaked. Only two Paleoindian archaeological resources have been identified in the YRSU (Gregg and Bleier 2008).

The Clovis complex (ca. 11,500–10,800 B.P.), defined by large, fluted lanceolate projectile points, is the earliest unequivocal complex in North America. Clovis artifacts have been found with megafauna, such as mammoth, in buried contexts in the Southwest and Great Plains (Grayson and Meltzer 2002); however, although megafauna were probably dietary constituents, it is debated to what degree Early Paleoindians pursued large game (Cannon and Meltzer 2004; Grayson and Meltzer 2002). Few Clovis sites have been recorded in the region. In the South Dakota Badlands, the Lange-Ferguson site yields the best evidence for proboscidean exploitation (Hannus 1990). Here, modified mammoth bones are directly associated with a flake and three projectile points that were recovered from deposits similar to those containing mammoth, indicating that Clovis hunter-gatherers either killed the animals or scavenged their carcasses (Hannus 1990).

Goshen (ca. 10,900–10,100 B.P.) is a technological complex first identified at Hell Gap, Wyoming (Irwin 1967, 1971), but it is also found at Mill Iron, Montana, Carter-Kerr/McGee, Wyoming, and the Jim Pitts site, located in the South Dakota Black Hills (Sellet 2001). Goshen is poorly understood—the basally thinned, unfluted projectile points share affinities with both Clovis and Folsom, but are also similar to Southern Plains Plainview points. In stratified deposits, Goshen materials typically underlie Folsom (Frison et al. 1996).

The Folsom complex (ca. 10,900–10,200 B.P.) is typified by distinctive fluted lanceolate projectile points. With most large grazers extinct by Folsom times and grasslands dominating the Great Plains, bison populations flourished, providing resources for Folsom hunters (Frison 1991). However, many high-elevation Folsom sites also demonstrate broad diets of diverse small prey (Hill 2007). Probable structures recorded at the Mountaineer and Barger Gulch sites in Colorado suggest long-term occupations in mountain settings (Stiger 2006; Surovell and Waguespack 2007). In North Dakota, there are numerous documented Folsom sites (Gregg 1985), including the Bobtail Wolf (32DU955A), Big Black (32DU955C), and Young-Man-Chief (32DU955D) sites (Root 2000; Shifrin 2000; William 2000). These sites are interpreted as camps, quarries, and lithic workshops where Knife River flint was procured and used for tool production.

Both the Agate Basin (ca. 10,500–10,000 B.P.) and Hell Gap (ca. 10,000–9,500 B.P.) technocomplexes are typified by lanceolate projectile points with thick lenticular cross-sections (Frison 1991). Based on morphological similarities and stratigraphic evidence, Hell Gap is technologically descended from Agate Basin. Agate Basin and Hell Gap hunter-gatherers were probably specialized bison hunters. Sites like Agate Basin II (Hill 2001) and Casper (Todd et al. 1997) indicate more frequent extraction of marrow and within-bone nutrients, suggesting a greater focus on planning than previously evident. Some sites associated with this tradition have been recorded in North Dakota and South Dakota, but these mainly consist of isolated and surface finds (Gregg 1985). A Hell Gap/Agate Basin-style projectile point was identified at 32MZ1447 (Klinner and Wermers 2000).

Alberta (9800–9000 B.P.) is a poorly dated technology that probably descends from Hell Gap and is documented at the Hell Gap, Wyoming, and Hudson-Meng, Nebraska, sites (Agenbroad 1978; Frison 1991). Hudson-Meng is one of the largest documented bison kills and suggests that Alberta people focused on bison hunting (Agenbroad 1978); however, more recent work suggests that humans were not responsible for killing the bison and that they died of a natural event (Todd and Rapson 1999). The Cody Complex (9200–8800 B.P.), which includes stemmed/shouldered Eden and Scottsbluff projectile points and the distinctive Cody knife, apparently arose from Alberta (Frison 1991). These sites are widespread across the northwestern and central Great Plains, with components at the Wyoming Horner I, Finley, and Medicine Lodge Creek sites (Frison and Todd 1986; Frison and Walker 2007) and the Mammoth Meadows, Myers-Hindman, and MacHaffie sites in Montana (Davis 1993). Such sites indicate that Cody adaptations were diverse and utilized large fauna as well as small prey and floral resources (Frison et al. 1996; Galvan 2007). Alberta/Cody sites have been recorded in North Dakota and South Dakota. In fact, Hudson-Meng contains a substantial amount of Knife River flint, showing a strong connection to the Missouri River region. One site in the YRSU, 32WI102, has yielded a Scottsbluff projectile point (Gregg and Bleier 2008).

The Parallel Oblique Flaked complex is a catch-all grouping of Paleoindian projectile point types (Gregg 1985) including Angostura, Milnesand, Browns Valley, Lusk, Allen, and Frederick; these range in age from around 9400 to 7900 B.P. All types are lanceolate with parallel oblique flaking. Bison kill-butcheries became rare on the northwestern and northern Great Plains after approximately 8000 B.P. (Frison 1998), perhaps due to severe ecological deterioration that could no longer support large bison populations. Complex surface and subsurface sites have been recorded in the Dakotas, including sites on the Missouri River.

Plains Archaic Tradition (ca. 8000–1500 B.P.)

The transition from Paleoindian to Archaic is archaeologically visible as an abrupt shift to large notched projectile points (Frison 1991), perhaps indicating a shift from hand-thrown spears to atlatl propelled darts. This transition is also associated with warming/drying trends that prompted diverse subsistence adaptations among hunter-gatherers (Carlson 1994). Ground stone appears in the Archaic, suggesting a greater focus on processing floral resources. In conjunction with the appearance of pithouses and storage pits in the western intermontane basins, this suggests a shift in subsistence base, a reduction in overall residential mobility, and more predictable seasonal rounds (Frison 1991). In the YRSU, 28 Archaic archaeological resources have been identified (Gregg and Bleier 2008).

The Logan Creek/Mummy Cave complex (5700–4000 B.P.) is the earliest example of large side-notched projectile points on the northern Great Plains. The blending of the Logan Creek and Mummy Cave names for this complex is due to varied nomenclature used among archaeologists regionally for similar archaeological complexes (Gregg 1985). Settlement types associated with this complex include bison kills, transient camps, and some stone circle sites. One archaeological resource containing a large side-notched projectile point has been identified in the YRSU (Gregg and Bleier 2008).

The Oxbow complex (5600–3500 B.P.), typified by side-notched, deeply concave-based projectile points, is concentrated in northern Montana, Alberta, and Saskatchewan (Hannus 1994:180) but is also quite common in North Dakota and South Dakota, with numerous sites along the Missouri River and its tributary system. Oxbow subsistence apparently centered on bison and sites include bison impoundments and jumps, encampments on stream terraces, stone circles, and processing areas (Hannus 1994; Reeves 1969). However, numerous birds and small mammals were probably exploited (Aaberg et al. 2006:174). Some northern Great Plains sites further yield evidence of complex cultural behavior including bundle burials with elaborate grave goods (Bryan 1991). One Oxbow archaeological resource has been identified in the YRSU (Gregg and Bleier 2008).

The McKean complex (ca. 4500–3400 B.P.) encompasses three distinct sub-phases—the McKean lanceolate, Duncan, and Hannah. The McKean complex is widespread across the Great Plains, and sites from this period can be found associated with bison kills, stone circles, lithic caching, and seasonal settlements (Frison 1991). Slab-lined pit hearths are common, as are ground stone artifacts suggesting a greater reliance on plant resources (Carlson 1994; Frison 1991). McKean complex sites often demonstrate evidence of lithic raw material exchange, including Swan River chert, Tongue River silicified sediment, and Knife River flint (Gregg 1985). In the YRSU, seven archaeological resources dating to the McKean complex have been identified (Gregg and Bleier 2008).

Pelican Lake (ca. 3000–2700 B.P.), typified by broad, thin, corner-notched projectile points, is likely a descendant of McKean and is found across the northern and central Great Plains (Frison 1991). This wide spatial distribution may indicate significant population growth in response to the favorable moist conditions of the Sub-Atlantic episode (Reeves 1983). Numerous communal bison kills, such as Head-Smashed-In (Frison 1991), indicate communal bison hunting, but this does not suggest it was an exclusive feature of their subsistence.

Rather, Pelican Lake populations probably relied on a broad-based economy across diverse ecozones (Hannus 1994). Eight Pelican Lake archaeological resources have been identified in the YRSU (Gregg and Bleier 2008).

Plains Woodland Tradition (ca. 2000–450 B.P.)

Temporally overlapping with the Northwestern Plains Late Archaic, the Plains Woodland tradition is characterized by increased sedentism, garden horticultural activity, expanding regional exchange networks with eastern Woodland populations (Adena and Hopewell), and the elaboration of ceremonial activities and mortuary practices, specifically mound burials (Griffin 1967). Significant technological advances such as bow and arrow and ceramics use are also apparent (Gregg 1985); however, the fundamental subsistence strategies of the Plains Woodland did not drastically differ from their Archaic predecessors (Zimmerman 1985). It is assumed that this tradition saw the beginning of horticultural practices in the region. For the purposes of this study, the complexes that are classed as belonging to the Plains Woodland include Besant, Sonota, Laurel, Avonlea, Old Woman's, and Blackduck.

The Besant complex (ca. 2000–1500 B.P.), typified by small to medium-sized side-notched triangular projectile points, represents the earliest presence of ceramics in North Dakota, probably resulting from eastern woodland influence (Walde 2006). Besant ceramics are more common in the eastern half of the Dakotas; the vessels show a basic conoidal shape and suggest lump modeling manufacture with some coarse cording (Wood and Johnson 1973). Besant sites show extensive use of Knife River flint (Reeves 1970). Site types include stone circle sites, habitations on stream and river terraces, and bison kills. Numerous communal kill sites, including the Ruby bison pound in Wyoming (Frison 1991), suggest that Besant people were sophisticated bison hunters. The Sonota complex (1850–1350 B.P.) appears to be a possible sub-complex of Besant, but differs in that burial mounds are common at Sonota sites (Reeves 1983; Wood 1967). These mounds include rectangular subfloor pits/tombs with dismembered bodies and, commonly, articulated bison remains (Johnson and Johnson 1998). The presence of associated exotic artifacts is often cited as evidence of Hopewell influence on Middle Plains Woodland populations (Johnson and Johnson 1998). In the YRSU, five Besant/Sonota archaeological resources have been identified, including at 32MZ333 (Gregg and Bleier 2008).

Sites from the Laurel complex (2100–850 B.P.) are generally found in the eastern portions of North Dakota, northern Minnesota, and southern Canada. Laurel pottery and mound building are fairly distinct, but lithics associated with this complex tend to be various and lack a particular style (Gregg 1985).

Avonlea complex (ca. 1800–1000 B.P.) sites occur across the northern Great Plains and are contemporaneous with Besant. This complex includes a variety of site types, including stone circles, bison kills, and rock shelter habitations (Reeves 1970). Avonlea represents the first regional complex to produce arrow points exclusively, suggesting a transition to bow and arrow technology (Frison 1988). Avonlea point types are small and indistinctly side-notched. Saskatchewan Basin Complex: Early Variant pottery is found at Avonlea sites (Byrne 1973). Avonlea subsistence in the north relied heavily on communal bison procurement, but in their southern range bison hunting was supplemented by smaller game (e.g., pronghorn), fish, and

seasonal plant exploitation (Smith and Walker 1988). Avonlea sites are relatively rare in the Dakotas (Vickers 1994). In North Dakota, the Evans site (32MN301) contained Avonlea projectile points and ceramics (Schneider and Kinney 1978). In the YRSU, four Avonlea complex archaeological resources have been identified (32MZ864, 32MZ1288, 32MZ1300, and 32MZ1422) (Gregg and Bleier 2008).

Rare in North Dakota is the Old Woman's complex (A.D. 700–1300). This complex is contemporary with the Plains Village tradition, so it would seem likely that many associated sites would be granted the latter designation (Gregg 1985).

The Blackduck complex (A.D. 1150–450) derives from northern Minnesota and was concentrated in southern Manitoba. It is contemporary with both Avonlea and Old Woman's complexes, and with Extended and Terminal Middle Missouri traditions. Some evidence of possible Blackduck pottery has been found along the Missouri River, which suggests trade between the Missouri River villagers and the Blackduck people to the north (Joyes 1970).

Plains Village Tradition (ca. 1050–350 B.P.)

Lehmer (1971) defined the Plains Village tradition as possessing the following diagnostic traits: equal horticulture and hunting and gathering strategies; semi-permanent villages near the Missouri River floodplain; earth lodges; large storage and refuse pits; distinctive ceramics; abundant end scrapers and arrow points; bison scapula hoes; and a well-developed bone tool industry. The Plains Village Tradition is divided into the Middle Missouri tradition (A.D. 969–1500) and the Coalescent tradition (A.D. 1300–1650), discussed below. In the YRSU, only three Plains Village archaeological resources have been identified (Gregg and Bleier 2008). The limited number of resources identified in the YRSU is likely due to this study unit being located outside of the geographic limits of most prehistoric Plains Village core areas (Gregg and Bleier 2008).

Three primary Middle Missouri variants are recognized: Initial Middle Missouri (A.D. 969–1297), Extended Middle Missouri (A.D. 1075–1443), and Terminal Middle Missouri (A.D. 1300–1500) (Eighmy and LaBelle 1996). These represent a continuation and intensification of Northern Plains Woodland lifeways and their appearance coincides with the onset of the Medieval Warm Period (Bryson et al. 1970) when a moisture increase likely permitted horticulture in areas previously characterized by tenuous farming conditions (Wood 2001).

The Initial Middle Missouri Variant (IMMV) is thought to have developed as an outgrowth of the Great Oasis (Tiffany 2007) or via the arrival of eastern populations already exploiting a Plains Village lifeway (Lehmer 1971). The IMMV was concentrated in the southern portions of the Middle Missouri region and characterized by highly fortified villages of large, semi-subterranean rectangular houses (Lehmer 1971; Winham and Calabrese 1998).

The Extended Middle Missouri Variant (EMMV) is concentrated in the northern portions of the Middle Missouri region (Lehmer 1971). EMMV groups resided in small villages of semi-subterranean rectangular houses; southern villages were more often fortified than those in the north (Wood 2001). It is unclear whether the EMMV replaced the IMMV or represents a contemporaneous offshoot of the IMMV. Origins aside, it is assumed that IMMV populations were eventually absorbed into EMMV populations. The final expression of this tradition was

the Terminal Middle Missouri (Winham and Calabrese 1998:282). These sites were concentrated in a smaller geographic area along the Missouri River in southern North Dakota and characterized by fewer but much larger villages (Wood 2001). Sites again contained long, rectangular semi-subterranean houses but were highly fortified (Wood 2001). A continuation of the Middle Missouri Tradition is recognized historically as the Siuoan-speaking Mandan and Hidatsa (Wood 2001).

The Coalescent period is temporally divided into Initial (650–350 B.P.), Extended (500–300 B.P.), and Post-Contact Coalescent (300 B.P.–Historic period) (Johnson 1998; Lehmer 1971). The Coalescent Tradition is thought to represent a geographic movement of Central Plains Tradition village-dwelling populations to the Missouri River Valley in South Dakota (Blakeslee 1993). Central Plains Traditions might have migrated from Nebraska and Kansas in response to drought brought on by the Pacific climatic episode (Lehmer 1971). Similar to Middle Missouri Tradition groups, Coalescent populations practiced an economy split between mixed cultigen horticulture and bison hunting (Johnson 1998).

Initial Coalescent Variant sites are located on bluffs overlooking the Missouri River and its drainages in southern South Dakota. Populations lived in fortified villages consisting of subrectangular to circular/oval earth lodges and often surrounded by complex fortifications (Johnson 1998). Violence amongst Coalescent groups is evidenced at the Crow Creek site (39BF11) where approximately 486 individuals were killed in the village fortification ditch around 625 B.P. (Willey and Emerson 1993). Crow Creek is interpreted as evidence of internecine warfare amongst Initial Coalescent groups over land competition (Zimmerman and Bradley 1993) or, conversely, as evidence of warfare between immigrant Coalescent groups and resident Middle Missouri Tradition peoples (Johnson 1998). The Extended Coalescent Variant apparently descended from the Initial Coalescent sometime in the fifteenth century A.D. Sites are concentrated along the Missouri River and its tributaries in central and northern South Dakota (Krause 2001). Extended Coalescent sites are far more abundant than during the Initial Coalsecent and are characterized by a dispersed, unfortified village structure of circular earth lodges (Johnson 1998; Krause 2001; Lehmer 1971). The Extended Coalescent Variant evolved into the Post-Contact Coalescent during the Protohistoric and Historic and the Coalescent Tradition is recognized as the Arikara (Krause 2001). The last post-contact village was Like-a-Fishhook Village, occupied by the Arikara, Mandan, and Hidatsa; it was abandoned in 1886 when groups were relocated to the Fort Berthold Indian Reservation (Smith 1972).

HISTORIC CONTEXTS

European Trade and Exploration (A.D. 1738–1858)

Perhaps the earliest attempts at exploring the northern Great Plains came as a result of the ventures of Pierre Gaultier de Varennes Siure de la Verendrye (Dill 1983). His travels from New France into North Dakota led him as far as the Missouri River (somewhere near Bismarck), and led to subsequent expeditions by his sons, which went farther south into South Dakota (near Pierre) and west towards the Black Hills. While the elder la Verendrye met the Mandan, his sons encountered the Arikara and other tribes in South Dakota. Their reports heightened interest in the region and the possibilities that existed for trade with its inhabitants.

Following the la Verendryes, a modest fur trade developed in the region, but until the expedition of Captains Meriwether Lewis and William Clark returned successfully from their voyage up the Missouri, the region was considered a wild unknown (Schulenberg 1957).

In 1807, Manuel Lisa established a short-lived post at the mouth of the Bighorn, and by 1809 his St. Louis Missouri Fur Company was building posts among most of the tribes all along the Missouri River. Other notable companies, such as the Northwest Company, Hudson Bay Company, the Columbia Fur Company, and the American Fur Company, soon followed suit (Schulenberg 1957). The life of these posts tended to be short, but they did much to influence the tribes who frequented the Missouri River in both North Dakota and South Dakota. Fort Union—at the confluence of the Yellowstone and Missouri—was the last of the great posts, and its waning during the late 1850s saw the fur trade in the Dakotas in its last throes.

Post-Contact Tribal Overview (A.D. 1780–1900)

In addition to the tribes that arose from the Middle Missouri and Coalescent traditions (Mandan, Hidatsa, and Arikara), the northern Great Plains and the Missouri River were also used by countless other tribes since before European contact.

The Assiniboine were known to frequent the northern Missouri River (mainly near the confluence with the Yellowstone), and were active in the fur trade throughout the eighteenth and nineteenth centuries. As well, the Cheyenne were pushed westward by the Chippewa during the middle of the eighteenth century and took up at least a temporary settlement period on the Missouri River. At least one earth lodge village has been attributed to the Cheyenne in eastern North Dakota, and some Cheyenne villages on the Missouri River were located between the Mandan to the north, and the Arikara to the south, where they built earth lodges and pursued horticulture and buffalo hunting (Schlesier 1968).

The Plains Cree and Plains Chippewa also frequented the northern Missouri—mainly near the confluence with the Yellowstone, but also near Fort Clark. Both tribes traded actively with the Mandan and Hidatsa. The Crow, although more westerly in their territory, were related to the Hidatsa and would often trade and visit with the Missouri River tribes (Schulenberg 1957).

Based on linguistic evidence, the Sioux (or Dakota) originated from the southwest Great Lakes region (DeMallie 2001a). The timing of the migration is unclear, but ceramic evidence suggests that the Dakota were living on the plains several centuries before the arrival of Europeans (Hanson 1998). Based on linguistics, it is thought that the Assiniboine split from the Sioux sometime before the mid-seventeenth century (Hanson 1998). The Teton Dakota are divided into seven sub-tribes, including the Oglala, Brule, Sans Arc, Hunkpapa, Blackfeet, Miniconjou, and Two Kettles (Hanson 1998). According to DeMallie (2001a), by the mid-eighteenth century, the Teton Dakota hunted bison in the area east of the Missouri River, their movements limited in part by the Arikara stronghold along the Missouri River. However, a series of smallpox epidemics from 1771 to 1781 devastated the Arikira villages (Johnson 1998) and permitted the Teton Dakota to move west of the Missouri River. Like the Teton Dakota, the Yankton and Yanktonai Dakota occupied the prairies east of the Missouri River and north into Minnesota in the mid-seventeenth century (DeMallie 2001a). By the mid-nineteenth century, the Yankton and Yanktonai occupied the prairies east of the Missouri

River from the mouth of the Big Sioux River in the south to the Red River in the north (DeMallie 2001b).

The Reservation Period began in the 1850s and continues to today. Fort Berthold Indian Reservation was created during the Fort Laramie Treaty of 1851, the boundaries of which were later redefined by executive orders of Ulysses S. Grant in 1870 and Rutherford B. Hayes in 1880 (Schneider 2001). By 1866, following the Treaty of Fort Berthold, members of the Mandan, Hidatsa, and Arikara (later the Three Affiliated Tribes) resided in Like-a-Fishhook Village (formed in 1845 by Mandan and Hidatsa leaders), located in the far southeast corner of the reservation territory adjacent the fur trade post of Fort Berthold (Schneider 2001; Stewart 2001). By 1886, however, the village was abandoned as a result of overcrowding and tribal members relocated to individual homesteads dispersed throughout the reservation (Schneider 2001; Smith 1972). This time period contains numerous accounts of attempts of forced assimilation by the U.S. Government—including government actions to stop tribal ceremonialism and forced boarding school education of Indian children (Schneider 2001). However, the tribes who lived on, and used, the Missouri River have persisted to the present as strong and vital people with a living culture which has survived for present and future generations. In the YRSU, one Hidatsa archaeological resource has been identified (Gregg and Bleier 2008).

Homesteading in the Dakotas (A.D. 1860–1930)

The first homestead in North Dakota was filed in 1868, which was the only homestead filed until 1871. The true rush for homesteads did not take place until 1885. This rush was spurred by the extension of the Northern Pacific Railroad across the Red River from Minnesota (Works Progress Administration [WPA] 1950). Western North Dakota—including McKenzie County—did not see much settlement prior to the 1890s, and the major settlement of this region did not start in any great numbers until between 1900 and 1910. In general, those homesteaders who selected lands along the Missouri River were able to do some crop farming, but the majority of homesteads were arranged as ranch operations for sheep or cattle.

In addition to the homesteading, which brought an increasing number of people to western North Dakota, the discovery of large deposits of lignite coal further boosted interest in the development of McKenzie County and the surrounding area (WPA 1950). Although slow at first, the mining industry started to flourish during the 1930s; to this day it remains a major focus of activity which drives the economy of both the county and the state. One historical Euro-American archaeological resource has been identified in the YRSU (Gregg and Bleier 2008).

BACKGROUND RESEARCH

As part of the initial phase of this investigation, SWCA conducted a background search of archaeological and historical literature and records for the project area and surrounding 1-mile area (includes 0.5 mile on either side of the proposed pipeline centerline). Researchers searched relevant records holdings at the State Historical Society of North Dakota and other available sources for information regarding previously recorded historic and prehistoric sites located within the project area. Background research was conducted on November 17 and 18, 2010, January 18, 2011, and June 2, 2011.

Results of the background search identified 44 previously recorded cultural resources within the 1-mile-wide study area (Table 2). Of these, 36 are prehistoric (including three Late Prehistoric and one Pelican Lake and Late Prehistoric), five are historic, and three are both historic and prehistoric. Of the prehistoric resources, 17 are cultural material scatters, two are cultural material scatters and quarry/mines, one is a cultural material scatter and a hearth, one is a rock feature, and 11 are isolated chipped stone finds. The three Late Prehistoric-aged sites are all cultural material scatters, as is the Pelican Lake/Late Prehistoric-aged site. The historic resources consist of three sites containing a cultural material scatter, foundation(s), and depression(s); one site containing a depression and machinery; and one site consisting of a cultural material scatter. The three multicomponent sites all consist of cultural material scatters. Eighteen of the resources are listed as not eligible for the National Register of Historic Places (NRHP), six are listed as potentially eligible for the NRHP, and the remainder have been left unevaluated regarding their NRHP eligibility.

Four previously recorded sites (32MZ69, 32MZ168, 32MZ767, and 32MZ1562) and one isolated find (32MZX632) are located within the project area and were revisited for the current inventory. 32MZ72 is very close to the inventory corridor; however, closer inspection of the site's location described on the previous site forms (as well as field verification), confirmed that the site is located outside of the inventory corridor. The previously recorded resource locations are shown on maps in Appendix C.

One hundred fifty-seven previous cultural resource inventories have been performed within the project area. A bibliographic listing of previous archaeological and historic studies for project lands in McKenzie County, North Dakota, is provided in Appendix A.

Table 2. Previously Recorded Resources.

Site Number	Site Name	Legal Location (T/R/S)	Site Type	Cultural Affiliation	NRHP Recommendation
32MZ0017	N/A	T147N/R104W/S04	CM Scatter, Depression, Foundation	Unknown Historic	Unevaluated
32MZ0041	Hay Stack Slope	T147N/R103W/S08	CM Scatter	Unknown Prehistoric	Unevaluated
32MZ0069	N/A	T147N/R105W/S02	CM Scatter, Depression, Foundation	Unknown Historic	Unevaluated
32MZ0072	N/A	T147N/R104W/S09	CM Scatter	Unknown Prehistoric	Unevaluated
32MZ0093	N/A	T148N/R105W/S36	CM Scatter	Unknown Prehistoric	Unevaluated
32MZ0136	N/A	T148N/R105W/S36	CM Scatter	Unknown Prehistoric	Unevaluated
32MZ0160	N/A	T147N/R104W/S12	CM Scatter, Depression, Foundation	Unknown Historic	Not Eligible
32MZ0168	N/A	T148N/R103W/S23	CM Scatter	Unknown Prehistoric	Not Eligible
32MZ0169	N/A	T148N/R103W/S24	CM Scatter, Quarry/Mine	Unknown Prehistoric	Not Eligible
32MZ0210	N/A	T148N/R103W/S23	CM Scatter	Unknown Prehistoric	Not Eligible
32MZ0217	N/A	T147N/R104W/S10	CM Scatter	Unknown Prehistoric and Historic	Potentially Eligible
32MZ0242	N/A	T147N/R104W/S12	CM Scatter, Quarry/Mine	Unknown Prehistoric	Not Eligible
32MZ0245	N/A	T148N/R105W/S36	CM Scatter	Unknown Prehistoric	Unevaluated
32MZ0360	N/A	T147N/R103W/S05	CM Scatter	Unknown Prehistoric and Historic	Unevaluated
32MZ0423	Vuylsteke Archaeological Area	T147N/R104W/S11	CM Scatter	Unknown Prehistoric	Unevaluated
32MZ0515	N/A	T147N/R103W/S08	Depression, Machinery	Unknown Historic	Unevaluated
32MZ0516	N/A	T147N/R103W/S08	CM Scatter	Unknown Prehistoric	Unevaluated
32MZ0517	N/A	T147N/R103W/S08	CM Scatter	Unknown Prehistoric	Not Eligible

Site Number	Site Name	Legal Location (T/R/S)	Site Type	Cultural Affiliation	NRHP Recommendation
32MZ0767	N/A	T148N/R103W/S33	CM Scatter	Unknown Historic	Potentially Eligible
32MZ0934	N/A	T147N/R104W/S10	CM Scatter	Unknown Prehistoric	Unevaluated
32MZ0937	N/A	T147N/R104W/S11; T147N/R104W/S12	CM Scatter	Late Prehistoric	Potentially Eligible
32MZ0938	N/A	T147N/R104W/S12	CM Scatter	Unknown Prehistoric	Unevaluated
32MZ0952	N/A	T148N/R103W/S26	CM Scatter, Hearth	Unknown Prehistoric	Potentially Eligible
32MZ1049	N/A	T147N/R104W/S05	CM Scatter	Late Prehistoric	Potentially Eligible
32MZ1050	N/A	T147N/R104W/S04	CM Scatter	Unknown Prehistoric	Unevaluated
32MZ1051	N/A	T147N/R104W/S05	CM Scatter	Pelican Lake and Late Prehistoric	Potentially Eligible
32MZ1113	N/A	T147N/R104W/S10	CM Scatter	Unknown Prehistoric and Historic	Unevaluated
32MZ1208	N/A	T147N/R105W/S02	CM Scatter	Unknown Prehistoric	Unevaluated
32MZ1404	N/A	T147N/R103W/S05	Rock Feature	Unknown Prehistoric	Unevaluated
32MZ1562	N/A	T148N/R103W/S23	CM Scatter	Unknown Prehistoric	Not Eligible
32MZ1595	N/A	T148N/R103W/S33	CM Scatter	Late Prehistoric	Unevaluated
32MZ1705	N/A	T147N/R103W/S05; T147N/R103W/S06	CM Scatter	Unknown Prehistoric	Unevaluated
32MZ1836	N/A	T148N/R103W/S28	CM Scatter	Unknown Prehistoric	Unevaluated
32MZX0092	IF-2	T147N/R104W/S11	Isolated Chipped Stone	Unknown Prehistoric	Not Eligible
32MZX0093	N/A	T147N/R104W/S06	Isolated Chipped Stone	Unknown Prehistoric	Not Eligible
32MZX0498	N/A	T147N/R104W/S06	Isolated Chipped Stone	Unknown Prehistoric	Not Eligible
32MZX0499	N/A	T147N/R104W/S08	Isolated Chipped Stone	Unknown Prehistoric	Not Eligible
32MZX0500	N/A	T147N/R104W/S11	Isolated Chipped Stone	Unknown Prehistoric	Not Eligible
32MZX0501	N/A	T147N/R105W/S01	Isolated Chipped Stone	Unknown Prehistoric	Not Eligible
32MZX0630	N/A	T147N/R104W/S08	Isolated Chipped Stone	Unknown Prehistoric	Not Eligible
32MZX0854	N/A	T147N/R104W/S02	Isolated Chipped Stone	Unknown Prehistoric	Not Eligible

Site Number	Site Name	Legal Location (T/R/S)	Site Type	Cultural Affiliation	NRHP Recommendation
32MZX0990	N/A	T148N/R105W/S36	Isolated Chipped Stone	Unknown Prehistoric	Not Eligible
32MZX0991	N/A	T148N/R105W/S36	Isolated Chipped Stone	Unknown Prehistoric	Not Eligible
32MZX0992	N/A	T147N/R104W/S06	Isolated Chipped Stone	Unknown Prehistoric	Not Eligible

CM = cultural material
NRHP = National Register of Historic Places

FIELDWORK METHODS

Fieldwork was designed so that project archaeologists could collect all appropriate and necessary data for the completion of the project report of results and recommendations, and to ensure accurate completion of site forms for all resources encountered.

In accordance with the scope of work, archaeologists surveyed the 250-foot-wide proposed pipeline survey corridor using parallel linear transects with spacing averaging 25 m and not exceeding 30 m. The ground surface was examined for artifacts, features, or other evidence of cultural occupation. Cut banks, eroded surfaces, and other areas with significant exposure were examined intensively throughout fieldwork, especially where previously recorded cultural resources existed. In areas with high vegetation cover and high probability of cultural resources, survey transects were reduced to 10 m spacing to maintain adequate visibility. Ground visibility during the project ranged from 0 to 15 percent, with areas of up to 100 percent, typically along the existing pipeline scar, in plowed fields, two-track roads, and near rodent burrows.

Where cultural resources were located, project archaeologists made an intensive effort to fully and accurately establish the extent and boundaries of newly and previously recorded sites. As such, sites were mapped using handheld submeter-accurate Trimble Global Positioning System (GPS) units. When detailed mapping or remapping was required, all linear site features, such as site boundaries, roads, and fence lines, as well as point features, such as the site datum, cultural features, artifact concentrations, diagnostic artifacts and tools, and other necessary data, were mapped using the Trimble GPS units for post-processing into ArcMap 9.0 shapefiles, and for plotting onto associated USGS 7.5-minute quadrangles to ensure accuracy and to produce required location maps of all sites and resources.

In addition to site mapping, project personnel photographed sites in overview and for other data collection needs. Associated features and diagnostic artifacts were described, measured, recorded using a handheld GPS unit, and photographed, as appropriate. Field personnel noted environmental setting, context, topography, and geographical location for each cultural resource.

SITE EVALUATION

SWCA evaluated sites and their significance, as defined by criteria set forth in 36 Code of Federal Regulations 60.4 (National Park Service 1991), which states:

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
>
> A) That are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> B) That are associated with the lives of persons significant in our past; or

C) That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D) That has yielded or may be likely to yield information important in prehistory or history.

Sites not eligible for inclusion in the NRHP have lost integrity and are unlikely to contribute further data significant to knowledge of prehistory or history.

Prehistoric Archaeological Sites

Prehistoric lithic scatters/campsites (sites without any structures or association with known significant events or persons) recorded for the project generally will not contain NRHP discussion for Criteria A, B, or C. Instead, for NRHP recommendation purposes, these properties will be discussed for their potential to yield information significant to prehistory or the archaeological record under NRHP Criterion D. Special cases generally apply to Criterion A, where a prehistoric site type (such as a stone circle site) may not be recommended eligible for listing in the NRHP from an archaeological perspective, but may be considered important to cultures of Native American peoples.

Evaluation of the significance of archaeological sites under Criterion D considers general characteristics such as the nature, size, and diversity of the site assemblage; the potential presence or absence of subsurface cultural deposits; the nature of any features within the site (construction techniques, building materials, structural integrity); and the age range reflected by the site assemblage. Sites considered to be significant generally contain an assemblage of cultural remains that reflects sufficient diversity to permit identification of activities and to allow confirmation of the period of site use. Sites with the most potential to address research questions about human lifeways contain associated features, structures, and/or relatively intact and dateable artifacts.

Historical Archaeological Sites or Components

Historical sites containing or consisting of preserved features or structures are evaluated primarily under Criteria A, B, and C. Historical trash scatters lacking associated features or structures are primarily evaluated under Criterion D. In general, these types of sites represent ephemeral prospecting or stock management activities, but they lack identifiable or important association with specific persons or events of regional or national history (Criteria A and B), and they lack the formal and structural attributes necessary to qualify as eligible under Criterion C. The evaluation of significance of historical archaeological sites under Criterion D focuses on the capacity of the sites or components to yield significant information regarding knowledge of history during the period(s) of site significance. Evaluation of the significance of historical sites considers general characteristics such as the nature, size, and diversity of the site assemblage; the potential presence or absence of subsurface cultural deposits; the nature of any features within the site; construction techniques; building materials; structural integrity; and the age range reflected by the site assemblage.

Historical sites considered to be significant under Criterion D generally contain an assemblage of cultural remains that reflects sufficient diversity to permit identification of activities and to allow confirmation of the period of site use. Sites with the most potential to address research questions contain associated features, structures, and relatively intact and datable artifacts. Significant sites are those that could impart information not available solely from historical documents. Although archival research may provide an essential form of information, often historical records are inaccurate or incomplete. For example, examination of construction techniques or household assemblages can provide information on economic slumps, reuse of structures for other than original purposes, and re-occupation cycles. As a result, insight may be gained into questions about human lifeways that are often asked in archaeology, but rarely specified directly in historical documentation.

Non-Archaeological Historical Sites or Components

Non-archaeological historical sites or sites with non-archaeological components are those primarily assessed for NRHP eligibility under Criteria A, B, or C, rather than Criterion D and typically are not subject to subsurface testing. Individual segments of significant historical sites are evaluated as contributing or non-contributing in terms of physical and environmental integrity. Examples of historical site types include linear historical features, such as transportation routes and water conduits, standing building and structure sites, and potentially extend to any historical feature on an otherwise archaeological site, such as Traditional Cultural Property (TCP) features. Historical and ethnographic sites evaluated for potential contribution to history or cultural traditions for reasons beyond their possible future research value tend to have different evaluation and management considerations than archaeological sites. Typically, the integrity of historical sites is addressed using the guidelines presented in National Register Bulletin 15 (National Park Service 1991), which defines the seven elements of integrity as location, design, materials, workmanship, setting, feeling, and association. As such, properties are basically evaluated in consideration of their physical integrity and the integrity of their surroundings. TCPs are also considered under the guidelines of National Register Bulletin 38 (Parker and King 1998).

INVENTORY RESULTS AND RECOMMENDATIONS

SWCA archaeologists revisited four previously recorded cultural resources located on USFS lands for the project. Two are a prehistoric lithic scatters (32MZ168 and 32MZ1562); one is an historic depression, rock pile, and cultural material scatter site (32MZ69); and one is a multicomponent historic and prehistoric cultural material scatter site. Though attempts were made to re-locate 32MZX632, a prehistoric isolated chipped stone find, this resource was not relocated during the current inventory. All revisited sites are discussed in detail below. North Dakota site forms for each resource are detached in Appendix B. The locations of all resources are depicted on maps in Appendix C.

32MZ69 (MP 52.3)

Site Type:	Depression, Rock Pile, and Cultural Material Scatter
Association:	Unknown Historic
Site Size:	303 by 314 feet (95,142 feet^2)
NRHP Recommendation:	Not Eligible
Management Recommendation/Project Effect:	No Further Work/No Effect

Site Description and Previous Recording

32MZ69 is an historic cultural material scatter and probable homestead located on a ridge line within an area characterized by upland grasslands and badlands (Figures 11 and 12). An east/west trending two-track road is approximately 60 m to the north and another dirt road sits an estimated 100 m to the east. North Dakota County Road 38 is approximately 0.5 mile to the east. The site consists of a small pile of stones, two depressions, and a cultural material scatter. Vegetation consists of tall mixed grasses, dandelions, fringed sage, creeping juniper, and white sagewort, allowing for an estimated 15 percent bare ground surface visibility. Soil is a dark brown clay loam deposited through colluvial and residual processes. The condition of the site is poor and has been adversely affected by road construction and vehicle traffic, cattle grazing, erosion, and potential looting.

Figure 11. 32MZ69 site overview, facing northeast.

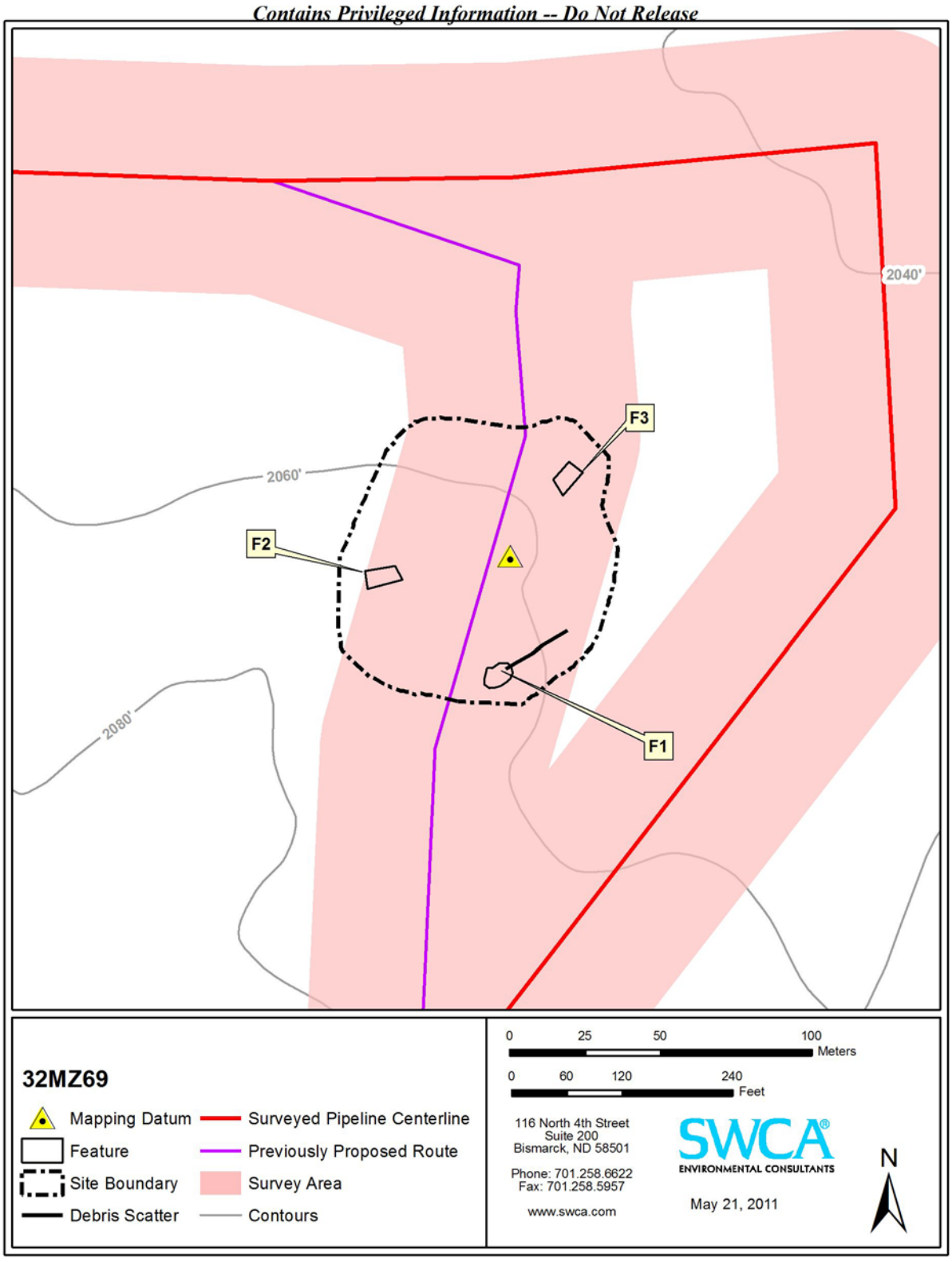

Figure 12. 32MZ69 site sketch map.

32MZ69 was originally recorded by R. Hubbard and O.D. Hand in 1979 for the Brownlie, Wallace #2-41 Federal project. The site was described as a probable Depression-era homestead consisting of four features and an artifact scatter. The features were described as the remains of a corral and three dugout structures. Feature 1 was described at an outbuilding with three intact, stacked sandstone slab walls. Feature 2 was described as the remains of a domestic structure with a collapsed chimney. Feature 3 was recorded as an out building, rectangular dugout feature with no associated cultural material. Feature 4 was described as a poorly defined dugout feature with milled lumber and fence posts inside. Additionally, a small circular depression was noted. The material scatter recorded included numerous glass fragments of a variety of colors, metal, barbed wire, bolts, miscellaneous machine parts, a toy telephone, a small wagon wheel, iron bars, a portion of a license plate, a bucket, a porcelain covered kettle, part of a wood stove, earthenware ceramics, china, a plastic bridle, and part of a plastic comb. It was postulated that lumber and large artifacts were scavenged at an earlier date. Hubbard and Hand left the site unevaluated for nomination to the NRHP.

32MZ69 was later revisited by an unknown party on an unknown date. The brief form states that the site was found to be in similar condition; all features (with the inclusion of the small depression) were relocated and the site was determined to be stable. No NRHP eligibility was provided during this revisit.

Survey Results

SWCA revisited 32MZ69 on May 14, 2011, and found the site to be in poor condition. Three features, including a rock pile (Feature 1) and two depressions (Features 2 and 3), and an artifact scatter were observed. Because SWCA was unable to determine which features matched the previously recorded ones, new features numbers were assigned.

Feature 1 is a small mound of sandstone rocks that measures 7 by 7 feet (Figure 13). An estimated 45 stones comprise the feature and associated artifacts include a wooden stake, glass, nails, and stoneware fragments.

Feature 2 is depression that measures 40 feet north/south by 20 feet east/west with a maximum depth of 3 feet that is surrounded on the southwest and northeast sides by a wall made of stacked sandstone (Figure 14). The rock wall is approximately two to six courses in height. Only a portion of the southwest wall is intact and the northeast wall is highly eroded. A sparse scatter of cultural material was found inside the depression including metal wire, stoneware sherds, and unidentified metal items.

Feature 3 is a depression that is located approximately 120 feet northeast of Feature 2 (Figure 15). No cultural material is associated with the feature. The depression is open on its east side and is oriented north/south. The depression measures approximately 33 feet north/south by 25 feet east/west and ranges from 2 to 3 feet in depth.

Cultural material observed at the site outside of the features consists of approximately 20 whiteware sherds, 10 stoneware sherds, three aqua bottle glass sherds, over 30 window glass sherds, two solarized glass, metal scrap, and one flat metal bucket.

Figure 13. 32MZ69 Feature 1, rock pile, facing east-southeast.

Figure 14. 32MZ69 Feature 2, depression, facing northwest.

Figure 15. 32MZ69 Feature 3, depression, facing northeast.

Historic Background

SWCA conducted historic background research for Section 2, T147N, R105W. The Bureau of Land Management (BLM) General Land Office (GLO) land patent search yielded a map of the township dated to 1903; however, no data were present on the map that could be used to determine the allocation of this plot of land. A patent was issued to William G. Hennen on August 2, 1920, for the S½ of the N½ of Section 2; however, the site is located in the NE¼ of Section 2 (BLM 2011 [1920]:Accession NDMTAA 765965). There is no record of a land transaction for this specific quarter-section of land.

NRHP Eligibility Recommendation

32MZ69 is an historic site consisting of two depressions and a rock pile with cultural material scatter. Historical research did not yield information to relate this site with a significant event or period of time, nor did it find any connection between the material at this site and any person or persons significant in local, state, or national history; therefore, the site is recommended not eligible for nomination to the NRHP under Criteria A and B. All buildings or structures at the site are no longer standing, nor do they represent their original functional or artistic merits; therefore, SWCA recommends the site as not eligible under Criterion C. The site is in poor condition and has been disturbed by road construction, vehicle traffic, cattle grazing, erosion, and possibly looting. Therefore, SWCA recommends the site remain unevaluated under Criterion D pending subsurface testing.

Management Recommendation

SWCA recommends no further work for 32MZ69. The site was identified during the inventory of the originally proposed pipeline corridor; however, the pipeline was rerouted

approximately 250 feet to the east of 32MZ69. This original proposed alignment will not be used and the site is avoided.

32MZ168 (MP 38.2)

Site Type:	Lithic Scatter
Association:	Unknown Prehistoric
Site Size:	65 by 71 m (4,612.46 m^2) (previous recording)
NRHP Recommendation:	Not Eligible
Management Recommendation/Project Effect:	No Further Work/No Effect

Site Description and Previous Recording

32MZ168 is a sparse prehistoric lithic scatter located in and along a road cut atop a prominent hill (Figures 16 and 17). The site sits on the eastern edge of the hill. An improved, east/west-trending scoria road travels through the site. North/south-trending North Dakota Highway 16 is approximately 1.4 miles west of the site. Vegetation includes brome grasses and dandelions, allowing for 5 to 10 percent ground surface visibility, with 100 percent visibility on the scoria road and within the side ditches of the road. The site has been disturbed by erosion, pipeline construction, and road construction and maintenance activities.

Figure 16. 32MZ168 site overview, showing crowned-and-ditched scoria access road, facing southwest.

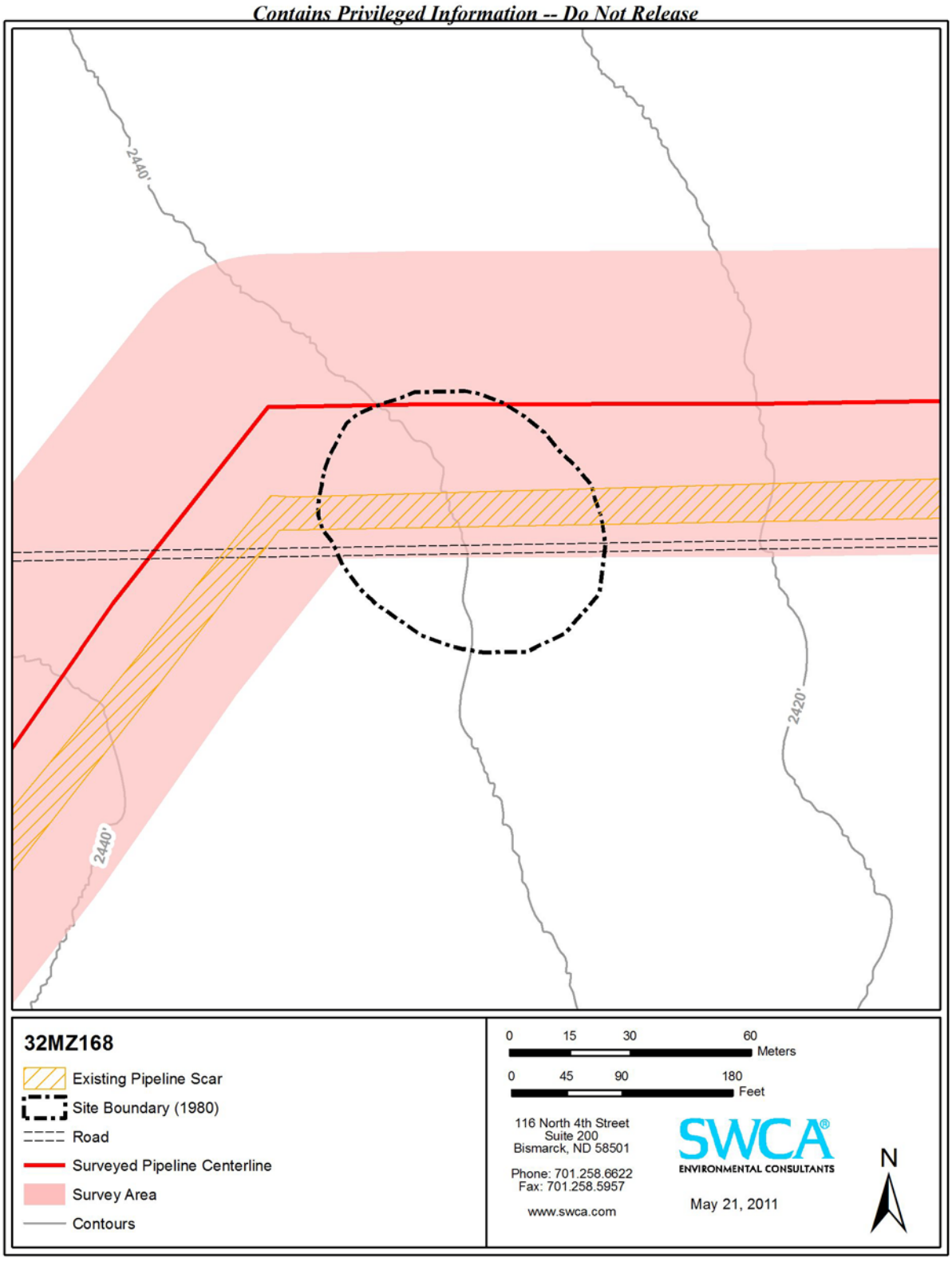

Figure 17. 32MZ168 site sketch map.

32MZ168 was original recorded in 1980 by David Kuehn during an access road survey. Kuehn noted three porcellanite flakes, two Knife River flint flakes, and five angular pieces of porcellanite in and along the existing dirt road during the recording. Kuehn recommended the site as "probably not eligible" for the NRHP.

Survey Results

SWCA revisited 32MZ168 on May 11, 2011. The original recording indicated the site was located on an existing dirt road. The road has since been improved to a fully crowned-and-ditched scoria road. Additionally, a pipeline scar located on either side of the road appears to have impacted the site. No cultural material was observed in the area surrounding the site location. The site has likely been destroyed by road and pipeline construction activities.

NRHP Eligibility Recommendation

32MZ168 was a sparse prehistoric lithic scatter. At the time of its original recording, the site contained 10 pieces of lithic debitage. Although the site was thought to be not eligible, the site was left unevaluated regarding its NRHP eligibility. During the current survey, no cultural material was observed. The site has since been destroyed by road and pipeline construction activities. SWCA recommends the site not eligible for nomination to the NRHP.

Management Recommendation

32MZ168 has been destroyed; therefore, no further work is recommended.

32MZ767 (MP 41.1)

Site Type:	Cultural Material Scatter
Association:	Multicomponent (Unknown Historic and Unknown Prehistoric)
Site Size:	263 by 181 m (47,434 m^2)/861 by 593 feet (510,773 $feet^2$)
NRHP Recommendation:	Eligible (Contributing and Non-Contributing Portions)
Management Recommendation/Project Effect:	Neck-down, Restrict Construction to Existing Pipeline ROW, Fence Construction Corridor, Monitor/No Adverse Effect

Site Description and Previous Recording

32MZ767 is an historic cultural material scatter located on a terrace above Bay Creek (Figures 18, 19, and 20). Buttes can be seen to the east and west and North Dakota Highway 16 is approximately 200 m to the west. An unnamed drainage bounds the site to the east and drains into Bay Creek. The east/west-trending Lewis and Clark pipeline scar bisects the site. Vegetation includes mixed short grasses and various short forbs, allowing for approximately 15 percent ground surface visibility with 100 percent visibility within the pipeline scar. The soil is a brown clay loam formed through residual processes. The site is in very poor condition and the integrity has been negatively affected by cattle grazing, vehicle traffic, and the construction of a pipeline.

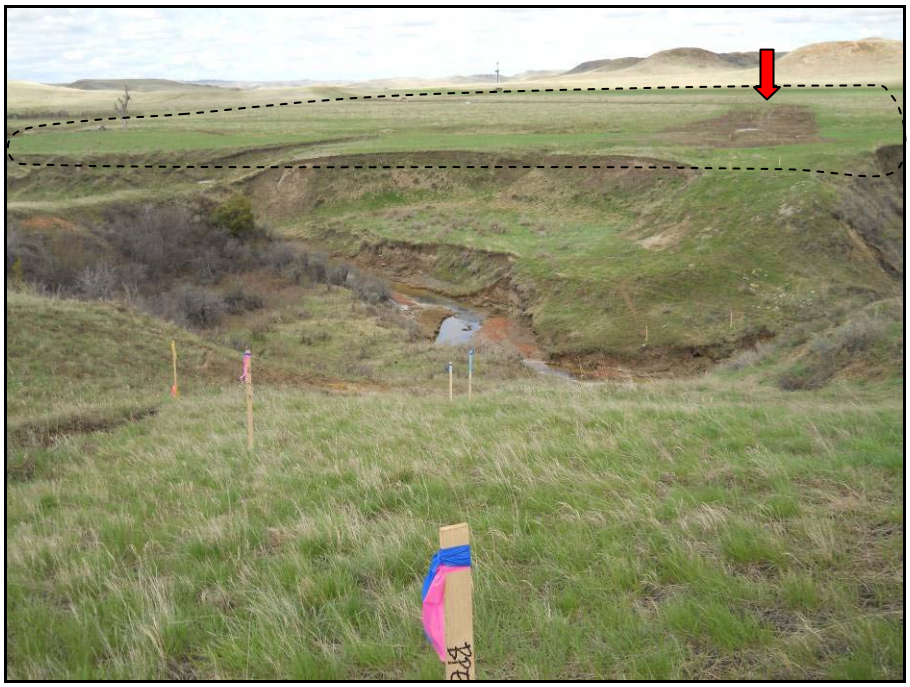

Figure 18. 32MZ767 site overview approaching site from east, showing existing pipeline scar bisecting site (red arrow), facing west. Dashed line shows approximate previous site location. Site extends to north (right in photograph) approximately 300 feet.

Figure 19. 32MZ767 site overview, showing existing pipeline scar, facing northeast.

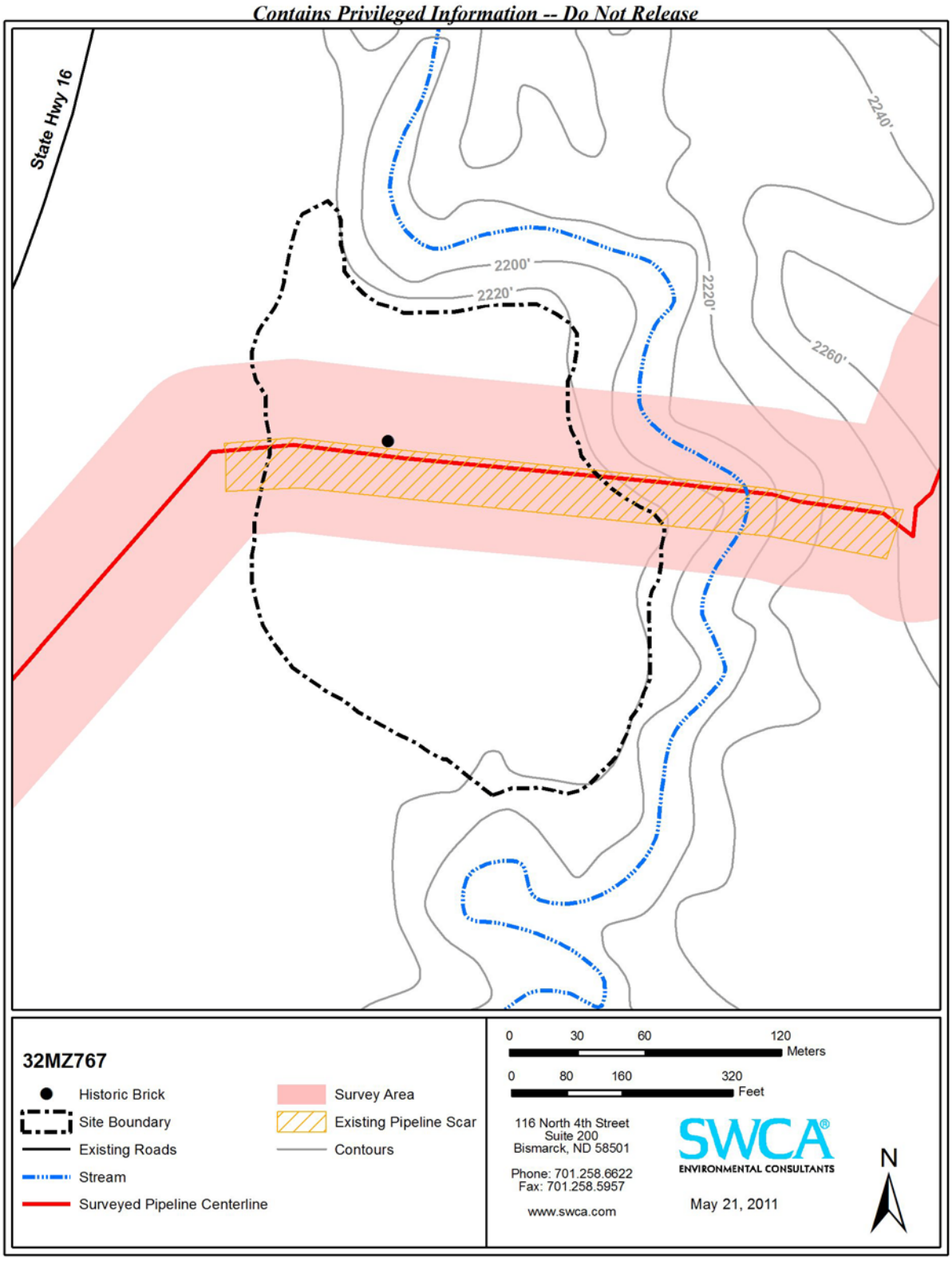

Figure 20. 32MZ767 site sketch map.

32MZ767 was originally recorded in 1985 by R.C. Christensen and D. Kuehn. Minimal information is on file for the original recording. The next visit to the site was conducted by B. Olson in an unknown year for the Koch Hydrocarbon Company Northern Border Connection Pipeline project. According to Olson, during the original recording, the site was described as a multicomponent site that included three features and a Late Prehistoric or Protohistoric cultural level identified during construction monitoring and testing. A hearth was excavated at this time. Olson's recording refers to these unnamed features but does not report observations of any prehistoric material. Olson reported an historic cultural material scatter that consisted of a flattened bucket, imbedded post stubs, barbed wire, part of a spring seat, brick fragments, broken window glass, pieces of broken crockery, and pieces of broken cobalt blue bottle glass. No features were recorded and site function was not inferred. Olson excavated nine shovel tests and one was positive for cultural material from 0 to 10 centimeters (cm) below ground surface level. Olson's recording agrees with the original recording's recommendation that the historic portion of the site remain not eligible for nomination to the NRHP.

In 1998 M. Floodman revisited the site. An east/west-trending pipeline bisected the site, immediately north of the previously recorded Feature 1. Floodman noted that Feature 3 was most likely destroyed by pipeline construction. Floodman recommended the site eligible for nomination to the NRHP based on the fact that there are few sites in the area containing a possible Protohistoric component.

The site was visited again in 2010 by A. Leuchtmann and S. Gordon of Kadrmas, Lee, and Jackson (KLJ). The site was found to retain some spatial integrity, though the surface scatter of historical cultural material was believed to have been disturbed by cattle grazing. KLJ recommended the site be avoided and in the event that the site cannot be avoided, it should be further tested for NRHP eligibility.

Survey Results

SWCA revisited 32MZ767 on May 12, 2011. A single, broken red brick, three pieces of bed springs, and one flat metal bucket were identified. The brick is imprinted with SHAKO and measures 5 by 3 ½ by 2 ¼ inches; this artifact was identified at the edge of the pipeline scar. Although careful attention was paid to nearby cut banks to see if additional buried cultural material was exposed, no other artifacts or features were identified during the inventory.

Historic Background

SWCA conducted historic background research for Section 33, T148N, R108W. The BLM GLO land patent search did not yield any results; no data were located for the allocation of this plot of land.

NRHP Eligibility Recommendation

32MZ767 is a multicomponent historic and prehistoric cultural material scatter site. Originally recorded in 1985, the site has been revisited on several occasions. Portions of the site have been tested for subsurface deposits and also monitored during pipeline construction, revealing a buried Late Prehistoric or Protohistoric component. The historic portion of the site has been recommended not eligible for the NRHP under all criteria while the buried Late

Prehistoric or Protohistoric component of the site has been recommended eligible for NRHP inclusion under Criterion D.

SWCA revisited the site for the current project and identified a sparse scatter of historic artifacts on the site surface. No shovel testing was conducted. The site's surface component (historic) is in poor condition due to continued disturbance by grazing, erosion, and pipeline construction. Given the sparse nature of the artifacts and the poor integrity of the site, SWCA concurs with the previous not eligible recommendation for the historic component of the site.

No prehistoric artifacts or features were observed during the current inventory. Without having conducted additional shovel testing, SWCA is unable to determine whether intact and interpretable subsurface cultural deposits still exist at the site. Therefore, SWCA leaves unchanged the previous recommendation which states that the prehistoric component of the site is eligible for the NRHP under Criterion D. However, the site is bisected by a pipeline scar (Figures 18 and 19); this portion of the site has been significantly disturbed and therefore lacks integrity. This portion of the site is not likely to contribute to the overall eligibility of the site and is therefore recommended as a non-contributing portion.

Management Recommendation

SWCA recommends additional impacts to the contributing portions of 32MZ767 be avoided pending subsurface testing. The proposed Garden Creek pipeline would be co-located with an existing east/west-trending pipeline corridor which currently bisects the site (Figure 20). It is recommended that the construction corridor be necked-down to remain within the existing pipeline disturbance area (non-contributing portion of the site). Furthermore, SWCA recommends that the edges of the necked-down construction corridor be fenced to ensure that all construction activities and vehicle traffic remain within the approved ROW and that a qualified archaeological monitor be present during all ground-disturbing activities adjacent to the site.

32MZ1562 (MP 38.0)

Site Type:	Lithic Scatter
Association:	Unknown Prehistoric
Site Size:	48 by 44 m (2,217 m^2)
NRHP Recommendation:	Not Eligible
Management Recommendation/Project Effect:	No Further Work/No Effect

Site Description and Previous Recording

32MZ1562 is a prehistoric lithic scatter located on top of an upland grassland plain surrounded by buttes in the distance (Figures 21 and 22). The site is located approximately 20 to 30 m north of an east/west-trending scoria road and parallel pipeline scar. A stock pond overlaps a large portion of the previously recorded site boundary. Vegetation at the site consists of short forbs, grasses, dandelions, and trees. Ground surface visibility is 40 percent. Soils at the site have been deposited through colluvial processes. The condition of the site is poor. 32MZ1562 has been partially inundated by a stock pond and disturbed by pond and dam construction.

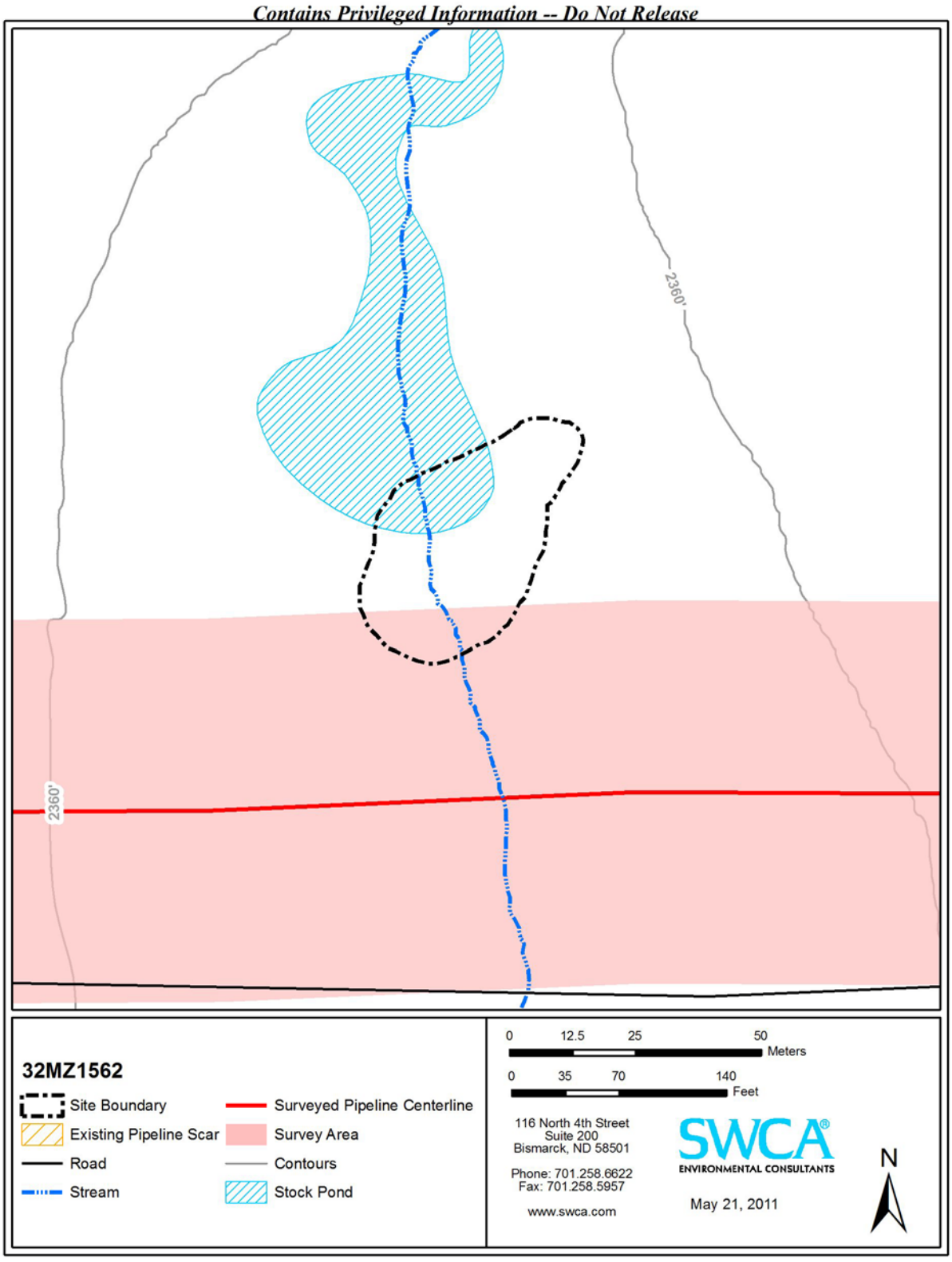

Figure 21. 32MZ1562 site sketch map.

Figure 22. 32MZ1562 site overview, facing west-southwest.

The site was originally recorded by M. Floodman and K. Borrud of the USFS in 2002 as part of a dam rehabilitation project. The site consisted of approximately 13 pieces of chipped stone debitage. The scatter was noted as being sparse and completely disturbed by dam construction. The site was recommended as not eligible for the NRHP.

Survey Results

SWCA revisited 32MZ1562 on May 11, 2011. Approximately one-half to three-quarters of the site is now located underwater within the stock pond. Three gray porcellanite flakes were identified near the edge of the pond. One additional flake was found approximately 20 m from the east/west-trending scoria road.

NRHP Eligibility Recommendation

32MZ1562 is a prehistoric lithic scatter. The site is in poor condition and has been significantly affected by the construction of a dam and stock pond. The site was recommended as not eligible for listing on the NRHP in 2002. Due to the sparse artifact scatter and impacts to the site from dam construction, SWCA concurs with the recommendation of not eligible for listing on the NRHP.

Management Recommendation

The site falls outside of the proposed 95-foot-wide construction corridor and will not be affected by project construction. No further work is recommended.

CONCLUSIONS

SWCA performed a Class III cultural resources inventory for the Garden Creek project between May 11 and 27, 2011. Bear Paw proposes to construct one 10-inch-diameter NGL pipeline connecting the Garden Creek Gas Processing Plant, located northeast of Watford City, North Dakota, to the Riverview Terminal, located just southwest of Sidney, Montana. The proposed pipeline would be constructed within a 95-foot-wide temporary construction ROW.

Although a cultural resources inventory was preformed for the entire pipeline corridor, this aboe report focuses on the portion of the project (13.72 miles) that crosses the DPG-LMNG in McKenzie County, North Dakota, and falls under the jurisdiction of the USFS. The Class III inventory includes a 250-foot-wide survey corridor centered on the 13.72-mile-long proposed pipeline centerline (417.95 acres) located on USFS lands. Additional areas totaling 19.40 acres were surveyed on USFS lands for access roads (12.24 acres) and to provide alternate alignment options and extra work space (7.16 acres). In total, 437.35 acres were inventoried on USFS lands in North Dakota for the project. As proposed, the pipeline construction ROW, access roads, and workspace would remain within the inventoried area.

Four previously recorded cultural resources were revisited for the portion of the project that crosses USFS lands. One is an historic depression, rock pile, and cultural material scatter site (32MZ69); one is a prehistoric lithic scatter (32MZ168); one is a multicomponent historic and prehistoric cultural material scatter site (32MZ767); and one is a prehistoric lithic scatter (32MZ1562). 32MZ69, 32MZ168 and 32MZ1562 are recommended as not eligible for listing on the NRHP due to poor preservation; no further work is recommended. 32MZ767 contains a prehistoric and an historic component. For the historic component, SWCA concurs with the previous recommendation of not eligible under all criteria. SWCA leaves unchanged the previous recommendation which states that the prehistoric component of the site is eligible for the NRHP under Criterion D. However, the site is bisected by a pipeline scar; this portion of the site has been significantly disturbed and therefore lacks integrity. This portion of the site is not likely to contribute to the overall eligibility of the site and is therefore recommended as a non-contributing portion. SWCA recommends additional impacts to the contributing portions of 32MZ767 be avoided pending subsurface testing. It is recommended that the construction corridor be necked-down to remain within the existing pipeline disturbance area (non-contributing portion of the site). Furthermore, SWCA recommends that the edges of the necked-down construction corridor be fenced to ensure that all construction activities and vehicle traffic remain within the approved ROW and that a qualified archaeological monitor be present during all ground-disturbing activities adjacent to the site. With the above stipulations, it is recommended that a determination of *No Historic Properties Adversely Affected* be granted for the project to proceed as planned.

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APPENDIX A
List of Previous Studies

Bibliographic Listing of Previous Archaeological and Historic Studies for Project Lands in McKenzie County, North Dakota

Manuscript Number	Title	Author(s)	Year
000178	Pasture 2, Allotment 3 Water Pipline Survey, McKenzie Co., ND	J. Chatters	1977
000182	Pasture 3, Allotment 3, Stockwater Pipeline and Tank Survey, McKenzie Co., ND	J. Chatters	1977
000299	Preliminary Report on the Archaeological Investigation of 110 Site Locations, Little Missouri Grasslands, Custer National Forest, Western North Dakota	L. Loendorf	1978
000312	Kerr McGee Corporation Federal #2-12 Well Pad and Access Road Survey, McKenzie Co., ND	J. Greer	1978
000321	Exeter Exploration Well #15-2-Federal Well Site Survey, McKenzie Co., ND	M. Metcalf, C. Zier	1978
000322	Shell Oil Company 44-31-31 USA, Well Pad and Access Road Survey, McKenzie Co., ND	J. Greer	1978
000323	Shell Oil Company 44-31-31-USA, Well Pad and Access Route Survey, McKenzie Co., ND	C. Muceus, R. Lawrence	1977
000324	Kerr-McGee Corporation Federal #1-12, Well Pad and Access Road Survey, McKenzie Co., ND	J. Greer	1978
000329	Exeter Exploration, Federal 7-2, Well Site Location Survey, McKenzie Co., ND	L. Loendorf	1978
000333	Brownlie, Wallace, Armstrong, Bander Fed 8-11, Well Location and Access Road Survey, McKenzie Co., ND	L. Lahren	n.d.
000337	Brownlie, Wallace, Armstrong, and Bander 10-44 Federal Well Site Survey, McKenzie Co., ND	Powers Elevation Co	1979
000339	Mon-Dak Oil Field Survey, McKenzie Co., ND	A. Keyser	1978
000342	Brownlie, Wallace, Armstrong, Bander Fed 8-23 Well Location and Access Road Survey, McKenzie Co., ND	L. Lahren	n.d.
000349	Brownlie, Wallace, Armstrong, Bander Fed 35-21, Well Location and Access Road Survey, McKenzie Co., ND	L. Lahren	1978
000352	Brownlie, Wallace, Armstrong, and Bander 5-31X Federal Well Pad Survey Report and Addendum, McKenzie Co., ND	M. Metcalf, C. Zier	1979
000362	Brownlie, Wallace, Armstrong, and Bander 5-11x Federal Well Pad and Access Route Survey, McKenzie Co., ND	M. McCoy, N. McCullough McCoy	1979
000391	Bander Oil Company 12-21 Allen-Fed Well Site and Access Road Survey, McKenzie Co., ND	L. Lahren	1978

Manuscript Number	Title	Author(s)	Year
000392	Brownlie, Wallace, Armstrong, Bander Fed #7-11, Well Location and Access Road Survey, McKenzie Co., ND	L. Lahren	1978
000393	Brownlie, Wallace, Armstrong, Bander Oil #35-43, Well Location and Access Road Survey, McKenzie, Co., ND	L. Lahren	1978
000395	Brownlie, Wallace, Armstrong, Bander Fed #7-33, Well Location and Access Road Survey, McKenzie Co., ND	L. Lahren	1978
000396	Bander Oil Company 3-22 Federal, Well Pad and Access Road Survey, McKenzie Co., ND	J. Greer	1978
000397	Bander Oil Company 34-43 Federal, Well Pad and Access Road Survey, McKenzie Co., ND	J. Greer	1978
000400	Shell Oil Company USA 21-26-79 Well Pad and Assumed Access Addendum Report, McKenzie Co., ND	J. Brechtel	1979
000415	Bander Oil Company 2-44 Federal, Well Pad and Access Road Survey, McKenzie Co., ND	J. Greer	1978
000424	Bander Oil Company 8-43 Federal Well Pad and Access Road Survey, McKenzie Co., ND	J. Greer	1978
000434	Brownlie, Wallace, Armstrong, and Bander Federal, Well Pad Survey, McKenzie Co., ND	J. Greer	1978
000455	Brownlie, Wallace, Armstrong, and Bander 3-44 Federal, Well Pad and Access Road Survey, McKenzie Co., ND	J. Greer	1978
000465	Brownlie, Wallace, Armstrong, and Bander, Inc., 1-14 Federal, Well Pad and Access Road Survey, McKenzie Co., ND	J. Greer	1978
000466	Brownlie, Wallace, Armstrong and Bander, Inc., to 11-21-, 11-23, and 11-43 Federal Well Pad Accesses Survey, McKenzie Co., ND	B. Rippeteau	1980
000476	Brownlie, Wallace, Armstrong, & Bander , Inc. 1-12 Federal, Well Pad and Access Road Survey, McKenzie Co., ND	J. Greer	1978
000477	Brownlie, Wallace, Armstrong, & Bander, Inc. 2-22 Federal, Well Pad and Access Road Survey, McKenzie Co., ND	J. Greer	1978
000487	Brownlie, Wallace, Armstrong, & Bander Inc., 8-11 Federal, Well Pad and Access Road Survey, McKenzie Co., ND	J. Greer	1978
000497	Brownlie, Wallace, Armstrong, and Bander Inc. #8-23 Federal Well Pad and Access Road Survey, McKenzie Co., ND	J. Greer	1978
00557	An Intensive Cultural Resource Survey at the Shell USA 11-31-25 Tank Battery Site, McKenzie County, North Dakota	B. Rydalch, K. McConnell	1979

Manuscript Number	Title	Author(s)	Year
000558	Cultural Resource Inventories on Proposed Drilling Location, Pipelines and Access Roads on the Little Missouri National Grasslands, McKenzie Co., ND	A. Murray	1978
000560	Mon-Dak and Bicentennial Oil Fields Drilling Sites and Access Roads Survey, McKenzie Co., ND	A. Keyser	1978
000564	Pasture 2, Allotment 3, Survey, McKenzie Co., ND	A. Keyser	1978
000591	Shell Oil Co., USA 24-26-47, Well Pad and Access Route Survey, McKenzie Co., ND	M. Metcalf, C. Zier	1979
000611	Shell Oil Company USA #31-82 Well Pad Survey, McKenzie Co., ND	M. Metcalf	1979
000625	Shell Oil Compnay USA #42-27-80 Well Pad Survey, McKenzie Co., ND	M. Metcalf	1979
000626	Brownlie, Wallace , Armstrong, and Bander # 3-13 Federal Well Pad Survey Addendum Report, McKenzie Co., ND	M. Metcalf, C. Zier	1979
000629	U-V Industries 1-4 Federal Well Pad and Access Road Surveys, McKenzie Co., ND	M. Metcalf, C. Zier	1979
000630	U-V Industries 2-4 Federal Well Pad and Access Route Surveys, McKenzie Co., ND	M. Metcalf, C. Zier	1979
000631	U-V Industries 3-4 Federal Well Pad and Access Route Surveys, McKenzie Co., ND	M. Metcalf, C. Zier	1979
000648	Shell Oil Company USA #24-32 Well Pad and Access Route Survey Addendum Report, McKenzie Co., ND	M. Metcalf, C. Zier	1979
000657	Shell Oil Company USA #44-31 Well Pad Survey, McKenzie Co., ND	M. Metcalf	1979
000658	Shell Oil Company USA #24-32 Well Pad and Access Route Survey, McKenzie Co., ND	M. Metcalf	1979
000697	U-V Industries, Inc., #4-4 Federal Well Pad and Access Route Survey, McKenzie Co., ND	M. McCoy, N. McCullough McCoy	1979
000700	McKenzie Electric Buried Cable From Shell 11-31 to Shell 31-32 Survey Report, McKenzie Co., ND	D. Kuehn	1979
000740	Shell Oil Company USA #31-31-82 Well Pad Survey and Addendum Report, McKenzie Co., ND	M. Metcalf, C. Zier	1979
000743	Brownlie, Wallace #9-41 Federal Resurvey of Well Pad and Access Route Addendum Report, McKenzie Co., ND	M. Metcalf, C. Zier	1979
000750	Brownlie, Wallace, Armstrong, and Bander #10-44 Federal Well Pad Survey and Access Route Survey Addendum Report, McKenzie CO., ND	M. Metcalf, C. Zier	1979

Manuscript Number	Title	Author(s)	Year
00780	Farmers Union Federal #12-8 Well Pad and Access Route Survey Report, McKenzie Co., ND	A. Simon, L. Loendorf	1979
000796	Indergard Water Pipeline Survey Report, McKenzie Co., ND	D. Kuehn	1979
000800	Shell Oil Company USA #11-31-25 Tank Battery Site Survey Report, McKenzie Co., ND	J. Greer	1979
000803	Marshall and Winston Spring Creek Federal 2, 3 and 4 Access Route Survey Report, McKenzie Co., ND	D. Kuehn	1979
000823	Brownlie, Wallace, Federal #2-41, Proposed Well Pad and Access Route Survey Report, McKenzie Co., ND	M. Metcalf, C. Zier	1979
00871	An Intenstive Cultural Resource Survey of the Shell #11-31-25 Flowline, McKenzie County, North Dakota	B. Rydalch, K. McConnell	1979
000919	McKenzie REC Buried Cable Survey and Addendum Report, McKenzie Co., ND	A. Simon, L. Loendorf	1979
001015	Pennzoil Company Survey of Pennzoil-Depco 30-24 Access Road, McKenzie County, ND	J. Greer	1979
001039	Pasture 2, Allotment 3, Water Pipeline and Tanks Survey, McKenzie County, ND	D. Kuehn	1979
001059	An Intensive Cultural Resource Survey of the Shell USA 44-31-31 Flowline, McKenzie County, North Dakota	S. Lau, D. McKay	1980
001069	Brownlie, Wallace, Armstrong and Bander 2-43 Allen Federal Well Pad and Access Route Survey, McKenzie Co., ND	M. Tate	1980
001100	Brownlie, Wallace, et al, Proposed 5-42 Well Pad Location and Access Route Survey, McKenzie Co., ND	M. Metcalf, C. Zier	1980
001112	Brownlie, Wallace, Armstrong and Bander 2-23 Allen Federal Well Pad Survey, McKenzie Co., ND	C. Zier	1980
001113	Brownlie, Wallace, Armstrong and Bander 2-21 Allen Federal Well Pad and Access Route Survey, McKenzie Co., ND	C. Zier	1980
001116	Shell Oil Compnay #22-24 Well Pad and Access Route Survey and Addendum Report, McKenzie Co., ND	C. Zier, M. Tate	1980
001214	McKenzie Electric Coopertive, Inc., Buried Cable Survey, McKenzie Co., ND	A. Simon, L. Loendorf	1980
001224	Report on Limited Shovel Testing on the Proposed Brownlie, Wallace, Armstrong and Bander 9-41 Well Pad, McKenzie Co., ND	M. Tate	1980

Manuscript Number	Title	Author(s)	Year
001272	Brownlie, Wallace, Armstrong & Bander 2-23 Allen Fed. Access Route Survey, McKenzie Co., ND	M. Tate	1980
001274	Brownlie, Wallace, Armstrong and Bander 5-23 Well Access Route Survey, McKenzie Co., ND	M. Tate	1980
001292	An Intensive Cultural Resource Survey of the Shell Salt Water Gathering System Pipeline, McKenzie County, North Dakota	J. Senulis	1980
001315	McKenzie Rural Electric Cooperative Survey of Burried Cable, McKenzie Co., ND	A. Simon, L. Loendorf	1980
001330	MDU Survey of Pipeline Right of Way in Mon-Dak Field, McKenzie Co., ND	A. Simon, L. Loendorf	1980
001360	McKenzie Electric Cooperative Survey of Buried Cable, McKenzie Co., ND	A. Simon, L. Loendorf	1980
001362	McKenzie Rural Electric Coopertive 115KV Transmission Line Survey, McKenzie Co., ND	A. Simon, L. Loendorf	1980
001409	BWAB Inc. Survey of 11-43-Federal-11-147-105 Well Location and Access Road, McKenzie Co., ND	B. Rippeteau	1980
001416	Shell Oil Company Survey of 13-4 USA Well Location and Access Routes, McKenzie Co., ND	B. Rippeteau	1980
001442	Brownlie, Wallace, et al, Proposed 2-41 Federal Well Location and Access Route Survey, McKenzie Co., ND	M. Metcalf, C. Zier	1979
001443	Brownlie, Wallace, Armstrong and Bander, Inc., 8-44 Well Pad Survey, McKenzie Co., ND	B. Rippeteau	1980
001485	Brownlie, Wallace, Armstrong, and Bander, Inc., 12-23 Federal Well Pad and Access Route Survey, McKenzie Co., ND	B. Rippeteau	1980
001503	An Intensive Cultural Resource Survey of the Shell Oil Cinnmon Pipeline R/W, McKenzie County, North Dakota	J. Senulis	1980
001581	Shell Oil Company B.W.A.B. 42-8 Well Location and Access Route Survey, McKenzie Co., ND	B. Rippeteau	1980
001596	Shell Oil Compnay Survey of Access Road to 23-19-140, McKenzie Co., ND	B. Rippeteau	1980
001646	Mondak Disposal Company Survey of Disposal Pipelines, McKenzie Co., ND	B. Rippeteau	1981
001694	Results of a Class III Cultural Resource Inventory Route and Alternates of the Proposed State Highway 16 Improvement, Golden Valley and McKenzie Counties, North Dakota	J. Logan, K. Good	1980
001714	Wesco Pipeline Company Flowline - Spring Creek Survey, McKenzie Co., ND	B. Rippeteau	1981

Manuscript Number	Title	Author(s)	Year
001729	Cultural Resource Mangement Report Shell 42-8, McKenzie Co., ND	B. Rippeteau	1981
001743	McKenzie Electric Cooperative, Inc., REC URD Lines Survey, McKenzie Co., ND	A. Simon, L. Loendorf	1981
001770	McKenzie Electric Coopertive, Inc., REC Line Survey, McKenzie Co., ND	A. Simon, L. Loendorf	1981
001776	Mondak Disposal Monitor of Section 5 Disposal Line, McKenzie Co., ND	B. Rippeteau	1981
001875	Addendum Shell 22-24 Battery, Testing Report, McKenzie Co., ND	B. Rippeteau	1980
001889	U.S.F.S. Air Monitoring Station Survey, McKenzie Co., ND	D. Maul	1980
001914	U.S.F.S. Survey of Dwyer Pipeline, McKenzie Co., ND	W. Allen	1981
001916	U.S.F.S. Dwyer Pipeline Survey, McKenzie Co., ND	W. Allen	1981
002005	Cultural Resources Inventory, McKenzie County, North Dakota, Borwnlie, Wallace, Armstrong, and Bander Federal 8-32	G. Moore	1981
002135	McKenzie REC Bennie Peer and Cheney Creek Electric Lines Survey, McKenzie Co., ND	D. Kuehn, A. Simon	1981
002211	REC Buried Cable - Proposed Route and Reroute Survey, McKenzie Co., ND	A. Simon, L. Loendorf	1979
002238	The Cultural Resource Survey of the Proposed Matador Bull Moose Pipeline in Portions of McKenzie County, North Dakota	A. Simon, L. Loendorf	1979
002319	Shell Oil Company #12-24 Tank Battery Survey, McKenzie Co., ND	C. Zier	1980
002322	Shell Oil Company 24-31-81 USA Addendum Survey Report, McKenzie Co., ND	Powers Elevation	1979
002350	Shell Oil Company 22-24 USA Access Route Survey Report, McKenzie Co., ND	B. Rippeteau	1981
002422	Brownlie, Wallace, Armstrong and Bander 12-23 Addendum Report on Limited Shovel Testing on the Proposed Well Pad, McKenzie Co., ND	B. Rippeteau	1980
002462	Cultural Resource Survey on the Little Missouri Buttes and Adjacent Areas, Western North Dakota and Appendix I, McKenzie, Stark, Billings & Slope Counties	L. Loendorf, J. Brownell, L. Weston, S. Montgomery, A. Simon, J. Borchert	1982
002470	Archaeological Test Excavation at the Ulsaker-Indergard Site (32MZ328), McKenzie County, North Dakota	C. Johnson, A. Simon	1981
002532	Cultural Resource Survey of the Proposed Later "B" Pipeline for the ND System in McKenzie Co., ND	Ecol. & Environment, Inc.	1982

Manuscript Number	Title	Author(s)	Year
002698	Class III Intensive Inventory of the Proposed Shell Sheep Butte USA 31-25-155, McKenzie Co., ND	A. Simon	1982
002831	Archaeological Investigations at Prehistoric Sites 32MZ333 and 32MZ334, McKenzie County, North Dakota	M. Floodman, M. Tate, R. Williams	1982
002864	Sample Survey of Burning Mine Butte Area for Buring Mine Butte Area Plan, McKenzie Ranger District 1982 Field Season, McKenzie Co., ND	W. Allen	1982
003109	Brownlie, Wallace, Armstrong and Bander 2-43 Allen Fed., Access Road Survey, McKenzie Co., ND	M. Tate	1980
003202	Cultural Resource Inventory of Conservation Practice #08-01-79, McKenzie Co., ND	A. Murray	1979
003204	Cultural Resources Inventory of Conservation Practice #08-05-79, McKenzie Co., ND	A. Murray	1979
003208	Cultural Resource Inventory; Brownlie, Wallace, Armstrong, and Bander 2-12 Federal, McKenzie Co., ND	A. Murray	1979
003331	Addendum Shell 24-31-81 USA, Re-Survey of 40 Acre Parcel Associated With Well Pad Locale, McKenzie Co., ND	M. Metcalf, C. Zier	1979
003575	A Report on Archaeological Testing at Site 32MZ153 for the Proposed Matador Pipeline, McKenzie County, North Dakota	D. Kuehn	1985
003660	Cultural Resource Survey, Matador Pipeline Route-Phillips-Koch Gass Pipeline, Section 23, T148N, R103W, McKenzie County, North Dakota (UW#848)	L. Blikre	1985
003866	A Cultural Resource Inventory of the Proposed Matador Pipeline Route Phillips-Koch Gas Pipeline in Sections 23, 26, 27, 33 and 34, T148N, R130W, McKenzie County, North Dakota (UW#859)	R. Christensen, D. Kuehn	1985
003885	A Report on Consturction Monitoring and Salvage Excavations at Site 32MZ767, McKenzie County, North Dakota (UW#890)	D. Kuehn	1985
004495	Dwyer Pipeline, McKenzie Co., ND	M. Hill	1987
004507	Archaeological Investigations of Sites 32MZ333, 32MZ334, and 32MZ573 McKenzie County, North Dakota	J. Borchert, D. Hungerford, S. Montgomery, L. Ritterbush, D. Stanley, R. Vogel	1982
004724	A Cultural Resources Inventory of the Proposed Northern Border Connection Pipeline McKenzie County, North Dakota Vol. I & II	M. Floodman	1988

Manuscript Number	Title	Author(s)	Year
004750	A Cultural Resources Inventory of the Proposed Northern Border Connection Pipeline, Survey of Re-Routes mcKenzie County, North Dakota	M. Floodman	1989
004974	11-1 Spring, McKenzie Co., ND	M. Hill	1989
005030	Pasture 11-A1 Range Water Project McKenzie District, Little Missouri National Grasslands Sections 15, 19, 20, 21, 22, 28, 29 T148N R102W and Section 24 T148N R103W McKenzie County, North Dakota	M. Floodman	1990
005243	Dwyer Allotment Improvements McKenzie District, Little Missouri National Grasslands Section 4 & 5 T147N R104W and Section 33 T148N R104W McKenzie County, North Dakota	M. Floodman	1990
005244	Dwyer Pasture 3, Allotment 3 Pipeline and Tank McKenzie District, Little Missouri National Grasslands Section 31 T148N R103W & Section 06 T147N R103W McKenzie County, North Dakota	M. Floodman	1990
005423	Koch Hydrocarbon Company, Northern Border Connection Pipeline (Additional Cultural Resources Inventory) McKenzie County, North Dakota	B. Olson	1991
005424	Koch Hydrocarbon Company, Northern Border Connection Pipeline Route through 32MZ938 & Adjacent to 32MZ937, Cultural Resources Inventory - McKenzie County, North Dakota	B. Olson	1991
005466	An Evaluation of 110 Archaeological and Historical Sites, McKenzie, Billings, Golden Vally, Bowman, and Slope Counties in the Little Missouri Grasslands of North Dakota	L. Loendorf	1978
005528	Greenwood Pasture 2-3 Tank Location McKenzie District, Little Missouri National Grasslands, Section 23 T148N R103W, McKenzie County, North Dakota	M. Floodman	1991
005556	Cultural Resource Inventory of the Propsed McKenzie Gass Plant to Fort Buford Compressor Station Northern Border Connection Pipeline McKenzie County, North Dakota	B. Olson	1991
005755	Dwyer Allotment Range Water Projects McKenzie Distoric, Little Missouris National Grasslands Sec. 10 T147N R104W McKenzie County, North Dakota	M. Floodman	1992
005862	RTC Koch One-O-ONE Line McKenzie County, North Dakota	M. Tate	1992

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005868	Greenwood Pasture 2-3 Pipeline Projects McKenzie District, Little Missouri National Grasslands Sec. 7 & 27 T148N R103W McKenzie County, North Dakota	M. Floodman	1992
006233	Pennington Dam Little Missouri National Grasslands, McKenzie District Section 2 T147N R105W McKenzie County, North Dakota	M. Floodman	1994
006982	Reliable Exploration, Inc. Seismic Line Survey, McKenzie County, North Dakotaa: Results of a Class III Cultural Resources Inventory UW #1923	G. Wermers	1997
007095	Reliable Exploration, Inc. Seismic Line Survey in Section 11 T148N, R103W, McKenzie County, ND UW #2020	G. Wermers	1997
007566	McKenzie District Well Plugging FY 200 in McKenzie Co., ND	M. Floodman	2000
008177	A Class III Cultural Resource Inventory for the Headington Oil Compnay, L.P. Bennie Peer 3-D Seismic Project, McKenzie Co., ND	E. Schneider	2002
008303	Little Missouri National Grasslands Dam Rehabilitation Projects, Billings and McKenzie County, ND	M. Floodman	2002
008467	McKenzie Ranger District FY 2003 Well Plugging McKenzie Co., ND	M. Floodman	2003
008633	Headington Oil Co. Federal 23X-3 Well Pad and Access Road/Utility Corridor, McKenzie Co., ND UW #2407	G. Wermers	2003
009118	BR Federal Amy 14-8H: A Class III Pedestrian Survey in McKenzie Co., ND	W. Bluemle	2005
009287	McKenzie Federal 14-x31 Well Pad and Access Road: A Class III Cultural Resource Inventory, McKenzie Co., ND	D. Klinner	2005
009382	Cummings Draw 44-6H Well Pad and Access Road: A Class III Cultural Resource Inventory McKenzie Co., ND	P. Heiner, J. Morrison	2005
009384	Bay Creek 11-5H Well Pad and Access Road: A Class III Cultural Resource Inventory, McKenzie Co., ND	D. Klinner	2005
009385	Bay Creek #11-4H Well Pads and Access Roads: A Class III Cultural Resource Inventory, McKenzie, Co., ND	P. Heiner	2005
009404	Kodiak Federal 4-11H Well Pad and Access Road: A Class III Cultural Resource Inventory, McKenzie Co., ND	P. Heiner	2005
009512	Lyco Energy's 32-14-H Well Pad and Access Road: A Class III Cultural Resource Invetory in McKenzie Co., ND	D. Hiemstra	2005

Manuscript Number	Title	Author(s)	Year
009594	Tracy Federal 44x-4 Well Pad and Access Road: A Class III Cultural Resource Inventory, McKenzie Co., ND	D. Klinner	2006
009658	44-2H McPeak Well Pad: A Class III Cultural Resource Inventory, McKenzie Co., ND	D. Klinner	2006
009728	Grizzly Federal 1-27H Well Pad and Access Roads: A Class III Cultural Resource Inventory, McKenzie Co., ND	D. Klinner, P. Heiner	2006
010159	Dwyer Federal 14X-1 Well Pad Survey, McKenzie CO., ND: A Class III Cultural Resource Inventory	C. Burns	2007
010246	Titan Federal Well Pads and Access Road Survey: A Class III Cultural Resource Inventory, McKenzie Co., ND	W. Burns	2007
011638	Chicken Creek Federal 44-35H Well Pad and Access Road: A Class III Cultural Resource Inventory in McKenzie Co., ND	W. Burns	2010
011711	Dwyer Federal #44x-1 Well Pad: A Class III Cultural Resource Inventory in McKenzie Co., ND	W. Burns	2010
011733	Lewis and Clark Replacement Pipeline: A Class III Cultural Resource Inventory McKenzie County, ND	B. O'Donnchadha	2010

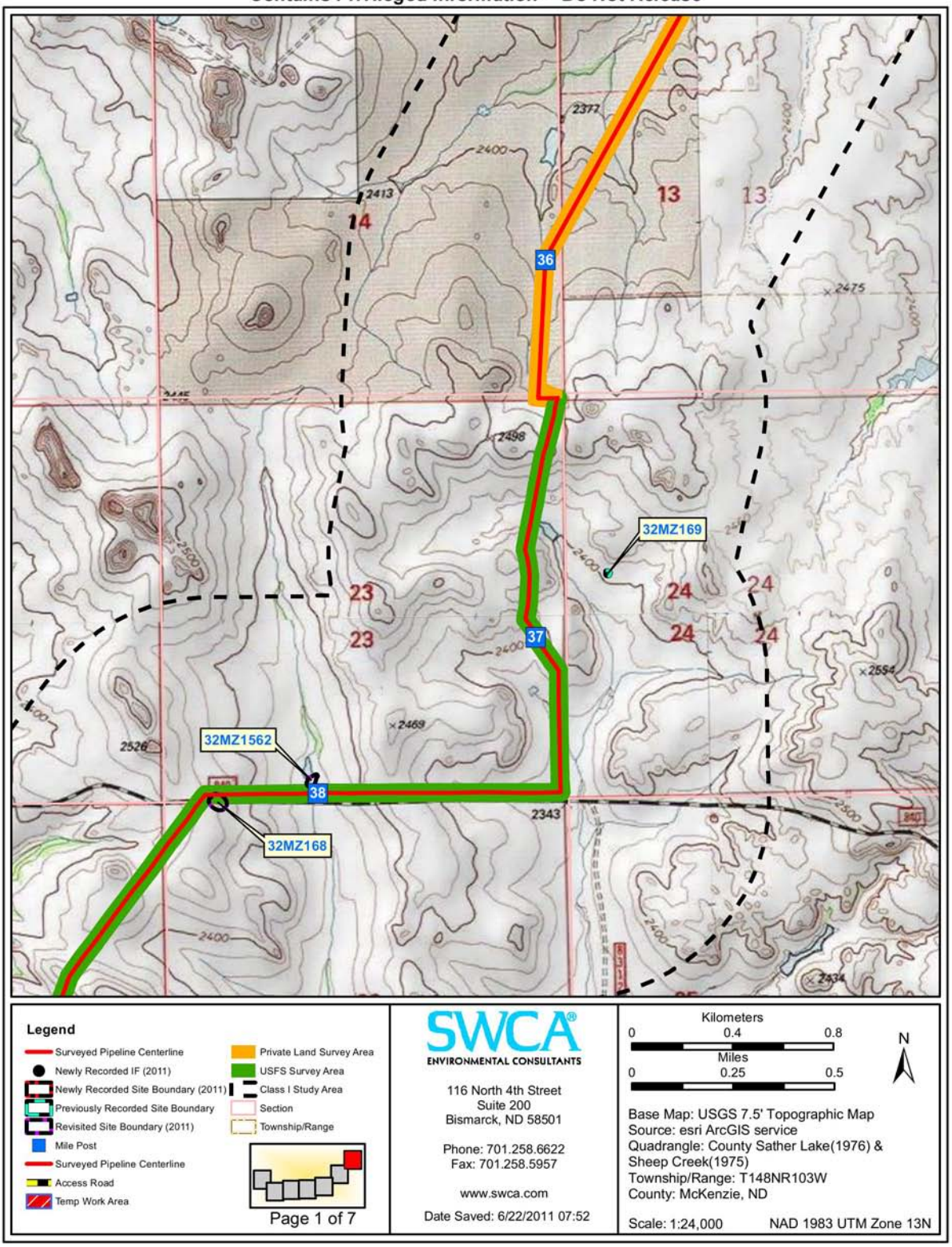
APPENDIX B
(Detached)

North Dakota Site Forms

APPENDIX C

Resource Location Maps

Contains Privileged Information -- Do Not Release



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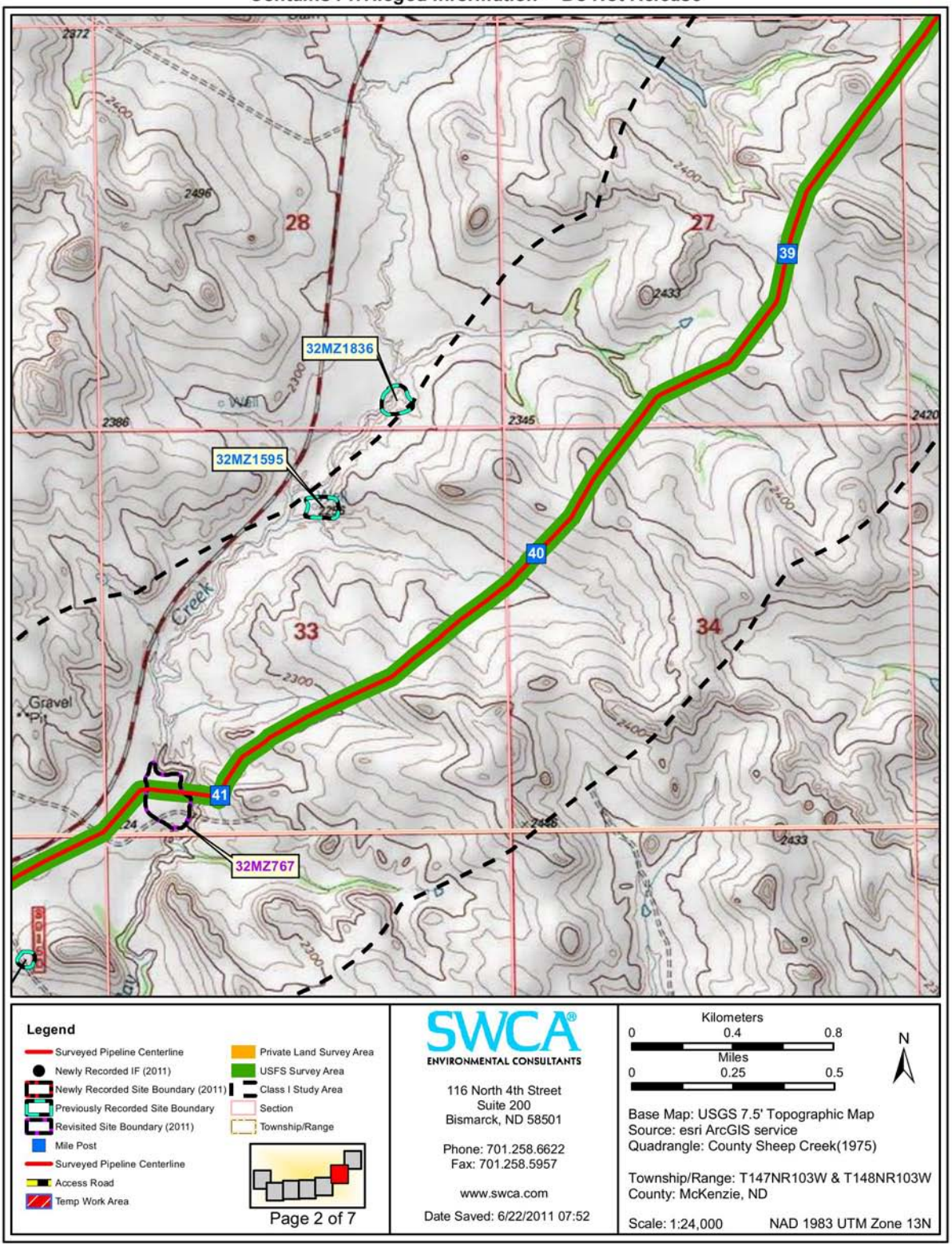

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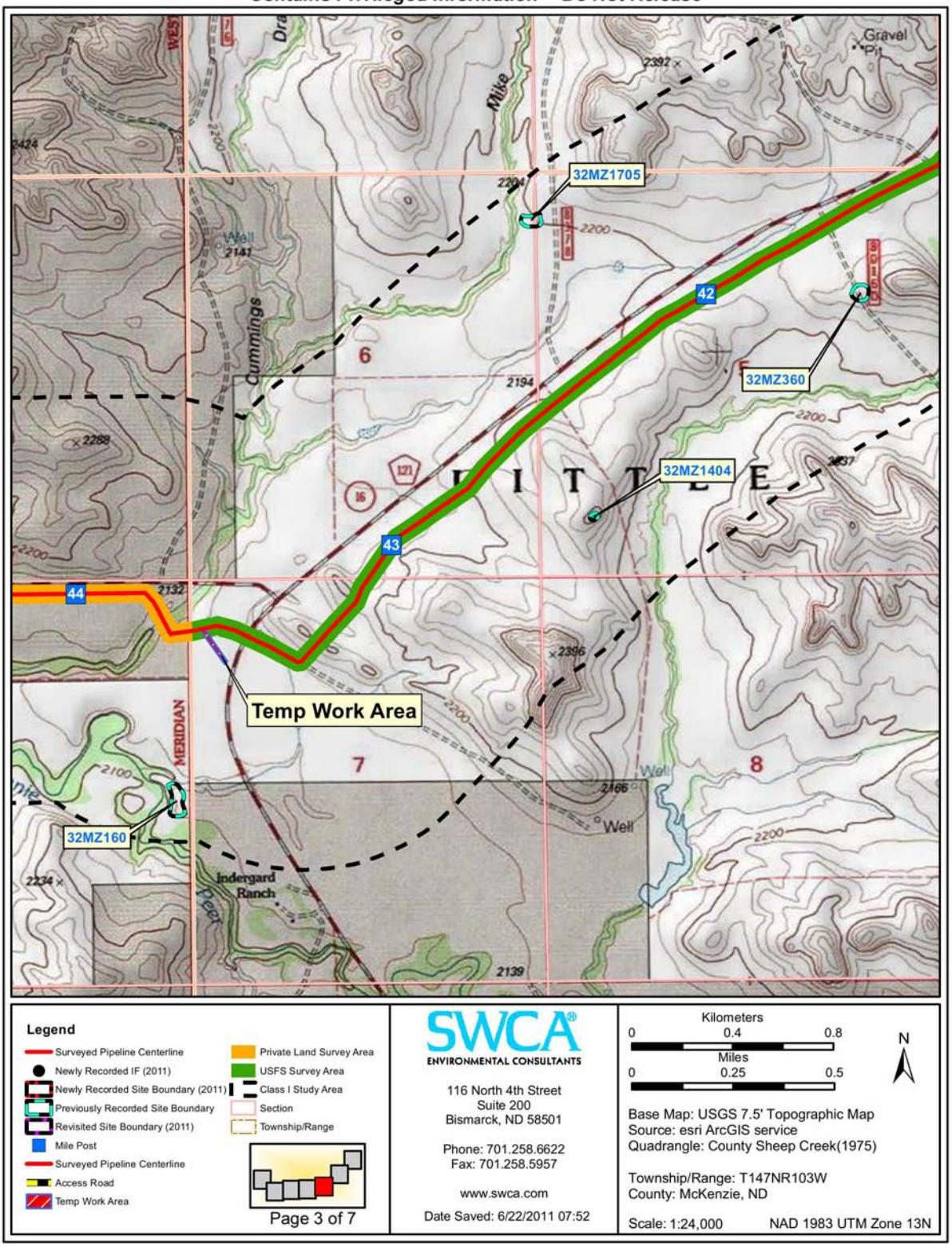

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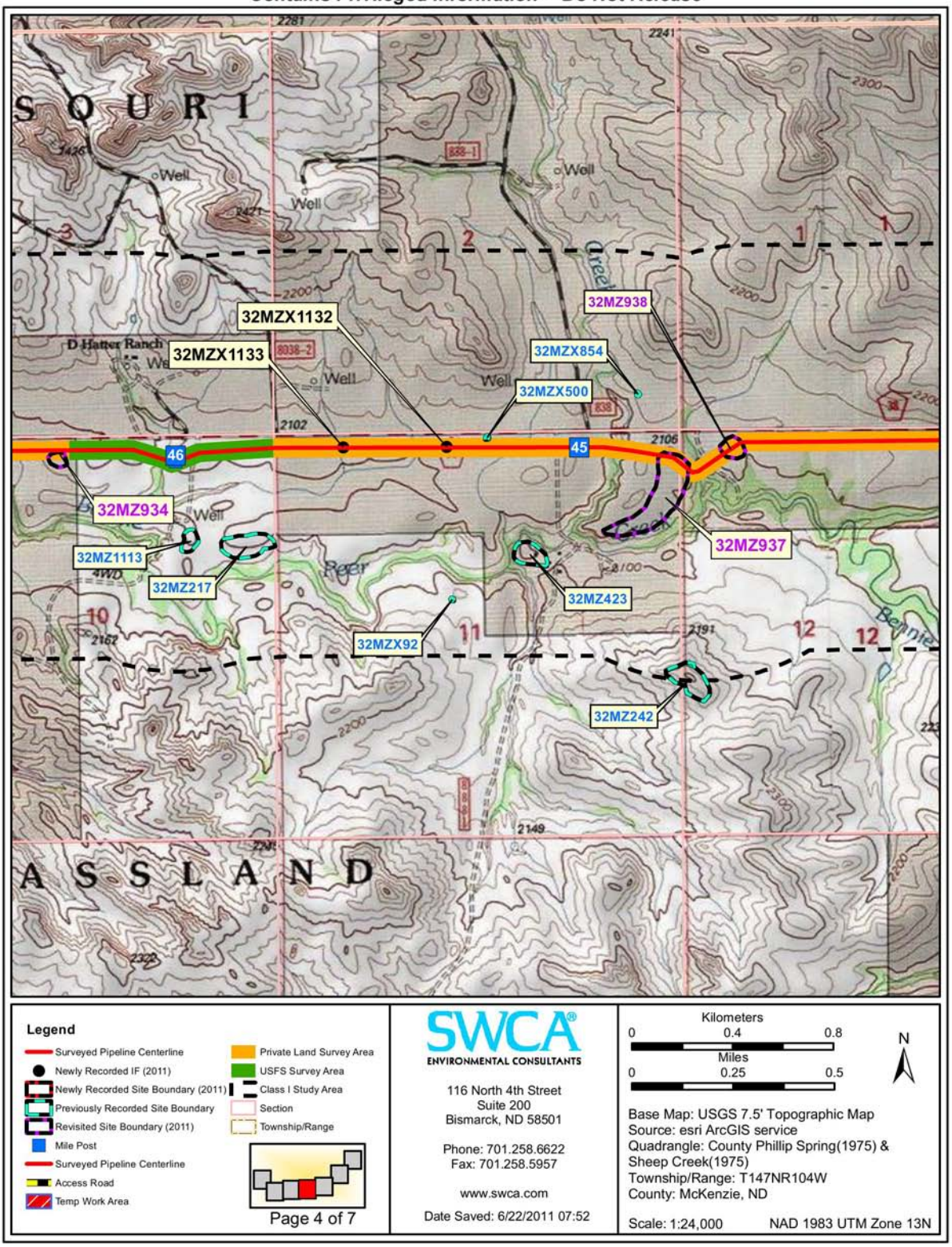

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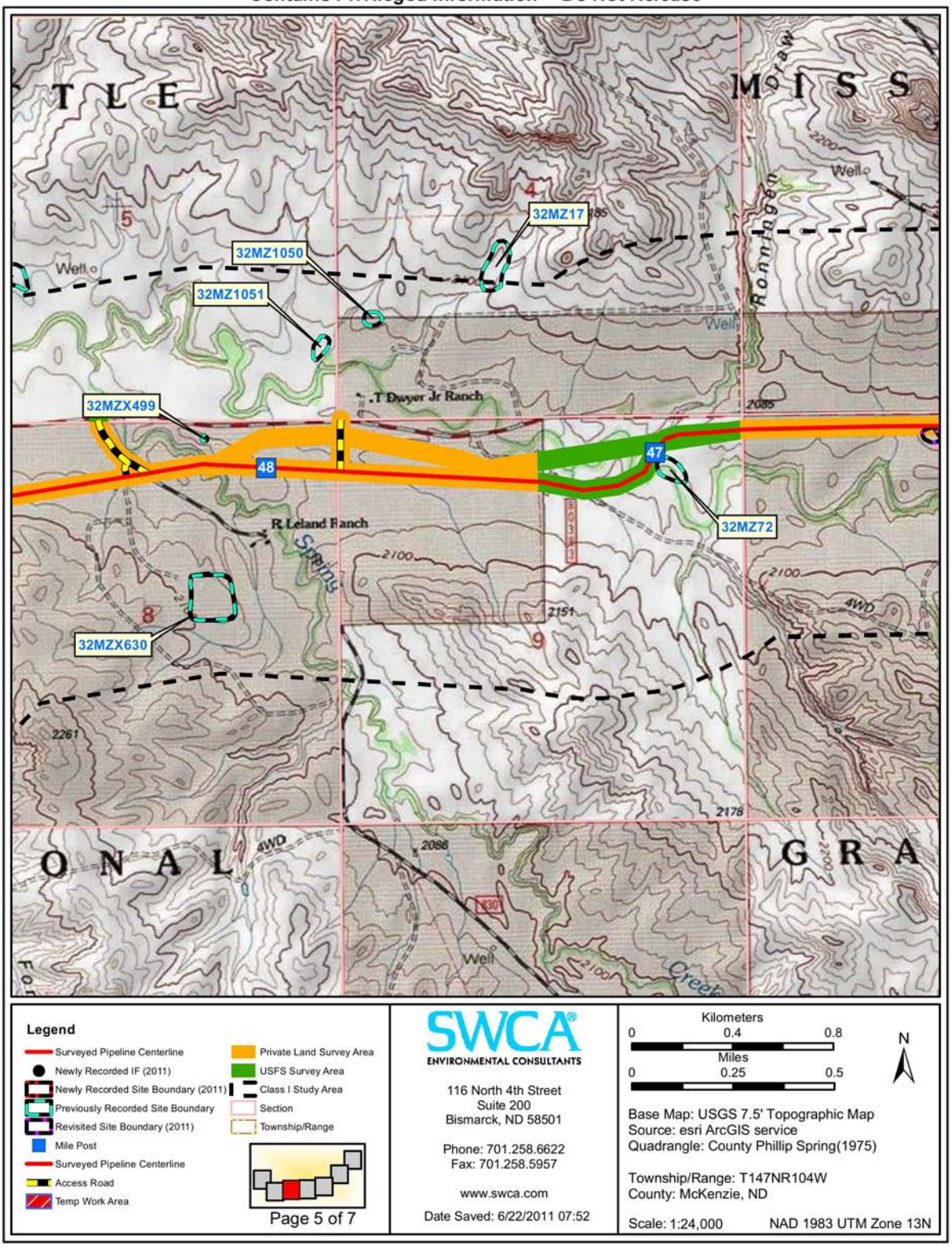

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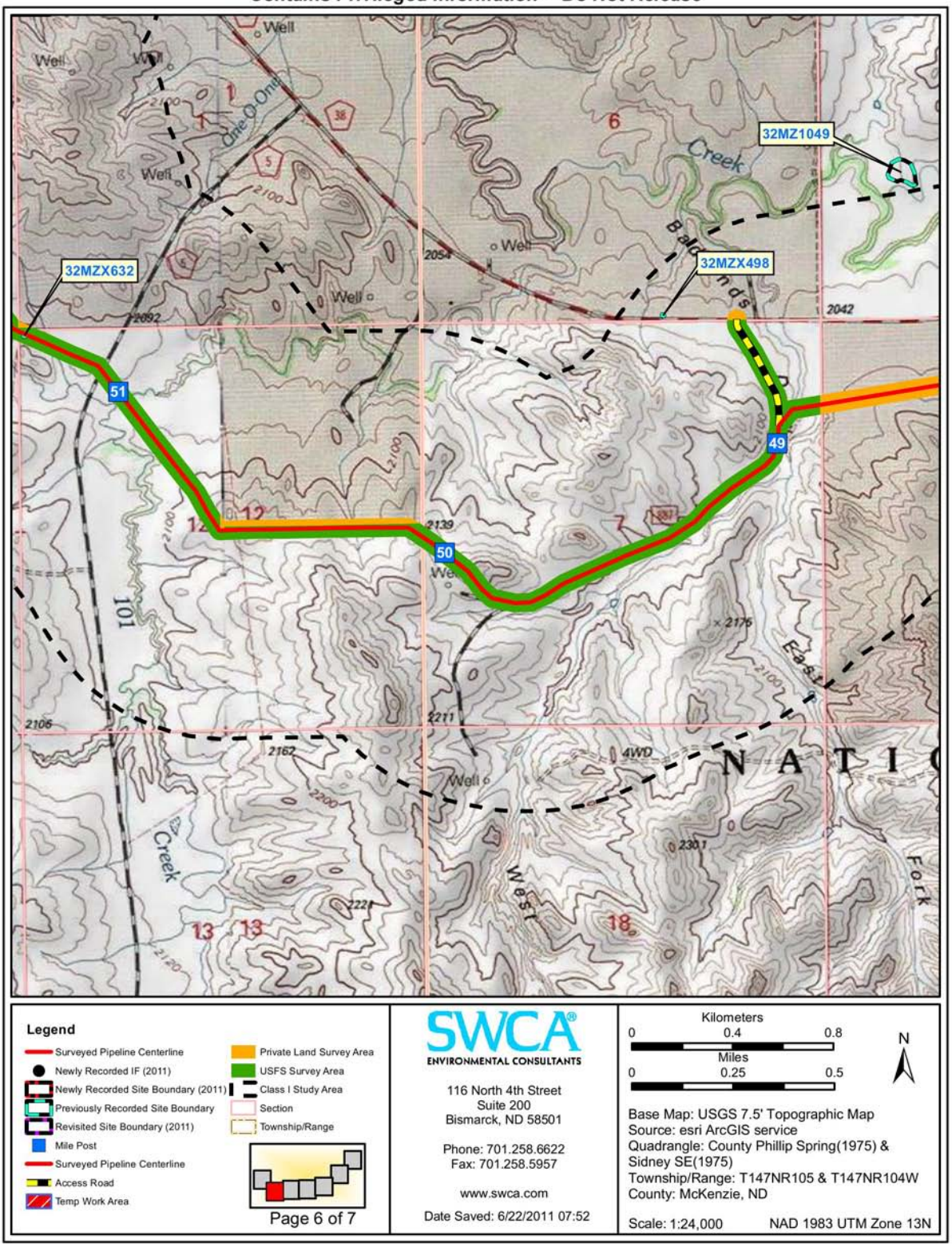

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