ONEOK BAKKEN PIPELINE, L.L.C.

16-inch Garden Creek Loop NGL Pipeline Project

North Dakota Public Service Commission

Consolidated Application for Certificate of Corridor Compatibility and Route Permit

October 2015

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ACRONYMS AND ABBREVIATIONS

BCC	Birds of Conservation Concern
BCR	Bird Conservation Regions
BGEPA	Bald and Golden Eagle Protection Act
BMP	Best Management Practice
bpd	barrels per day
CFR	Code of Federal Regulations
COE	U.S. Army Corps of Engineers
CMRP	Construction Mitigation and Restoration Plan
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
DOD	Department of Defense
DOT	Department of Transportation
FSA	U.S. Department of Agriculture Farm Service Agency
FWS	U.S. Fish and Wildlife Service
GIS	Geographic Information System
gpm	gallons per minute
GRP	Grassland Reserve Program
HDD	horizontal directional drilling
ICBM	intercontinental ballistic missile
IPaC	Information, Planning, and Conservation System
LMNG	Little Missouri National Grassland
MBTA	Migratory Bird Treaty Act
Merjent	Merjent, Inc.
MMb/d	million barrels per day
MMcf/d	million cubic feet per day
NDDA	North Dakota Department of Agriculture
NDDH	North Dakota Department of Health
NDDTL	North Dakota Department of Trust Lands
NDGF	North Dakota Game and Fish Department
NDPDES	North Dakota Pollution Discharge Elimination System
NDPSC	North Dakota Public Service Commission
NDSLD `	North Dakota State Land Department
NDSWC	North Dakota State Water Commission
NHI	Natural Heritage Inventory
NLEB	northern long-eared bat
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places

ONEOK	ONEOK Bakken Pipeline, L.L.C.
ORM	ONEOK Rockies Midstream, L.L.C.
PCN	Pre-Construction Notification
Project	16-inch Garden Creek Loop NGL Pipeline Project
psig	pounds per square inch gauge
ROW	right-of-way
SHPO	state historic preservation office
SWPPP	stormwater pollution prevention plan
USAF Cable Affairs	U.S. Air Force Cable Affairs office
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
USNPS	U.S. National Park Service
WAWSA	Western Area Water Supply Area
WHPA	Well Head Protection Area(s)
WRP	Wetland Reserve Program

LIST OF EXHIBITS

INTRODUCTION

ONEOK Bakken Pipeline, L.L.C. (ONEOK) a wholly owned subsidiary of ONEOK Partners, L.P., owns and operates natural gas liquids (NGLs) assets in North Dakota. As part of the 16-inch Garden Creek NGL Pipeline Loop Project (Project), ONEOK is proposing to construct approximately 14.4 miles of 16–inch-diameter steel loop pipeline in McKenzie County, North Dakota. Looping a pipeline involves operating a shorter segment of pipeline in parallel with the existing pipeline; the loop is connected to the main pipeline to help reduce pressure drop and increase capacity of the system. The Project will parallel and interconnect with the existing ONEOK Garden Creek 10-inch NGL pipeline, to expand its capacity from 74,000 barrels per day (bpd) to 93,000 bpd.

The Garden Creek 10-inch NGL pipeline (previously authorized under PU-11-066) originates at the ONEOK Rockies Midstream, L.L.C. (ORM) Garden Creek Gas Plants near Watford City and proceeds generally west and south through McKenzie County. The pipeline crosses the state line into Montana where it can deliver NGLs into the ORM Riverview Rail Facility near Sidney, Montana or continue southward on the pipeline. The Project will, in part, overlap with the existing Garden Creek 10-inch NGL pipeline easement.

ONEOK hereby submits to the North Dakota Public Service Commission (NDPSC) a single consolidated application for a Certificate of Corridor Compatibility and Route Permit for the Project. The application provides the information required by:

- North Dakota Century Code, Energy Conversion and Transmission Facility Siting Act, Chapter 49-22-08; and
- NDPSC Administrative Code, Chapter 69-06-05, Certificate of Site or Corridor Compatibility.

Construction activities are currently proposed to begin in April 2016 and be completed in August 2016. Restoration activities may extend into fall 2016 and spring 2017, if needed.

1.0 SIZE AND TYPE OF FACILITY

1.1 TYPE

The Project is a Y-grade natural gas liquid (NGL) transmission pipeline. The steel pipeline will meet U.S. Department of Transportation (DOT) regulations outlined in 49 Code of Federal Regulations (CFR) Part 195 which specify criteria for design, construction, operation, and maintenance of NGL transmission pipeline systems.

1.2 SIZE

The Project pipeline specifications are the following:

- 16.00-inch Outside Diameter Steel Pipe
- API 5L GR X60 FBE/ARO Coated ERW pipe
- Nominal Wall Thickness of 0.281 inch
- Maximum Operating Pressure: 1,440 pounds per square inch gauge (psig)
- Maximum Throughput: 2,700 gallons per minute (gpm), approximately 93,000 bpd
- Maximum Temperature: 100 degrees Fahrenheit

1.3 LENGTH

The proposed Project is approximately 14.4 miles in length of which 12.8 miles will be co-located with existing pipeline ROW. Approximately 1.6 miles will require greenfield development.

1.4 ABOVEGROUND FACILITIES

The proposed pipeline will include three block valves, one on the pipeline inspection gauge (pig) launcher, one mainline block valve and another at the pig receiver. These valves will be used to isolate specific sections of pipeline and minimize release, and will be located to mirror the existing ONEOK Garden Creek 10-inch NGL Pipeline valve locations, where possible. The valve sites will have a foot-print of approximately 45 feet in width by 50 feet in length and will be installed to meet DOT regulations. The valves on the launcher and receiver will be actuated and the valves on the block valves will be manual, and operated by ONEOK operations employees responsible for that area. Please see Exhibit A for typical drawings of these facilities.

A pig will be used to inspect the pipeline. The proposed pipeline will include a launcher located at the Garden Creek Loop injection site and a receiver located at the terminus of the pipeline for a tie-in to the Garden Creek 10-inch Pipeline. The launcher and receiver will facilitate the introduction of in-line tools which perform various functions varying from cleaning to integrity monitoring. Refer to Exhibit A for engineering documents.

2.0 DESIGN OF THE FACILITY

2.1 DESIGN OF PROPOSED FACILITY

The Project design includes an approximately 14.4-mile long route with 16-inch-diameter steel pipeline and associated valves and launcher/receivers described in Section 1.4. Please see Exhibit A for engineering documents.

The pipeline will be manufactured according to American Petroleum Institute Specifications API5L Seamless Line Pipe and will meet International Organization for Standardization (ISO) 3183 and applicable DOT regulations, specifically the design criteria outlined in 49 CFR part 195 subpart C, constructed per 49 CFR part 195 subpart D, and operated and maintained per 49 CFR part 195 subpart F.

2.2 PURPOSE AND NEED OF THE FACILITY

The purpose of the Project is to provide additional take away capacity for Y-grade NGLs (a mixture of ethane, propane, butanes, iso-butane mix, pentanes and natural gasoline) produced at ORM's Garden Creek Plants I-III, the Bear Creek Plant, the Lonesome Creek Plant and third party connections with third-party pipelines (Targa and Hiland). The Project will loop ONEOK's existing Garden Creek pipeline and will, in part, overlap the existing Garden Creek 10-inch NGL pipeline easement. The loop will expand the Garden Creek Line capacity from 74,000 bpd to 93,000 bpd and will provide access to facilities in the Mid-Continent and Gulf Coast for additional processing prior to distribution to various markets.

Technological advances in drilling and completion associated with horizontal wells currently employed in the Bakken Shale and Three Forks formations of the Williston Basin has dramatically increased hydrocarbon production in the area. Despite a downturn in commodity pricing, producers remain active in the region therefore creating demand for natural gas gathering infrastructure. According to data released in December 2014, natural gas production in North Dakota was reported at approximately 1,430 MMcfd; of which approximately 42 percent was produced in McKenzie County.[1]

The increased production of oil and natural gas products continues to be constrained by the available infrastructure take away capacity. While near term demands associated with increased crude oil production can be readily addressed with the installation of tankage for temporary storage coupled with additional trucking or rail capacity to bring it to market, the associated natural gas production is typically lost to flaring until the required infrastructure is placed into service.

According to data released in December 2014, approximately 22 percent of gas produced is being flared; one percent below the January 2015 goal set by the state Industrial Commission to reduce flaring to 23 percent by January 2015, ten percent by 2020 and potentially five percent beyond that. In order to continue to meet the gas capture goals, infrastructure needs to be added to accommodate active drilling activities in North Dakota. The requisite infrastructure includes gathering systems and gas processing to refine the raw feedstock into commercial products. The function of the gas processing plant is to separate commercial grade methane (i.e.; natural gas) from NGLs such as butane, propane and ethane, and in turn prepare these products for delivery.

[1] North Dakota Industrial Commission. 2014. Oil and Gas Division. December 2014 Report. http://www.nd.gov/ndic/pipe/publica/annual-report14.pdf

A major constraint in transporting NGLs and other hydrocarbons from North Dakota to processing/distribution centers and eventual end users in the United States is the lack of pipeline capacity. To relieve the pipeline constraints, several projects have been planned to address the growing volumes of natural gas, NGL, and other hydrocarbons. However, pipeline capacity is not expected to keep pace with production, leaving incremental volumes to find alternative transportation methods, primarily rail or other surface transportation alternatives.

Construction of the proposed Project will provide firm, reliable service for up to an additional 19,000 barrels of NGLs per day and will supplement the critical link between the ONEOK Bakken Plants and connections to the ORM Riverview Rail Facility near Sidney, Montana and facilities in the Mid-Continent and Gulf Coast for additional processing prior to distribution to various markets.

2.3 GENERAL AREA TO BE SERVED

The Project will allow for the delivery of additional NGLs from the Bakken and Three Forks production areas to United States refineries in the Midwest and Gulf Coast, where the NGLs will be refined into products to meet the existing need for agriculture and the petrochemical and plastics industries, as well as for refining and home heating throughout the U.S.

2.4 CAPACITY

The Project will transport an average of 798,000 gallons per day based on customer demand and will have a maximum throughput of 550 gpm, or approximately 19,000 bpd.

2.5 TECHNOLOGY TO BE DEPLOYED/EMPLOYED

The Project will be designed, constructed, maintained, and inspected to the DOT Pipeline and Hazardous Materials Safety Administration regulations utilizing industry standards and company policies. The system will be monitored 24 hours a day, 7 days a week, and 365 days a year by trained controls personnel. Additionally, the system is set up with a monitoring and alarm system that continuously monitors the flow and pressure of the system and readily signifies anything outside normal operating conditions. Mainline valves along the pipeline will be installed with remote actuators so that they could be closed remotely in the event of an emergency.

2.6 TYPE OF PRODUCT TO BE TRANSMITTED

The Project would transport Y-grade NGLs which is a mixture of ethane, propane, butanes, iso-butane mix, pentanes, and natural gasoline.

2.7 SOURCE OF PRODUCT TO BE TRANSMITTED

The anticipated sources of the NGLs are formations in the Williston Basin.

2.8 FINAL DESTINATION OF PRODUCT

Product will be shipped out of North Dakota via the ONEOK Garden Creek 10-inch NGL Pipeline to facilities in the Mid-Continent and Gulf Coast for additional processing prior to distribution to various markets.

2.9 WIDTH OF ROW

The pipeline will be constructed utilizing a 100-foot construction right-of-way (ROW). Additional extra temporary workspace may be need adjacent to road crossings and sensitive environmental features. ONEOK will maintain a permanent (35-50 foot wide) ROW easement along the entire length of the Project. This ROW will be reclaimed and could return to its pre-existing use once construction is complete. Typical ROW configuration drawings are included in Exhibit B.1.

2.10 REQUIREMENT FOR AND GENERAL LOCATION OF ANY NEW ASSOCIATED FACILITIES

The proposed pipeline would include a pig launcher at the Garden Creek Loop injection site, one block valve, and a pig receiver at the end of the pipeline for a tie-in to the Garden Creek 10-inch Pipeline. The launcher would facilitate the introduction of in-line tools that perform numerous functions varying from cleaning to integrity monitoring. Block valves will be used to isolate pipeline segments for maintenance or safety reasons. The launcher facility will be approximately 125 feet wide and 100 feet long. The receiver facility will be approximately 100 feet wide and 100 feet long. The block valve footprint will be 45 feet wide by 50 feet long along the ROW. Refer to Exhibit A for engineering plans.

2.11 ESTIMATED DISTANCE BETWEEN SURFACE STRUCTURES FOR PIPELINE FACILITIES

Discussion of surface structures to be developed for the Project are described in Sections 1.4 and 2.10 of this application. The proposed pipeline will include three block valves, one on the pig launcher, one mainline block valve and another at the pig receiver. The pipeline is 14.4 miles in length. Therefore, surface structures at the terminuses of the pipeline will be 14.4 miles apart. The final location of the mainline block valve will be sited upon evaluation of maintenance and safety requirements.

2.12 MAXIMUM DESIGN OPERATING PRESSURE AND TEMPERATURE FOR PIPELINE FACILITIES

The maximum operating pressure for the pipeline is 1,440 psig and the maximum operating temperature is 100 degrees Fahrenheit. Under normal operating conditions the pipeline will operate at a summertime temperature of 90^{o}F and 1100 psig.

2.13 MAXIMUM DESIGN FLOW RATE FOR PIPELINE FACILITIES

Refer to Section 2.4 above.

2.14 NUMBER AND GENERAL LOCATION FOR COMPRESSOR OR PUMPING STATIONS

No new compression or pumping stations will be required for this Project.

2.15 ESTIMATED TOTAL COST OF CONSTRUCTION

ONEOK will invest approximately $19.52 million in North Dakota to develop this Project. Once constructed and in-service, the continued costs of maintenance and operation of the proposed pipeline are minimal.

2.16 PREFERRED LOCATION OF FACILITY

The Project would be located in McKenzie County, North Dakota, originating at the Garden Creek Loop injection site, moving generally west and south, and terminating at ONEOK's receiver tie-in location approximately 19 miles southwest of Arnegard, North Dakota. The proposed Project is approximately 14.4 miles in length of which 12.8 miles will be co-located with the existing ONEOK Garden Creek Line pipeline. Approximately 1.6 miles will require greenfield development. Project location maps that depict the pipeline route are provided in Exhibit B. The Sections, Townships, and Ranges crossed by the Project are presented in the following table:

Table 2.16-1
Project Location

Township	Range	Sections
149N	100W	6, 17-19
149N	101W	23, 24, 26-28, 32, 33
148N	102W	2-6
148N	103W	1, 12, 13

2.17 PREFERRED LOCATION OF CORRIDOR

The Project corridor described in this application provides ONEOK with the opportunity to utilize existing assets and minimize landowner and environmental impacts. ONEOK owns and operates several assets throughout the region. The operation of these assets are conducted in a manner that maximizes the overall value of the NGLs, which benefits regional stakeholders (i.e., producers, royalty owners, and the State) through tax revenues.

Selection of the proposed corridor and route entailed a program which evaluated several geographic information system (GIS) data layers for the Project area. Information relative to high consequence areas (e.g., populated areas, wetlands, waterbodies, areas of cultural significance or high probability, public lands, etc.) and other unfavorable constructability or operational features were evaluated in an attempt to avoid and minimize proximity and potential impacts to these features. Features for favorable constructability or operations such as existing ROWs (e.g., pipelines, roads, railways, powerlines, etc.) were also evaluated in an effort to maximize co-location. After selection of a preliminary route, ONEOK also developed a one-mile-wide study area for further analysis and agency consultation (see Section 6 for more detail).

The shortest route that accomplished the desired impact avoidance and minimization while maximizing co-location efforts has served as the baseline for the proposed corridor. This baseline was then further evaluated for environmental, engineering, construction, and ROW considerations for further optimization. Field surveys, additional constructability reviews, and landowner communications are ongoing to finalize micro-routing to determine the exact placement of the pipeline and facilities along the established Project corridor. The location of the Project corridor is depicted in the aerial maps in Exhibits B.3-B.5.

ONEOK worked with engineering and environmental firms to develop and refine the preliminary route and corridor. Environmental field surveys were conducted within the Project corridor to identify sensitive resources and to further refine the route. As the pipeline routing process is finalized, ONEOK will continue to work with local, state, and federal agencies to determine a route that minimizes impacts to humans and the environment and allows for an efficient and cost-effective means to transport NGLs. Several factors went into consideration in selecting the pipeline route, including:

- Human – choosing a route that minimizes impact and ensures public safety;
- Environmental – choosing a route that minimizes disturbances to biological and cultural resources; and
- Constructability – terrain and obstacles such as roads, waterbodies, and other utilities must be considered to achieve safe and efficient construction.

2.18 DESCRIPTION OF ROW PREPARATION AND CONSTRUCTION AND RECLAMATION PROCEDURES

Pipeline construction occurs in a linear fashion and, at any one time during the Project, any of the following activities may occur. The typical sequence of construction activities for the Project is as follows:

- Stake the workspace boundaries and utilities;
- Clearing of construction area;
- Install temporary erosion and sediment controls;
- Grade and stump removal, if necessary;
- Segregation of topsoil, where necessary;
- Pipe delivery, bending, and welding;
- Trenching;
- Pipe installation;
- Backfilling excavations;
- Cleanup and final grading;
- Soil compaction treatment, where necessary;
- Stone removal, where necessary;
- Final restoration; and
- Upon final stabilization, remove temporary erosion and sediment controls.

Rough and final grading includes restoring disturbed areas as near as practicable to preconstruction conditions, returning the topsoil where topsoil has been stripped, preparing a seedbed (where applicable) for permanent seeding, installing or repairing temporary erosion and sediment control measures, repairing/replacing fences, and installing permanent erosion and sediment controls. Pre-existing landowner soil conservation improvements and structures disturbed by pipeline construction will be restored to the approximate pre-construction line and grade.

ONEOK will develop a Revegetation Plan for the Project to provide procedures to be followed during the revegetation of areas disturbed as a result of construction. In areas of cultivated cropland, the land will be returned to its original land use as soon as practical following construction. Additionally, ONEOK will comply with applicable permit conditions and environmental, civil, or landowner agreements.

2.19 LANDOWNER NOTIFICATION, EASEMENT ACQUISITION, AND COMPENSATION

Prior to conducting field surveys, ONEOK reviewed courthouse records for the purpose of identifying current landowners along the route. ONEOK contacted landowners to introduce the Project and to obtain permission to conduct surveys. ONEOK is in the process of negotiating easement agreements with landowners to give the company the right to construct, operate, and maintain the pipeline along a specified portion or corridor of each landowner's property in return for monetary compensation. ONEOK will obtain a permanent pipeline easement with an additional temporary easement during construction. When applicable, ONEOK will offer additional compensation for damages resulting from pipeline construction, such as the loss of crops.

The refinement of the route includes adjustments made per landowner request. ONEOK, at all times, negotiates in good faith, and necessary easement conditions and restrictions are presented and discussed.

3.0 SCHEDULE

3.1 OBTAINING CERTIFICATE OF CORRIDOR COMPATIBILITY

ONEOK seeks a Certificate of Corridor Compatibility by or before mid-March 2016.

3.2 OBTAINING ROUTE PERMIT

ONEOK seeks a Route Permit by or before mid-March 2016.

3.3 COMPLETING ROW ACQUISITION

ONEOK anticipates completing ROW acquisition in December 2015.

3.4 STARTING CONSTRUCTION

ONEOK plans to begin construction on the Project upon receipt of regulatory approval and applicable permits in April 2016.

3.5 COMPLETING CONSTRUCTION

Completion of construction is anticipated to occur in August 2016.

3.6 TESTING OPERATIONS

Testing of the pipeline and tank facilities is expected to be conducted July 12 to 25, 2016.

3.7 COMMENCING OPERATIONS

The in-service date for the Project is August 15, 2016.

4.0 ALTERNATIVES

4.1 ALTERNATIVES TO THE PROPOSED FACILITY

Construction of the proposed Project will provide firm, reliable service for an additional capacity of 19,000 bpd of NGLs on the existing ONEOK Garden Creek 10-inch Pipeline. The products will be delivered to the ORM Riverview Rail Facility near Sidney, Montana, or continue southward on the pipeline. ONEOK identified and evaluated several Project alternatives; however, none of these alternatives effectively satisfied the Project objective. These alternatives included:

- No-Action Alternative;
- Trucking Alternative; and
- Rail Alternative.

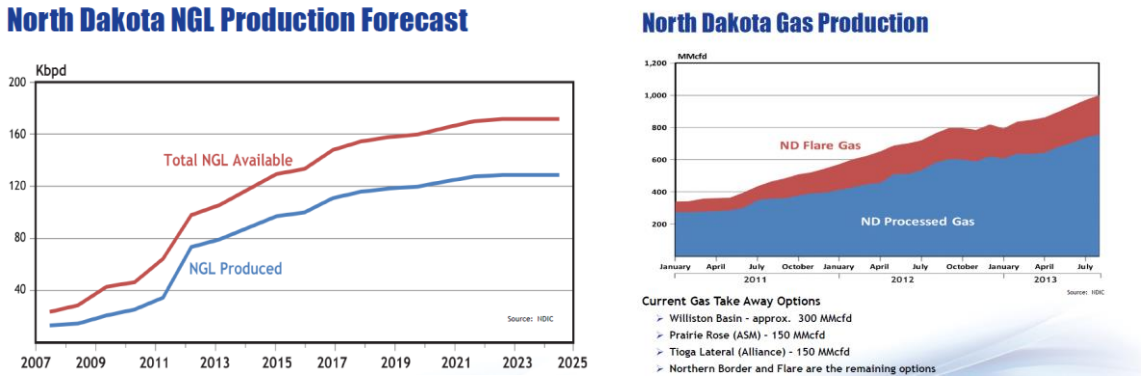
4.1.1 No Action Alternative

The primary objectives of the Project are to provide additional, new, firm transportation capacity to an existing natural gas transmission system and to place the proposed facility into service by August 2016. Under the no-action alternative, the Project would not be built, and the environmental impacts associated with construction and operation of the proposed Project would not occur.

A No Action Alternative would leave the region constrained by limited transport capacity for safe and reliable transmission of NGL products to markets. Added NGL volumes from ORM's Lonesome Creek Plant (currently a 200 million cubic feet per day (MMcf/day) natural gas processing plant) and Bear Creek Plant (currently an 80 MMcf/day plant) will exceed the capacity of the existing Garden Creek 10-inch Pipeline. Without adequate infrastructure to transport this influx of NGLs, the two ONEOK plants would have to flare off this additional product or operate the plants at a reduced capacity.

Within the region, NGL production from the Bakken has increased from 20 million barrels per day (MMb/d) in 2011 to almost 90 MMb/d today and is projected by the North Dakota Industrial Commission to continue to increase through 2025 (see Figure 4.1.1-1). Thus, development of solutions for gas gathering, processing, and takeaway infrastructure are needed. Historically, gathering, processing, and pipeline constraints have held back production growth in the Bakken region.

Figure 4.1.1-1 North Dakota NGL Production Forecast



Source: NDIC[2]

The No-Action Alternative would constrain the local and regional economic benefits that will be provided by the proposed Project and would deny ONEOK's customers the firm transportation service they have requested. Both of these effects of the No-Action Alternative could cause other natural gas transmission companies to propose similar, new facilities to meet the demand for the contracted volumes of gas to supply ONEOK's customers. These actions would likely result in environmental impacts similar to or greater than those associated with the proposed Project and might not meet the Project's objectives in the proposed timeframe. Alternatively, the regional demand for NGLs could continue to be met through importation from foreign and other domestic sources. However, continuing to meet regional demand for NGLs through importation – of both foreign and domestic sources – would leave North Dakota and other regional customers subject to global supply chain challenges. As a result, the No-Action Alternative provides no significant advantage over the proposed Project. For these reasons, ONEOK rejected a No Action Alternative.

4.1.2 Truck Transportation Alternative

A Trucking Alternative was reviewed and eliminated due to the volumes of NGLs that will be produced from the two plants. The maximum daily additional capacity provided by the proposed Project would be equal to an estimated 19,000 barrels or 798,000 gallons of NGLs. The average load for an NGL truck is approximately 10,000 gallons per truck. Thus, it will require 79 trucks per day to be loaded between the Lonesome Creek Plant and the Bear Creek Plant, an average of 3 trucks every hour for 24 hours a day. Similarly, it would require these 79 trucks per day to be unloaded (i.e., transloaded) at the railcar facility terminal. This level of truck activity is not logistically feasible; as it would cause significant amounts of heavy vehicle traffic for the area's residents as well additional wear and tear on the infrastructure. Further, any disruption in the trucking capacity due to seasonal load restrictions on roads, inclement weather, or road repairs would result in a plant shutdown and flaring of gas production.

Additionally, the DOT statistics show that pipelines are the safest, most efficient way to transport these products, particularly across long distances. A sharp increase in traffic on North Dakota roads as a result of the rapid expansion in the number of commercial trucks linked to the oil industry speaks to the issues associated with road safety. The Federal Motor Carrier Safety Administration reports a traffic fatality rate in North Dakota of 0.48 per million vehicle miles traveled in 2012 with 48 deaths involving a bus or large

[2] North Dakota Industrial Commission. 2015. North Dakota Drilling and Production Statistics. Available online at https://www.dmr.nd.gov/oilgas/stats/statisticsvw.asp.

truck, far surpassing any other state.[3] With an average of only 13 annual deaths involving commercial trucks in the pre-boom years of 2001 to 2005, and the economic cost of severe truck crashes more than doubling between 2008 to 2012, much of the increase in the fatality rate can be attributed to the energy production boom, along with the fact that much of the infrastructure is still single-lane, rural, and unpaved roads.[4] Harsh winter weather and seasonal road restrictions compromise the reliability of truck transportation even further. This alternative is not desirable; therefore, ONEOK rejected a Trucking Alternative.

4.1.3 Rail Transportation Alternative

A Rail Alternative was also evaluated as a surface transportation alternative. However, the lack of active railroad service within reasonable proximity to the plant's locations limited the viability of this alternative. Upon further analysis, this alternative was determined not feasible due to the associated environmental impacts and financial, logistic, and time constraints necessary to acquire land and construct the requisite rail infrastructure. This alternative would also require a third party rail operator.

Additionally, to ship NGLs via rail, it must be combined with crude oil increasing the flammability of the crude oil and creating a more hazardous product to ship. From a safety standpoint, railroad transport consistently reports a substantially higher number of transportation accidents than pipelines.[5] A series of major rail accidents taking place in 2013 to 2014 in Canada and the United States has heightened concern about the risks involved in shipping crude by rail.[6]

Reliance on rail as a transportation method for crude oil in the Williston Basin has drastically increased in recent years, carrying a negligible percentage of the overall market share as recently as 2010 to nearly 60 percent of the overall market share by mid-2014.[7] The rise in the use of rail as a primary transportation method has been driven in large part by the rapid increase in production coupled with a lack of pipeline capacity to account for additional supplies.

The downside of the growth in popularity of rail as a method of long-distance transportation has included delays that have had negative impacts on the agricultural sector, has led to reductions in coal-fired power plant inventories, and has been responsible for production issues in the food production industry, among others. Reports filed with the federal government in August 2014 indicate that the Burlington Northern Santa Fe Railway had a backlog of 1,336 rail cars waiting to ship grain and other products while Canadian Pacific Railway had a backlog of nearly 1,000 cars.[8] For industries such as those listed in which the use of

[3] DOT. 2014. Pocket Guide to Large Truck and Bus Statistics. Federal Motor Carrier Safety Administration. http://www.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/docs/FMCSA%20Pocket%20Guide%20to%20Large%20Truck%20and%20Bus%20Statistics%20-%202014%20-%20508C.pdf.
[4] Bachman, J. 2014. North Dakota's Downside to the Oil Boom: Traffic Deaths. Businessweek. http://www.businessweek.com/articles/2014-06-09/north-dakotas-downside-to-the-oil-boom-traffic-deaths.
[5] DOT. Transportation Accidents By Mode. Office of the Assistant Secretary For Research and Technology. http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/national_transportation_statistics/html/table_02_03.html.
[6] Fritelli, J. 2014. U.S. Rail Transportation of Crude Oil: Background and Issues for Congress. Congressional Research Service. http://fas.org/sgp/crs/misc/R43390.pdf.
[7] Kringstad, J. 2014. Energy Development and Transmission Committee. North Dakota Pipeline Authority. https://ndpipelines.files.wordpress.com/2012/04/kringstad-edt-7-8-2014.pdf.
[8] Nixon, R. 2014. Grain Piles Up, Waiting For A Ride, As Trains Move North Dakota Oil. New York Times. http://www.nytimes.com/2014/08/26/us/grain-piles-up-waiting-for-a-ride-as-trains-move-north-dakota-oil.html.

pipelines is not an option, the only viable alternative would be increased reliance on trucking, which would exacerbate some of the issues listed above.

A rail transportation alternative would require the design and construction of rail car loading and offloading facilities, lateral service lines, and ancillary facilities necessary to support the requisite volumes of NGLs, requiring land acquisition and permanent conversion of agricultural land to industrial. Use of rail would require a completely different Project design than that currently proposed for the Project.

While rail tanker cars are a vital part of the short-haul distribution network for NGLs, pipelines are a more reliable, safer, and more economical alternative for the large volumes transported and long distances covered by the Project. As such, the rail transportation alternative is not considered a viable alternative.

4.2 ROUTE/SEGMENT ALTERNATIVES

As the purpose of the proposed Project is to loop the existing Garden Creek 10-inch Pipeline, it is ONEOK's strong preference to co-locate with the existing pipeline to the maximum extent possible. However, due to landowner concerns, ONEOK evaluated two major segment alternatives during Project planning. The segment alternatives were included in the agency consultation requests described in Section 4; however, have since been removed from consideration. The vast majority of the current route (89%) is co-located with the existing Garden Creek 10-inch Pipeline.

5.0 ENVIRONMENTAL STUDIES

ONEOK defined its study area as a 1-mile-wide corridor centered on the preferred pipeline route and conducted an initial desktop analysis for cultural resources, wetlands and waterbodies, and other sensitive environmental resources. The assessment was conducted utilizing GIS mapping, reviewing agency databases, peer-reviewed articles, and internet research. Following the desktop analysis, the appropriate agencies were consulted for cultural and biological resources (see Section 6). In addition to the preferred route, two segment alternates were also analyzed and included in the agency consultations.

Field studies for the Project focused on a generally 250-foot wide environmental survey corridor, centered on the pipeline, where survey permissions allowed. The survey corridor was widened in select locations to allow for flexibility in pipeline routing or in areas where extra workspace is anticipated to be required. The Project corridor, as shown on the maps in Exhibits B.3-B.5, is defined with the same boundaries as the survey corridor along the proposed Project route, and is the corridor ONEOK is requesting be certificated by the NDPSC.

ONEOK contracted specialized consultants to perform cultural, wetland and waterbodies, and habitat assessment surveys for the Project. At the time of this filing, the entire Project survey corridor has been surveyed for cultural resources, wetland and waterbodies, and habitat. Additional surveys are planned for spring 2016, including a tree and shrub inventory, eagle and raptor nest surveys, and pre-construction migratory bird surveys, if needed.

5.1 CULTURAL RESOURCE INVENTORY

According to the North Dakota Energy Conversion and Transmission Facility Siting Act, among the "*factors to be considered [by the Commission] in evaluating applications and designation of sites, corridors, and routes,*" is the effect of the proposed site or route on existing scenic areas, historic sites and structures, and paleontological or archaeological sites. The repository in North Dakota for this information is the State Historic Preservation Office (SHPO), which acts as a technical resource during identification and evaluation of areas, sites, and structures and during reviews of Project effects. The Commission tasks the Proponent to coordinate identification and effects discussions with the SHPO.

Since June 2015, ONEOK has sponsored desktop and field reviews of a study area that completely encompasses the Project route. The review tasks included: canvassing the SHPO previous survey and archaeological and historic structure files and characterizing them in a Class I cultural resource report; documenting archaeological sites and historic structure field inventory of an area that entirely includes the Project route in a Class III cultural resource report[9]; and corresponding in writing with SHPO about the resources identified and projected avoidance measures, if applicable. The standards of the National Register of Historic Places (NRHP) are used in North Dakota to differentiate those sites for which impacts are considered during Project reviews (i.e., eligible, not evaluated for inclusion on the NRHP) from those for which impacts are not considered.

The Class I cultural resource report provided information on nine archaeological and historic structure sites identified previously in the Garden Creek study area, an area large enough to both contain the Project footprint and provide context on likely site density and type on the Project route. All nine of the previously

[9] A Class I and Class III Cultural Resource Inventory of the Garden Creek Loop NGL Pipeline Project, McKenzie County, North Dakota, SWCA Environmental Consultants (Bismarck, ND) 2015.

recorded sites have been previously determined as not eligible for nomination to the NRHP. Site types were typical of the region, with most being isolated finds.

In addition, ONEOK sponsored field inventories of the Project route in June, July, and August 2015, which resulted in the preparation of a Class III cultural resource report. One new cultural site (a historic depression of unknown function was documented within the Project area and recommended as not eligible for inclusion on the NRHP. ONEOK submitted the Class III cultural resource report[10] to SHPO for a technical review on September 25, 2015 and requested review and comment on the NRHP recommendation (see Section 6.8). Comments from SHPO regarding the Class III cultural resource report are pending, and will be provided to NDPSC staff upon receipt.

5.2 WETLAND AND WATERBODY INVENTORY

Wetland and waterbody surveys were conducted within the Project's survey corridor in June, July, and August 2015. The results of this survey can be found in the Natural Resources and Wetland Delineation Report provided in Exhibit C.1. Mapping of wetlands and waterbodies within the surveyed corridor are included in the Selection Criteria maps in Exhibit B.5. A summary of delineated features is provided in Table 5.2-1 below.

Table 5.2-1
Summary of Delineated Wetlands and Waterbodies

Feature type	Number of Features Crossed	Acreage within Survey Corridor	Temporary Project Impacts (acre)	Permanent Project Impacts (acre)
Wetlands				
PEM[1]	1	0.57	0.17	0
POW[1]	0	0.57	0	0
Waterbodies				
Intermittent	3	0.39	0.16	0
Ephemeral	7	0.53	0.11	0

[1] PEM = Palustrine Emergent; POW = Palustrine Open Water

5.3 WILDLIFE INVENTORY

Wildlife surveys were conducted within the Project's survey corridor in conjunction with the wetland and waterbody delineations in June, July, and August 2015. The wildlife observed are species commonly associated with agricultural communities. Details regarding the wildlife observed during field surveys are included in the Natural Resources and Wetland Delineation Report included in Exhibit C.1. No federally listed species or state species of concern were observed during the field surveys.

[10] Natural Resources and Wetland Delineation Report for the Garden Creek Loop NGL Pipeline Project, McKenzie County, North Dakota, SWCA Environmental Consultants (Bismarck, ND) 2015.

5.3.1 Federally Protected Species Review

A review of the U.S. Fish and Wildlife Service (FWS) Endangered Species Information, Planning, and Conservation System (IPaC) website[11] and the FWS North Dakota Field Office website[12] was conducted to determine the potential for listed species and critical habitat that may be present in McKenzie County, North Dakota. Field surveys for listed species and a general habitat assessment of the Project area were conducted in June, July, and August 2015. No threatened or endangered species or critical habitats were observed at the time of the on-site assessments. Details regarding the wildlife observed during field surveys are provided in the Natural Resources and Wetland Delineation Report included in Exhibit C.1.

Table 5.3.1-1 provides a summary of protected species in McKenzie County. A brief description of each species and their preferred habitat is also provided below. A summary of ONEOK's consultation with FWS with respect to federally-listed threatened and endangered species is included in Section 6.1 and in Exhibit D.

Table 5.3.1-1
Federally listed Species in McKenzie County, ND

Common Name	Status
Interior Least Tern	Endangered
Whooping Crane	Endangered
Pallid Sturgeon	Endangered
Gray Wolf	Endangered
Piping Plover (Northern Great Plains Population)	Threatened
Dakota Skipper	Threatened
Rufa Red Knot	Threatened
Northern Long-eared Bat[1] (NLEB)	Threatened
Sprague's Pipit	Candidate
Black-footed ferret	Experimental Population
Piping Plover Critical Habitat	Nearest designated critical habitat is approximately 17.3 miles north and east of the Project area along the Missouri River

[1] The NLEB was listed as threatened (with Interim 4(d) Rule) on April 1, 2015. Based on our initial review of this new listing, the NLEB will not have any specific protection outside of areas within 150 miles of a documented White Nose Syndrome case. As of this writing, the entire state of North Dakota falls outside of this range.

Interior Least Tern (*Sterna antillarum*): Endangered

The interior least tern is known to nest on midstream sandbars along the Yellowstone and Missouri River systems in North Dakota. The species constructs bowl-shaped depression nests on sparsely vegetated sandbars and sandy beaches during the nesting period, which occurs between mid-May and mid-August. Nesting adults have been documented to travel 7.5 miles or more from their nest sites to forage in wetlands or riverine habitat. The Project is located approximately 17.3 miles from the Missouri River. No potential habitat was observed within the Project area during the on-site field survey.

Whooping Crane (*Grus americana*): Endangered

The whooping crane's preferred habitat includes large marshy wetlands where whooping cranes would be likely to roost and croplands where cranes may feed. The whooping crane has a spring and fall migration period, which are late-April through mid-June (spring migration) and mid-September through

[11] http://ecos.fws.gov/ipac/wizard/chooseLocation!prepare.action
[12] http://www.fws.gov/northdakotafieldoffice/SEtable.pdf

mid-November (fall migration) in North Dakota.[13] Because Project activities will occur in the vicinity of suitable whooping crane stopover habitat (i.e., wetlands and croplands), ONEOK proposes to do one of the following to avoid or minimize impacts to the whooping crane:

1. Conduct Project activities outside of the whooping cranes spring and fall migration periods, which are late-April through mid-June (spring migration) and mid-September through mid-November (fall migration) in North Dakota, or

2. As part of pre-construction activities, ONEOK will conduct environmental training with the contractor and construction crews to provide details on this species. Should a whooping crane be sighted within 1 mile of the Project area, ONEOK will suspend construction at that location and contact the FWS immediately.

Pallid Sturgeon (*Scaphirhynchus albus*): Endangered

Pallid sturgeon are found in the Missouri River and parts of the Yellowstone River in North Dakota. They are adapted to living close to the bottom of silty river systems, typically in turbid fast moving water. Weighing up to 85 pounds, pallid sturgeons are long lived, with individuals possibly reaching 50 years of age. The Project does not include any suitable pallid sturgeon habitat and is located over 17.3 miles from the Missouri River.

Gray Wolf (*Canis lupus*): Endangered

Likely habitat for the gray wolf in North Dakota is forested areas in north central and northeast North Dakota. Most wolf experts agree that wolves spotted in North Dakota are probably lone individuals in search of a new home. These individuals are highly mobile and would likely avoid the Project area if present. In addition, the Project activities do not occur in or near any forested areas.

Piping Plover (*Charadrius melodus*): Threatened

Suitable nesting habitat for piping plovers in the Missouri River system is characterized as sparsely vegetated channel sandbars, sand and gravel beaches on islands, temporary pools on sandbars and islands, and island margins that interface with the river channel, all protected from disturbance. The Project is located over 17.3 miles from the Missouri River system.

Piping Plover Critical Habitat

Critical habitat for the northern Great Plains piping plover has been designated on alkali lakes and wetlands, the Yellowstone River, and Missouri River in North Dakota. The physical and biological features that are essential to the conservation of the species, referred to as the primary constituent elements, require special consideration for protection. In riverine habitat, these elements include sparsely vegetated channel sandbars, sand and gravel beaches on islands, temporary pools on sandbars and islands, and island margins that interface with the river channel, all protected from disturbance. The nearest designated piping plover critical habitat (associated with the Missouri River) is over 17.3 miles from the Project.

[13] http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B003. Accessed December 2014.

Dakota Skipper (*Hesperia dacotae*): Threatened

Dakota skippers require untilled, high-quality prairie. Habitat preferred by the skipper is wet-mesic prairie with little topographic relief on near-shore glacial lake deposits and in rolling native-prairie terrain over gravelly glacial moraine deposits. Larvae feed on grasses, favoring little bluestem (*Schizachyrium scoparium*). Adults commonly feed on nectar of flowering native forbs such as harebell (*Campanula rotunidfolia*), wood lily (*Lilium philadelphicum*), and purple coneflower (*Echinacea angustifolia*). This species is not known to disperse widely and has low mobility, dispersing a maximum of 0.6 mile. The species is threatened by conversion of native prairie to cultivated agriculture or shrublands, over-grazing, invasive species, gravel mining, and inbreeding.

The proposed Project site is primarily cultivated cropland and has been managed as such for more than 20 years. Review of aerial photos and soil survey data indicate that untilled, high-quality prairie dominated by native grasses that contain a high diversity of native forbs are not present within the Project site or within one-half mile of the site. Desktop analysis supported with field studies have concluded that no suitable habitat is present within the Project area; therefore, impacts to the Dakota skipper are not anticipated.

Rufa Red Knot (*Calidris canutus rufa*): Threatened

The red knot is protected as threatened under the Endangered Species Act, effective January 12, 2015. When migrating through interior North America, red knots largely rely on exposed substrate at wetland edges for stopover habitat. The suitability of a wetland for red knots depends on water levels and may vary annually. In addition, red knots have been reported to forage in cultivated fields when migrating through the interior.[14]

Because Project activities will occur in the vicinity of suitable stopover habitat (i.e., wetlands and croplands), ONEOK proposes to do one of the following to avoid or minimize impacts to the red knot:

1. Conduct Project activities outside of the red knot's spring and fall migration periods, which are May 15 to June 15 (spring migration) and July 15 to September 15 (fall migration) in North Dakota, or

2. As part of pre-construction activities, ONEOK will conduct environmental training with the contractor and construction crews to provide details on this species. Should a red knot be sighted within 1 mile of the Project area, ONEOK will suspend construction at that location and contact the FWS immediately.

NLEB (*Myotis septentrionalis*): Threatened with Interim 4(d) rule

The NLEB ranges across much of the eastern and central United States. During summer, the NLEB roosts singly or in colonies underneath bark, in cavities, or in crevices of both live and dead trees. Males and non-reproductive females may also roost in cooler places, such as caves and mines. This bat seems opportunistic in selecting roosts using tree species based on suitability to retain bark or provide cavities

[14] Rufa Red Knot Ecology and Abundance. Supplement to Endangered and Threatened Wildlife and Plants; Proposed Threatened Status for the Rufa Red Knot (*Calidris canutus rufa*). Docket No. FWS–R5–ES–2013–0097; RIN 1018–AY17. http://www.fws.gov/northeast/redknot/pdf/20130923_REKN_PL_Supplement02_Ecology%20Abundance_Final.pdf.

or crevices. It has also been found, rarely, roosting in structures like barns and sheds. NLEB spends winter hibernating in caves and mines.[15]

NLEB was officially listed as threatened (with Interim 4[d] Rule) on April 1, 2015. Based on our initial review of this new listing, the NLEB will not have any specific protection outside of areas within 150 miles of a documented White Nose Syndrome case. As of this writing, the entire state of North Dakota falls outside of this range.[16]

Sprague's Pipit (*Anthus spragueii*): Candidate

The Sprague's pipit is a candidate species, endemic to the northern Great Plains native short-to-mixed grass prairie, and sensitive to fragmentation and conversion of grassland habitat. Sprague's pipits prefer relatively large prairie patches of at least approximately 72 acres, with larger patches of at least 360 acres preferred. Sprague's pipits arrive on the breeding grounds from the third week of April to mid-May. Project activities do not occur in an area of suitable habitat for this species.

Black-footed Ferret (*Mustela nigripes*): Experimental Population

Black-footed ferrets inhabit the extensive prairie dog complexes of the Great Plains, typically composed of several smaller colonies close to one another that provide a sustainable prey base. The Black-footed Ferret Survey Guidelines for Compliance with the Endangered Species Act published by the FWS (1989), states ferrets require black-tailed prairie dog (*Cynomys ludovicianus*) towns or complexes greater than 80 acres in size, and a town of this dimension may be important for ferret recovery efforts. This species has not been observed in the wild for more than 20 years and is not anticipated to be impacted by the proposed Project.

5.3.2 Migratory Bird Treaty Act

ONEOK will develop a Migratory Bird Conservation and Compliance Plan to outline measures it will implement to avoid, minimize, and reduce possible impacts on migratory birds. Conservation measures were developed in consideration of statutory authority, regulatory guidance, and through experience with state and federal agencies on past projects in the region.

Although the Migratory Bird Treaty Act (MBTA) provides protection for all migratory birds, the FWS developed lists of Birds of Conservation Concern (BCC) to foster proactive conservation actions by federal and state agencies and private parties by focusing first on species of concern.[17] In addition, the U.S. is divided into Bird Conservation Regions (BCR); each BCR has a list of birds present or possibly present within the region that are considered BCC. The Project is located within BCR 17 or Badlands and Prairies.[18] ONEOK used this list as a starting point for prioritizing bird conservation measures.

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[15] http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A0JE. Accessed December 2014.
[16] http://www.fws.gov/midwest/nleb/documents/WNSBufferZone.pdf. Accessed April 2015.
[17] FWS. 2008. Birds of Conservation Concern 2008. FWS, Division of Migratory Bird Management. Available online at http://www.fws.gov/migratorybirds/pdf/grants/BirdsofConservationConcern2008.pdf.
[18] U.S. NABCI Committee, 2000 Rufa Red Knot Ecology and Abundance. Supplement to Endangered and Threatened Wildlife and Plants; Proposed Threatened Status for the Rufa Red Knot (*Calidris canutus rufa*). Docket No. FWS–R5–ES–2013–0097; RIN 1018–AY17.
http://www.fws.gov/northeast/redknot/pdf/20130923_REKN_PL_Supplement02_Ecology%20Abundance_Final.pdf.

The Project is most likely to impact migratory birds if construction and operation activities occur during the nesting season. Within the Project areas, birds generally nest from late March to early August, with the peak nesting season for migratory birds taking place between April 15 and July 30. Vegetative clearing during the nesting season would increase the potential for the Project to result in the take of a migratory bird. Typically, take from pipeline construction is not of adult birds or juveniles that have fledged from the nest because they are mobile and avoid Project-related activities; instead, take is typically of eggs and nestlings due to nest destruction and loss of young.

Prior to initiating pre-clearing activities and construction, ONEOK will conduct environmental training for company and contractor supervisory personnel. Where constructing the Project outside of the peak nesting season for migratory birds is not feasible, ONEOK will conduct ground surveys to identify migratory bird nests that could be impacted by construction activities. Varying activity restriction buffers around active nests and leks will be utilized as conservation measures for the plan.

A summary of ONEOK's consultation with FWS with respect to MBTA is included in Section 6.1 and in Exhibit D.

5.3.3 Bald and Golden Eagle Protection Act

Bald and golden eagles are protected by both the MBTA and the Bald and Golden Eagle Protection Act (BGEPA). The BGEPA prohibits the take of a bald or golden eagle adults, juveniles, or chicks including their parts, nests, or eggs without a permit. Take is defined by the BGEPA as to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. The BGEPA also addresses impacts resulting from human-induced alterations occurring around previously used nesting sites.

A raptor survey was conducted for the Project in June and July 2015 using a 0.5-mile line-of-sight methodology (see Exhibit C.1). No primary or secondary signs of bald or golden eagles or active nests were observed. Additionally, consultation was conducted with the North Dakota Game and Fish Department (NDGF) to determine known locations of bald and golden eagle nest sites within 1 mile of the Project. The NDGF responded on October 5, 2015 stating that there are no known bald or golden eagle nests within the 1-mile study area.

ONEOK will conduct pre-clearing bird surveys described in Section 5.3.2 above to determine whether bald or golden eagle nests are present within 1 mile of the Project. If an eagle nest is documented along the route during surveys, coordination will continue with the FWS regarding proper measures to be employed to avoid or minimize impacts.

A summary of ONEOK's consultation with FWS with respect to BGEPA is included in Section 6.1 and in Exhibit D.

5.4 TREE/SAPLING/SHRUB INVENTORY

Tree, shrub, and woody vegetation surveys are planned to be completed prior to construction when the Project workspace is well defined. Conducting these surveys as close to construction as possible will ensure that an accurate, up to date inventory of woody vegetation is collected for mitigation purposes, as minor reroutes may be incurred. In addition to reroutes, other dynamics like land use alteration and environmental factors such as storm events, flooding, or drought can affect the presence of woody vegetation over several growing seasons. Surveys will be targeted to a subset of areas where tree draws,

shelter belts, riparian areas, and native habitat are present. ONEOK will perform mitigation for removal of trees and shrubs at a 2:1 ratio, as is anticipated in the final order from the NDPSC.

5.5 NOXIOUS WEEDS INVENTORY

The Federal Noxious Weed Act of 1974 established a federal program to control the spread of noxious weeds. The U.S. Secretary of Agriculture was given the authority to declare plants "Noxious Weeds" and limit the interstate spread of such plants without a permit. Two federally listed noxious weeds (*Cuscuta L.* and *Orobanche ludoviciana*) occur in North Dakota.

North Dakota law (NDCC § 4.1-47-02) requires every person to do all things necessary and proper to control the spread of noxious weeds and makes it illegal for any person to distribute, sell, or offer for sale within this state a noxious weed. The North Dakota Department of Agriculture (NDDA) lists 11 species of noxious weed and invasive species including:

- absinth wormwood (*Artemisia absinthium*)
- Canada thistle (*Cirsium arvense*)
- diffuse knapweed (*Centaurea diffusa*)
- leafy spurge (*Euphorbia esula*)
- musk thistle (*Carduus nutans*)
- purple loosestrife (*Lythrum salicaria*)
- Russian knapweed (*Acroptilon repens*)
- spotted knapweed (*Centaurea maculosa*)
- yellow toadflax (*Linaria vulgaris*)
- dalmatian toadflax (*Linaria dalmatica*)
- saltcedar (*Tamarix chinensis*)

In addition to the NDDA noxious weed and invasive species list, localized weed boards within each county manage noxious weeds and invasive species and may develop a list of additional weeds for enforcement within their jurisdiction. In addition to the species listed above, McKenzie County has designated the following five species as noxious weeds:

- black henbane (*Hyoscyamus niger*)
- common burdock (*Arctium minus)*
- houndstongue (*Cynoglossum officinale*)
- halogeton (*Halogeton glomeratus*)
- baby's breath (*Gypsophila*)

It is ONEOK's intent to minimize the potential introduction and/or spread of undesirable species (i.e., invasive species and noxious weeds) along its ROW during pipeline construction activities and the revegetation timeframe. However, it is not practicable for ONEOK to eradicate undesirable species that are adjacent to its ROW. ONEOK will minimize the potential for the establishment of undesirable species by minimizing the time duration between final grading and permanent seeding. ONEOK will also require that construction equipment be cleaned before arriving on the construction spread to prevent the introduction of undesirable species to the Project area, as described in the Project's Revegetation Plan, which address weed control.

ONEOK has also initiated consultation with the McKenzie County Weed Control Board to identify known locations of noxious/invasive weeds in the Project area, and to solicit recommendations to control the spread of these species during construction. A summary of ONEOK's consultation with the McKenzie County Weed Board is included in Section 6.1 and in Exhibit D.

6.0 AGENCY NOTIFICATIONS AND PERMITTING

In September 2015, ONEOK initiated consultation and coordination with federal, state, and local agencies within the 1-mile study area that may be affected by the Project. Letters and/or emails were submitted with an accompanying mapset of the Project. At the time of the submittals, ONEOK was considering two segment alternatives which were included in the study area; however, since the consultation requests were submitted, ONEOK has selected the route as described in this filing. A summary of these consultations is provided in table 6.0-1 below, and further details on each consultation are included in the following sections.

Table 6.0-1
Summary of Agency Notifications[1]

Agency	Applicable Resource/Program	Date Submitted	Response Received
FWS – Ecological Services Office	Federally listed threatened and endangered species, FWS managed lands, MBTA consultation BGEPA consultation	September 2, 2015	October 6, 2015
FWS Lake Ilo National Wildlife Refuge	FWS-managed Lands, Grassland and Wetland Easements and Fee-title Lands	September 3, 2015	October 6, 2015
U.S. Department of Defense (DOD)	Intercontinental Ballistic Missile (ICBM) sites, launch facilities and cables	September 2, 2015	September 2, 2015
U.S. Department of Agriculture (USDA) - Natural Resources Conservation Service (NRCS)	Wetland and Grassland Reserve Programs	September 2, 2015	October 6, 2015
USDA Farm Service Agency (FSA) North Dakota State Office	Conservation Reserve and Conservation Reserve Enhancement Program lands	September 2, 2015	September 10, 2015
North Dakota Department of Health (NDDH)	Air and water quality, public health and safety	September 3, 2015	September 23, 2015
North Dakota SHPO	Natural Register of Historic Places, Cultural Resources Consultation	September 25, 2015	Pending
NDGF	State Conservation Priority Species, Game Refuges, Game Management Areas and Private Land Open to Sportsmen	September 3, 2015	September 30, 2015
North Dakota Parks and Recreation Department (NDPR)	North Dakota Natural Heritage Inventory system, State Parks Recreation areas, Natural areas, and Land and Water Conservation Fund projects	September 3, 2015	October 2, 2015
North Dakota State Land Department (NDSLD) – School Trust	Identification of impacts to NDSLD-administered School Trust lands.	September 2, 2015	September 2, 2015
NDSLD – Mineral Trust	Identification of impacts to NDSLD-administered School Trust lands.	September 2, 2015	September 8, 2015

Table 6.0-1 Summary of Agency Notifications[1]			
Agency	**Applicable Resource/Program**	**Date Submitted**	**Response Received**
North Dakota State Water Commission (NDSWC)	Sovereign Lands and Navigable Waters, Water appropriation and withdrawal	September 3, 2015	September 18, 2015
McKenzie County Water Resource Board	County-level drainage issues and stormwater management.	September 3, 2015	October 6, 2015
McKenzie County Weed Control Board	State and County-listed noxious weeds	September 3, 2015	October 7, 2015
[1] Copies of agency consultations are included in Exhibit D.			

6.1 U.S. FISH AND WILDLIFE SERVICE

The North Dakota Ecological Services Field Office of the FWS manages federally listed species and MBTA and BGEPA issues, while the Lake Ilo Wildlife Refuge manages FWS-easements in the Project area. ONEOK submitted Project notification letters to each office requesting a review of the Project in September 2015. Formal written responses have not yet been received; however, on behalf of ONEOK, Merjent, Inc. (Merjent) followed up with the agency via phone on October 6, 2015. A phone log is included in Exhibit D.

6.1.1 Federally Protected Species Review

Project-specific consultations were initiated with the FWS requesting confirmation regarding the presence or absence of federally protected species and their designated critical habitat. Additionally, review of the FWS IPaC was conducted for the study area and a wildlife/habitat inventory was conducted in conjunction the wetland and waterbody delineation for the Project (see Exhibit C.1). Results of this analysis are discussed in Section 5.3.1 of this application. Based on the October 6, 2015 conversation with Kevin Shelley (FWS Ecological Services – North Dakota Director), the FWS did not have any additional comments or concerns regarding listed species within the vicinity of the Project area.

6.1.2 Migratory Bird Treaty Act

Migratory birds are federally protected by the MBTA, which prohibits the taking, killing, possession, and transportation of migratory birds, their eggs, parts, and nests, except when specifically permitted by regulations. In North Dakota, both native prairie and non-native grasslands provide breeding, nesting, foraging, brood-rearing, and dispersal habitat for many species of migratory birds. Based on the October 6, 2015 conversation with Mr. Shelley, the FWS did not have any additional comments or concerns regarding migratory birds within the vicinity of the Project area. As summarized in Section 10.0, ONEOK will implement a MBTA Plan during construction to protect migratory birds and eagles/raptors.

6.1.3 Bald and Golden Eagle Protection Act

Bald and golden eagles are protected by both the MBTA and the BGEPA. The BGEPA prohibits the take of a bald or golden eagle adults, juveniles, or chicks including their parts, nests, or eggs without a permit. Take is defined by the BGEPA as to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. The BGEPA also addresses impacts resulting from human-induced alterations occurring around previously used nesting sites. Based on the October 6, 2015 conversation with Mr. Shelley, the

FWS did not have any additional comments or concerns regarding bald or golden eagles within the vicinity of the Project area.

In addition to the FWS, the NDGF was contacted to identify known locations of bald and golden eagle nest sites (See Section 6.6). On October 5, 2015, the NDGF responded that there are no known bald or golden eagle nests within the 1-mile study area. If an eagle nest is documented along the route during surveys, coordination will continue with the FWS regarding proper measures to be employed to avoid or minimize impacts. As summarized in Section 10.0, ONEOK will implement a MBTA Plan during construction to protect migratory bird and eagle/raptors.

6.1.4 Wetland and Grassland Easements

The FWS maintains grassland and wetland easements in North Dakota (as part of its National Wildlife Refuge system) for the purpose of providing habitat for wildlife as well as other functions and values provided by these features. Project-specific consultations were initiated with the Lake Ilo FWS National Wildlife Refuge office requesting confirmation of the presence or absence of lands within these programs. While a formal response from Lake Ilo has not been received as of this filing, based on the October 6, 2015 conversation with Mr. Shelley, FWS does not hold any grassland or wetland easements within McKenzie County.

6.2 U.S. ARMY CORPS OF ENGINEERS

The U.S. Army Corps of Engineers (COE) regulates impacts to Waters of the United States[19] under Sections 404 and 10 of the federal Clean Water Act. Based on a review of the wetland and waterbody data collected during field surveys (see Section 5), the pipeline will cross features within the COE's jurisdiction. ONEOK expects that the Project will be eligible for coverage under the COE's Nationwide Permit 12, which authorizes temporary impacts to COE-jurisdictional waters due to construction of utility lines.

Furthermore, ONEOK believes the Project impacts will not exceed the minimum requirements needed for a Pre-Construction Notification (PCN) to be submitted to the COE. As such, ONEOK has not initiated consultation with the COE. Should the scope of the Project change and a PCN be required, ONEOK will engage the COE at that time.

6.3 U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE

The USDA NRCS administers the Grassland Reserve Program (GRP) and Wetland Reserve Program (WRP) as well as the Farm and Ranch Lands Protection Program (FFRP) and Agricultural Conservation Easement Program (ACEP). ONEOK initiated consultation with the USDA NRCS to identify lands enrolled in these programs. The state and county offices of the USDA NRCS responded on September 9, 2015 and October 6, 2015 respectively, stating that the USDA NRCS does not administer any of the above referenced program easements within the Project corridor. ONEOK is working with landowners during the easement acquisition process to identify whether any federal cost shared funds have been allocated to conservation practices on their property that may be destroyed or abandoned because of pipeline installation so that reclamation can be completed.

[19] As defined in 40 CFR 230.3

6.4 U.S. DEPARTMENT OF AGRICULTURE, FARM SERVICE AGENCY

Lands enrolled in the FSA administered Conservation Reserve Program (CRP) are privately owned; however FSA has administrative responsibilities to ensure the provisions of CRP are maintained throughout the contract period. The FSA responded on September 10, 2015 confirming that the CRP program stipulates that lands enrolled in CRP may not have the vegetative cover disturbed during the Primary Nesting and Brood Rearing Season (April 15 through August 1) unless disturbance of the existing cover is minimal and a waiver of this provision is granted by the FSA.

ONEOK is working with landowners during the easement acquisition process to identify presence of CRP enrolled lands within the Project area. Should CRP land be impacted by the Project within the Primary Nesting and Brood Season noted above, ONEOK will apply for a waiver from FSA.

6.5 U.S. DEPARTMENT OF DEFENSE

In a September 2, 2015 response, the DOD confirmed that the proposed pipeline corridor is not within the limits of the DOD's restrictive easement for intercontinental ballistic missiles and launch facilities and that no Air Force assets are located within the Project area.

6.6 NORTH DAKOTA GAME AND FISH DEPARTMENT

ONEOK consulted with NDGF regarding state conservation priority species, game refuges, game management areas, and Private Land Open to Sportsmen lands.

NDGF responded on October 5, 2015, regarding known locations of bald and golden eagle nests. The NDGF stated that there are no known bald or golden eagle nests within the 1-mile study area. NDGF responded on September 30, 2015 providing the following recommendations and comments:

1. Avoid disturbance to native prairie and wooded draws to extent practicable.

2. Aerial surveys should be conducted for raptor nests before construction begins. A ½-mile buffer should be implemented around active eagle nest sites that have been known to be occupied within the past 5 years.

3. Avoid impacts to wetlands and do not alter drainage patterns or place above ground appurtenances in wetlands. Unavoidable destruction or degradation of wetlands acres should be mitigated in kind.

4. Impacts to wildlife or sensitive species and resources are not anticipated provided the above recommendation are implemented where appropriate.

As noted previously, approximately 89 percent of the route is co-located with the existing Garden Creek pipeline which will help to limit disturbances of sensitive features. In addition, no wooded areas are crossed by the route. ONEOK will restore disturbed wetlands in accordance with its Construction Mitigation and Restoration Plan (CMRP) and Revegetation Plan (see Section 10.0) and there will be no long-term alteration of drainage patterns. As noted in Section 5.3.3, ONEOK sponsored a pedestrian raptor survey in June/July 2015 using a 0.5 mile line of sight. No primary of secondary signs of bald or golden

eagles were observed (see Exhibit C.1). ONEOK is currently proposing to conduct pre-construction pedestrian surveys for raptor and eagle nests, and is assessing the need to conduct aerial surveys.

6.7 NORTH DAKOTA PARKS AND RECREATION DEPARTMENT

ONEOK consulted with NDPR regarding North Dakota Natural Heritage Inventory (NHI) system, state parks, recreation areas, natural areas, and land and water conservation fund. The NDPR responded on, September 22, 2015, stating that the Project will not affect state parks or Land and Water Conservation Fund recreation areas. NDPR also state that no NHI occurrences are present within 1 mile of the Project area. NDPR also recommended using local native species for revegetation of lands disturbed by construction. ONEOK will restore the ROW according to its CMRP and Revegetation Plan (see Section 10.0) and will use native species, where possible.

6.8 NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICE

According to the North Dakota Energy Conversion and Transmission Facility Siting Act, among the "*factors to be considered [by the Commission] in evaluating applications and designation of sites, corridors, and routes,"* is the effect of the proposed site or route on existing scenic areas, historic sites and structures, and paleontological or archaeological sites. The repository in North Dakota for this information is the SHPO, which acts as a technical resource during identification and evaluation of areas, sites, and structures and during reviews of Project effects. The Commission tasks the Proponent to coordinate identification and effects discussions with the SHPO.

ONEOK sponsored a Class I cultural resource report and a field inventory in June, July, and August 2015 which resulted in the preparation of a Class III cultural resource report. A discussion of the desktop and field reviews conducted for the Project is provided in Section 5.1. One new cultural resource was documented within the Project area. ONEOK submitted the Class III cultural resource report to SHPO for a technical review on September 25, 2015 and requested review and comment on the NRHP recommendation (see Exhibit D). Comments from SHPO regarding the Class III cultural resource report are pending. ONEOK will forward to the NDPSC any written comments from the SHPO.

6.9 NORTH DAKOTA DEPARTMENT OF HEALTH

ONEOK initiated consultation with NDDH requesting review of the Project with respect to programs under purview of the NDDH such as implementation of strategies to address environmental impacts associated with new developments, the state hazardous waste management program, air and water quality management programs, and protection of groundwater and drinking water aquifers. In a response from the NDDH dated September 23, 2015, the NDDH recommended the following:

1. Minimize fugitive dust emissions created during construction activities.

2. Minimize disturbance of stream beds and banks to prevent excess siltation and revegetate disturbed areas as soon as possible after completion of work.

3. Prevent oil or grease spills from equipment maintenance or refueling from entering waterbodies.

4. Projects disturbing more than 1 acre require a permit to discharge storm water runoff until site is stabilized.

5. Minimize noise impacts during construction by conducting work during daytime hours and ensuring that mufflers on construction equipment are in working condition.

6. Select work areas to minimize potential for environmental damage during construction in the event of a spill and restrict spilled fluids from reaching surface waters. Develop a spill response plan. Surveillance and monitoring is necessary for early detection of potential leaks.

NDDH also confirmed it owns no land in or adjacent to the ONEOK will construct the Project in accordance with its CMRP, Spill Prevention, Control, and Countermeasure (SPCC), and Stormwater Pollution Prevention Plans (SWPPP) (see Section 10.0) which will outline measures and practices which address the six issues above.

Additionally, ONEOK performed a desktop review of waterbodies crossed in North Dakota which may have special designations. These include waterbodies considered "impaired" with respect to Section 303(d) of the federal Clean Water Act and "Class I or IA" waterbodies (defined in North Dakota Administrative Code Section 33-16-02.1-09), which are protected for special uses such as fish propagation, drinking water, and recreation. Based on this review, no 303(d) impaired waterbodies or state classified fishery resource waters are located within the study area.[20]

The NDDH also administers the North Dakota Source Water Protection Program, which was developed in response to the 1996 Safe Drinking Water Act amendments. The program identifies wellhead protection areas (WHPA) for groundwater-dependent public water systems or a source water protection area for surface water-dependent public water systems. Based on review of the NDDH Interactive Map of Wellhead Protection/Source Water Protection Areas,[21] accessed on August 12, 2015, the nearest protection area is a non-community WHPA, Youngquist Brothers Employee housing, located approximately 5 miles north of the Project just west of the city of Arnegard. No susceptibility analysis has been completed for this WHPA.

Permitting Authority

The NDDH, through their North Dakota Pollution Discharge Elimination System (NDPDES) construction stormwater program, authorizes the discharge of stormwater associated with construction activities under their general permit NDR10-0000. As this is a gas project and per the Energy Policy Act of 2005 and the remand of the U.S. EPA's rule by the Ninth Circuit Court of Appeals, this Project is exempt from requiring permit coverage under NDR10-0000. However, ONEOK will develop and implement a SWPPP to prevent pollutant runoff from the construction site to waters of the State.

The NDDH also provides authorization to discharge water from hydrostatic testing of pipe and dewatering activities during construction under the NDPDES general permit NDG07-0000. ONEOK will apply for permit coverage and comply with the requirements of NDG07-0000 for hydrostatic test discharge and dewatering activities associated with the Project. Coverage under the permit is generally granted no more than 30 days after submittal of an application. ONEOK will file a copy of this permit with the commission upon receipt.

[20] USGS, 1978. Stream Evaluation Map State of North Dakota.
[21] NDDH Interactive Wellhead/Source Water Protection Area Interactive Mapper accessed at http://www.ndhealth.gov/wq/gw/sourcewater.htm.

6.10 NORTH DAKOTA STATE WATER COMMISSION

ONEOK consulted with the NDSWC regarding the Commission's role in the oversight of the management and development of the State's water resources. The NDSWC responded on September 18, 2015, stating that the Project was not within any designated floodplain areas. Therefore, no floodplain permits are required. No sole source aquifers have been designated within North Dakota.

Additionally, NDSWC stated that gaging stations or water wells may be present in the area and that that the NDSWC should be contacted in the event that such facilities would be affected or accidentally damaged by the Project. In their response, NDSWC provided a map showing the approximate locations of these wells. Should any of these facility be affected by the Project, ONEOK will be in contact with the NDSWC. The response also indicated that the Western Area Water Supply Authority (WAWSA) may have infrastructure in the area and should be contacted regarding the location of their water supply pipeline. ONEOK will contact WAWSA to determine if the Project will impact any existing or proposed WAWSA infrastructure and will keep the commission apprised of any relevant communication.

Permitting Authority

Appropriation of water from the State's water resources is permitted by the NDSWC. Typically ONEOK will truck in water for hydrostatic testing of the pipe, rather than appropriating water from a nearby surface or groundwater source. As such, ONEOK does not expect that the Project will require a permit from the NDSWC. Should the scope of the Project change and a permit be required, ONEOK will apply for permit coverage through the NDSWC at that time.

6.11 NORTH DAKOTA DEPARTMENT OF TRUST LANDS

The North Dakota Department of Trust Lands (NDDTL) oversees management of surface acres and mineral interests held in trust for various schools and institutions. ONEOK provided Project notification to the NDDTL Surface Management Division requesting review of the Project for presence of School Trust Lands within the Corridor and Route. The NDDTL responded on September 2, 2015 indicating that ND School Trust has surface interests in Section 16, T149N, R100W in McKenzie County and has established east and west ROW corridors in that section. This parcel of land is within the Project's study area reviewed by the agency, but is not directly crossed by the route or corridor proposed in this application.

ONEOK provided Project notification to the NDDTL Minerals Management Division requesting comments regarding the presence or absence of state Mineral Trust Lands within the Corridor and Route. A preliminary review of publicly available Mineral Trust Land information concluded that the Project intersects with 10 Mineral Trust land tracts within the 1-mile study area, 6 tracts within the Corridor, and 4 tracts crossed by the route. The NDDTL Minerals Management Division responded on September 8, 2015, confirming the presence of Mineral Trust land tracts within the study area and route as depicted in the maps in Exhibit B.5. No special permits or approvals are typically required to cross such parcels, and the agency did not indicate any concerns with the proposed route.

6.12 MCKENZIE COUNTY WATER RESOURCE BOARD

ONEOK consulted with the McKenzie County Water Resource Board (WRB) regarding their role in the oversight of the management and development of the County's water resources. A normal written response has not yet been received; however, on behalf of ONEOK, Merjent followed up with the agency

via phone on October 6, 2015. The WRB stated that they have reviewed the Project and that they have no comments or concerns at this time.

6.13 MCKENZIE COUNTY WEED CONTROL BOARD

ONEOK consulted with the McKenzie County Weed Control Board regarding their role in the oversight of the management state- and county-listed noxious weeds. In an October 7, 2015 response, the agency stated that it had reviewed ONEOK's noxious weed containment plan, and that it meets all North Dakota and McKenzie County weed law standards. ONEOK will continue to cooperate with the agency to minimize the spread of noxious weeds during construction, as needed.

7.0 POLICY CRITERIA

7.1 LOCATION AND DESIGN

The Project facilities are being sited in accordance with the North Dakota Energy Conversion and Transmission Facility Siting Act (North Dakota Century Code chapter 49-22). Efforts to avoid and minimize environmental and human impacts are ongoing. Additionally, discussions with landowners regarding placement of the pipeline on respective tracts are taking place.

Facilities will be constructed and operated according to all applicable regulations. The Project will meet or exceed state and federal safety requirements and will be designed in accordance with 49 CFR part 195. All persons and firms providing service to ONEOK are required to conduct their work in compliance with environmental conditions, permit authorizations, and applicable regulations and would be held accountable for their actions.

7.2 TRAINING AND UTILIZATION OF IN-STATE LABOR

Construction of the Project will require approximately 120 workers in North Dakota.

7.3 ECONOMIES OF CONSTRUCTION AND OPERATION

ONEOK will invest approximately $19.52 million in North Dakota to develop this Project, generating approximately $293,000 of additional ad valorem tax revenues annually. Once constructed and in-service, the continued costs of maintenance and operation of the proposed pipeline are minimal. While the Garden Creek Loop Pipeline itself will not generate any direct tariff revenues, it is estimated that the gross NGL product value produced at the plants and transported through the Project will be in excess of $20 million annually, generating significant producer, royalty, and state tax revenues in the most efficient and minimally intrusive way possible.

7.4 USE OF CITIZEN COORDINATING COMMITTEES

ONEOK has established and maintains a good relationship with the local residents through its, and its affiliates', long-term regional presence operating various assets in the area. Through these relationships, ONEOK has maintained several grassroots communication channels to inform local residents regarding the developments associated with the Project. ONEOK would continue to maintain contact with local government officials. Through this contact, Project-related information would be exchanged and should concerns arise, ONEOK would work with officials to resolve those issues.

7.5 COMMITMENT OF PORTION OF TRANSMITTED PRODUCT FOR USE IN STATE

The proposed Project would interconnect with existing facilities. The products currently handled, transferred, and shipped at these facilities are currently delivered to markets located in and out of the state.

7.6 LABOR RELATIONS

ONEOK maintains positive labor relations with its staff and contract work force and does not anticipate encountering any adverse labor relations on this Project. ONEOK is an equal opportunity employer committed to diversity and inclusion. Additionally, the labor market in the region is generally supportive of the oil and gas industry.

7.7 POLICIES AND COMMITMENTS TO LIMIT ENVIRONMENTAL IMPACT

ONEOK is committed to protecting the environment during all phases of construction of the Project. Before construction, surveys of the pipeline route were conducted to identify wetlands, streams, threatened and endangered species and their habitat, cultural resources, agricultural areas, and special land-use designations. In consultation with state and federal agencies, ONEOK developed mitigation plans to protect these sensitive areas during and after construction. Once the pipeline is operational, ongoing monitoring and maintenance activities will be implemented to ensure the safe operation of the pipeline.

7.8 COORDINATION OF FACILITIES

ONEOK Rockies Midstream (ORM), ONEOK's affiliate, owns and operates the Garden Creek Plants, Lonesome Creek Plant, Bear Greek Plant and Riverview Terminal. Coordination of the proposed 16-inch Garden Creek Loop NGL Pipeline is anticipated to be seamless as the proposed Project will provide critical takeaway transport of NGLs produced at the above plants allowing the Plants to operate at full capacity.

7.9 MONITORING IMPACTS

ONEOK has established and maintained positive landowner and community relationships throughout the region through its open communication and commitment to corporate citizenship standards that are based on integrity. ONEOK monitors landowner concerns through its ROW department and responds to all reasonable requests. In a similar manner, ONEOK monitors community concerns and responds to all reasonable concerns brought to its attention by local community leaders. ONEOK will select a contractor for construction of the Project and will coordinate the oversight responsibilities for construction activities with this contractor throughout the Project. Environmental responsibilities will be coordinated in the same manner.

During operation, pipeline control personnel provide 24-hour electronic surveillance of ONEOK pipeline operations. In addition, ONEOK uses a number of inspection methods and processes to mitigate corrosion and minimize the potential for third-party damage to the pipelines. These include regular ROW patrols, inspections of cathodic protection equipment, and coordination with the State One-Call Centers to mark the pipeline or to be present during excavation to ensure the public's safety and the integrity of the pipeline.

ONEOK designs, constructs, operates, and maintains its pipeline systems to ensure safety and reliability. If a leak were detected, the company has the ability to stop the flow of product remotely from its control center. ONEOK continues to establish and maintain contact with appropriate fire, police, and other public officials. This communication establishes the responsibility and resources of each government organization that may respond to a pipeline emergency. ONEOK also acquaints officials with the abilities of the pipeline operator when responding to an emergency. In all cases, emergency responders are directed to protect people first, then the environment next, and then property.

7.10 USING EXISTING AND PROPOSED ROWS AND CORRIDORS

ONEOK selected the preferred Project alignment in an effort to maximize the use of existing utility corridors. Of the 14.4 mile route, approximately 89 percent (12.8 miles) of the Project is co-located with ONEOK's existing Garden Creek pipeline.

7.11 OTHER EXISTING OR PROPOSED TRANSMISSION FACILITIES

ONEOK Partners, ONEOK's parent company, is one of the largest publicly traded master limited partnerships and is a leader in the gathering, processing, storage, and transportation of natural gas and natural gas liquids in the U.S. The company operates natural gas liquids systems connecting NGL supply in the Rocky Mountain and Mid-Continent regions with key market centers. In addition, the company owns and operates:

- 15,500 miles of gathering pipelines;
- 7,000 miles of transmission pipelines;
- 52 billion cubic feet of storage capacity;
- 13 processing plants; and
- 770 MMcf/d of processing capacity.

ONEOK Partners' general partner, ONEOK, Inc., has owned and operated natural gas pipelines since 1906.

8.0 CRITERIA

The information presented in this section was developed to demonstrate conformance with the NDPSC's siting criteria for transmission facilities. ONEOK has conducted a thorough inventory of the Project corridor and evaluated the resources within it to assess the compatibility of the Project with the NDPSC's siting criteria. The following sections identify and discuss the presence or absence of siting criteria within the Project corridor and route. Where siting criteria are identified, the location of each is shown on the maps in Exhibits B.3-B.5.

8.1 EXCLUSION AREAS

Table 8.1-1
Exclusion Areas
NDPSC Certificate of Corridor and Route Permit

Exclusion Area	Located within Study Area	Located within the Project Corridor	Crossed by Route	Administering Agency
National Parks	No	No	No	National Park Service (USNPS)
National Memorial Parks	No	No	No	USNPS
National Historic Sites and Landmarks	No	No	No	USNPS
National Natural Landmarks	No	No	No	USNPS
National Wilderness Areas	No	No	No	USNPS and U.S. Forest Service (USFS)
National Monuments	No	No	No	USNPS and State Historical Society
State Parks	No	No	No	State Park Service
State Historic Sites	No	No	No	State Historical Board
State Monuments	No	No	No	State Historical Board
State Historical Markers	No	No	No	State Historical Society
State Archaeological Sites	No	No	No	State Historical Board
State Nature Preserves	No	No	No	State Park Service
County Parks and Recreation Areas, Municipal Parks, and Parks under other Governmental Jurisdiction	No	No	No	Various
Areas Critical to the Life Stages of Threatened or Endangered Animal or Plant Species	No	No	No	FWS
Areas Where Animal or Plant Species Unique or Rare to the State Would be Irreversibly Damaged	No	No	No	Various
Areas within 1,200 feet of an ICBM facility	No	No	No	DOD
Areas within 30 feet of direct line of ICBM launch facility	No	No	No	DOD

[1] Study area and Project corridor are defined in Section 5.0. The route considered in this table assumes a 100-foot-wide workspace as shown in the typical ROW configuration shown in Exhibit B.1; however, actual workspace design will be finalized prior to construction.

8.1.1 Federal

Review of digital data[22] available from the USNPS, the USFS, and the FWS shows that there are no national parks, national memorial parks, national historic sites and landmarks, national wilderness areas, or national monuments located within the environmental survey corridor or route. Therefore, there will be no direct impacts to national parks, sites, monuments, or wilderness. The nearest federally managed land is the Little Missouri National Grassland (LMNG) located approximately one-half mile south and west of the Project and within the LMNG Sather Lake Recreation Area located 3.0 miles west of the Project.

8.1.2 State

Review of digital data[23] available from the NDPR indicates that there are no designated or registered state parks, sites, monuments, or nature preserves within the environmental survey corridor or route. Lewis and Clark State Park is the nearest such area and is located approximately 30 miles northeast of the Project. Therefore, there will be no direct impacts to state parks, sites, monuments, or nature preserves.

As discussed in Section 5.1; one cultural resource site was identified during field surveys; however, it was recommended as not eligible for inclusion on the NRHP. ONEOK submitted the Class III cultural resource report to SHPO for technical review on September 25, 2015 and requested review and comment on the NRHP recommendation (see Exhibit D). Comments from SHPO regarding the Class III cultural resource report are pending and will be filed upon receipt. .

8.1.3 County

Review of publicly available data shows that there are no county parks and recreational areas, municipal parks, or parks owned or administered by other governmental subdivisions within the environmental survey corridor or crossed by the route. The nearest such areas are located in the vicinity of Watford City approximately 11 miles northeast of the Project. Therefore, no direct impacts are anticipated.

8.1.4 Areas of Critical Habitat

A desktop analysis was conducted with respect to FWS-designated critical habitat. Critical habitat is defined as a specific geographic area that is essential to the conservation of a threatened or endangered species that may require special management and protection.[24] No designated critical habitat is present within the Project corridor or route. The nearest designated critical habitat to the Project is for the piping plover and is associated with the Missouri River located approximately 17.3 miles north and east of the Project at its closest point. The nearest designated Dakota Skipper critical habitat is located approximately 35 miles northeast of the Project.

[22] http://www.nps.gov/state/nd/index.htm, http://www.nps.gov/lecl/planyourvisit/loader.cfm?csModule=security/getfile&PageID=76427, and http://www.wilderness.net/NWPS/stateView?state=ND

[23] http://www.parkrec.nd.gov/parks/parks.html

[24] FWS. 2014. Endangered Species, Critical Habitat – What is it? http://www.fws.gov/midwest/endangered/saving/CriticalHabitatFactSheet.html. Accessed June 5, 2015.

8.1.5 Areas where Unique or Rare Species Would Be Irreversibly Damaged

A detailed discussion of unique and rare animal and plant species within the vicinity of the proposed Project is provided in Section 5.0 of this application. Additionally, consultation was conducted with the FWS North Dakota Field Office, the FWS Lostwood National Wildlife Refuge, the NDGF, and the NDPR as discussed in Section 6.0 of this application. Records of these consultations are included in Exhibit D.

Field surveys for natural resources including state and federal listed species were conducted for the Project in June, July, and August 2015. The results of these surveys are included in the Natural Resources and Wetland Delineation Report in Exhibit C.1. No threatened or endangered species were observed during the field survey. There are no areas within the Project corridor or route where animal or plant species unique or rare in North Dakota would be irreversibly damaged.

8.1.6 Areas within 1,200 Feet of ICBM Facility or 30 Feet of Direct Line of ICBM Launch Facility

The U.S. Air Force Cable Affairs (USAF Cable Affairs) office was contacted to determine whether the Project is situated within 1,200 feet of the geographic center of an ICBM launch or launch control facility or within 30 feet on either side of a direct line between an ICBM or launch control facility. The USAF Cable Affairs office responded on September 2, 2015, stating that the Air Force has no assets in the Project area. A record of this consultation is included in Exhibit D. A minimum of 2 days' notice will be provided by the construction contractor to USAF Cable Affairs though the North Dakota One-Call system prior to commencement of ground disturbance activities for the Project.

8.2 AVOIDANCE AREAS

Table 8.2-1
Avoidance Areas
NDPSC Certificate of Corridor and Route Permit

Avoidance Area	Located within Study Area	Located within the Project Corridor	Crossed by Route	Administering Agency
National Historic Districts	No	No	No	State Historic Society
National Wildlife Areas	No	No	No	FWS
National Wild, Scenic, or Recreational Rivers	No	No	No	Heritage Conservation Recreation Service, State
National Wildlife Refuges	No	No	No	FWS
National Grasslands	No	No	No	USFS
State Wild, Scenic or Recreational Rivers	No	No	No	State of North Dakota Legislative Assembly
State Game Refuges	No	No	No	NDGF
State Game Management and Management Areas	No	No	No	NDGF
State Forests	No	No	No	State Forest Service
State Forest Management Lands	No	No	No	State Forest Service
State Grasslands	No	No	No	State Park Service

Table 8.2-1 Avoidance Areas NDPSC Certificate of Corridor and Route Permit				
Avoidance Area	**Located within Study Area**	**Located within the Project Corridor**	**Crossed by Route**	**Administering Agency**
Historical Resources which are not specifically designated as Exclusion or Avoidance Areas	No	No	No	State and County Historical Society
Areas which are Geologically Unstable	10 Landslide Deposits (Susceptibility – Moderate)	1 Landslide Deposit (Susceptibility – Moderate)	No	State Geological Survey
Within 500 Feet of a Residences, School, or Place of Business	NA	1 Occupied Structure within 500 feet of route		Landowner
Reservoirs	No	No	No	COE and State Water Commission
Municipal Water Supplies	No	No	No	State Water Commission
Water Sources for Organized Rural Water Districts	No	No	No	State Water Commission
Irrigated Land	No	No	No	State Water Commission
Areas of Recreational Significance but not designated exclusion areas	No	No	No	Various

8.2.1 Federal

Review of digital data available from the USNPS, the USFS, and the FWS shows that there are no designated or registered national historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; or grasslands are crossed by the survey corridor or route. Lake Zahl National Wildlife Refuge, located approximately 16 miles North of the Project, is the nearest such federally managed land. Additionally, the Little Missouri National Grasslands, is located approximately one-half mile south of the Project, and the Missouri River is the nearest designated wild and scenic river which is located over 17 miles away. Therefore, no direct impacts are anticipated.

8.2.2 State

Review of the NDGF and NDPR websites[25] shows no designated or registered state wild, scenic or recreational rivers, Scenic Byways and Backways Program areas, game refuges, game management areas, Land and Water Conservation Fund project sites, state forest management lands, or grasslands are crossed by the Project corridor or route. Consultation with the both agencies was initiated in September 2015 and responses have been received (see Section 6 and Exhibit D). The nearest game management area is a waterfowl production area 24 miles north of the Project. No direct impacts are anticipated.

[25] http://gf.nd.gov/hunting/where-hunt/public-lands; http://www.parkrec.nd.gov/byways/byways.html

8.2.3 Historical Resources Not Designated as Exclusion/Avoidance Areas

See Section 5.1 for a discussion of historical resource desktop and field studies conducted for completion of Class I and Class III cultural resource reports, and see Section 6.8 for a discussion of agency consultations conducted with the SHPO regarding the Project.

8.2.4 Geologically Unstable Areas

Landslide and Mining Hazards

Landslide areas are masses of rocks and soil that have collapsed under their own weight. These geologic hazards can damage buildings, roads, railroad tracks, pipelines, and transmission lines. Landslides are generally characterized by steep, near-vertical slopes (i.e., the scarp) that are underlain by a mound of displaced rock (i.e., the body). The body of the slide may be relatively intact or it may be severely fragmented. Recent or relatively new landslides are generally characterized by a fresh (i.e., well-exposed rock) scarp and a sparsely vegetated body. Older slides are typically more difficult to identify in the field because the scarps may be covered with vegetation.

Mining hazards within the Project area may result from subsidence of historical lignite mine sites. Lignite has been mined in the region for many years. Before modern surface mining methods that involve stripping off the overburden, backfilling, and reclamation, lignite was mined by room-and-pillar underground methods. Resulting overburden can be thin (often less than 50 feet) and can create underground voids which could collapse causing sinkhole-type subsidence, fissures, and unstable ground conditions.

Review of North Dakota Geological Survey landslide maps indicates that ten areas of recent Pleistocene landslide deposits occur within the Project study area, none are located within the Project route. These areas are associated with the banks of Cow Creek and may be surface irregularities associated with old mines rather than slumps. The nearest mapped area is located 0.14-mile from the proposed Project centerline (see Exhibit B.3).

Areas of potential subsidence from abandoned lignite mines were identified based on review of the NDPSC abandon mine data.[26] Based on this review, there are two abandoned mines within the study area, however, there are no abandoned mine areas within the Project corridor. No Project impacts are anticipated.

Areas of Karst and Salt Dissolution

Where water-soluble rocks (e.g., limestone, dolomite, gypsum, anhydrite, salt) are at or near the surface, karst and salt dissolution features are prone to develop. Resulting sinkholes and caverns are potential hazards if the land surface subsides or collapses into the underground voids. No known locations of karst topography occur within the Project study area or Project corridor.

[26] Johnson, Bruce A. 2013. Abandoned Mines. Accessed at: http://ndgishub.nd.gov/arcgis/services/All_Locations/MapServer/WMSServer?

Tectonic Hazards

Ground motion hazards result when the energy from an earthquake is propagated through the ground. Faults are dislocations in which blocks of earth material on opposite sides of the faults have moved in relation to one another. Rapid slippage of these blocks can cause energy to be released, resulting in an earthquake. An active fault is one in which movement can be demonstrated to have taken place within the last 10,000 years.[27]

The 2008 U.S. Geological Survey (USGS) National Seismic Hazard Maps display earthquake ground motions for various probability levels across the U.S. and are applied in seismic provisions of building codes, insurance rate structures, risk assessments, and other public policy. The hazard map used estimates of peak ground acceleration, which is expressed as a percentage of the acceleration of gravity with a 2 percent probability of exceedance in 50 years.[28] Based on the evaluation of potential seismic hazards along the Project, the risk of the proposed pipeline rupturing from earthquake ground motion is considered to be minimal. The Project would not cross any known active faults and is located outside of known zones of high seismic hazard.

8.2.5 Areas within 500 Feet of a Residence, School, or Place of Business

The Project is located within 500 feet of one occupied structure. No other residence, school, or place of business are located within the Project corridor or route. ONEOK is currently in the process of obtaining the necessary waiver from the landowner. ONEOK will file the waiver once received (Exhibit E).

8.2.6 Reservoirs and Municipal Water Supplies

Review of the NDDH Wellhead Protection/Source Water Protection Area GIS data[29] indicates that no reservoirs or municipal water supplies are located within the Project study area or route. The nearest WHPA is Non-Community – Youngquist Brothers Employee Housing WHPA, which is not ranked for susceptibility for contamination. The nearest Community WHPA is the Arnegard Diamond Estates WHPA, which uses groundwater as its source, is located approximately 6 miles northeast of the Project and is ranked Not Likely Susceptible for contamination. No impacts to reservoirs or municipal water supplies are anticipated.

8.2.7 Water Sources for Organized Rural Water Districts

The Project is within the McKenzie County Rural Water Association which purchases its water from the Western Area Water Supply Area (WAWSA). WAWSA obtains its water from the Missouri River and treats it at the Williston Treatment plant. The NDDH completed assessment of this water source in 2003 and determined that the water system is moderately susceptible to potential contaminant sources. They also

[27] USGS. 2009. Earthquake Glossary. http://earthquake.usgs.gov/learn/glossary/?term=active fault.
[28] Peterson et. al. 2008. Documentation for the 2008 Update of the U.S. National Seismic Hazard Maps Open-File Report 2008–1128.
[29] NDDH Wellhead Protection/Source Water Protection Area mapping available at http://www.ndhealth.gov/wq/gw/sourcewater.htm. Accessed June 22, 2015.

noted that historically the Williston Water Plant has effectively treated this source water to meet drinking water standards.[30]

As noted in Section 6.10, ONEOK will contact WAWSA to determine if the Project will impact any existing or proposed WAWSA infrastructure and will keep the commission apprised of any relevant communication.

8.2.8 Irrigated Land

Irrigated land does not apply to underground transmission facilities.

8.2.9 Areas of Recreational Significance but Not Designated Exclusion Areas

No NDPR-designated Scenic Byways or Backways are crossed by the Project. The Project will result in only short-term visual effects related to the presence of heavy equipment, staging areas, and removal of vegetation within the construction workspace. Disturbed areas will be returned to preconstruction conditions and contours but may continue to show short-term visual disturbance until vegetation is fully reestablished. Once installed underground, the pipeline is not visible and is not expected to negatively impact any recreational areas. No aboveground facilities are expected to be installed within recreational areas.

8.3 SELECTION CRITERIA

The State of North Dakota Rules specifies selection criteria considered in designating a pipeline corridor or route.[31] These criteria are used to determine whether adverse effects from the location, construction, and maintenance of the facility will be at an acceptable minimum or whether these effects will be managed and maintained at an acceptable minimum.

The selection criteria that were considered for the Project include:

- Agricultural Production,
- Family Farms and Ranches,
- Land Suitable for Irrigation,
- Surface Drainage and Groundwater Flow Patterns,
- Sound Sensitive Areas,
- Visual Effects,
- Extractive and Storage Resources,
- Wetlands, Woodlands and Wooded Areas,
- Communication or Electric Control Facilities,
- Human Health and Safety,
- Animal Health and Safety, and
- Plant Life.

[30] McKenzie Rural Water District, 2013. Annual Drinking Water Quality Report. Available at http://county.mckenziecounty.net/usrfiles/ccr_2013.pdf. Accessed August 12, 2015.
[31] NDR Section 69-06-08-02.3.

Potential impacts and measures to avoid and minimize these impacts, as they relate to each of the selection criteria, are discussed in the following subsections.

8.3.1 Agricultural Production

Crop and Range Production

Prime farmland (including areas of prime farmland, if drained) and farmland that is of statewide importance occurs within the 1-mile wide study area, Project corridor and route. Prime farmland, as defined by the USDA, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. Prime farmland could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are factors needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied.

Farmland of statewide importance is land that is not federally designated prime but that is important for the production of food, feed, fiber, forage, and oil seed crops as determined by the appropriate state agency or agencies based on state-specific criteria. The 1-mile study area includes a minor amount of prime farmland and a larger, but still minor, amount of Farmland of Statewide Importance (see Table 8.3.1-1).

Generally, there will be no permanent impacts to prime farmland or farmland of statewide importance because the land use will not be affected post construction with the exception of above ground facilities (i.e., valves, launcher/receiver sites, tank facilities). Crop and forage (i.e., tame and native pasture) production will be temporarily disrupted in cases where the construction period overlaps with the growing season. Landowners will be compensated for crop loss and reduced yields caused by construction of the Project.

ONEOK has developed a CMRP to ensure that appropriate systems are in place to achieve compliance with the various permits and plans that have been developed for the Project. ONEOK's CMRP outlines construction-related environmental policies, procedures, and mitigation measures developed by ONEOK based on ONEOK's experience implementing Best Management Practices (BMP) during construction. The CMRP is designed to address typical circumstances that may be encountered along the Project including soil erosion and sedimentation control procedures and restoration and revegetation of areas disturbed during construction.

Table 8.3.1-1
Prime Farmland and Soil Erodibility Summary

	Acres	Prime Farmland[1]	Farmland Statewide Significance[1]	Compact Prone[2]	Highly Erodible	
					Wind[3]	Water[4]
		Percent				
One Mile Study Area	9,525	0	27.6	0	3.4	50.1
Project Corridor	588	0	23.9	0	7.0	49.2
Pipeline Route						
Temporary Workspace[5]	116.8	0	25.5	0	5.8	48.8
Permanent Easement[5]	77.0	0	25.5	0	5.3	47.5
Total	193.8	0	25.5	0	5.6	48.3

1 Prime farmland and Farmland of Statewide Significance as indicated in the Soil Survey Geographic database (SSURGO2).
2 Includes soils that are somewhat poorly drained to very poorly drained soils in loamy sands and finer textural classes.
3 Includes soils in wind erodibility groups 1 and 2.
4 Includes soils in land capability classes 4e through 8e or that have a representative slope value greater than or equal to 9%.
5 Refer to Exhibit B.1 for typical ROW configuration

CRP and Conservation Reserve Enhancement Program Lands

The FSA administers the CRP and the Conservation Reserve Enhancement Program (CREP). In September 2015, ONEOK submitted Project-specific consultations to the North Dakota FSA offices requesting confirmation regarding the presence or absence of lands within these programs. The FSA has administrative responsibilities to ensure the provisions of CRP are maintained throughout the contract period. According to these provisions, land enrolled in CRP shall not have the cover disturbed during the primary nesting and brood rearing seasons (April 15 through August 1 in North Dakota), unless a waiver from the FSA is granted.

For landowner privacy reasons, the FSA has elected to withhold disclosing CRP and CREP land information to ONEOK. ONEOK continues to actively engage landowners along the route to determine if their land is enrolled in these programs.

GRP and WRP Lands

The USDA NRCS administers the GRP and WRP. USDA NRCS confirmed that no lands enrolled in GRP or WRP are present within the Project corridor. Because lands are continually in transition into these programs; ONEOK will continue to actively engage landowners along the route to determine if lands are enrolled in these programs.

FWS Grassland and Wetland Easements

The FWS maintains grassland and wetland easements in North Dakota for the purpose of providing habitat for wildlife as well as other functions and values provided by these features. ONEOK has routed the pipeline to avoid all FWS owned and managed lands including wetland and grassland conservation easements on privately owned land. In September 2015, Project-specific consultations were initiated with

the FWS requesting confirmation of the presence or absence of lands within these programs. While a formal response from Lake Ilo Wildlife Refuge has not been received as of this filing, based on the October 6, 2015 conversation with Mr. Shelley, FWS does not hold any grassland or wetland easements within McKenzie County (see Exhibit D).

8.3.2 Family Farms and Ranches

The effects of construction on family farms and ranches within the 1-mile wide study area would be minor and short term. The primary impact on family farms would be the loss of standing crops and use of the land within the work area during construction of the Project. ONEOK will implement mitigation measures to minimize these potential impacts as described in the CRMP.

The primary impact on family ranches would be temporary prohibition of livestock grazing in the construction ROW, workspace areas, and restrictions on livestock movement across the construction ROW and workspace areas during construction. Given the narrow, linear nature of the Project and the alignment of the pipeline along property boundaries, livestock grazing reductions and livestock movement restrictions would be minor.

Long-term or permanent impacts on family farms and ranches are not anticipated. Following construction, the work area would be restored and farming and ranching would be allowed to continue over the operational ROW. Landowners would be compensated for temporary loss of land use. Grazing activities would return to normal after revegetation.

8.3.3 Land Economically Suitable for Irrigation

There are no federal, state, or private irrigation systems crossed by the Project. Only one isolated center-pivot irrigation systems is visible in recent aerial photography. Water may be sourced from surface ditches and rivers or underground aquifers. ONEOK will work with landowners to address Project location and timing with respect to irrigation systems. ONEOK will restore and/or compensate for damages directly resulting from construction activities.

8.3.4 Surface Drainage Patterns and Groundwater Flow Patterns

Surface Drainage

The Project is within the unglaciated area of the Missouri Plateau that is characterized as moderately dissected level to rolling plains with isolated sandstone buttes. Drainage in the study area is integrated and within the study area along the northern 3 miles of the proposed Project flows towards the Little Missouri River through tributaries such as Cherry Creek. Drainage within the study area along the southern 12 miles of the Project flows toward the Yellowstone River through tributaries such as Charbonneau Creek. Flow from these areas occurs only during spring thaws following above normal winter precipitation. The peak flows generally occur in March or April but may be as late as May. The secondary peaks in June and July are caused by heavy rainfalls of short duration. Most of the low flows, usually from May or June through February, are caused by ground-water discharge.

Surface drainage patterns will not be altered as a result of construction of the Project. Streams, swales, ditches, and other natural drains will be restored to pre-construction contours after construction is

complete. The pipe will be installed to depths that will not interfere with flow or future maintenance efforts by landowners or the drainage authorities.

Groundwater Flow

Groundwater for domestic and livestock use in McKenzie County is obtained from three aquifer systems in semiconsolidated rocks of Late Cretaceous and Tertiary age. Formations older than Late Cretaceous age generally contain brackish water that is unsuitable for most purposes. Groundwater from aquifers in unconsolidated rocks of Quaternary age occurs in various parts of the county.[32]

The Fox Hills and basal Hell Creek aquifer systems of late Cretaceous age underlies all of McKenzie County and is generally 1,100 to 1,800 feet below land surface. The aquifer system is recharged primarily by subsurface inflow from adjacent areas to the south and by leakage from underlying beds. Grounds water in this formation generally moves northeastward. Wells tapping the Fox Hills and basal Hell Creek aquifer system may yield about 100 gpm and is suitable for most domestic and livestock uses and for industrial purposes but is not suitable for irrigation.

Two Tertiary age aquifers are present in McKenzie County: the Ludlow and the Tongue River systems. The Ludlow aquifer is present at depths of more than 500 feet and includes the lower 600 feet of the Fort Union Formation. About 75 feet of claystone separates the Ludlow aquifer from the overlying Tongue River aquifer. Recharge to the Ludlow aquifer is by recharge from underlying deposits. Seepage may also occur upward into the valley of the Little Missouri River. The water is not suitable for irrigation or municipal use, but it is suitable for most domestic and livestock uses. Most of the recharge to the Tongue River aquifer system is from precipitation and seepage from lakes and streams. Wells developed in this system indicate that groundwater moves downward from south to north and discharges to the north beyond McKenzie County. Water from this aquifer is not usable for irrigation or municipal purposes but is suitable for most domestic and livestock uses.

The nearest Quaternary age aquifer is the Tobacco Garden Aquifer located approximately 4 miles southeast of the study area. This aquifer consists of alluvial sand and gravel deposited along the floor of the preglacial Little Missouri valley. Water from this aquifer is generally suitable for most domestic, livestock, municipal and industrial uses and for irrigation.

Any construction impacts that may occur to groundwater flow would be in surficial aquifers and would be highly localized and temporary in nature. No permanent impacts to groundwater flow are expected as a result of the Project.

8.3.5 Sound-sensitive Land Uses

Temporary increases in ambient sound will occur in the areas immediately surrounding active construction. The Project is located in a rural setting away from major population centers. Construction activities at any given point along the Project are expected to be short-term (i.e., 2 to 4 weeks in any given area) and generally limited to daylight hours. The use of heavy equipment or trucks will be the primary noise during construction and excavation. The level of impact may vary by equipment type, duration of construction activity, and the distance between the noise source and the receptor. Once constructed and

[32] Croft, M.G. 1985. Groundwater resources of McKenzie County, North Dakota. County Groundwater Studies 37 – Part III. USGS.

in-service, normal pipeline operations are not audible. Construction and operation of the Project is expected to comply with applicable noise requirements.

8.3.6 Visual Effect on Adjacent Areas

The Project area is comprised primarily of open grassland and agricultural fields with occasional rural structures, roadways, and power lines. Wooded vegetation occurs infrequently as shelter belts or within riparian draws and drainageways.

Above ground facilities associated with the Project include mainline valves, line markers, cathodic protection equipment, and test stations. Other than these permanent aboveground facilities, the Project will result in only short-term visual effects related to the presence of heavy equipment, staging areas, and removal of vegetation within the temporary construction workspace. These workspace areas will show short-term visual disturbance until vegetation is fully reestablished.

8.3.7 Extractive and Storage Resources

Four types of actively extractive resources were identified at various locations within the Project corridor or route: oil and gas; sand, gravel, and scoria; lignite; and uranium. Impacts on future extractive development would not constitute a substantial loss of resource availability because of the narrow, linear nature of the pipeline ROW relative to the expanse of areas with resource potential.

Oil and Gas

The Project would be located within the Williston Basin. The Williston Basin is a large, intracratonic sedimentary basin that occupies parts of North Dakota, Montana, South Dakota, Saskatchewan, and Manitoba. The Mississippian-Devonian Bakken petroleum system in the basin is characterized by low-porosity and permeability reservoirs, organic-rich source rocks, and regional hydrocarbon charge.[33]

The Bakken petroleum system consists of the Bakken Formation, lower Lodgepole**,** and upper Three Forks Formations. The Mississippian-age Bakken Formation consists of three members: (1) upper shale; (2) middle silty dolostone or dolomitic siltstone and sandstone; and (3) lower shale. The middle dolomite, known as the middle Bakken, is the principal oil reservoir and is on average 10,500 to 11,000 feet deep. Both the upper and lower shales are organic-rich marine shales and also serve as source rocks for the middle Bakken. The Devonian-age Three Forks Formation is also targeted. It is composed of shaley dolomite, typically found at 10,600 to 11,000 feet.[34]

According to the North Dakota Department of Mineral Resources, Oil and Gas Division, a total of 19 wells are located within the 1-mile study area. Efforts will be made to identify all wells along the route. The layout of construction ROW will be such that no wells will be within the Project footprint. Additional protection measures will be coordinated with the owner/operators of the facilities to ensure avoidance of negative impacts. Access to operating facilities will be coordinated with respective owners as needed.

[33] Kringstad, J. 2014. Energy Development and Transmission Committee. North Dakota Pipeline Authority. https://ndpipelines.files.wordpress.com/2012/04/kringstad-edt-7-8-2014.pdf.
[34] Kringstad, J. 2014. Energy Development and Transmission Committee. North Dakota Pipeline Authority. https://ndpipelines.files.wordpress.com/2012/04/kringstad-edt-7-8-2014.pdf.

Overall, the Project does not pose a hindrance for accessing oil and gas resources. With the current ability to drill horizontal laterals or directionally drill wells to access oil and gas resources, the proposed pipeline would not restrict access to those resources. Because oil and gas are produced at depths considerably deeper than the excavation depths required for the Project, construction of the Project would not be expected to affect the oil and natural gas producing formations. Construction-related impacts would be limited to surface or near-surface facilities, which could temporarily disrupt production until repairs are made.

Sand, Gravel, and Scoria

Aggregate (i.e., sand and gravel) is present from localized deposits in floodplains or glacial deposits. Scoria, mined for use in road construction, is formed from the in-situ burning of coal seams that result in baked rock. Based on review of available aerial photography, no gravel pits are located within the 1-mile study area. In the event that such resources were identified within the Project area, ONEOK will work with applicable owners and operators to determine pipeline placement in these areas.

It may be necessary to obtain construction sand and gravel from local, existing commercial sources for use as pipe padding, road base, or surface facility pads. These demands for sand and gravel would aid in short term economics of the local gravel pits but will not affect the long-term availability of construction materials in the area.

Lignite

Based on review of North Dakota Geological Survey Lignite Reserves Watford 100k Map Sheet, the Project route does cross mapped areas identified as an economically minable coal deposit. This map sheet encompasses most of McKenzie County and identifies approximately 618 million tons of mineable lignite. This reserve is spread throughout the mapped area, however, more than half of this tonnage comes from the Red Wind Creek and Bowline Creek deposits located approximately 2.5 miles south of the study area at its closest point. The Johnson's Corner deposit, located approximately 20 miles northeast of the study area, is the only other deposit in the sheet that contains more than 100 million tons of mineable lignite.[35]

Uranium

The nearest source of uranium to the Project is found in the volcanic-rich White River strata.[36] Over millions of years, groundwater has leached uranium from this strata and deposited it in the underlying carbonaceous rocks and sandstones within the Golden Valley Formation and Fort Union Group. Discovery of uraniferous lignite in western North Dakota by federal scientists led several energy companies to explore for uranium in this area during the 1950s and 1960s. Often mining of lignite was accomplished by stripping the overburden, burning the lignite in place, and shipping the ash off-site for further refinement or shipping the lignite to a reduction facility southeast of Belfield, North Dakota. Between 9 and 15 mines produced 85,138 tons of ore yielding 592,288 pounds of U_3O_8 "yellow cake". Generally there was no reclamation and only a few of the mined areas have been reclaimed under the North Dakota Abandoned Mine Lands program. As of January 2007, a shortfall in supply and an increased price for U_3O_8 has resulted in renewed interest in North Dakota's uranium deposits. The Project is 42 miles northwest of the nearest

[35] Murphy, 2007. Lignite Reserves, Watford 100K Sheet, North Dakota Division of Minerals, available at https://www.dmr.nd.gov/ndgs/Coalmaps/pdf/100K/wfdc_100k_c.pdf.
[36] Murphy, 2007. Uranium, Grassy Butte 100K Sheet, North Dakota Division of Minerals, available at https://www.dmr.nd.gov/ndgs/uraniummaps/pdf/grsb_100k_u.pdf.

identified uranium source described above. No impacts to uranium resources are anticipated to result from the Project.

Impacts on future mineral development would not constitute a substantial loss of mineral resource or mineral availability because of the narrow, linear nature of the pipeline ROW relative to the expanse of areas with mineral resource potential. The pipeline trench would be backfilled with materials derived from the trench excavation, and it will be necessary to obtain some construction sand and gravel from local, existing commercial sources for use as pipe padding, road base, or surface facility pads.

8.3.8 Wetlands, Woodlands, and Wooded Areas

Field surveys for wetlands and waterbodies were conducted for the Project in June, July, and August, 2015. The results of this survey can be found in the Natural Resources and Wetland Delineation Report provided in Exhibit C.1. Mapping of wetlands and waterbodies within the surveyed corridor are included in Exhibit B.5. Detailed discussion of wetlands and waterbodies are provided in Section 5.2 of this application.

Shrubland communities within the study area consists of uplands dominated by western snowberry (*Symphoricarpos occidentalis*). No forested areas are present within the study area. Acreage of shrubland present within the study area and corridor are provided in Table 8.3.8-1 below.

Table 8.3.8-1
Cover Types within Project Area

Cover Type	1-mile Study Area (Acres)	Project Corridor (Acres)	Temporary Workspace (Acres)[1]	Permanent Easement (Acres)[1]
Barren Land	39.23	7.25	0.69	0.45
Cultivated Crops	4211.64	224.99	49.72	31.68
Deciduous Forest	76.75	0.96	0.02	0.14
Developed	307.97	22.48	3.67	1.89
Emergent Herbaceous Wetlands	56.90	1.20	0.16	0.25
Evergreen Forest	0.25	0	0	0
Grassland/Herbaceous	4261.45	303.36	56.54	37.96
Hay/Pasture	23.56	2.82	0.67	0.36
Mixed Forest	2.09	0.28	0	0
Open Water	16.79	0	0	0
Scrub/Shrub	483.81	24.71	5.31	4.30
Woody Wetlands	44.65	0	0	0

[1] Refer to Exhibit B.1 for typical ROW configuration

8.3.9 Radio and TV Reception and Other Communication or Electronic Facilities

Based on review of publicly available information, no radio and TV reception and other communication or electronic facilities are located within the study area. The proposed Project is a buried, underground utility. No impacts on television or radio reception or communication or electronic control facilities are anticipated to occur as a result of the Project.

8.3.10 Human Health and Safety

During construction, residences and businesses in proximity to construction activities will be exposed to short-term increases in construction-related noise and dust. The construction ROW, access roads, and spoil piles near residential and commercial areas will be watered down as needed to control fugitive dust during construction. Following construction, measures to stabilize and re-vegetate the ROW will be taken promptly to minimize further dust emissions. Heavy construction equipment required for pipeline installation will generate unavoidable short term increases in sound levels. Increases in noise levels due to equipment operation will be limited to the period of active construction and will primarily be avoided during night-time hours (10pm – 7am). Twenty-four hour construction activities are generally limited to completing tasks that commenced during the day and where ceasing to complete could jeopardize the installation. Largely this can apply to some phases of horizontal directional drills, various bores, and occasional aboveground facility construction.

The DOT's pipeline standards are published in Part 195 of Title 49 of the CFR. The regulations are intended to ensure adequate protection of the public and to prevent accidents and failures. Part 195 addresses petroleum pipeline safety issues, specifying material selection and qualification, minimum design requirements, and protection from internal, external, and atmospheric corrosion.

Actual installation of the pipeline and all construction and testing records will be subject to inspection. All pipe installed along the Project will be externally coated with a fusion bonded epoxy to resist corrosion. Once installed, internal inspections will be conducted on the pipeline at regular intervals using in-line inspection technology. The pipeline will undergo hydrostatic testing above maximum allowable operating pressure to ensure its integrity and will be placed into service only after successful completion and commissioning to verify compliance with all construction standards and requirements.

ONEOK will ensure that public education and outreach program is developed to promote public awareness of pipelines and pipeline safety in accordance with DOT requirements. Proper signage and warnings at road and highway crossings, railroad crossings, navigable rivers, and other locations will alert the public to the presence of underground lines and to provide information, contact numbers, and emergency data.

8.3.11 Animal Health and Safety

Construction activity within the study corridor will have temporary impacts on domestic animals and wildlife. The clearing of vegetation will temporarily reduce cover, nesting, and foraging habitat for some species, temporarily displacing individuals that used these areas. Following reclamation, it is likely that wildlife will be reestablished within the study corridor to preconstruction levels.

Pipeline trenching activities and associated spoil piles may result in a short-term barrier restricting the movement of some wildlife species (typically 2 to 4 weeks at any one area). Except for short-term interruptions during construction, existing public roads, farm lanes, and livestock crossings will be kept open, providing crossing access for wildlife. During construction, temporary fencing will be used as necessary to keep livestock and wildlife away from the pipeline trench and the length of time the trench will be left open will be minimized.

8.3.12 Plant Life

The Project area consists primarily of cultivated cropland and pasture or hay land. Remaining covertypes include Northwestern Great Plains mixedgrass prairie, minor amounts of Western Great Plains Depressional Wetland Systems, Western Great Plains wooded draw, and Northwestern Great Plains shrublands. Northwestern Great Plains mixedgrass prairie are dominated by grass species such as Western wheatgrass *(Pascopyrum smithii)*, green needlegrass *(Nassella viridula)*, blue grama (*Bouteloua gracilis*), slender wheatgrass (*Elymus trachycaulus*), needle and thread *(Stipa comata),* and little bluestem *(Schizachyrium scoparium)*. These areas that have experienced grazing may also include an increase in cool season non-native exotics such as Kentucky bluegrass *(Poa pratensis),* smooth brome *(Bromus inermis)*, and chrested wheatgrass (*Agropyron cristatum*). Dominant plant species within wetlands within the study area are discussed in Section 5.2 above. Shrubland and within the study area are discussed in Section 8.3.8 above. Farming and ranching are the main economic enterprises in the county. The principal crops are dryland spring wheat, other small grains, canola, and grass-legume hay.[37]

Field surveys conducted for the Project did not identify any sensitive plant species or critical habitat within the study corridor (see Exhibit C.1). All areas disturbed by construction of the Project will be revegetated in accordance with applicable county agency standards and landowner requests. No permanent impacts to vegetation are anticipated.

[37] North Dakota Agricultural Statistics Service. 2005. Ag. Statistics No. 74. North Dakota State University, North Dakota Department of Agriculture, and USDA-National Agricultural Statistics Service.

9.0 OTHER FACTORS CONSIDERED

9.1 PUBLIC HEALTH, WELFARE, NATURAL RESOURCES, AND THE ENVIRONMENT

Refer to Sections 5.0, 7.3, 7.7, 7.9, 8.1, 8.2, and 8.3.

9.2 TRANSMISSION TECHNOLOGIES AND SYSTEMS DESIGNED TO MINIMIZED ADVERSE ENVIRONMENTAL EFFECTS

The Project design is consistent with existing pipeline technologies. A variety of measures will be taken to avoid, minimize, or mitigate impacts to sensitive resources, including implementing trenchless construction (i.e., horizontal directional drilling [HDD], bores), narrowing ROW widths, rerouting and route deviations, etc. Trenchless techniques avoid the need for open cut trenches, thereby minimizing environmental impacts and eliminating ground-level surface hazards in sensitive areas along the route. BMPs will be used to minimize impacts from clearing, trenching, and reclamation of the construction ROW. Potential impacts to environmentally sensitive areas will be either avoided through rerouting, HDD/bore, or by protecting sites during construction.

ONEOK's CMRP prescribes construction techniques and mitigation measures that will be employed to minimize the effects of construction on environmental resources. Mitigation measures are also discussed in Section 10 of this application. The Project does not include new energy conversion or transmission technologies that are expressly designed to minimize adverse environmental effects.

9.3 BENEFICIAL USES OF WASTE ENERGY FROM A PROPOSED ENERGY CONVERSION FACILITY

The Project does not involve new energy conversion facilities; as such, the potential for beneficial uses of waste energy from a proposed energy conversion facility does not apply to the Project.

9.4 UNAVOIDABLE ADVERSE DIRECT AND INDIRECT ENVIRONMENTAL EFFECTS

Unavoidable adverse direct and indirect environment effects will be temporary and short-term and will be minimized to the extent practicable. The Project will co-locate and run parallel to existing infrastructure (e.g., pipelines, utility corridors, railway, etc.) to the extent possible and ONEOK will implement measures to mitigate potential impacts to resources such as vegetation, wildlife, agricultural, transportation, and noise levels. Impact minimization methods are described in Section 8.0; refer to Section 10.0 for a complete description of mitigation measures.

9.5 CORRIDOR OR ROUTE ALTERNATIVES DEVELOPED DURING THE HEARING THAT MINIMIZE ADVERSE EFFECTS

A description of the alternatives analyzed in the design of the Project is presented in Section 4.0 of this application. The Project corridor and route have been designed based on landowner engagement, stakeholder outreach, civil surveys, environmental surveys, and constructability analysis, among others.

Reroutes of varying lengths and for a variety of reasons have been made to minimize adverse effects to sensitive areas. ONEOK will continue to adjust the route based on additional constructability concerns and necessary feature avoidance. ONEOK will participate in the hearing process and will address any alternatives developed during the process, as applicable.

9.6 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF NATURAL RESOURCES IF DESIGNATED

The Project was designed to co-locate the pipeline within existing linear infrastructure (i.e., pipeline, utility, road, and railroad corridor) to the extent practicable. This design minimizes irreversible or irretrievable commitments of natural resources due to conversion of greenfield to industrial uses and optimizing existing fragmentation. Generally all areas impacted by pipeline construction (except for above ground facilities) would return to previous land use. Long-term vegetation impacts would result from converting wooded areas to herbaceous/scrub shrub areas to comply with federal pipeline regulations, ensure safety and integrity of the pipeline, and facilitate routing aerial inspections. Approximately 4.44 acres (or 2 percent of the total construction area) of wooded areas along the pipeline would be converted to open land.

ONEOK provided Project-specific notification to various federal and state agencies, reviewed published information, and conducted a desktop analysis of the Project corridor to determine if areas of critical animal or plant habitat may occur. Based on these studies, ONEOK has confirmed the absence of protected species and/or their critical habitats. Refer to Exhibit D for supporting documentation of agency correspondence.

9.7 DIRECT AND INDIRECT ECONOMIC IMPACTS OF THE FACILITY

Estimated total spending for construction of the Project is $19.52 million. This estimate includes construction of the pipeline, architectural, engineering and real estate services, easement payments, mitigation payments, and other support services. Construction outputs for the Project include employment, labor income, and production spending. The Project is expected to employ 120 workers for construction of the Project. These economic impacts will be realized during construction in 2016 and throughout operations and maintenance annually starting in 2016.

North Dakota imposes taxes on sales, use, gross receipts and lodging, and individual income. Local governments may impose taxes on the same tax bases; however, most unincorporated areas do not impose local option sales taxes. The Project will contribute directly and indirectly to tax bases at the state and local levels.

Construction of this Project would provide firm, reliable service for an additional 19,000 bpd of NGL and provide a critical transportation link between ONEOK Bakken Plants and connections to the ORM Riverview Rail Facility near Sidney, Montana, or mid-continent by continuing southward on the pipeline.

9.8 EXISTING PLANS FOR OTHER DEVELOPMENTS IN THE VICINITY

ONEOK Partners, the parent company of ONEOK Bakken Pipeline, L.L.C., is the largest independent operator of natural gas gathering and processing facilities in the Williston Basin, with a natural gas gathering system of more than 6,500 miles and more than 3 million net acres where production is dedicated to its systems. ONEOK's 10-year plan describes the company's plans for future development in the region.

The Garden Creek III plant, a 100-MMcf/d natural gas processing facility in eastern McKenzie County, North Dakota, originally scheduled for completion during the first quarter of 2015, was completed more than three months ahead of schedule. The completion of the Garden Creek III plant increases ONEOK Partners' Williston Basin natural gas processing capacity to more than 600 MMcf/d, which is 6 times more than their natural gas processing capacity in the region in 2010.

The ONEOK Partners' Williston Basin natural gas processing capacity is expected to increase to approximately 1.2 billion cubic feet per day in the third quarter of 2016 with the completion of the Lonesome Creek and Bear Creek natural gas processing plants and the completion of additional natural gas compression facilities.

An expansion of the Bakken NGL Pipeline is complete, increasing the pipeline's capacity to 135,000 bpd from an initial capacity of 60,000 bpd with the installation of additional pump stations. A previously announced second expansion, which will increase the pipeline's capacity to 160,000 bpd, is expected to be completed in the fourth quarter of 2016.

ONEOK maintains contact with local and state agencies, and through normal communications with these entities, it has concluded that this Project is not conflicted with any known developments planned in the area.

Development occurring in the vicinity of the proposed Project by other entities includes[38]:

Energy Transfer Partners

Energy Transfer Partners plans to construct the Dakota Access pipeline, a 30-inch crude oil system from western North Dakota to Patoka, IL. The project is designed to have an initial capacity of 450,000 bpd and is scheduled to be placed into service in late 2016.

Enbridge

Enbridge's Sandpiper Project includes the installation of a new crude oil pipeline originating near Tioga, North Dakota and extending to Superior, Wisconsin.

Hiland Crude, LLC

A project sponsored by Hiland Crude, LLC will convert an existing 197-mile long crude oil gathering line into a transmission line that crosses Williams, McKenzie, and Mountrail counties.

[38] North Dakota Pipeline Authority, 2014. The Pipeline Publication, Volume 6. North Dakota Public Service Commission Case Search available at http://psc.nd.gov/index.php. Accessed June 24, 2015.

Vantage Pipeline US LP

Vantage Pipeline US LP is proposing to construct and operate approximately 47.3 miles of new high vapor pressure, 8-inch steel pipeline from a natural gas processing plant near Williston, North Dakota, to an existing pipeline system near Stady, North Dakota.

Hess North Dakota Pipelines LLC

Hess North Dakota Pipelines LLC (Hess) has filed a ROW Grant application with the Bureau of Land Management to construct, operate, and maintain the Hawkeye Pipeline Project (includes crude oil, natural gas, and NGL pipelines) in McKenzie and Williams counties, North Dakota. As part of this project, Hess proposes to repurpose existing pipelines, construct several aboveground project components, and operate a NGL pipeline. The projected in-service date for the Hawkeye Pipeline Project is October 2015. The expected life of the project is 30 years. The project would transport NGL from the Hawkeye Compressor Station near Charlson, North Dakota, to the Silurian Compressor Station near Tioga, North Dakota.

9.9 RECYCLING OF CONVERSION BYPRODUCTS AND EFFLUENTS

Recycling of conversion byproducts and effluents is not applicable to this type of project.

9.10 POLICIES AND COMMITMENTS TO LIMIT ENVIRONMENTAL IMPACT

ONEOK is committed to conducting its business in compliance with all applicable environmental laws and regulations. These laws, regulations, and standards are designed to safeguard the environment, human health, wildlife, and natural resources.

ONEOK would conduct its activities with the objectives of providing a healthful and safe workplace for its employees and preventing accidents and environmental incidents. All persons and firms providing service to ONEOK are required to conduct their work in compliance with environmental conditions, permit authorizations, and applicable regulations and would be held accountable for their actions in that regard.

9.11 ENERGY CONSERVATION THROUGH USE OF A PRIMARY ENERGY SOURCE OR RAW MATERIAL

ONEOK is committed to energy conservation through management of energy costs and energy usage in the operations of the Project.

9.12 NON-RELOCATION OF RESIDENTS

No residents will be relocated as a result of the Project.

9.13 DEDICATION OF AN AREA ADJACENT TO THE FACILITY FOR LAND USE SUCH AS RECREATION, AGRICULTURE, OR WILDLIFE MANAGEMENT

ONEOK does not own property adjacent to the proposed Project suitable for recreation, agricultural, or wildlife management purposes. The current land use of properties adjacent to the Project is agricultural/range land (see Exhibit B.4).

The Project will result in the development of a buried pipeline and other industrial type ancillary facilities. No land is being acquired for the Project. Therefore, no areas are proposed for dedication.

9.14 SECONDARY USES OF APPROPRIATE ASSOCIATED FACILITIES FOR RECREATION AND THE ENHANCEMENT OF WILDLIFE

The Project will result in the development of a buried pipeline and other industrial type ancillary facilities. As such, these developments are not typically suitable for recreational or wildlife application.

9.15 PROBLEMS RAISED BY FEDERAL, STATE, AND LOCAL AGENCIES

ONEOK provided Project-specific notification to various federal, state, and local agencies; through this notification process, these agencies have the opportunity to identify possible sensitive environmental resources within the study area and any related agency concerns. Section 6.0 of this application summarizes the consultations that have taken place to date. ONEOK is actively working with federal, state, and local agencies and will address problems that are raised. A complete record of these agency communications is provided in Exhibit D.

10.0 MITIGATION MEASURES

ONEOK has developed or is in the process of developing several Project control documents that will be utilized during construction activities to minimize and mitigate impacts to environmental resources. These plans will be incorporated into contract documents and enforced by ONEOK:

- CMRP
  - Comprehensive control document that describes general mitigation measures related to erosion and sedimentation, stream/wetland crossings, highway/rail crossings, dewatering and hydrostatic testing, and revegetation.
- MBTA Plan
  - Protection of federally protected migratory birds and eagles/raptors.
- SWPPP
  - Construction stormwater management and erosion/sediment control.
- SPCC
  - Outlines spill prevention and BMPs and provides details on spill response and notification procedures in the event of a spill.
- HDD Inadvertent Release Control and Mitigation Contingency Plan
  - Minimize potential for release of drilling mud during HDD operations. Establishes procedures and responsibilities for containment/cleanup in the event of an inadvertent release.
- Unanticipated Discoveries Plan
  - Response measures to be followed in the event of a discovery of cultural resources or human remains.
- Revegetation Plan
  - Revegetation and permanent restoration of disturbed ROW. Appropriate seed mixes will be incorporated into this plan. This plan also addresses control of noxious and invasive weeds.
- Dust Control Plan
  - Control of fugitive dust caused by construction activities/soil exposure.

The plans as they relate to specific resources are referenced in the following sections. In addition to these plans, the Project will be subject to permits from various federal, state, and local agencies (environmental permits are discussed in Section 6). To further ensure compliance with permits, plans, obligations, and commitments, ONEOK will employ one or more Environmental Inspectors (EI) during the Project. The EI(s) will be responsible for monitoring construction activities and will provide daily reports to ONEOK staff.

10.1 HUMAN ENVIRONMENT

ONEOK will require its construction contractor to clean up on a daily basis personal litter, bottles, and paper deposited by ROW preparation and construction crews. Waste and scrap that is the product of pipeline construction will be removed and properly disposed of in accordance with applicable regulations before construction is completed. To the maximum extent practicable, ONEOK will minimize noise and dust resulting from construction near residential areas.

The Project route crosses eighteen roads, including seven private or commercial roads, eleven county and city roads, and no state roads. The pipeline does not cross any railroads. Paved roads and railroad

crossings will be bored; therefore, use of these facilities will not be disrupted as a result of the Project. Gravel roads will be open cut or bored. Open cutting a road will temporarily close it to traffic; however, the road network throughout the Project is sufficient that suitable alternative routes are readily available to prevent any significant delays in traffic. Further, the trench can be plated to allow for traffic crossing when construction is not active (i.e., after the end of the work day).

ONEOK will obtain applicable permits prior to conducting road crossings. Temporary signs will be posted at each crossing as appropriate to alert motorists of construction activity. Paved roads and railroads will be bored, which will minimize interference with traffic flow caused by construction activities.

As noted above, ONEOK has developed or is in the process of developing several Project control plans which will be utilized during construction activities to minimize and mitigation impacts.

10.2 TERRAIN AND GEOLOGICAL RESOURCES

ONEOK will, to the maximum extent practicable, restore the area affected by pipeline construction to its pre-construction condition. Restoration will be compatible with the safe operation, maintenance, and inspection of the pipeline. Measures such as slope breakers, erosion control blankets, and re-vegetation will be employed to maintain the stability of slopes along the ROW. No crown of backfill material will be left over the trench in wetlands.

10.3 SOILS

Pipeline construction activities such as clearing, grading, trench excavation, and backfilling, as well as the movement of construction equipment along the ROW, may result in impacts on soil resources. Clearing removes protective cover and exposes soil to the effects of wind and precipitation, which may increase the potential for soil erosion and movement of sediments into sensitive environmental areas. Grading and equipment traffic may compact soil, reducing porosity and percolation rates, which could result in increased runoff potential. Trench excavation and backfilling could lead to a mixing of topsoil and subsoil and may introduce rocks to the soil surface from deeper soil horizons.

Soil characteristics are summarized in Tables 10.3-1 and 10.3-2 below.

Table 10.3-1
Soil Characteristics Summary

	Total Acres	Saline[1]	Saline/ Sodic[2]	Hydric[3]	Droughty[4]	Stony/ Rocky[5]	Shallow to Bedrock[6]
		Percent					
1-Mile Study Area	9,525	4.8	26.4	0.5	8.2	3.6	53.8
Project Corridor	588	5.3	32.7	0.3	12.5	2.2	60.2
Pipeline Route							
Temporary Work Space[7]	116.8	5.3	29.9	0.5	10.2	2.7	59.0
Permanent Easement[7]	77.0	5.0	33.6	0.4	10.4	2.9	56.0
Total	193.8	5.2	31.4	0.5	10.3	2.8	57.8

1 Includes soils that have a soil horizon or horizons within the soil profile with an EC > 4 dS/m.
2 Includes soils that have a soil horizon or horizons within the soil profile with an EC > 4 dS/m and an SAR >13.
3 As determined by the NRCS and indicated in the NRCS SSURGO2 database.
4 Includes soils with a surface texture of sandy loam or coarser that are moderately well to excessively drained.
5 Includes soils with a textural modifier of gravelly, stony, cobbley, flaggy, or channery or that have 5% or more coarse fragments greater than 3 inches in any dimension in the soil surface.
6 Includes soils that have paralithic (soft) bedrock indicated above 60 inches from the soil surface. Paralithic bedrock is typically rippable with normal construction equipment.
7 Refer to Exhibit B.1 for typical ROW configuration

Table 10.3-2
Topsoil Depth and Slope Summary

	Total Acres	Topsoil Thickness[1] (inches)				Slope Class[2] (percent)				
		0-6	>6 - 12	>12 - 18	>18	0-5	>5 - 8	>8 - 15	>15 - 30	>30
		Percent				Percent				
1 Mile Study Area	9,525	59.6	40.2	0.1	0.1	45.8	14.3	17.9	9.8	12.2
Project Corridor	588.0	59.9	40.1	-	-	46.6	14.6	17.3	8.2	13.4
Pipeline Route										
Temporary Workspace[3]	116.8	59.5	40.5	-	-	45.2	18.0	17.0	9.2	10.5
Permanent Easement[3]	77.0	56.1	43.9	-	-	47.1	16.5	16.8	10.6	9.0
Total	193.8	58.1	41.8	-	-	46.0	17.5	16.9	9.8	9.9

1 Topsoil is defined as the thickness of the A-horizon and any underlying layer with greater than 2% organic matter.
2 The SSURGO2 database provides representative slope values for all component soil series. Slope classes represent the slope class grouping in percent that contains the representative slope value for a major component soil series.
3 Refer to Exhibit B.1 for typical ROW configuration

ONEOK will minimize or avoid these impacts on soils by implementing the mitigation measures described in its CMRP. The CMRP will be included in contract documents and enforced as such throughout the duration of the Project. Temporary erosion and sedimentation control measures may include installation of silt fence, straw bales, slope breakers, trench breakers, erosion control fabric, and mulch.

To minimize potential impacts on soil productivity, topsoil will be segregated during trench excavation in agricultural land, unsaturated wetlands, and if applicable, other areas where soil productivity is an important consideration. Unless otherwise requested by the landowner, topsoil in cropland will be

removed to a maximum depth of 12 inches from the trench and spoil storage area and stored separately from the trench spoil. After the trench is backfilled, topsoil will be returned to its approximate original location in the soil horizon.

Compaction of agricultural soils will be minimized by restricting construction activities during periods of prolonged rainfall. Where unacceptable levels of compaction occur in agricultural lands, a chisel plow, or other deep tillage equipment will be utilized to loosen the soil during restoration.

ONEOK will retain EI(s) to monitor the contractor's compliance with applicable requirements to protect soil resources during construction of the Project.

10.4 VEGETATION AND WILDLIFE

ONEOK will clear the ROW to the extent necessary to assure suitable access for construction, safe operation, and maintenance of the pipeline. In areas that require permanent revegetation, ONEOK will specify appropriate seed mixes, application rates, and seeding dates, taking into account recommendations of appropriate state and federal agencies and landowner requests. In non-agricultural areas, vegetation cleared from extra workspace will be allowed to revegetate after construction depending on arrangements with the landowner. Consequently, significant changes in cover types are not anticipated.

After completion of waterbody crossings, ONEOK will revegetate disturbed stream banks in accordance with the CMRP, Revegetation Plan, and requirements of applicable state or federal permits. During construction in unsaturated wetlands, topsoil will be segregated from the trench line to preserve natural sources of seed and rootstock. After the trench is backfilled, the topsoil will be replaced to facilitate the natural revegetation process.

ONEOK will take appropriate precautions to protect livestock and crops from being affected by construction. Operation of the proposed pipeline is not anticipated to significantly affect terrestrial wildlife, fisheries resources, or other aquatic species. Shelter belts and trees will be protected and restored by ONEOK to the extent practicable in a manner compatible with the safe operation, maintenance, and inspection of the pipeline. ONEOK will mitigate for tree and shrub loss at a 2:1 ratio as is anticipated in the final order to be issued by the NDPSC.

10.5 LAND USE

ONEOK will obtain and comply with applicable county permits and zoning and land use regulations. Permits may include, but are not limited to, grade and fill permits, ditch crossing permits, road and utility permits, and conditional use permits. ONEOK will retain one or more Environmental Inspectors to monitor compliance with environmental conditions of county permits.

ONEOK will repair surface drains and drainage tiles disturbed during ROW preparation, construction, and maintenance activities. ONEOK will repair private roads and farm lanes damaged when moving equipment or when obtaining access to the ROW. ONEOK will repair or replace fences and gates removed or damaged as a result of ROW preparation, construction, or maintenance activities.

The Project will be installed at a minimum depth of 48 inches from the surface contour to minimize the potential for environmental damage resulting from deep tillage activities unless modified to

accommodate special construction issues at the site. Upon installation of the pipeline, all Project locations will be returned to their original pre-construction contours and land use.

10.6 CULTURAL RESOURCES

Consideration for impacts to cultural resources have occurred throughout the course of the Project. Avoidance is the preferred method of treatment for historic properties. In the event that a historic property cannot be avoided, ONEOK will consult with the North Dakota SHPO to mitigate adverse effects and implement appropriate treatment plans.

As discussed in Section 5.1, ONEOK conducted Class III inventory surveys throughout the survey corridor. ONEOK submitted the Class III cultural resource report to SHPO for a technical review on September 25, 2015 and requested review and comment on the NRHP recommendation (see Exhibit D). Comments from SHPO regarding the Class III cultural resource report are pending. ONEOK will forward to the NDPSC any written comments from the SHPO.

There is always the potential during construction to encounter previously unknown cultural resources or human remains. As such, ONEOK will develop a Project-specific Unanticipated Discoveries Plan, which describes the actions to be taken in the event a previously unrecorded paleontological or cultural resource site is discovered during construction activities, specifically calling for work to stop until the appropriate authority can be contacted. This plan will be incorporated into contract documents and implemented throughout the Project.

11.0 DEVELOPMENT

11.1 PRESENT AND FUTURE NATURAL RESOURCE DEVELOPMENT IN THE AREA

A small percentage of North Dakota is held in public ownership. Of the 45 million acres of land in the state, less than 3 million are owned in fee title by state and federal land management agencies. Most of these agencies work in cooperation with private producers in managing these lands. For example, the NDGF leases certain tracts of wildlife management areas for grazing, haying, and food plots. The USFS manages for multiple uses and the sustained yield of renewable resources such as water, forage, wildlife, and recreation, as well as industry such as oil and gas development.

As discussed in Section 8.1.1, there are no national parks, national memorial parks, national historic sites and landmarks, national wilderness areas, or national monuments located within the Project corridor. There are no designated or registered state parks, sites, monuments, or nature preserves along the Project corridor. There are no county parks, recreational areas, municipal parks, or parks owned or administered by other governmental subdivisions crossed by the route. As such, there will be no direct impacts to national parks, sites, monuments, or wilderness.

As discussed in Section 8.2.1, there are no federally managed wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; or grasslands within the study corridor, Project corridor, or route. No designated or registered state wild or recreational rivers, game refuges, game management and management areas, forests, forest management lands, or grasslands are crossed by the Project corridor or route.

As discussed in Section 6.1.4, the FWS maintains grassland and wetland easements in North Dakota. The FWS responded on October 6, 2015, stating that the FWS does not maintain any easement interests within McKenzie County. ONEOK has routed the pipeline to avoid all FWS owned and managed lands, including wetland and grassland conservation easements on privately owned land. Additionally, the USDA NRCS administers the GRP and WRP, and the FSA administers the CRP. ONEOK continues to actively engage landowners along the route to determine if lands are enrolled in these programs.

The land use along the pipeline route is primarily in agricultural production with a significant number of oil wells and other pipeline systems in the area. As the pipeline is a buried utility, surface land use will return to preexisting conditions once the pipeline is installed.

Other known development projects in the vicinity of the Project are discussed in Section 9.8 of this application. ONEOK is not aware of any federal, state, or local natural resource development plans within the Project corridor or study area.

12.0 QUALIFICATIONS OF PREPARERS

Todd Kelvington, CEP
Environmental Project Manager
ONEOK Partners

Degree(s): M.S. Environmental Policy and Management, American Military University; and B.S. Biology, Norwich University

Mr. Kelvington is an environmental specialist with 17 years of environmental planning experience in a wide range of development projects. He has both performed and managed the assessment, siting, permitting, and construction of a wide range of federal, state, and municipal infrastructure projects throughout the mid-west and east coast regions. He is a Certified Environmental Professional with the Academy of Board Certified Environmental Professionals.

James Akingbola
Operations Engineer
ONEOK Partners 100 West 5th Street, Tulsa, OK 74103

B.S Chemical Engineering – University of Oklahoma. Mr. Akingbola is an Operations Engineer with 6 years of pipeline integrity and pipeline construction experience. As an Operations Engineer, Mr. Akingbola has managed several pipeline projects for ONEOK Partners Large Projects group. He also serves as project manager for the proposed pipeline project.

Paul Hartzheim, M.S.
Senior Environmental Analyst
Merjent, Inc.

Degree(s): M.S. Water Resources Science, University of Minnesota-Twin Cities, B.S. Environmental Science, University of Minnesota-Twin Cities

Mr. Hartzheim is a Senior Analyst with 9 years of environmental consulting experience serving the oil and gas and biofuels industries. Mr. Hartzheim has served as project manager and deputy project manager on numerous projects and has a wide range of regulatory, permitting, and compliance experience. His responsibilities have included preparation of federal, state, and local permit applications; State Public Utility Commission filings; development of construction and industrial SWPPPs and other project control documents; National Pollutant Discharge Elimination System applications; state and federal agency consultations; assisting in preparation of data collection, interpretation and analysis, developing and conducting environmental training modules; and project management and compliance guidance.

Jennifer Kamm
Senior Environmental Analyst
Merjent, Inc.

Degree(s): B.S. Natural Resources and Environmental Studies (minor in Forestry), University of Minnesota-Twin Cities

Ms. Kamm is a Senior Analyst with Merjent, Inc. with over 10 years of environmental consulting experience including natural gas and oil pipeline construction, wind energy development, electrical

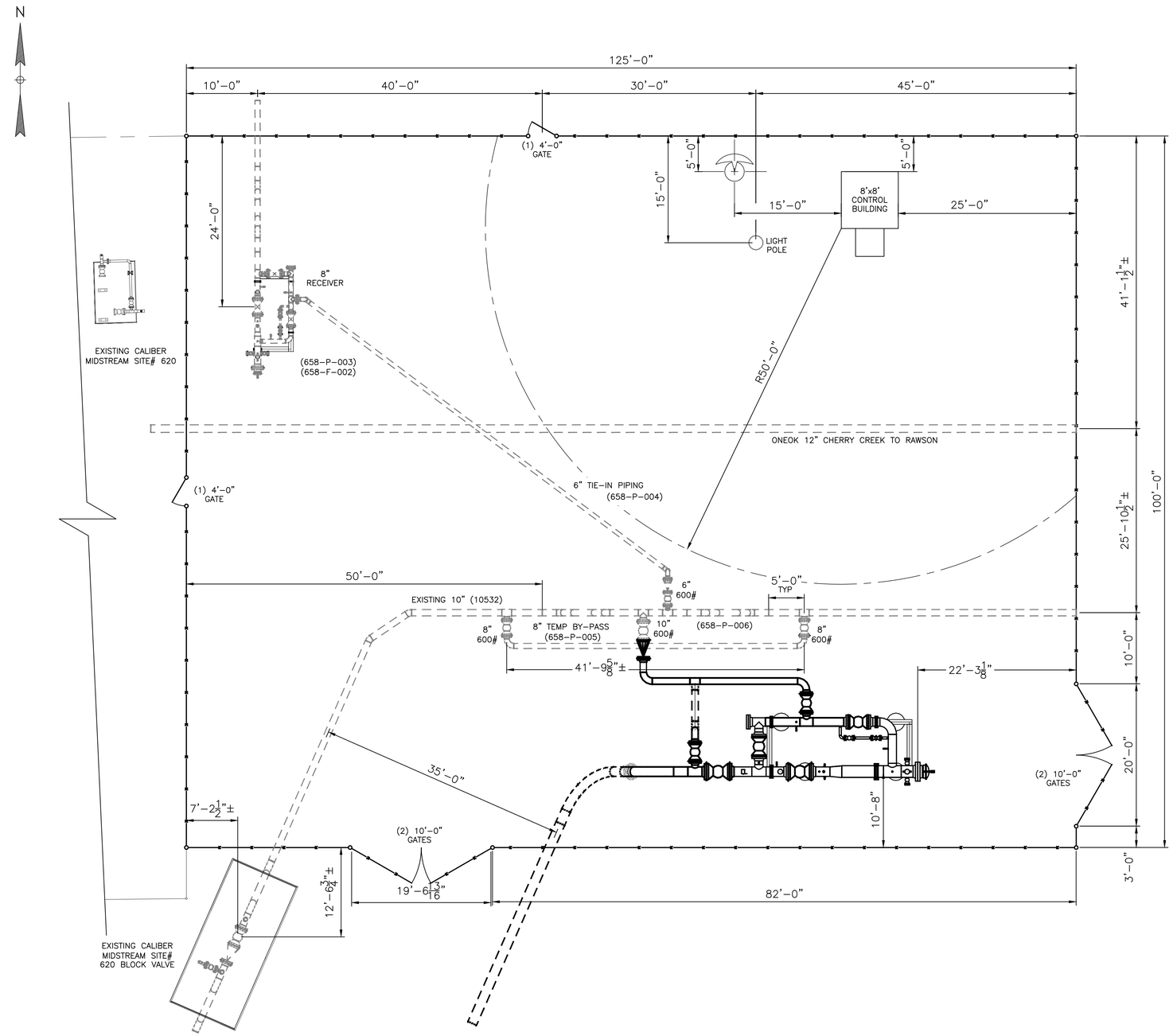
transmission, transportation, and land development projects for both private clients and government agencies. Ms. Kamm has assisted in the development of Federal Energy Regulatory Commission Environmental Impact Studies, NDPSC Siting Authorizations, Environmental Assessments, Environmental Resource Permitting, Land Use Plans, Wildlife and Endangered Species Assessments, Mitigation Plans, Environmental Construction and Restoration Plans, Wetland Delineations, COE permit applications, COE jurisdictional determinations, pipeline route evaluations, noxious weed and aquatic nuisance species management plans, unanticipated findings documents, spill prevention containment and control plans, SWPPPs, federal and state public lands crossing permits, and floodplain crossing permits.

Madeline Steffenson, EIT
Senior Environmental Analyst
Merjent, Inc.

Degree(s): M.B.A, North Dakota State University, B.S. Civil Engineering, North Dakota State University

Ms. Steffenson is a Senior Analyst with Merjent, Inc. and has excelled in her 4 years of experience in the water resources and environmental regulation fields. Her experience in the environmental field includes project management, interpretation and analysis of project related data/maps to evaluate permit needs and form strategies during the planning stages of projects, coordinating environmental field surveys, conducting environmental training, performing compliance inspections and inspector coordination. Ms. Steffenson has permitting experience including preparation of federal, state, and local permit applications, SWPPPs, National Pollutant Discharge Elimination System applications, preparation of third-party Environmental Assessments, and coordination with local, state, and federal units of government.

EXHIBIT A



LATITUDE:	LONGITUDE:	LEGAL:	INTERSECTING ROADS:
47.73274	-103.51613	S8 T149N R100W	137TH AVE NW AND 22ND ST NW

NOTE:
ALL UNDERGROUND PIPING IS APPROX.
AND ASSUMED.

MK	DATE	REVISIONS	BY	AP.
A	7/31/15	ISSUED FOR REVIEW	MTS	KRC
B	08/26/15	ISSUED FOR REVIEW	TSH	KRC
C	10/06/15	CHANGE TITLE	TSH	KRC

MK	DATE	REVISIONS	BY	AP.

DWG. NO.	REFERENCE DRAWINGS

ONEOK
BAKKEN PIPELINE
A SUBSIDIARY OF ONEOK PARTNERS

GARDEN CREEK LOOP LAUNCHER SITE
OVERALL SITE LAYOUT

DES.:	AFE#:	DATE: 07/28/15	
DR.: MTS		DWG. NO.:	REV.
CH.:	SCALE: 1/4"=1'-0"	658-O-002	C
AP.:	CAD#: 658-O-002		

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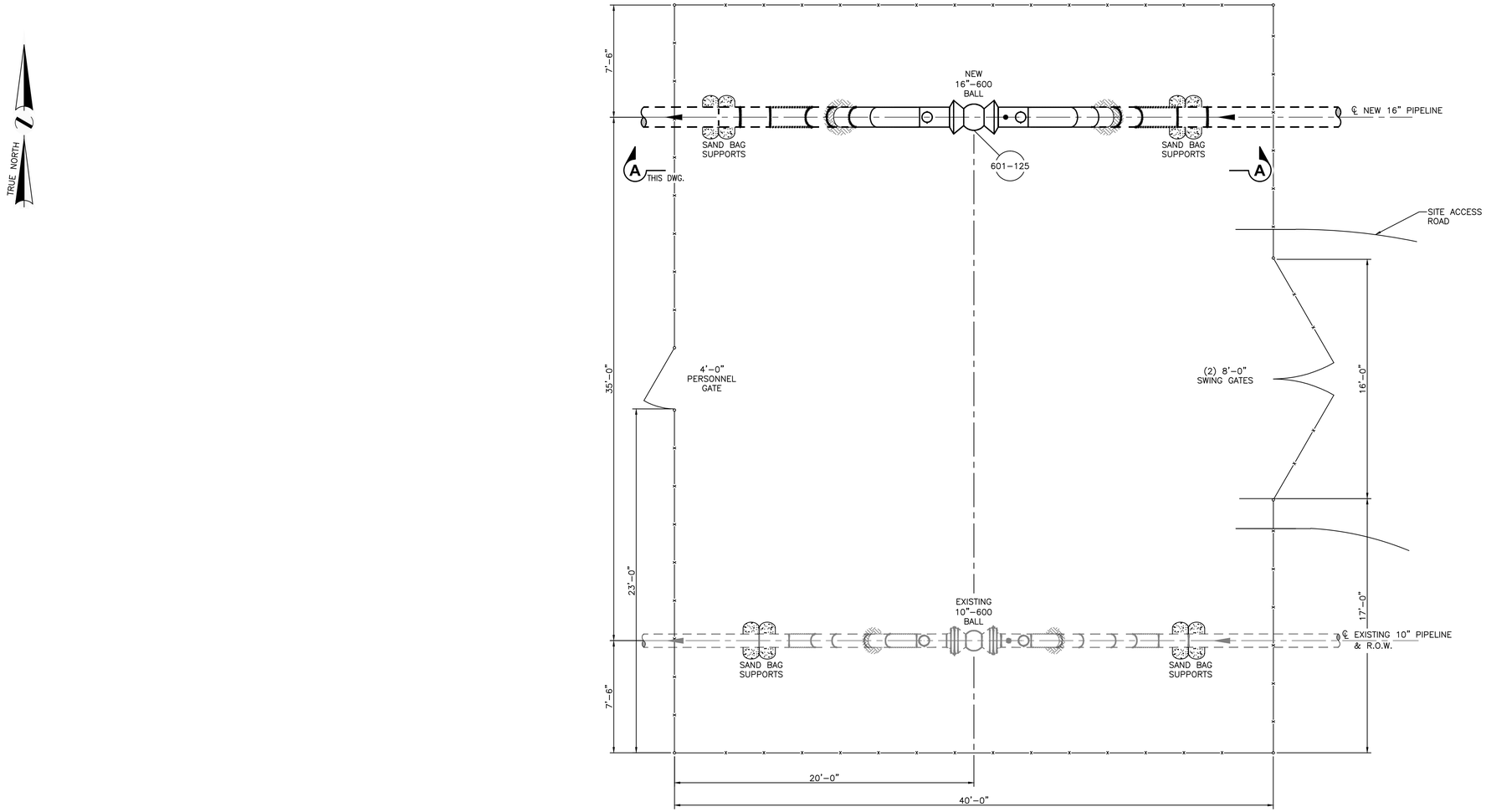
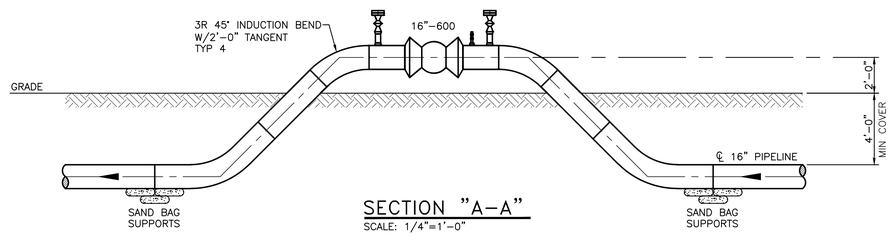


PLAN

SCALE: 1/4"=1'-0"



SECTION "A-A"

SCALE: 1/4"=1'-0"

NOTE:
1. DRAWING PREVIOUSLY ISSUED FOR REVIEW AS DRAWING NUMBER 658-0-004.

CONSTRUCTION NOTES:
1. The types, locations, sizes, and/or depths of existing underground utilities as shown on the improvement plans were obtained from sources of varying reliability. The contractor is cautioned that only actual excavation will reveal the types, extent, sizes, locations, and depths of such underground utilities. (A reasonable effort has been made to locate and delineate all known underground utilities.) The engineer, however, can assume no responsibility for the completeness or accuracy of the delineation of such underground utilities that might be encountered but which are not shown on these drawings.
2. The contractor shall ascertain and verify the true location and elevation of underground utility pipes and/or structures prior to the start of construction and locate and protect utility lines and structures whether shown or not. Also, the contractor shall notify the owners of utilities and/or structures concerned before starting work. Any underground facilities damaged by the contractor or contractor's agent during the course of work shall be replaced at contractor's own expense.
3. Minor adjustments required in the field at proposed pipeline locations due to conflicts with existing utilities shall be done with the approval of the client and the engineer without additional expenses to the client or the engineer.

MK	DATE	REVISIONS	BY	AP.	MK	DATE	REVISIONS	BY	AP.
A	7/31/15	ISSUED FOR REVIEW	MTS	KRC					
B	08/26/15	ISSUED FOR REVIEW	TSH	KRC					

DWG. NO.	REFERENCE DRAWINGS

ONEOK
BAKKEN PIPELINE
A SUBSIDIARY OF ONEOK PARTNERS

PIPING PLAN
GARDEN CREEK LOOP VALVE SITE 601-125

DES.:	KRC	AFE#:	DATE:
DR.:	MTS		DWG. NO.: 601-P-125
CH.:	KAG	SCALE: 1/4"=1'-0"	REV.: B
AP.:	MLG	CAD#:	

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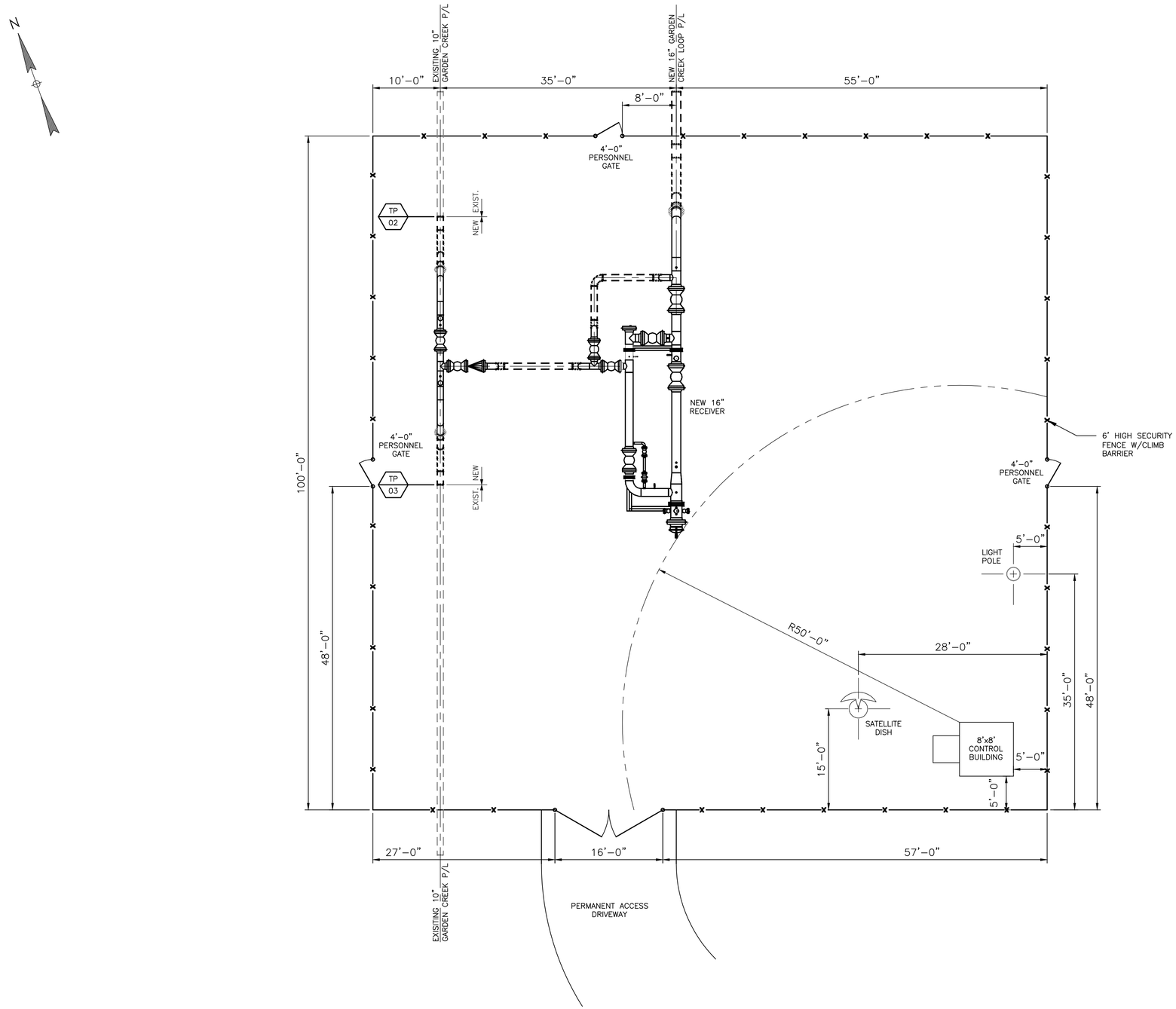

NOTE:
1. ALL UNDERGROUND PIPING IS APPROX. AND ASSUMED.
2. DRAWING PREVIOUSLY ISSUED FOR REVIEW AS DRAWING NUMBER 658-O-004.

LATITUDE:	LONGITUDE:	LEGAL:	INTERSECTING ROADS:
47.64752	-103.75027	S12 T148N R103W	151ST AVE NW AND 16TH ST NW

MK	DATE	REVISIONS	BY	AP.	MK	DATE	REVISIONS	BY	AP.
A	7/31/15	ISSUED FOR REVIEW	MTS	KRC					
B	08/26/15	ISSUED FOR REVIEW	TSH	KRC					
C	10/06/15	CHANGE TITLE	TSH	KRC					

DWG. NO.	REFERENCE DRAWINGS

ONEOK BAKKEN PIPELINE
A SUBSIDIARY OF ONEOK PARTNERS

GARDEN CREEK LOOP RECEIVER SITE
OVERALL SITE LAYOUT

DES.:	MTS	AFE#:	DATE: 7/29/15
DR.:	MBC		DWG. NO.: 601-O-002 / REV.: C
CH.:	KRC	SCALE: 1/4"=1'-0"	
AP.:	KG	CAD#:	

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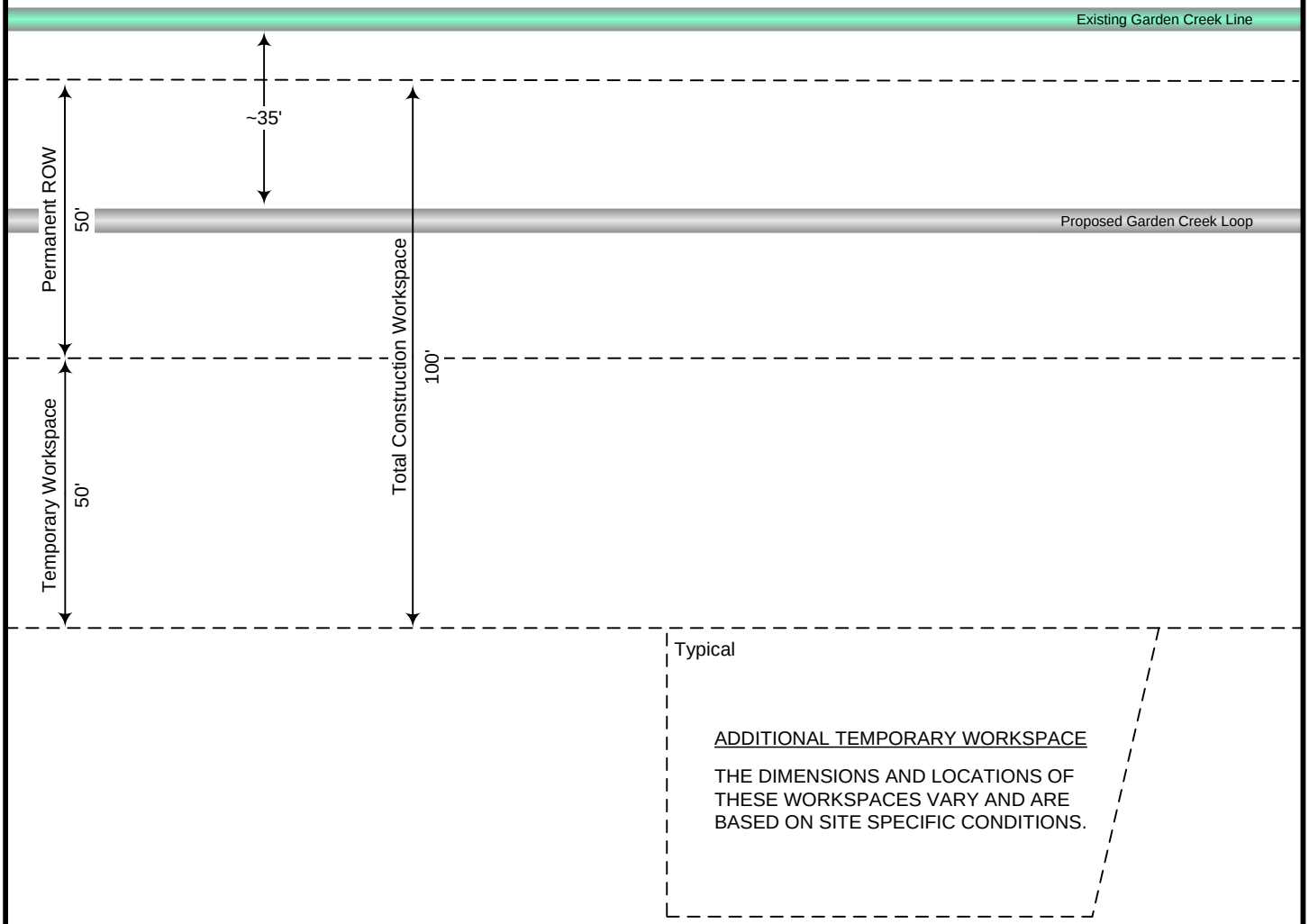
EXHIBIT B



Typical

ADDITIONAL TEMPORARY WORKSPACE

THE DIMENSIONS AND LOCATIONS OF THESE WORKSPACES VARY AND ARE BASED ON SITE SPECIFIC CONDITIONS.

EXHIBIT B.1

ONEOK

Typical Right-of-Way Configuration

ONEOK Bakken Pipeline

Garden Creek Loop NGL Pipeline Project

Drawn by: Merjent 10/7/2015

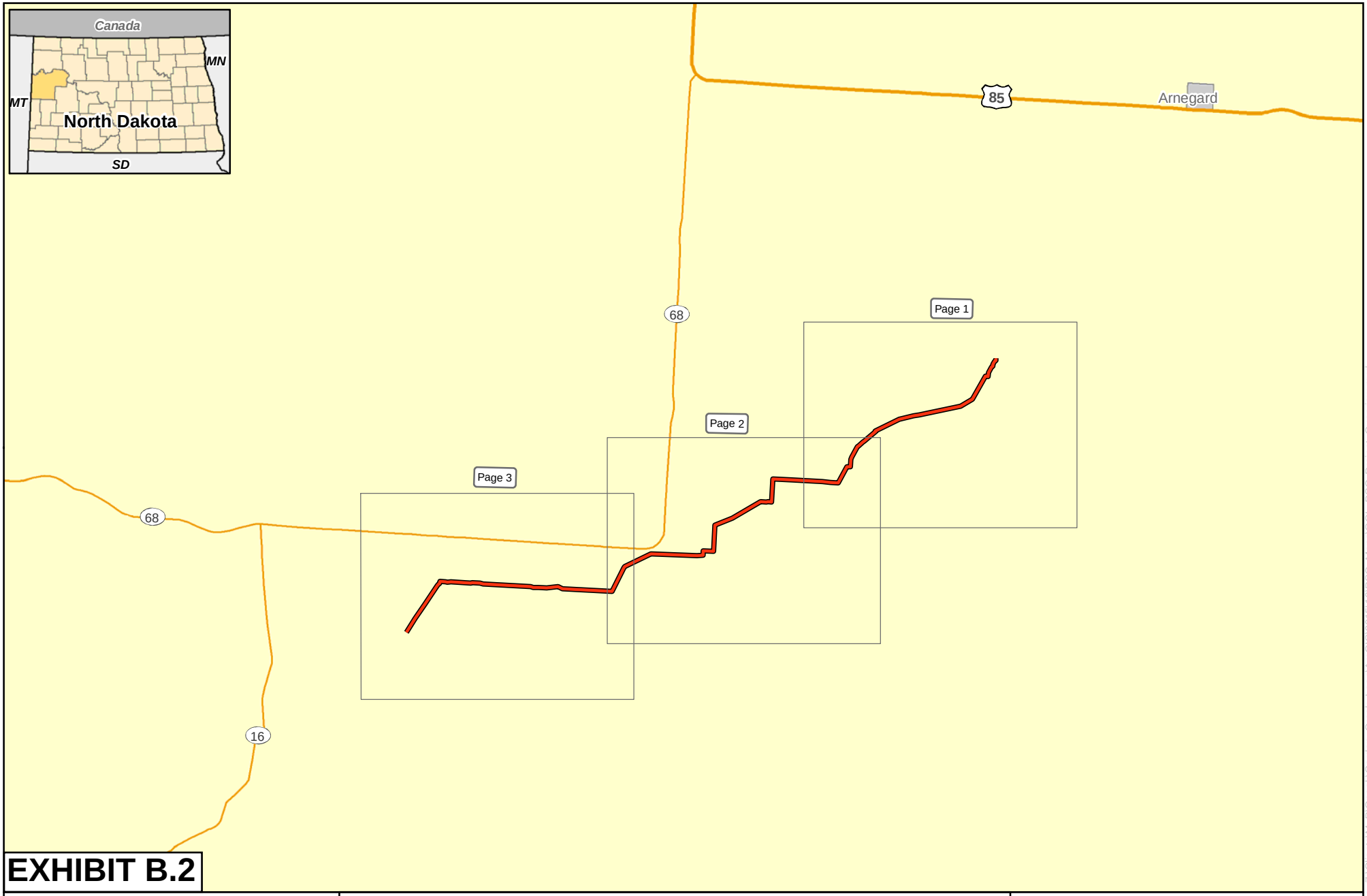


EXHIBIT B.2

0 1.25 2.5 Miles

1 inch = 2.5 miles

N W E S

merjent

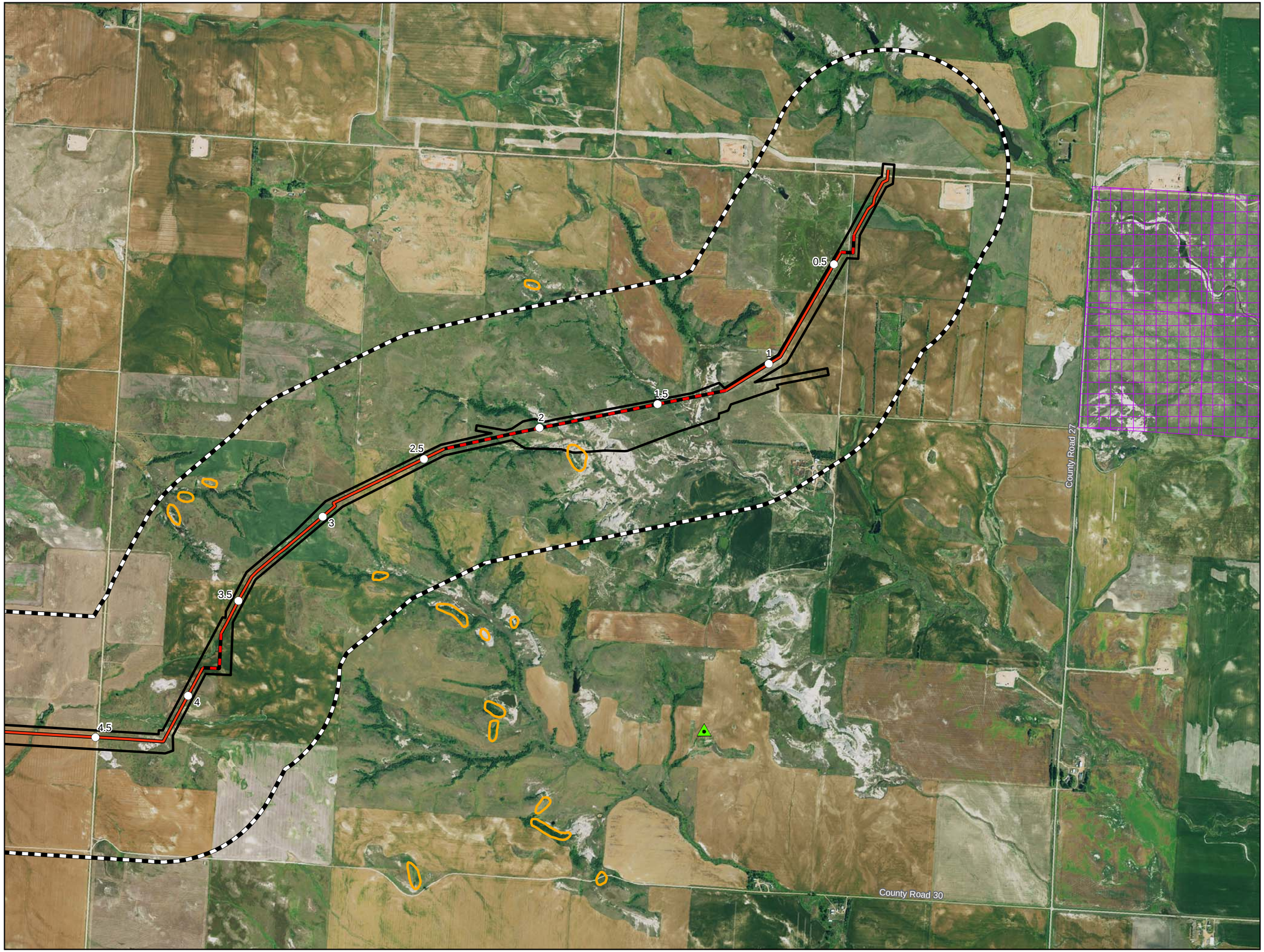
For Environmental Review Purposes Only

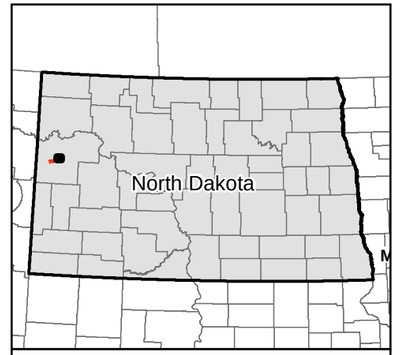
ONEOK Bakken Pipeline
Garden Creek Loop NGL Pipeline Project
Project Location Map
McKenzie County, ND

Proposed Route

Source: Z:\Clients\M_P\Oneok\Garden_Creek_Loop\ArcGIS\2015\10\PSC_Maps\GCL_PSC_Project_Overview.mxd

Date: (10/8/2015)





0 1,000 2,000 Feet

1 inch = 2,000 feet

N
W E
S

Imagery Source: USDA-FSA Aerial Photography Field Office, NAIP 2014

- Milepost
- Centerline: Co-located
- Centerline: Not Co-located
- Project Corridor
- 1-mile Study Area

Avoidance Areas

- Abandoned Mine
- Occupied Structure within 500' of Corridor
- Occupied Structure (500' Buffer)
- National Grassland
- Landslide Deposits
- NDDTL - School Trust Land

EXHIBIT B.3

ONEOK Bakken Pipeline
Garden Creek Loop
NGL Pipeline Project

Avoidance and Exclusion Areas

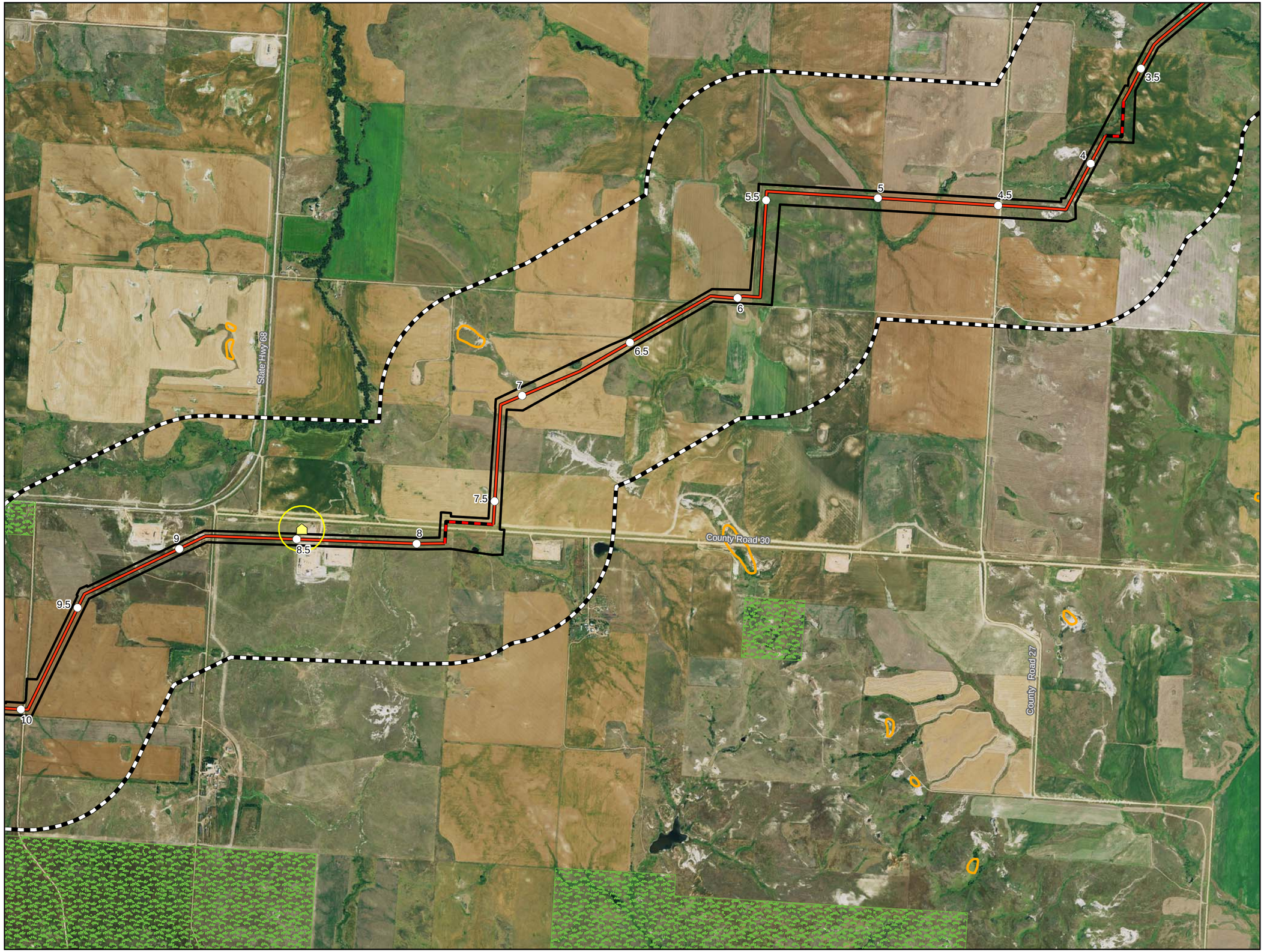
Page 1 of 3
McKenzie County

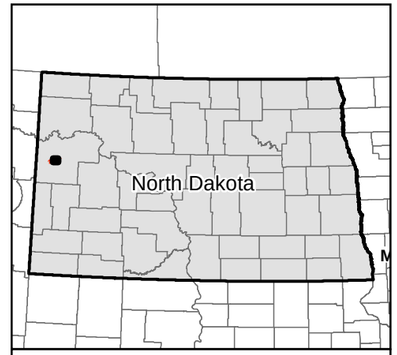
merjent

For Environmental Review Purposes Only

10/9/2015

Source: Z:\Clients\M_P\ONEOK\Garden_Creek_Loop\ArcGIS\2015\10\PSC_Maps\GCL_PSC_Avoidance_Exclusion_Area_Map_Book.mxd
Date: (10/9/2015)





0 1,000 2,000 Feet

1 inch = 2,000 feet

Imagery Source: USDA-FSA Aerial Photography Field Office, NAIP 2014

N
W E
S

- Milepost
- Centerline: Co-located
- Centerline: Not Co-located
- Project Corridor
- 1-mile Study Area

Avoidance Areas

- Abandoned Mine
- Occupied Structure within 500' of Corridor
- Occupied Structure (500' Buffer)
- National Grassland
- Landslide Deposits
- NDDTL - School Trust Land

EXHIBIT B.3

ONEOK Bakken Pipeline
Garden Creek Loop
NGL Pipeline Project

Avoidance and Exclusion Areas

Page 2 of 3
McKenzie County

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For Environmental Review Purposes Only

10/9/2015

Source: Z:\Clients\M_P\Oneok\Garden_Creek_Loop\ArcGIS\2015\10\PSC_Maps\GCL_PSC_Avoidance_Exclusion_Area_Map_Book.mxd
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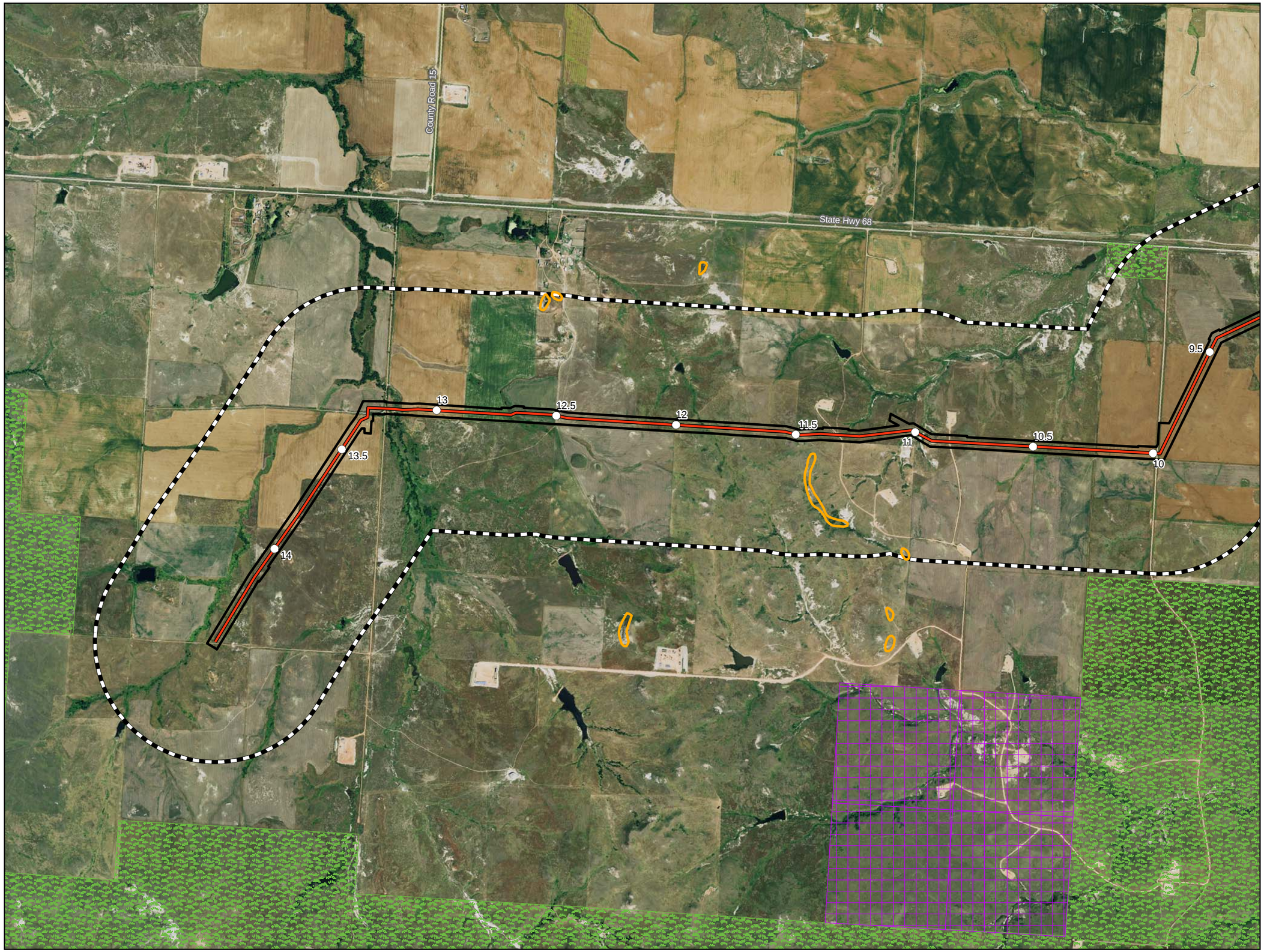

0 1,000 2,000 Feet

1 inch = 2,000 feet

Imagery Source: USDA-FSA Aerial Photography Field Office, NAIP 2014

N
W E
S

- Milepost
- Centerline: Co-located
- Centerline: Not Co-located
- Project Corridor
- 1-mile Study Area

Avoidance Areas

- Abandoned Mine
- Occupied Structure within 500' of Corridor
- Occupied Structure (500' Buffer)
- National Grassland
- Landslide Deposits
- NDDTL - School Trust Land

EXHIBIT B.3

ONEOK Bakken Pipeline
Garden Creek Loop
NGL Pipeline Project

Avoidance and Exclusion Areas

Page 3 of 3
McKenzie County

Merjent

For Environmental Review Purposes Only

10/9/2015

Source: Z:\Clients\M_P\Oneok\Garden_Creek_Loop\ArcGIS\2015\10\PSC_Maps\GCL_PSC_Avoidance_Exclusion_Area_Map_Book.mxd
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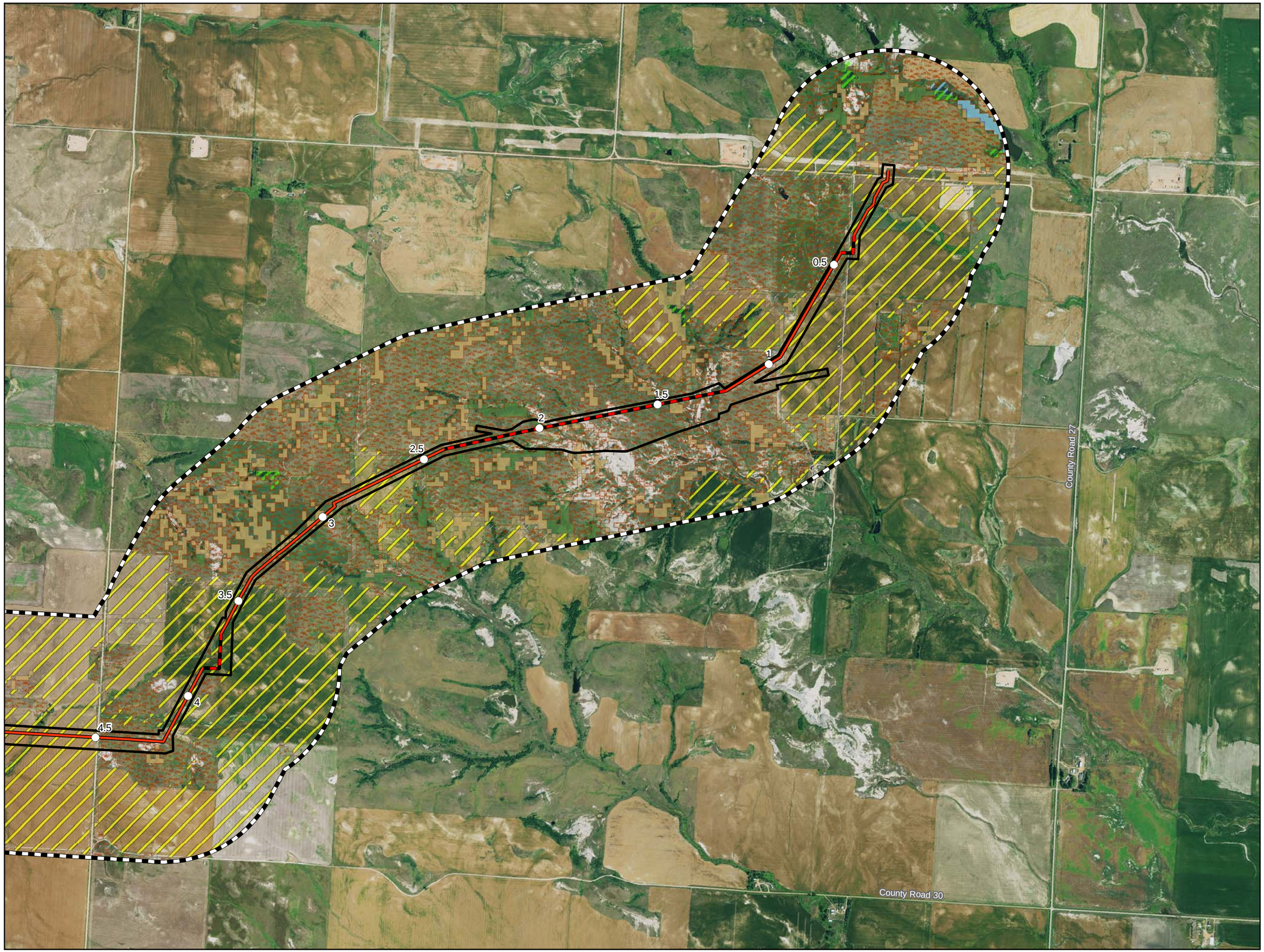
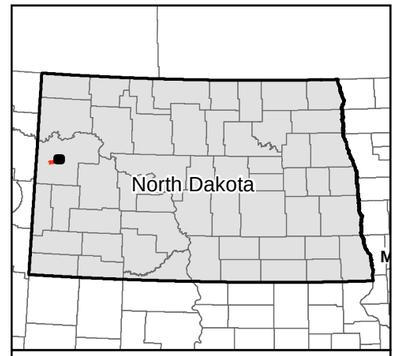




0 1,000 2,000 Feet

1 inch = 2,000 feet

Imagery Source: USDA-FSA Aerial Photography Field Office, NAIP 2014

N
W E
S

- Milepost
- Centerline: Co-located
- Centerline: Not Co-located
- Project Corridor
- 1-mile Study Area

LULC Classification

- Barren Land
- Cultivated Crops
- Forested
- Developed
- Emergent Herbaceous Wetlands
- Grassland/Herbaceous
- Hay/Pasture
- Open Water
- Shrub/Scrub
- Woody Wetlands

EXHIBIT B.4

ONEOK Bakken Pipeline
Garden Creek Loop
NGL Pipeline Project

Land Use Land Cover

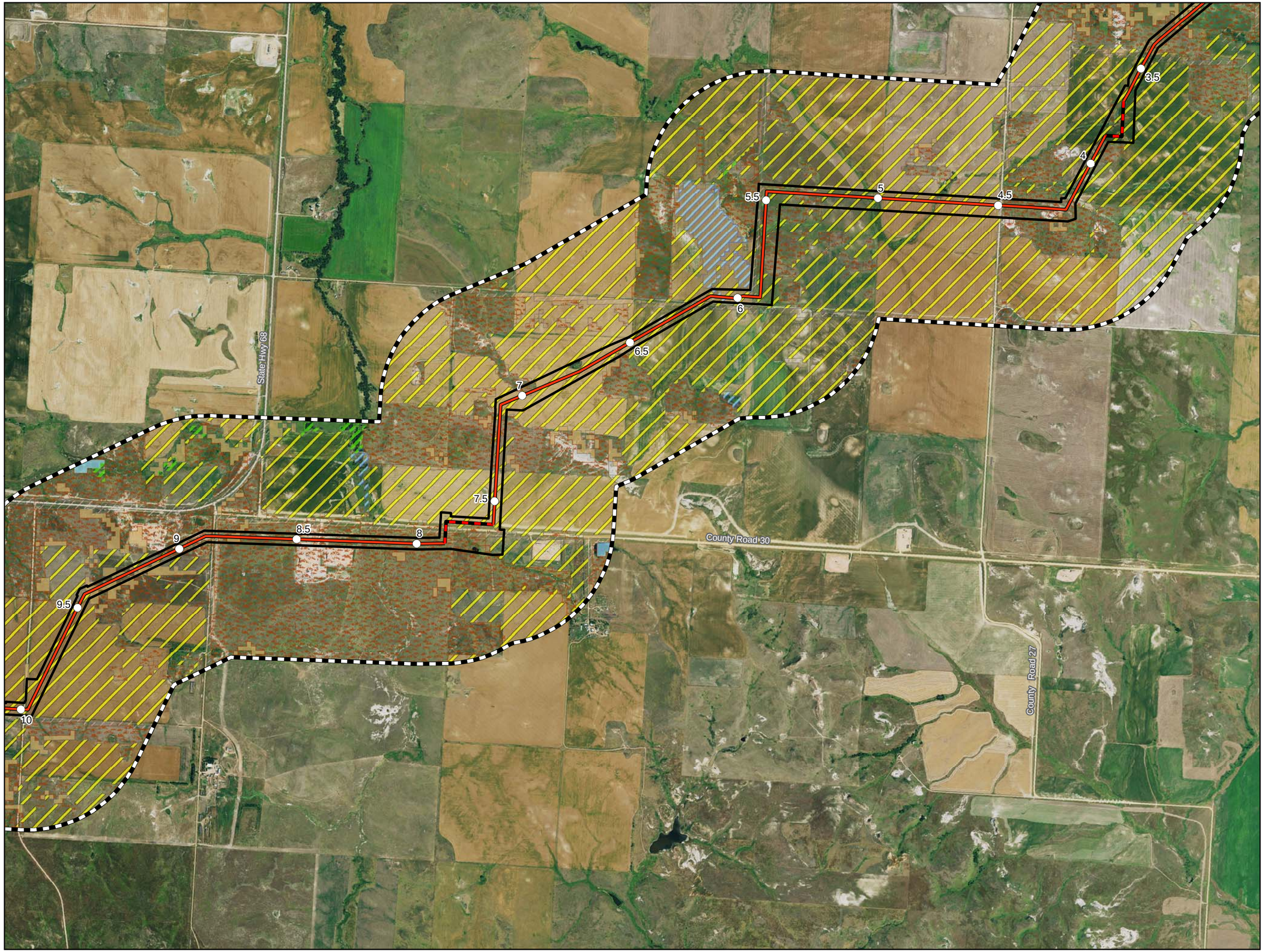
McKenzie County

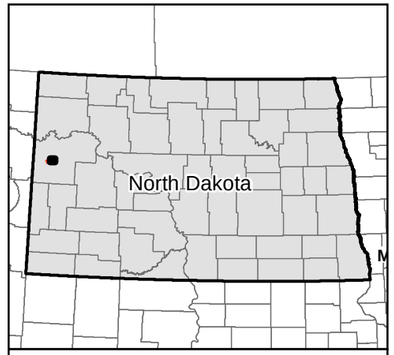
Emerjent

For Environmental Review Purposes Only

10/7/2015

Source: Z:\Clients\M_P\Oneok\Garden_Creek_Loop\ArcGIS\2015\10\PSC_Maps\GCL_PSC_Land_Use_Map_Book.mxd
Date: (10/7/2015)





0 1,000 2,000 Feet

1 inch = 2,000 feet

Imagery Source: USDA-FSA Aerial Photography Field Office, NAIP 2014

N W E S

- Milepost
- Centerline: Co-located
- Centerline: Not Co-located
- Project Corridor
- 1-mile Study Area

LULC Classification

- Barren Land
- Cultivated Crops
- Forested
- Developed
- Emergent Herbaceous Wetlands
- Grassland/Herbaceous
- Hay/Pasture
- Open Water
- Shrub/Scrub
- Woody Wetlands

EXHIBIT B.4

ONEOK Bakken Pipeline
Garden Creek Loop
NGL Pipeline Project

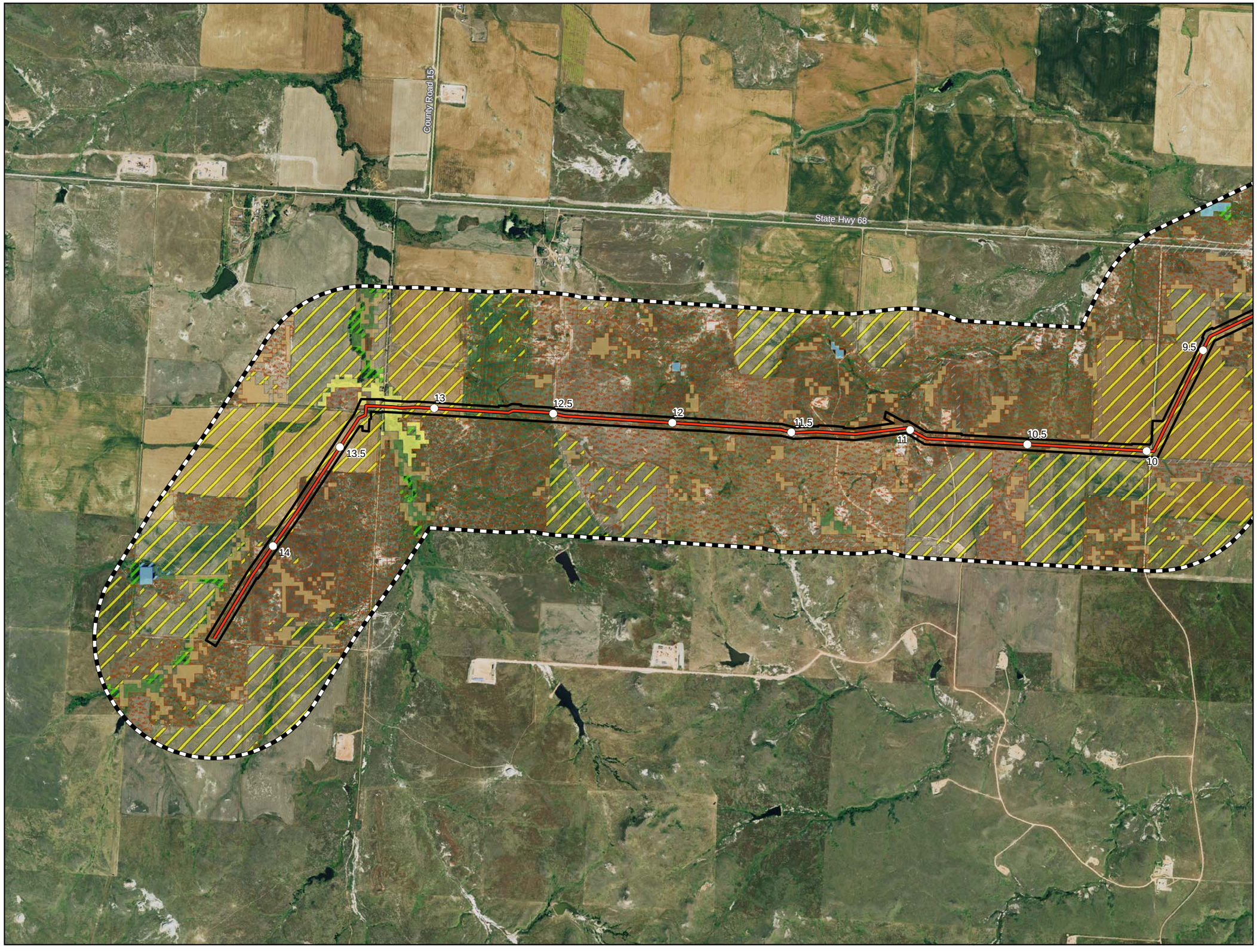
Land Use Land Cover

Page 2 of 3
McKenzie County

Source: Z:\Clients\M_P\Oneok\Garden_Creek_Loop\ArcGIS\2015\10\PSC_Maps\GCL_PSC_Land_Use_Map_Book.mxd
Date: (10/7/2015)

For Environmental Review Purposes Only

10/7/2015



0 1,000 2,000 Feet

1 inch = 2,000 feet

Imagery Source: USDA-FSA Aerial Photography Field Office, NAIP 2014

N W E S

- Milepost
- Centerline: Co-located
- Centerline: Not Co-located
- Project Corridor
- 1-mile Study Area

LULC Classification

- Barren Land
- Cultivated Crops
- Forested
- Developed
- Emergent Herbaceous Wetlands
- Grassland/Herbaceous
- Hay/Pasture
- Open Water
- Shrub/Scrub
- Woody Wetlands

EXHIBIT B.4

ONEOK Bakken Pipeline
Garden Creek Loop
NGL Pipeline Project

Land Use Land Cover

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McKenzie County

Emerjent

For Environmental Review Purposes Only

10/7/2015

Source: Z:\Clients\M_P\Oneok\Garden_Creek_Loop\ArcGIS\2015\10\PSC_Maps\GCL_PSC_Land_Use_Map_Book.mxd
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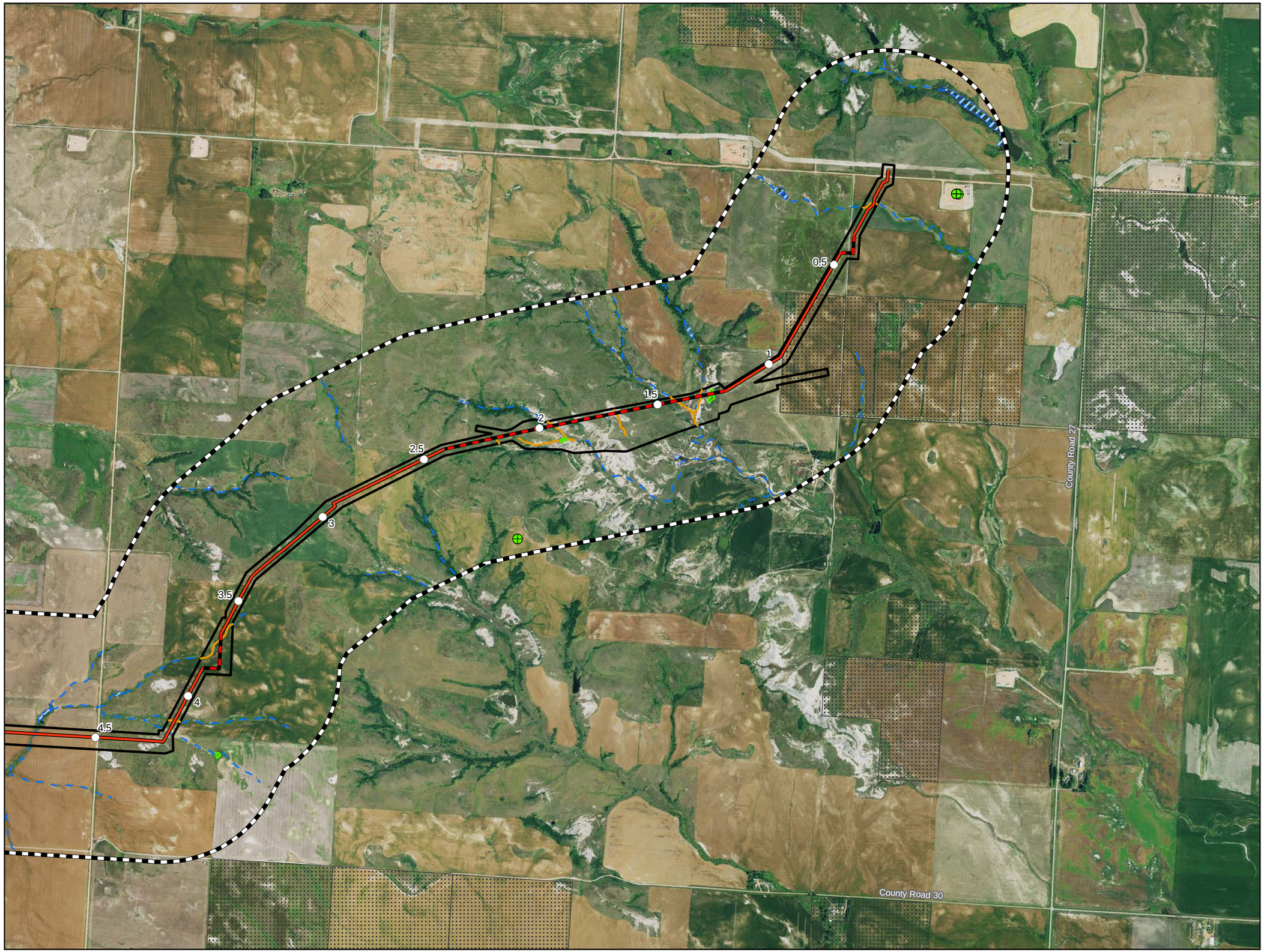

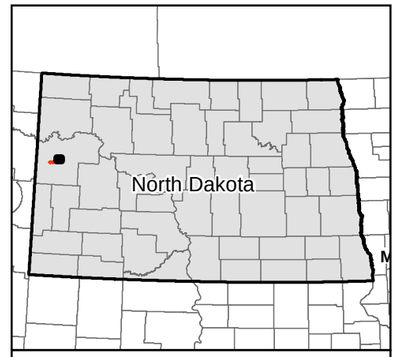

0 1,000 2,000 Feet

1 inch = 2,000 feet

Imagery Source: USDA-FSA Aerial Photography Field Office, NAIP 2014

N W E S

- Milepost
- Centerline: Co-located
- Centerline: Not Co-located
- Project Corridor
- 1-mile Study Area
- Oil and Gas Well
- NDDTL - Mineral Trust Land
- Field Delineated Waterbody
- Field Delineated Wetland
- NWI Wetland

USGS Streams

- Intermittent Stream
- Perennial Stream

EXHIBIT B.5

ONEOK Bakken Pipeline
Garden Creek Loop
NGL Pipeline Project

Other Criteria Considered

Page 1 of 3
McKenzie County

Emerjent

For Environmental Review Purposes Only

10/9/2015

Source: Z:\Clients\M_P\Oneok\Garden_Creek_Loop\ArcGIS\2015\10\PSC_Maps\GCL_PSC_Other_Criteria_Map_Book.mxd
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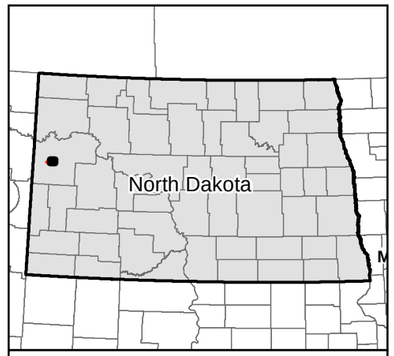


0 1,000 2,000 Feet

1 inch = 2,000 feet

Imagery Source: USDA-FSA Aerial Photography Field Office, NAIP 2014

N W E S

- Milepost
- Centerline: Co-located
- Centerline: Not Co-located
- Project Corridor
- 1-mile Study Area
- Oil and Gas Well
- NDDTL - Mineral Trust Land
- Field Delineated Waterbody
- Field Delineated Wetland
- NWI Wetland

USGS Streams

- Intermittent Stream
- Perennial Stream

EXHIBIT B.5

ONEOK Bakken Pipeline
Garden Creek Loop
NGL Pipeline Project

Other Criteria Considered

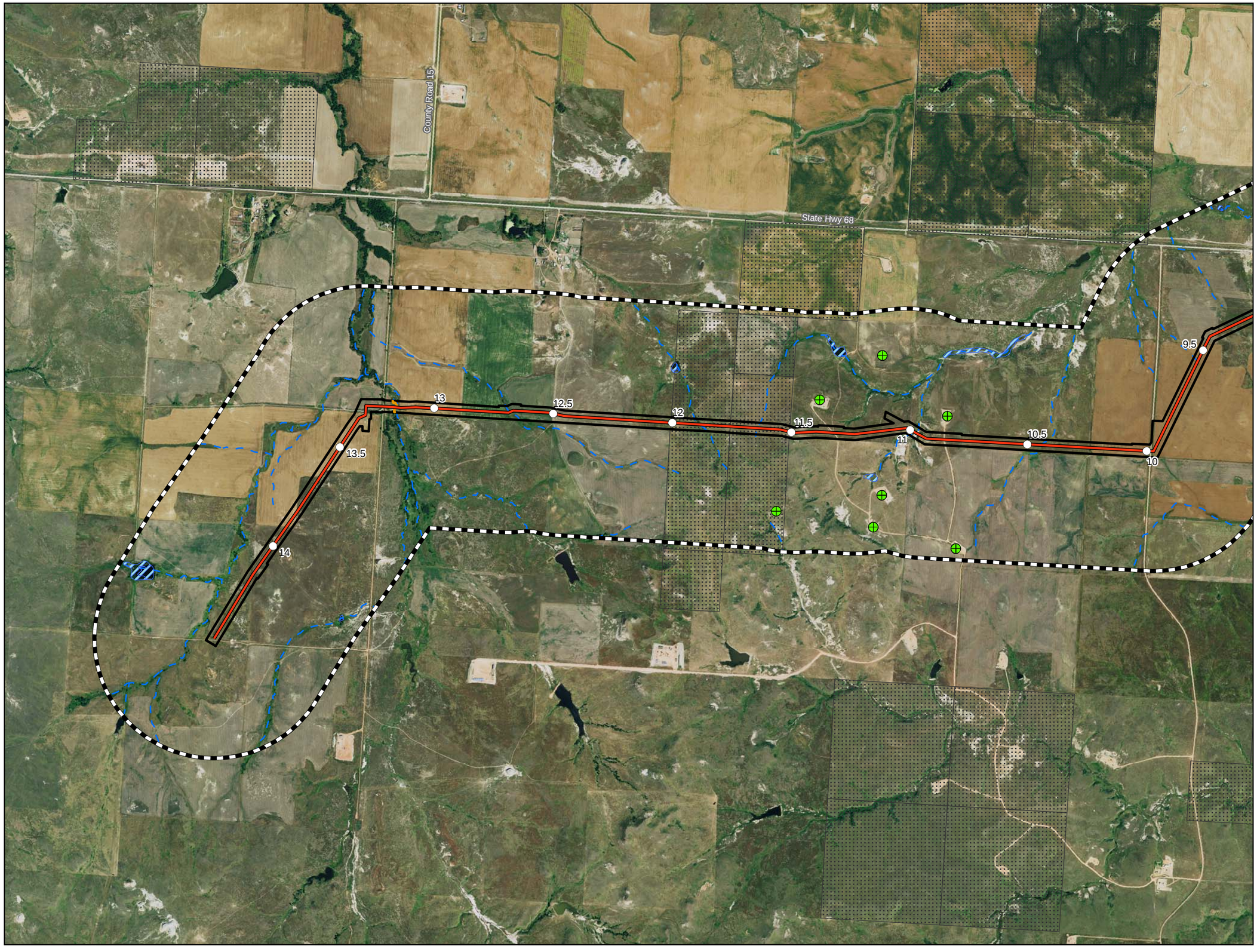
McKenzie County

Emerjent

For Environmental Review Purposes Only

10/9/2015

Source: Z:\Clients\M_P\Oneok\Garden_Creek_Loop\ArcGIS\2015\10\PSC_Maps\GCL_PSC_Other_Criteria_Map_Book.mxd
Date: (10/9/2015)



0 1,000 2,000 Feet

1 inch = 2,000 feet

Imagery Source: USDA-FSA Aerial Photography Field Office, NAIP 2014

N W E S

- Milepost
- Centerline: Co-located
- Centerline: Not Co-located
- Project Corridor
- 1-mile Study Area
- Oil and Gas Well
- NDDTL - Mineral Trust Land
- Field Delineated Waterbody
- Field Delineated Wetland
- NWI Wetland

USGS Streams

- Intermittent Stream
- Perennial Stream

EXHIBIT B.5

ONEOK Bakken Pipeline
Garden Creek Loop
NGL Pipeline Project

Other Criteria Considered

Page 3 of 3
McKenzie County

merjent

For Environmental Review Purposes Only

10/9/2015

Source: Z:\Clients\M_P\Oneok\Garden_Creek_Loop\ArcGIS\2015\10\PSC_Maps\GCL_PSC_Other_Criteria_Map_Book.mxd
Date: (10/9/2015)

EXHIBIT C

SWCA®
ENVIRONMENTAL CONSULTANTS
Sound Science. Creative Solutions.®

Natural Resources and Wetland Delineation Report for the Garden Creek Loop NGL Pipeline Project, McKenzie County, North Dakota

Prepared for

Merjent, Inc.

Prepared by

SWCA Environmental Consultants

October 2015

Natural Resources and Wetland Delineation Report for the Garden Creek Loop NGL Pipeline Project, McKenzie County, North Dakota

Prepared for:

Merjent, Inc.
800 Washington Avenue North, Suite 315
Minneapolis, Minnesota 55401

Prepared by:

Dillon Belisle, Environmental Specialist
Ashley C. Persinger, Natural Resource Project Manager

Reviewed by:

Jeffrey Towner
Natural Resources Team Lead

SWCA Environmental Consultants
116 North 4th Street, Suite 200
Bismarck, North Dakota 58501
Phone (701) 258-6622, Fax (701) 258-5957

SWCA Project Number 33016

October 7, 2015

TABLE OF CONTENTS

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LIST OF FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

1.1 BACKGROUND

ONEOK, LLC (ONEOK) is proposing to construct and operate the Garden Creek Loop Pipeline (proposed project) in McKenzie County, North Dakota. SWCA Environmental Consultants (SWCA) conducted natural resources field surveys in order to identify exclusion and avoidance areas as specified in North Dakota Administrative Code 69-06-08-02 for the proposed project.

As proposed, the Garden Creek Loop Pipeline is approximately 21 miles long, including surveyed segment alternatives, spanning privately owned lands in North Dakota (Appendix A).

SWCA conducted field surveys, including reroutes, of a varying 250- to 700-foot-wide survey corridor on June 29, June 30, July 16, July 17, and August 27, 2015 to determine the potential presence and extent of wetlands and waterbodies, including jurisdictional waters of the U.S., within the proposed survey area. Concurrently with the wetland determinations, SWCA conducted a cursory threatened and endangered species survey and habitat assessment. Site layout maps of the survey area and natural resources features identified during the field surveys are provided in Appendix A.

This report summarizes the methodology used by SWCA's biologists to complete each of the aforementioned surveys. Additionally, this report presents the results of the completed field surveys and regulatory recommendations to ensure compliance with the North Dakota Public Service Commission and to support future project planning and any local, state or federal permitting as needed.

2.0METHODS

2.1 SURVEY AREA

Overall, northwest North Dakota is characterized by a moderate to cool climate, with cold, dry winters and mild to warm summers. Mean annual precipitation for the area is 14 to 16 inches (Bryce et al. 1998).

The proposed project is primarily located in the Great Plains (level I ecoregion), West-Central Semi-arid Prairies (level II ecoregion), Northwestern Great Plains (level III ecoregions), and Missouri Plateau (level IV ecoregions).

The Northwestern Great Plains are characterized by a semiarid rolling plain of shale- and sandstone-derived soils punctuated by occasional buttes and badlands (U.S. Geological Survey [USGS] 2014). An overview of the project area is depicted in Figure 1.

The inventory area is on the USGS Sather Lake (1976), Moline School (1975), Stocke Butte (1960), and Bear Butte (1976), North Dakota, quadrangles. The proposed project corridor that was surveyed June 29, June 30, July 16, July 17, and August 27 encompasses portions of 24 sections within 5 townships and ranges.

- Sections 1, 12, and 13 of Township (T) 148 North (N), Range (R) 103 West (W)

- Sections 1, 2, 3, 4, 5, 6, and 8 T148N, R102W
- Section 6, T148N, R101W
- Sections 23, 24, 26, 27, 28, 32, 33, 34, and 35, T149N, R101W
- Sections 8, 17, 18, and 19, T149N, R100W

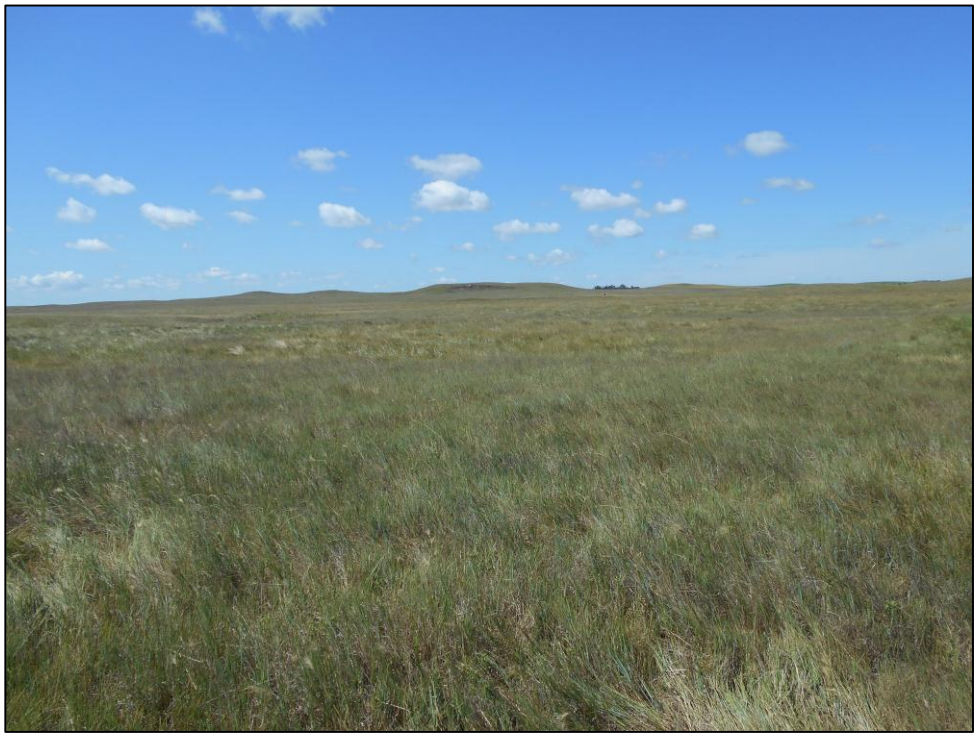

Figure 1. Project area overview depicting general topography within the survey area, facing west (photo taken July 16, 2015).

2.2 PRE-FIELD REVIEW

Prior to conducting field surveys, SWCA reviewed applicable National Wetlands Inventory data as well as preliminary National Weather Service climatic data. SWCA also reviewed the USGS National Hydrologic Dataset (NHD) and the Watershed Boundary Dataset (WBD) to identify local drainage features and watershed basins. The Soil Survey Geographic database (SURRGO) data sets were obtained to describe the local soil types and properties.

2.3 WETLANDS

National Wetlands Inventory mapping for the region indicates the presence of wetlands (U.S. Fish and Wildlife Service [USFWS] 2012). SWCA biologists conducted wetland delineations within the survey area based on the principles and guidelines provided in the *Corps of Engineers Wetlands Delineation Manual* (Manual) (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region, Version 2.0* (Supplement) (USACE 2010). According to the Manual, an area is a wetland if three mandatory wetland criteria are present in a given area, with special exceptions. These criteria include the presence of hydrophytic vegetation, wetland hydrology, and hydric soils.

All wetlands and waterbodies geographically referenced within the survey area during field survey are depicted on the site layout maps in Appendix A. Wetland delineation data forms are provided in Appendix B.

2.3.1 Hydrophytic Vegetation

Biologists recorded all plants within the vegetative community based on the respective stratum each species occupied. A tree is defined by the Supplement to be a woody-stemmed plant with a trunk diameter at breast height (DBH) of equal to or greater than 3 inches, regardless of height. The sapling and shrub stratum is defined by the Supplement to be composed of woody-stemmed plants with a trunk DBH of less than 3 inches, regardless of height. The herbaceous stratum includes all non-woody-stemmed plants regardless of height. Finally, the woody vine stratum includes all woody-stemmed vines, regardless of diameter.

SWCA recorded the binomial scientific name and percent cover of all plants within a 30-foot radius for the tree stratum, a 15-foot radius for the sapling/shrub stratum, a 5-foot radius for the herbaceous stratum, and a 30-foot radius for the woody vine stratum. SWCA biologists noted each plant species' respective USFWS indicator status (i.e., upland [UPL], facultative upland [FACU], facultative [FAC], facultative wetland [FACW], and obligate [OBL]). Vegetation communities met the hydrophytic vegetation criterion for wetlands if greater than 50% of dominant species had an indicator status of FAC, FACW, and OBL.

2.3.2 Wetland Hydrology

A wetland was determined to contain wetland hydrology if at least one primary indicator or at least two secondary indicators of wetland hydrology were present, as defined by the Manual and Supplement. Common hydrologic indicators include the presence of surface water, high water table, soil saturation, water marks on trees or other objects, sediment deposits, water-stained leaves, and oxidized rhizospheres on living roots.

2.3.3 Hydric Soil

Biologists recorded detailed notes regarding soil profiles including the hue, value, and chroma (i.e., color) of the soil (using Munsell Soil Color Charts); the depth and extent of that soil color within the entire soil profile; the concentration of any redoximorphic concentrations or depletions; and the texture of the soil at each depth where a color change was observed. Soil pits were excavated to a minimum depth of 20 inches at each data point. Common hydric soil indicators of the Northern Great Plains subregion include the presence of hydrogen sulfide gas within the soil pit, redox depressions, redox dark surfaces, and depleted matrix.

2.4 WATERBODIES

Waterbodies (i.e., ponds, creeks, streams, rivers) were identified by the presence of an ordinary high water mark (OHWM). Common identifiable indicators of an OHWM include open water or evidence of a clear, natural line visible on the bank; shelving; changes in soil characteristics; the destruction of terrestrial vegetation; the presence of litter and debris; and watermarks on structures that are inundated during normal high water conditions. The OHWM typically represents the potential limits of the USACE jurisdiction. Please note that the USACE has full discretion in determining the jurisdictional status of referenced wetlands and waterbodies.

SWCA classified streams as perennial, intermittent, or ephemeral based on field observations. During a typical year, a perennial stream contains flowing water year-round and the water table is located above the stream bed. Groundwater is the primary water source for stream flow while precipitation runoff is supplemental. Biologists classified streams that showed significant flow during the field survey as perennial. Additionally, the USGS topographic maps were used as reference.

An intermittent stream has flowing water for only portions of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

2.5 WILDLIFE INCLUDING THREATENED AND ENDANGERED SPECIES

Prior to conducting field surveys, SWCA reviewed information obtained from the USFWS list of threatened and endangered species by North Dakota county (USFWS 2014) regarding the presence of threatened or endangered species that may occur within the survey area. This document does not represent a comprehensive survey, but rather acknowledges the past and/or current presence of listed species. The lack of discovery of threatened or endangered species does not signify their non-existence within the area, but only that no primary or secondary indications of these species were recorded. SWCA completed a random survey for all listed species and suitable habitat.

A line-of-sight binocular survey for raptor species was also conducted for a distance of approximately 0.5 mile. SWCA biologists noted all wildlife observed during the field survey. Wildlife sightings can involve primary observations (i.e., actual sighting of an animal) or secondary observations (i.e., observation of scat, tracks, or fur deposits).

Dakota skipper habitat surveys were conducted in conjunction with the reroute surveys on July 16 and 17, 2015. The survey was conducted following a protocol created in collaboration with Merjent. The protocol can be found in Appendix C.

2.6 MAPPING

The boundaries of each wetland, waterbody, and woody vegetation habitat were geographically recorded using a Trimble GeoXT global positioning system (GPS) unit. The aforementioned GPS unit is capable of recording geographic data with sub-meter accuracy. SWCA used Universal Transverse Mercator Zone 13 North as the projected coordinate system and North American Datum 1983 as the datum. ArcGIS v10.0 (ESRI Redlands, California) was used to analyze recorded features, calculate areas, and generate the maps provided in Appendix A. Please note that all data collected using the GPS unit, and displayed on the attached maps, are for review purposes only and do not represent a professional civil survey.

3.0 RESULTS

3.1 VEGETATION

During the field survey, SWCA biologists identified four general types of vegetative communities within the survey area. These vegetative communities were classified as herbaceous upland, shrubland and upland woody vegetation, cropland, and palustrine emergent (PEM) wetland. PEM wetlands are characterized by the presence of herbaceous hydrophytic or submergent aquatic macrophytes. Photographs of the survey area are provided in Appendix D.

Vegetation communities met the hydrophytic vegetation criterion for wetlands if greater than 50% of dominant species had an indicator status of FAC, FACW, or OBL. The upland communities failed to meet at least one of the three assessed wetland criteria.

3.1.1 Cropland

Field survey indicated agricultural use within the survey area. The dominant crop species observed within the project area were small grains, including wheat (*Triticum aestivum*).

3.1.2 Herbaceous Upland

The herbaceous upland community consists of areas dominated by non-woody vegetation such as grasses and forbs. Vegetation within the project area consisted of native and non-native grasses and forbs including crested wheatgrass (*Agropyron cristatum*), foxtail barely (*Hordeum jubatum*), green needlegrass (*Nassella viridula*), junegrass (*Koeleria macrantha*), Kentucky bluegrass (*Poa pratensis*), little bluestem (*Schizachyrium scoparium*), needle and thread (*Stipa comata*), smooth brome (*Bromus inermis*), western wheatgrass (*Pascopyrum smithii*), buffalograss (*Bouteloua dctyloides*), prairie sagewort (*Artemisia frigida*), tarragon (*Artemisia dracunculus*), stiff sunflower (*Helianthus pauciflorus*), blue lettuce (*Lactuca tatarica*), upright prairie coneflower (*Ratibida columnifera*), prairie rose (*Rosa arkansana*), purple coneflower (*Echinacea angustifolia*), silverleaf scurfpea (*Pediomelum argophyllum*), soft goldenrod (*Solidago mollis*), Missouri goldenrod (*Solidago missouriensis*), and yellow sweetclover (*Melilotus officinalis*).

3.1.3 Shrubland and Woody Vegetation

Shrubland communities occurring throughout the survey area consisted of upland areas dominated by woody-stemmed vegetation including western snowberry (*Symphoricarpos occidentalis*).

3.1.4 Hydrophytic Vegetation

Aquatic vegetation species confirmed during the survey included foxtail barley, prairie cordgrass (*Spartina pectinata*), and American sloughgrass (*Beckmannia syzigachne*).

3.2 HYDROLOGY

Wetland communities observed during the determination effort displayed at least one primary or two secondary indicators of wetland hydrology, as defined by the Manual and Supplement.

Upland communities either failed to display hydrologic indicators or failed to meet the hydrophytic vegetation and hydric soils criterion, as defined by the Manual and Supplement. Common indicators of wetland hydrology observed during field surveys include High Water Table (A2), Saturation (A3), Drift Deposits (B3), Inundation Visible on Aerial Imagery (B7), Drainage Patterns (B10), Saturation Visible on Aerial Imagery (C9), Geomorphic Position (D2), and FAC-Neutral Test (D5).

According to National Weather Service preliminary climatological data for Williston, North Dakota, 6.36 inches of precipitation was recorded from April 1 through August 27, 2015 (Table 1). This amount is 2.90 inches below normal for this time period. Williston is approximately 30 miles north of the project area at its closest point.

Table 1. Monthly Recorded Rainfall at National Weather Service Station in Williston, North Dakota

Month	Recorded Precipitation (inches)	Normal Precipitation (inches)	Difference (inches)
April 2015	0.27	1.00	-0.73
May 2015	1.82	1.92	-0.10
June 2015	1.90	2.52	-0.62
July, 2015	1.55	2.54	-0.99
August 1-27, 2015	0.82	1.28	-0.46
Total	**6.36**	**9.26**	**-2.90**

Source: National Oceanic and Atmospheric Administration 2015.

3.3 WETLANDS

SWCA recorded four PEM wetlands (WET1, WET2, WET3 and BWET7) within the survey area, totaling approximately 1.38 acre (Table 2; Appendix A).

Table 2. PEM Wetland Acreage within the Survey Area

Feature ID	Type	Description	Total Recorded Size (acres)
NRBWET7	Seasonal	Isolated	0.44
WET1	Seasonal	Connected	0.13
WET2	Semi-permanent	Isolated	0.64
WET3	Seasonal	Isolated	0.17
Total			**1.38**

3.4 WATERBODIES

SWCA identified 13 waterbodies within the survey area, four of which are classified as intermittent streams and nine are ephemeral streams (Table 3). The recorded ephemeral and intermittent streams all contained an OHWM.

Upland data points and five upland swales were recorded at potential high risk run-off areas which did not show an OHWM and contained predominantly upland vegetation (Appendix A). However, these areas should be considered when developing a storm water pollution prevention plan.

Table 3. Waterbodies within the Survey Area

Feature ID	Description	OHWM (feet)	Total Area (acres)
STR1	Ephemeral	2	0.02
STR2	Ephemeral	2	0.04
STR3	Ephemeral	6	0.09
STR4	Ephemeral	6	0.1
STR5	Ephemeral	3-4	0.06
STR6	Ephemeral	3	0.07
STR7	Ephemeral	3	0.01
STR8	Ephemeral	6	0.15
STR9	Intermittent	6	0.04
STR10	Intermittent	6	0.25
STR11	Intermittent	6	0.10
STR12	Intermittent	8	0.18
Total			**1.11**

3.5 SOILS

Based on Natural Resources Conservation Service (NRCS) mapping (NRCS 2014), 41 soil types are present in the project survey corridor. The project area analyzed for soils covering the varying 250- to 700-foot-wide survey corridor. Table 4 lists all soil units within the survey area. The following soil component descriptions represent the most prevalent soil series found within the survey area (NRCS 2014).

Table 4. NRCS Derived Soil Series Present within the Survey Area

Soil Types	Map Unit Symbol	Slopes (%)	Acres within Survey Area	Percent within Map Unit
Dogtooth-Janesburg silt loams	E0559B	0 to 6	114.23	13.70
Cabba-Chama-Sen silt loams	E2741D	9 to 15	69.44	8.32
Belfield-Savage-Daglum complex	E0617B	2 to 6	54.27	6.50
Dogtooth-Janesburg-Cabba complex	E0701F	6 to 35	50.46	6.05
Zahl-Cabba-Williams complex	E3641D	9 to 15	44.20	5.30
Cabba-Badland complex	E3107F	6 to 70	50.29	6.03
Beisigl-Flasher-Telfer loamy fine sands	E1403D	6 to 15	36.92	4.42
Chama-Cabba-Sen silt loams	E2737C	6 to 9	36.82	4.41
Cabba-Chama-Shambo loams	E2617F	9 to 50	34.55	4.14
Rhoades-Daglum complex	E0515B	0 to 6	36.83	4.41

Soil Types	Map Unit Symbol	Slopes (%)	Acres within Survey Area	Percent within Map Unit
Belfield-Grail clay loams	E0605A	0 to 2	28.67	3.43
Savage silty clay loam	E0837B	2 to 6	29.48	3.53
Lawther silty clay	E0821A	0 to 2	27.55	3.30
Daglum-Belfield complex	E0447B	0 to 6	27.35	3.28
Vebar-Cohagen fine sandy loams	E1333C	6 to 9	20.76	2.49
Brandenburg-Searing-Dogtooth complex	E3013D	6 to 15	19.93	2.39
Zahl-Williams-Cabba complex	E3639C	6 to 9	19.56	2.34
Brandenburg-Cabba-Dogtooth complex	E3013F	15 to 70	16.97	2.03
Chama-Sen-Cabba silt loams	E2913B	3 to 6	16.08	1.92
Reeder-Farnuf loams	E2819B	3 to 6	15.28	1.83
Farnuf loam	E2120B	2 to 6	10.53	1.26
Vebar-Flasher-Tally complex	E1355D	9 to 15	8.17	0.98
Farnuf loam	E2120C	6 to 9	7.39	0.88
Cabba-Chama-Havrelon, occasionally flooded complex	E4190F	2 to 70	8.37	1.00
Regent-Janesburg complex	E0651B	3 to 6	4.96	0.59
Savage silty clay loam	E0837C	6 to 9	4.82	0.57
Moreau-Wayden silty clays	E0913C	6 to 9	4.69	0.56
Regent-Janesburg complex	E0651C	6 to 9	4.61	0.55
Zahl-Cabba-Maschetah complex	E3609F	6 to 70	4.15	0.49
Korchea-Fluvaquents complex, channeled	E4139A	0 to 2	3.96	0.47
Amor-Cabba loams	E2601C	6 to 9	3.83	0.46
Williams-Zahl loams	E3541C	6 to 9	3.13	0.37
Tally-Parshall fine sandy loams	E1865B	2 to 6	3.07	0.36
Golva silt loam	E2213B	2 to 6	4.50	0.54
Zahl-Beisigl-Tally complex	E3637D	9 to 15	2.51	0.30
Flasher-Vebar-Parshall complex	E1423F	9 to 35	2.24	0.26
Zahl-Williams loams	E3555D	9 to 15	1.38	0.16
Golva silt loam	E2213C	6 to 9	0.74	0.08
Savage-Grail silty clay loams	E0835A	0 to 2	0.45	0.05
Tally-Parshall fine sandy loams	E1865C	6 to 9	0.43	0.05
Moreau-Barkof silty clays	E1009B	3 to 6	<0.01	0.0000
Total			**833.74**	**100.00**

Source: Natural Resources Conservation Service 2014.

3.5.1 Dogtooth

The Dogtooth series consists of moderately deep, well-drained, very slowly permeable soils found in uplands where the predominant slope is between 0% and 25%. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 15 inches and mean annual air temperature is approximately 42 degrees Fahrenheit (°F). The most common vegetation species found on this soil type are range and pasture grasses including western wheatgrass and blue grama (*Bouteloua gracilis*) (NRCS 2014).

3.5.2 Janesburg

The Janesburg series consists of moderately deep, well-drained soils formed in residuum weathered from alkaline, soft shale, siltstone, and mudstone. These soils have slow or very slow permeability and are on upland plains with slopes of 0% to 25%. The mean annual precipitation found throughout the spatial extent of this soil type is about 15 inches and the mean annual air temperature is about 42°F. Most of these soils are used for range, pasture, and small grains. Native vegetation is western wheatgrass, blue grama, green needlegrass, sedges (*Carex* sp.), and forbs (NRCS 2014).

3.5.3 Cabba

The Cabba series consists of shallow, well-drained, moderately permeable soils found on hills, escarpments, and sedimentary plains. The soil slopes broadly range between 2% and 70%. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 16 inches and mean annual air temperature is approximately 43°F. The most common vegetation species found on this soil type are little bluestem, green needlegrass, and other various herbs, forbs, and shrub species (NRCS 2014).

3.5.4 Chama

The Chama soil series consists of well-drained soils found in materials weathered from soft siltstone, mudstone, and shale on uplands. These soils are reasonably deep to soft siltstone, mudstone, or shale. These soils are moderately or moderately slowly permeable. The slope ranges from 0% to 45%. The mean annual precipitation found throughout the spatial extent of this soil type is 15 inches and the mean annual air temperature is 42°F. Soils are cropped to small grains, which are mostly wheat, where a significant acreage is in rangeland. The native vegetation is principally western wheatgrass, needle and thread, and blue grama (NRCS 2014).

3.5.5 Sen

The Sen series consists of well-drained, moderately permeable soils that formed in calcareous siltstone or shale. They are moderately deep to soft bedrock. These soils are on upland plains and have slopes of 0% to 25%. The mean annual precipitation found throughout the spatial extent of this soil type is 15 inches and the mean annual air temperature is 42°F. Soils are cropped to small grains in a crop-summer fallow rotation. Native vegetation is middle and short prairie grasses such as green needlegrass, needle and thread, western wheatgrass, blue grama, and a variety of forbs (NRCS 2014).

3.5.6 Belfield

The Belfield series consists of deep and very deep, well- to moderately well-drained, very slowly permeable soils found on upland flats, terraces, and swales with slopes ranging from approximately 0% to 9%. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 15 inches and mean annual air temperature is approximately 43°F. This soil type is largely used for rangeland foraging. Native vegetation species common to this soil type include western wheatgrass, blue grama, and green needlegrass (NRCS 2014).

3.5.7 Savage

The Savage series consists of very deep, well-drained soils that formed in silty alluvium, loess, or in glaciofluvial or glaciolacustrine material. These soils are on alluvial fans, stream terraces, drainageways, and sedimentary plains and till plains. Slopes are 0% to 25%. The mean annual precipitation found throughout the spatial extent of this soil type is about 16 inches, and the mean annual air temperature is about 42°F. Savage soils are used mainly for dryland crops; some areas are used for irrigated crops and as rangeland. Potential native vegetation is mainly bluebunch wheatgrass (Pseudoroegneria spicata), western wheatgrass, green needlegrass, and perennial forbs (NRCS 2014).

3.5.8 Daglum

The Daglum series consists of deep and very deep, moderately well- and well-drained, slow to very slowly permeable soils found on swales on upland terraces and foot slopes. Slopes range from approximately 0% to 9%. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 16 inches and mean annual air temperature is approximately 42°F. This soil type is used for rangeland foraging and cultivation of small grains. Native vegetation species common to this soil type include western wheatgrass, blue grama, and green needlegrass (NRCS 2014).

3.6 ENDANGERED, THREATENED, AND CANDIDATE SPECIES

Several wildlife species that may exist in McKenzie County are listed as threatened or endangered under the Endangered Species Act (ESA) (16 United States Code 1531 et seq.). According to the USFWS, listed species in McKenzie County, North Dakota, include the gray wolf (*Canis lupus*), black-footed ferret (*Mustela nigripes*), whooping crane (*Grus americana*), piping plover (*Charadrius melodus*) and its designated critical habitat, interior least tern (*Sterna antillarum)*, pallid sturgeon (*Scaphirhynchus albus*), northern long-eared bat (*Myotis septentrionalis)*, Dakota skipper (*Hesperia dacotae*) and its designated critical habitat, and rufa red knot (*Calidris canutus rufa*). In addition, the Sprague's pipit (*Anthus spragueii*) is a candidate species. A life history and biological review of the inhabitance of the species within the project area are described in detail within the following sections.

SWCA conducted a threatened and endangered species survey concurrently with the wetland delineations. Biologists did not observe any primary (i.e., actual sighting) or secondary (i.e., tracks, scat, feathers, fur) indicators of the presence of threatened or endangered species. However, a lack of observations does not mean that some or all of the threatened or endangered species known to occur in McKenzie County may not use areas in the vicinity that possess habitat components necessary to support those species.

If there is a federal nexus to the project, that is if there is any federal funding, or if any federal permits or licenses are required, a more formal effects analysis for federally listed species would be required.

3.6.1 Black-footed Ferret

Federal Status: Endangered

Black-footed ferrets are nocturnal, solitary carnivores of the weasel family that have been largely extirpated from the wild primarily due to range-wide decimation of the prairie dog (*Cynomys* sp.) ecosystem (Kotliar et al. 1999). The species has been listed by the USFWS as endangered since 1967 and has been the object of extensive re-introduction programs (USFWS 2013b). Ferrets inhabit the extensive prairie dog complexes of the Great Plains, which are typically composed of several smaller colonies in proximity to one another, providing a sustainable prey base. The *Black-footed Ferret Survey Guidelines for Compliance with the Endangered Species Act* (USFWS 1989) states that ferrets require black-tailed prairie dog (*Cynomys ludovicianus*) towns or complexes greater than 80 acres in size, and towns of this dimension may be important for ferret recovery efforts (USFWS 1988a). Prairie dog towns of this size were not observed during the field survey. Considering the likely extirpation of the species from this area of North Dakota, the black footed ferret is not expected to be within the project area.

3.6.2 Gray Wolf

Federal Status: Endangered

The gray wolf, listed as endangered in the United States in 1978, was believed extirpated from North Dakota in the 1920s and 1930s, with only sporadic reports from the 1930s to present (Licht and Huffman 1996; USFWS 1978). The presence of wolves in most of North Dakota consists of occasional dispersing animals from Minnesota and Manitoba (Licht and Fritts 1994; Licht and Huffman 1996). Most documented gray wolf sightings within western North Dakota are believed to be young males seeking to establish territory (Hagen et al. 2005). The Turtle Mountain region of north-central North Dakota provides marginal habitat that may be able to support a very small population of wolves. The closest known pack of wolves is the Minnesota population, located approximately 17 miles (28 kilometers [km]) from the northeast corner of North Dakota.

The gray wolf uses a variety of habitats that support a large prey base, including montane and low-elevation forests, grasslands, and desert scrub (USFWS 2013a). Due to a lack of forested habitat and distance from Minnesota and Manitoba populations, as well as the troubled relationship between humans and wolves and the vulnerability of the latter to being shot in open habitats (Licht and Huffman 1996), the re-establishment of gray wolf populations in North Dakota is unlikely. Additionally, habitat fragmentation may further act as a barrier against wolf recolonization in western North Dakota. Due to a lack of recent sightings and the habitat fragmentation within the area, the gray wolf is not expected to be within the project area.

3.6.3 Whooping Crane

Federal Status: Endangered

The whooping crane was listed as endangered in 1970 in the United States by the USFWS and in 1978 in Canada. Historically, population declines were caused by shooting of individuals and destruction of nesting habitat in the prairies from agricultural development. Current threats to the species include habitat destruction, especially suitable wetland habitats that support

breeding and nesting as well as feeding and roosting during their fall and spring migration (Canadian Wildlife Service and USFWS 2007).

The July 2010 total wild population was estimated at 383 (USFWS 2013c). Only one self-sustaining wild population, the Aransas-Wood Buffalo National Park population, exists and nests in Wood Buffalo National Park and adjacent areas in Canada, where approximately 83% of the wild nesting sites occur (Canadian Wildlife Service and USFWS 2007; USFWS 2013c). McKenzie County, including the project area, is within the primary migratory flyway of whooping cranes.

Whooping cranes probe the soil subsurface with their bills for foods on the soil or vegetation substrate (Canadian Wildlife Service and USFWS 2007). Whooping cranes are omnivores, and foods typically include agricultural grains, as well as insects, frogs, rodents, small birds, minnows, berries, and plant tubers. The majority of time spent during migration is spent feeding in harvested grain fields (Canadian Wildlife Service and USFWS 2007). Studies indicate that whooping cranes use a variety of habitats during migration, in addition to cultivated croplands, and generally roost in small palustrine (marshy) wetlands within 0.6 mile (1 km) of suitable feeding areas (Howe 1987, 1989). Whooping cranes have been recorded in riverine habitats during their migration, with eight sightings along the Missouri River in North Dakota (Canadian Wildlife Service and USFWS 2007:18). In these cases, they roost on submerged sandbars in wide, unobstructed channels that are isolated from human disturbance (Armbruster 1990).

Suitable whooping crane foraging habitat (i.e., cultivated cropland and wetlands >0.04 hectare) was observed within the survey area. In addition, the project area is located within the delineated 80% migration corridor for the whooping crane. The nearest verified sighting occurred approximately 20 miles northwest of the proposed alignment (unpublished data, M. Tacha, USFWS). The surface disturbance and changes to vegetation due to the project are unlikely to adversely affect whooping cranes. However, to minimize potential impacts to whooping cranes, it is recommended construction crews notify the USFWS if a whooping crane is sighted within 1 mile of the construction area.

3.6.4 Interior Least Tern

Federal Status: Endangered

The interior population of the least tern is listed as endangered by the USFWS (1985a). This bird is the smallest member of the gull and tern family, measuring approximately 9 inches long. Terns remain near flowing water, where they feed by hovering over and diving into standing or flowing water to catch small fish (USFWS 2013d).

The interior population of least terns breeds in isolated areas along the Missouri, Mississippi, Ohio, Red, and Rio Grande river systems, where they nest in small colonies. From late April to August, terns nest in a shallow hole scraped in an open sandy area, gravel patch, or exposed flat and bare sandbars along rivers, sand and gravel pits, or lake and reservoir shorelines. The adults continue to care for chicks after they hatch. Least terns in North Dakota often will be found sharing sandbars with the piping plover, a threatened species (USFWS 2013d).

Census data indicate that more than 8,000 least terns comprise the interior population. In North Dakota, the least tern is found mainly on the Missouri River from Garrison Dam south to Lake Oahe and on the Missouri and Yellowstone Rivers upstream of Lake Sakakawea (USFWS 1990a, 2013d). Approximately 100 pairs breed in North Dakota (USFWS 2013d). Details of their migration are unknown, but their winter range is reported to include the Gulf of Mexico and Caribbean Islands (USFWS 1990a, 2013d).

Loss of suitable breeding and nesting habitat for terns has resulted from dam construction and river channelization on major rivers throughout the Mississippi, Missouri, and Rio Grande river systems. River and reservoir changes have led to reduced sandbar formation and other shoreline habitats for breeding, resulting in population declines. In addition, other human shoreline disturbances affect the species (USFWS 1990a). Critical habitat has not been designated for the species (USFWS 2013d). Current conservation strategies include identification and avoidance of known nesting areas, public education, and limiting or preventing shoreline disturbances near nests and hatched chicks (USFWS 2013d).

Suitable shoreline habitat on Lake Sakakawea for breeding and nesting terns occurs 17.3 miles north of the project location. Terns may visit wetlands and waterbodies off the lake that contain forage fish. The wetlands within the survey area are not generally suitable for foraging least tern due to the distance to their nesting habitat on Lake Sakakawea. Adverse effects from construction, operation, and reclamation of the project area are not expected.

3.6.5 Pallid Sturgeon

Federal Status: Endangered

The pallid sturgeon was listed as endangered in 1990 in the United States by the USFWS (1990b). The primary factor leading to the decline of this species is the alteration of habitat through river channelization, creation of impoundments, and alteration of flow regimes (USFWS 1990b). These alterations within the Missouri River have blocked movements to spawning, feeding, and rearing areas; destroyed spawning habitat; altered flow conditions, which can delay spawning cues; and reduced food sources by lowering productivity (USFWS 2007a). The fundamental elements of pallid sturgeon habitat are defined as the bottom of swift waters of large, turbid, free-flowing rivers with braided channels; dynamic flow patterns; flooding of terrestrial habitats; and extensive microhabitat diversity (USFWS 1990b).

Pallid sturgeon populations occur in the Missouri River below Fort Peck Dam to the headwaters of Lake Sakakawea and the lower Yellowstone River up the confluence of the Tongue River, Montana (USFWS 2007a). This population consists of approximately 136 wild adult pallid sturgeon (USFWS 2007a). Hatchery-reared sturgeon have also been stocked since 1998. The pallid sturgeon has been found to use the 15.5 miles (25 km) of riverine habitat that would be inundated by Lake Sakakawea at full pool (Bramblett 1996 per USFWS 2007a). Larval pallid sturgeon have also been found to drift into Lake Sakakawea. While the majority of pallid sturgeon are found in the headwaters of Lake Sakakawea, the North Dakota Game and Fish Department has caught and released pallid sturgeon in nets set in 80 to 90 feet of water between the New Town and Van Hook areas. Based on this information, pallid sturgeon could be found throughout Lake Sakakawea (personal communication, email from Steve Krentz, Pallid Sturgeon Project Lead, USFWS, to SWCA, September 3, 2010).

Desktop analysis concluded that suitable pallid sturgeon habitat is not present in the project area. The survey area does not occur within the same HUC-12 watershed as Lake Sakakawea, and due to the approximate 17.3 mile distance from Lake Sakakawea, activities associated with the proposed project are not anticipated to adversely affect water quality and subsequently the pallid sturgeon.

3.6.6 Piping Plover

Federal Status: Threatened

The piping plover is a small shorebird that breeds only in three geographic regions of North America: the Atlantic Coast, the Northern Great Plains, and the Great Lakes. Piping plover populations were federally listed as threatened and endangered in 1985, with the Northern Great Plains and Atlantic Coast populations listed as threatened and the Great Lakes population listed as endangered (USFWS 1985b).

Plovers in the Great Plains make their nests on open, sparsely vegetated sand or gravel beaches adjacent to alkali wetlands, and on beaches, sand bars, and dredged material islands of major river systems (USFWS 2002, 2012b). The shorelines of lakes of the Missouri River constitute significant nesting areas for the bird. Piping plovers nest on the ground, making shallow scrapes in the sand, which they line with small pebbles or rocks (USFWS 1988b). Anthropogenic alterations of the landscape along rivers and lakes where piping plover nest have increased the number and type of predators, subsequently decreasing nest success and chick survival (USFWS 2002, 2012b). The birds fly south by mid to late August to areas along the Texas coast and Mexico (USFWS 2002). The Northern Great Plains population has continued to decline despite federal listing, with population estimates of 1,500 breeding pairs in 1985 reduced to fewer than 1,100 in 1990. Low survival of adult birds has been identified as a factor (Root et al. 1992). Current conservation strategies include identification and preservation of known nesting sites, public education, and limiting or preventing shoreline disturbances near nests and hatched chicks (USFWS 1988b, 2012b).

Suitable shoreline habitat for breeding and nesting plovers does not occur within the project area and Lake Sakakawea is approximately 17.3 miles from the proposed project area. The wetlands within the survey area are generally unsuitable for the piping plover. Activities associated with the construction, production, or reclamation of the proposed project area is not anticipated to adversely affect habitat for the piping plover.

3.6.7 Piping Plover Designated Critical Habitat

The USFWS has designated critical habitat for the Great Lakes and Northern Great Plains populations of piping plover (USFWS 2002). Designated critical habitat for the piping plover includes 183,422 acres and 1,207.5 river miles of habitat including the shoreline of Lake Sakakawea in Mountrail and McKenzie Counties, North Dakota (USFWS 2002).

The proposed project would not modify, alter, disturb, or affect the designated critical habitat for the piping plover.

3.6.8 Dakota Skipper

Federal Status: Threatened

The Dakota skipper is a small butterfly with a 1-inch wingspan. The male wing ranges from a tawny orange to brown and the female wing is darker brown with tawny orange spots and faint white spots (U.S. Fish and Wildlife Service [USFWS] 2011). The Dakota skipper was found to be warranted for protection under the Endangered Species Act, was precluded for higher-priority species in 1995, and was the subject of a proposed rule for listing as threatened under the Endangered Species Act. On October 24, 2014, the USFWS determined a threatened species status for the Dakota skipper, and the final rule became effective November 24, 2014 (79 Federal Register 63672). The primary causes for decline in Dakota skipper populations include the loss or fragmentation of high-quality native prairie habitat due to overgrazing, conversion to agriculture, invasion by non-native plants, urbanization, and disruption of natural prairie fire cycles.

Dakota skipper dispersal is limited due to a short adult life span of 3 weeks (Dana 1991) and one annual flight per year. The Dakota skipper may disperse an average 0.6 mile (1 kilometer) to an area that contains sufficient vegetative diversity and emigrants. Unless a site is within about 0.6 mile of a site that generates a sufficient number of emigrants, the species' extirpation from a site is likely permanent. Adult skippers were encountered in Units 11 and 12 during surveys in July 2014 (Royer et al. 2014).

Two habitat types have been described for Dakota skipper in North Dakota. 'Type A' habitat is low, wet-mesic prairie with little topographic relief occurring in near-shore glacial lake deposits (Royer and Marrone 1992). Three plant species dominate Type A habitat and include wood lily (*Lilium philadelphicum*), bluebell bellflower (*Campanula rotundifolia*), and mountain deathcamas (*Zigadenus elegans*) (McCabe 1981). 'Type B' habitat of the Dakota skipper occurs on rolling terrain over gravelly glacial moraine deposits and is dominated by big bluestem (*Andropogon gerardii*), little bluestem (*Schizachyrium scoparium*), and needlegrasses (Stipa spp.), and may include bluebell bellflower and wood lily (USFWS 2014). Additionally, Type B habitat supports extensive stands of purple coneflower (*Echinacea angustifolia*), upright prairie coneflower (*Ratibida columnifera*), and common gaillardia (*Gaillardia artistata*) (USFWS 2014).

A detailed vegetation survey specific to Dakota skipper habitat was conducted following the referenced protocol on July 16 and 17, 2015. The vegetation type in the project area was mixed-grass prairie, consisting of both native and non-native species. Dominant species observed within the project area included Kentucky bluegrass (*Poa pratensis*), crested wheatgrass (*Agropyron cristatum*), western wheatgrass (*Pascopyrum smithii*), prairie junegrass (*Koeleria macrantha*), prairie sagewort (*Artemisia frigida*), and buffalograss (*Bouteloua dactyloides*).

Other species documented included little bluestem (*Schizopyrum scoparium*), and needle and thread grass (*Nassella viridula*), green needlegrass (*Stipa comata*), upright prairie coneflower (*Ratibida columnifera*), stiff sunflower (*Helianthus pauciflorus*), broom snakeweed (*Gutierrezia sarothrae*), silverleaf scurfpea (*Pediomelum argophyllum*), smooth brome (*Bromus inermis*), velvety goldenrod (*Solidago mollis*), northern bedstraw (*Gallium boreale*), alfalfa (*Medico sativa*), purple prairie clover (*Dalea purpurea*), common yarrow (*Achillea*

millefolium), pricklypear (*Opuntia spp.*), tarragon (*Artemisia dracunculus*), purple coneflower (*Echinacea angustifolia*), wavy-leaf thistle (*Cirsium undulatum*), and American licorice (*Glycyrrhiza lepidota*).

Due to the lack of high-quality diverse native grasslands featuring the plant species necessary for the life requirements of larval and adult Dakota skippers, the project area does not contain suitable habitat for the Dakota skipper. The project area does not meet the vegetation requirement for either larvae habitat or adult foraging habitat.

3.6.9 Dakota Skipper Designated Critical Habitat

On October 1, 2015, the USFWS designated critical habitat for the Dakota skipper in 21 counties across its range and 5 counties in North Dakota (80 Federal Register 59247), and the final ruling will become effective on November 2, 2015 (USFWS 2015b). The nearest known Dakota skipper population, designated critical habitat Unit 12, is approximately 34.7 miles northeast of the project area.

Two units of designated critical habitat occur west of the Missouri River in McKenzie County, North Dakota. Designated Units 11 (McKenzie Pasture 12 East) and 12 (McKenzie Pasture 12 West) are located on the Little Missouri National Grassland, also in McKenzie County. Based on a 2014 survey, the Dakota skipper should be able to persist in Units 11 and 12 due to the presence of suitable habitat (Royer et al. 2014).

The proposed project would not modify, alter, disturb, or affect the designated critical habitat for the Dakota skipper.

3.6.10 Rufa Red Knot

Federal Status: Threatened

The rufa red knot is a medium-sized shorebird approximately 9 to 11 inches tall with breeding plumage consisting of red around the face and a prominent stripe above the eye, breast, and upper belly and non-breeding plumage of dusky gray and white (Bureau of Indian Affairs 2014). The USFWS published a proposal to list the rufa red knot as threatened under the ESA in the Federal Register in September 2013 (78 *Federal Register* 60023). On December 11, 2014, the USFWS determined a threatened species status for the rufa red knot, and the final rule became effective on January 12, 2015 (79 *Federal Register* 73705).

The primary reasons for decline of this species are reduced food supplies in Delaware Bay due to commercial harvest of horseshoe crabs and areas of range loss due to rising sea levels, shorelines projects, and development (USFWS 2013e). The rufa red knot breeds in the Canadian Arctic and migrates 19,000 miles to winter on the U.S. Gulf Coast and in South America. The species generally occurs along the ocean coasts during migration, but a small number have been reported across the interior United States.

Suitable habitat along Lake Sakakawea is approximately 17.3-miles from the nearest point of the project area. Activities associated with the construction or long-term use of the proposed project area are not anticipated to adversely affect suitable stopover habitat for the rufa red knot. The recorded wetlands for the proposed project likely would be considered unsuitable stopover

habitat as the rufa red knot prefers sandy, gravel, or cobble beaches; tidal mudflats; salt marshes; shallow coastal impoundments; and lagoons for its migration habitat. Additionally, the recorded wetlands likely do not support the typical food source preferred by the rufa red knot, which includes softer invertebrate prey: small fish, worms, invertebrates and insects (USWFS 2013d). There is a low likelihood of occurrence of the rufa red knot in the project area, and the likelihood of any adverse effects due to disturbance from construction activities is extremely low.

3.6.11 Sprague's Pipit

Federal Status: Candidate

Sprague's pipit is a small passerine, 10 to 15 centimeters long, endemic to the Northern Great Plains (USFWS 2011b). Sprague's pipit requires large tracts of unplowed native prairie habitat throughout its life cycle. Because native grasslands are disturbance-dependent, Sprague's pipit prefers grassland habitats that are regularly disturbed. The frequency of disturbance required for habitat maintenance depends on how quickly grasses grow to an intermediate height (4 to 12 inches) following a disturbance event.

In North Dakota, Sprague's pipit has been found in areas of moderate grazing. Sprague's pipits are sensitive to patch size and avoid edges between grasslands and other habitat features (USFWS 2011b). They may avoid non-grassland features including roads, trails, oil wells, croplands, woody vegetation, and wetlands. The Sprague's pipit is reported to stay up to 350 meters away from anthropogenic features such as roads, oil wells, and wind turbines (USFWS 2011b). The USFWS has estimated that each new oil well and associated road in North Dakota results in potential impacts to approximately 51 acres of pipit habitat due to avoidance and habitat fragmentation (USFWS 2011b). Because of increasing habitat fragmentation, especially by energy development, throughout the Sprague's pipit range and the loss of native prairie habitat, Sprague's pipit was listed as a Candidate Species under the ESA in 2010 (USFWS 2011b).

In North Dakota, Sprague's pipit breeds throughout the state except for the easternmost counties. During the breeding season the birds prefer large patches of well-drained, open native grassland with a minimum size of 358.3 acres (range = 170 to 776 acres). They have not been observed in areas smaller than 71.6 acres on their breeding grounds (USFWS 2011b).

Native prairie habitat with grasses of intermediate height does not occur within the project area. The proposed project is unlikely to directly affect habitat due to lack of adequate patch sizes required by the Sprague's pipit for breeding grounds in the immediate project area, but may indirectly contribute to reduced use of any nearby suitable grassland habitat patches within 350 meters of the proposed project.

3.6.12 Northern Long-eared Bat

Federal Status: Threatened

On May 4, 2015, the USFWS listed the northern-long eared bat as threatened under the ESA (USFWS 2015). USFWS also issued an interim rule pursuant to Section 4(d) of the Act in conjunction with the final rule to list the species as threatened, which also took effect on May 4, 2015. For areas of the country not affected by whitenose syndrome (i.e., areas outside the

150-mile white-nose syndrome buffer zone), including all of North Dakota, the interim 4(d) rule exempts incidental take from certain activities. This medium-sized bat ranges across the eastern and north-central United States and all of the Canadian provinces (USFWS 2013f). Throughout most of this species' range, populations are patchily distributed. They emerge at dusk to fly through the understory of forested hillsides and ridges, feeding on moths, flies, leafhoppers, caddisflies, and beetles.

Most records of northern long-eared bats are from winter hibernacula surveys, with more than 780 hibernacula identified within the United States. No known hibernacula are located in North Dakota, due either to a lack of suitable hibernacula present or to a lack of survey efforts (USFWS 2013g). This bat species occupies a wide range of rocky and forested habitats. Suitable winter habitat contains large caves and mines (USFWS 2013f). Summer day roosts include abandoned buildings, bridges, hollow trees, stumps, under loose bark, and rock fissures (Jones and Choate 1978).

Northern long-eared bats are not known to occur in the project area, although species-specific surveys have not been conducted. Suitable winter habitat or suitable summer day roosts for northern long-eared bats do not occur within the project area. The likelihood of any adverse effects due to disturbance from construction activities is extremely low.

3.7 MIGRATORY BIRDS, EAGLES AND OTHER WILDLIFE

3.7.1 Migratory Birds

Status: Not listed, protected under the Migratory Bird Treaty Act

Suitable habitat for migratory birds exists in the entire survey area. Specifically, grassland nesting birds have the potential to occur and nest in the survey area, especially during the migratory bird breeding season between February 1 and July 15. Suitable woodland nesting habitat is minimal, but also occurs in the survey area. One inactive nest was observed near the survey area which is a probable prairie falcon nest. If construction is conducted outside of the migratory bird nesting season (generally between February 1 and July 15), MTBA violations are not likely to occur.

3.7.2 Bald Eagle

Federal Status: Delisted under the ESA in 2007; protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act

The bald eagle (*Haliaeetus leucocephalus*) feeds on fish and carrion and typically roosts in large trees near a water source. Bald eagle nesting habitat is typically any mature stands of conifer or cottonwood trees in association with rivers, streams, reservoirs, lakes, or any significant body of water. Bald eagles are usually observed along the Missouri River (Gomes n.d.) and Yellowstone River, but are also found in other locations across the state. Bald eagles may occur within or near the survey area; however, no bald eagles, nests, or nesting habitat were observed during the field surveys.

3.7.3 Golden Eagle

Federal Status: Unlisted under the ESA; protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act

The golden eagle (*Aquila chrysaetos*) prefers habitat characterized by open prairie, plains, and forested areas. Usually, golden eagles can be found in proximity to badland cliffs which provide suitable nesting habitat. Golden eagles may occur within or near the survey area; however, no golden eagles, nests, or nesting habitat were observed during the field surveys.

3.7.4 Wildlife Observed

During the field survey, SWCA biologists observed various wildlife species that use wetlands and other habitat within the survey area (Table 5). Common wildlife species may be affected both directly via incidents with construction equipment or indirectly through the temporary fragmentation of habitat as a result of construction activities.

Table 5. Wildlife Observed during Field Surveys within the Survey Area

Common Name	Scientific Name	Observation Type
American badger	*Taxidea taxus*	Primary
American robin	*Turdus migratorius*	Primary
Gray partridge	*Perdix perdix*	Primary
Mallard	*Anas platyrhynchos*	Primary
Mule deer	*Odocoileus hemiones*	Primary
Pronghorn	*Antilocapra americana*	Primary
Red-winged blackbird	*Agelaius phoeniceus*	Primary
Ring-necked pheasant	*Phasianus colchicus*	Primary
Savannah sparrow	*Passerculus sandwichensis*	Primary
Sharp-tailed grouse	*Tympanuchus phasianellus*	Primary
Thirteen-lined ground squirrel	*Ictidomys tridecemlineatus*	Primary
Western meadowlark	*Sturnella neglecta*	Primary

4.0 CONCLUSIONS AND RECOMMENDATIONS

1. SWCA biologists recorded four wetlands, totaling approximately 1.38 acre, within the survey area.

2. SWCA recorded 12 streams within the survey area (eight ephemeral and four intermittent). The recorded streams exhibited OHWM characteristics.

3. No threatened or endangered species were observed during the field survey. However, a lack of observations does not mean that some or all of the threatened or endangered species known to occur in McKenzie County may not use areas in the vicinity that possess habitat components necessary to support those species.

4. The black-footed ferret, gray wolf, whooping crane, pallid sturgeon, interior least tern, piping plover, Northern long-eared bat, rufa red knot, Sprague's pipit or Dakota skipper are not expected to occur within the project area or be impacted by the proposed project.

5. Dakota skipper or Piping Plover Designated Critical habitat does not exist within the project area. The proposed project would not modify, alter, disturb, or affect the designated critical habitat for the Dakota skipper or piping plover.

6. Migratory birds and their habitats were observed throughout the entire project area. If construction is conducted outside of the migratory bird nesting season (generally between February 1 and July 15), MTBA violations are not likely to occur.

7. Foraging and migrating bald and golden eagles may pass through the project area. A 0.5-mile line-of-sight raptor nest survey was conducted along the length of the proposed project. One unidentified inactive nest was observed outside of the survey area. No active bald or golden eagle or raptor nests were observed within the survey area.

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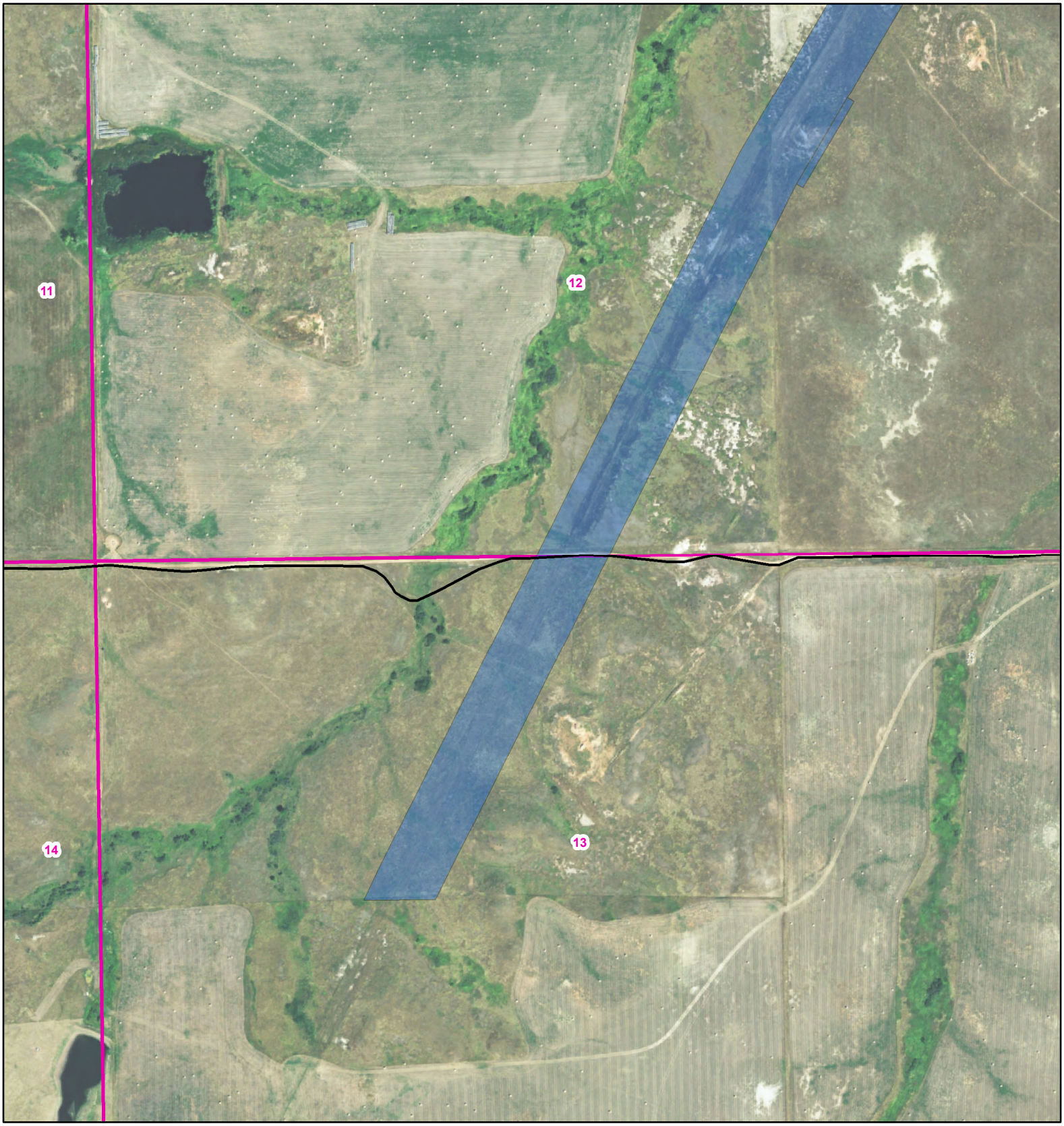
APPENDIX A
Vicinity and Site Layout Maps



Garden Creek Loop

- Upland Data Point
- Wetland Data Point
- Nest
- Upland Swale
- Existing Road
- Stream
- Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

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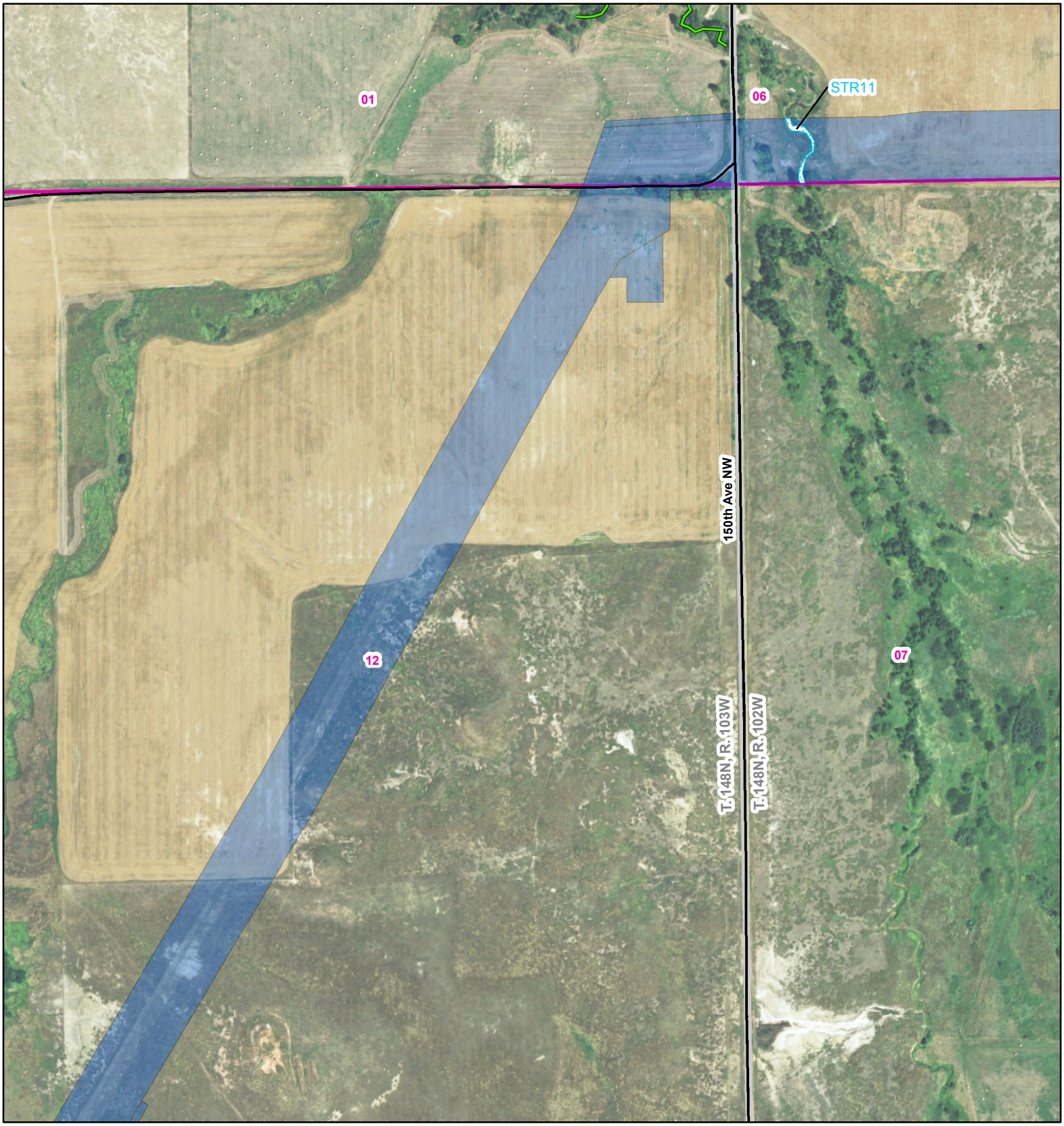
Feet
0 600 1,200

Meters
0 175 350

Base Map: 2014 NAIP Aerail Imagery
Source: USDA/FSA
Aerial Photography Field Office
Sather Lake (1995) and Moline School (1995)
T. 148N, R. 103W

McKenzie County, North Dakota
Projection: NAD 1983 UTM Zone 13N

N



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Moline School (1995)
T. 148N, R. 103W and T. 148N, R. 102W

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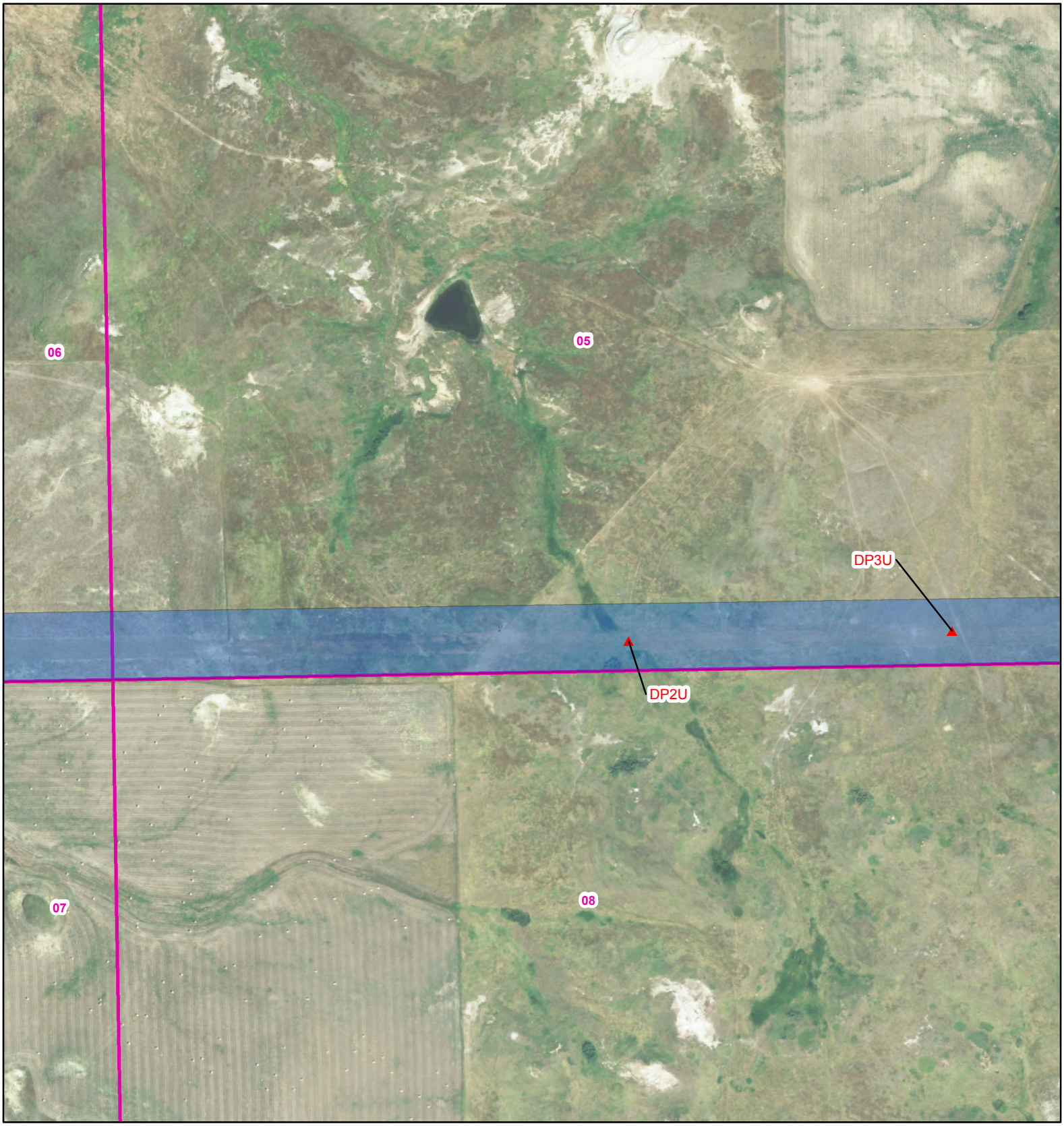

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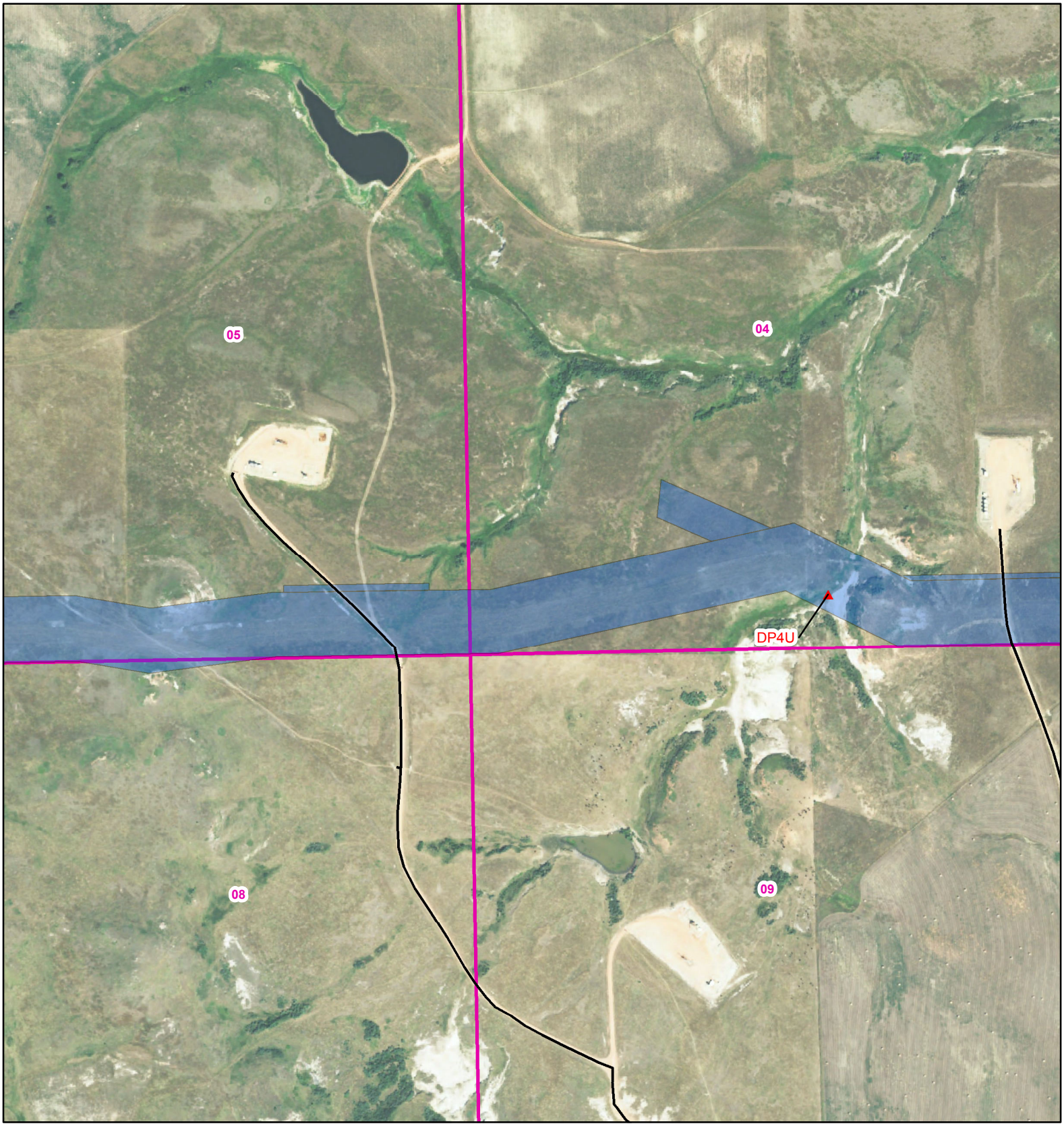

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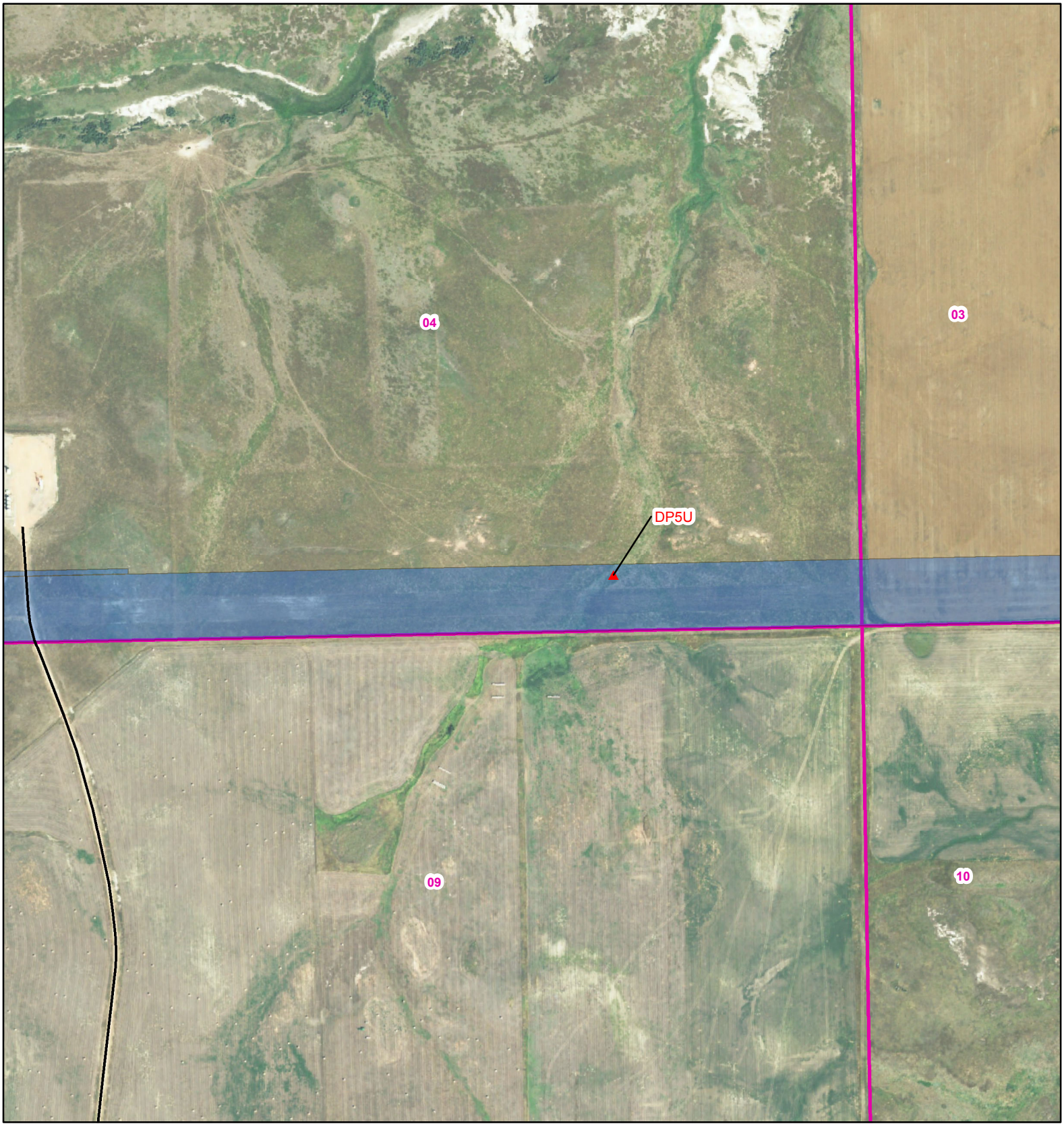

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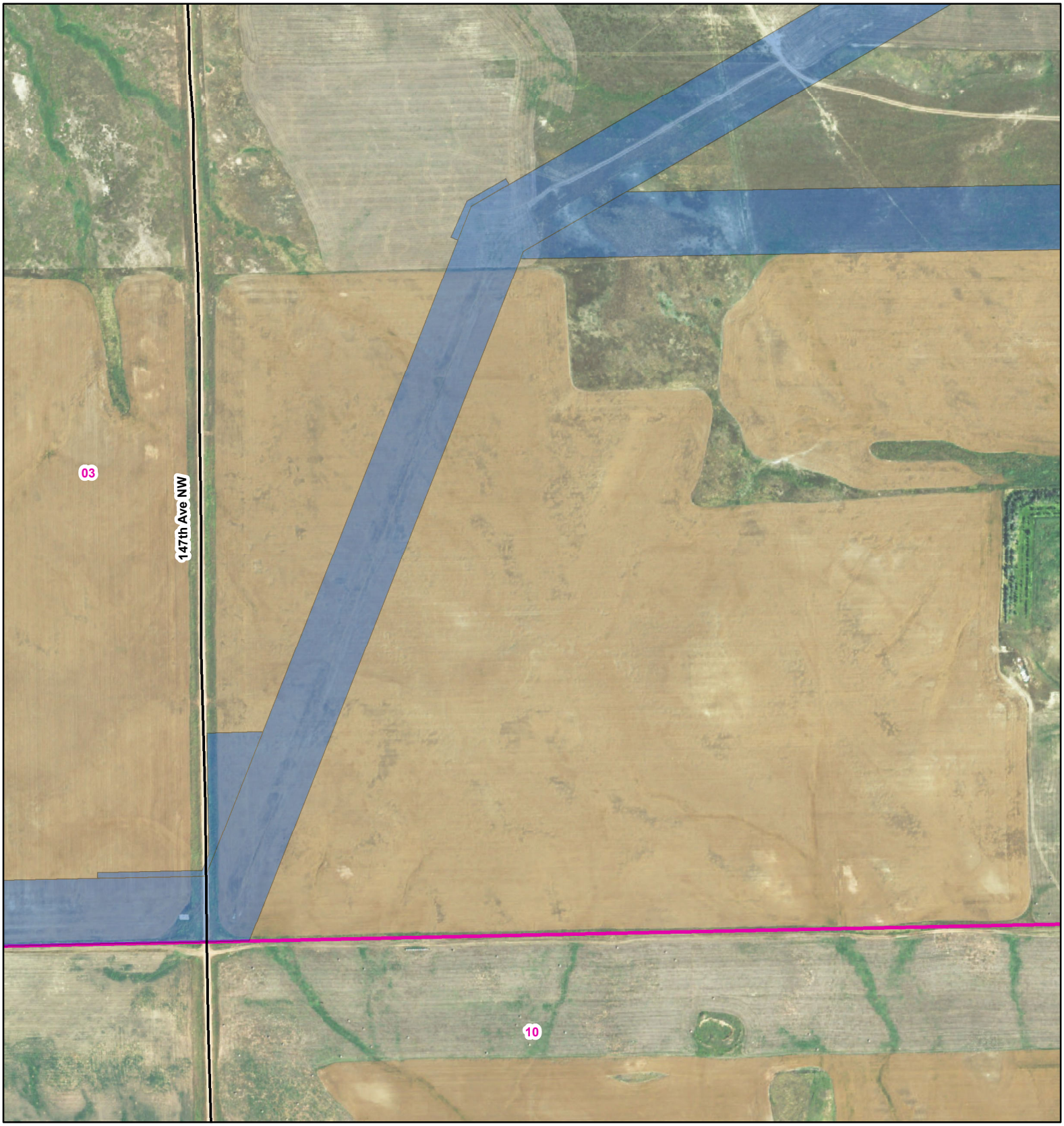

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Feet
0 600 1,200

Meters
0 175 350

Base Map: 2014 NAIP Aerail Imagery
Source: USDA/FSA
Aerial Photography Field Office
Moline School (1995)
T. 148N, R. 102W

McKenzie County, North Dakota
Projection: NAD 1983 UTM Zone 13N

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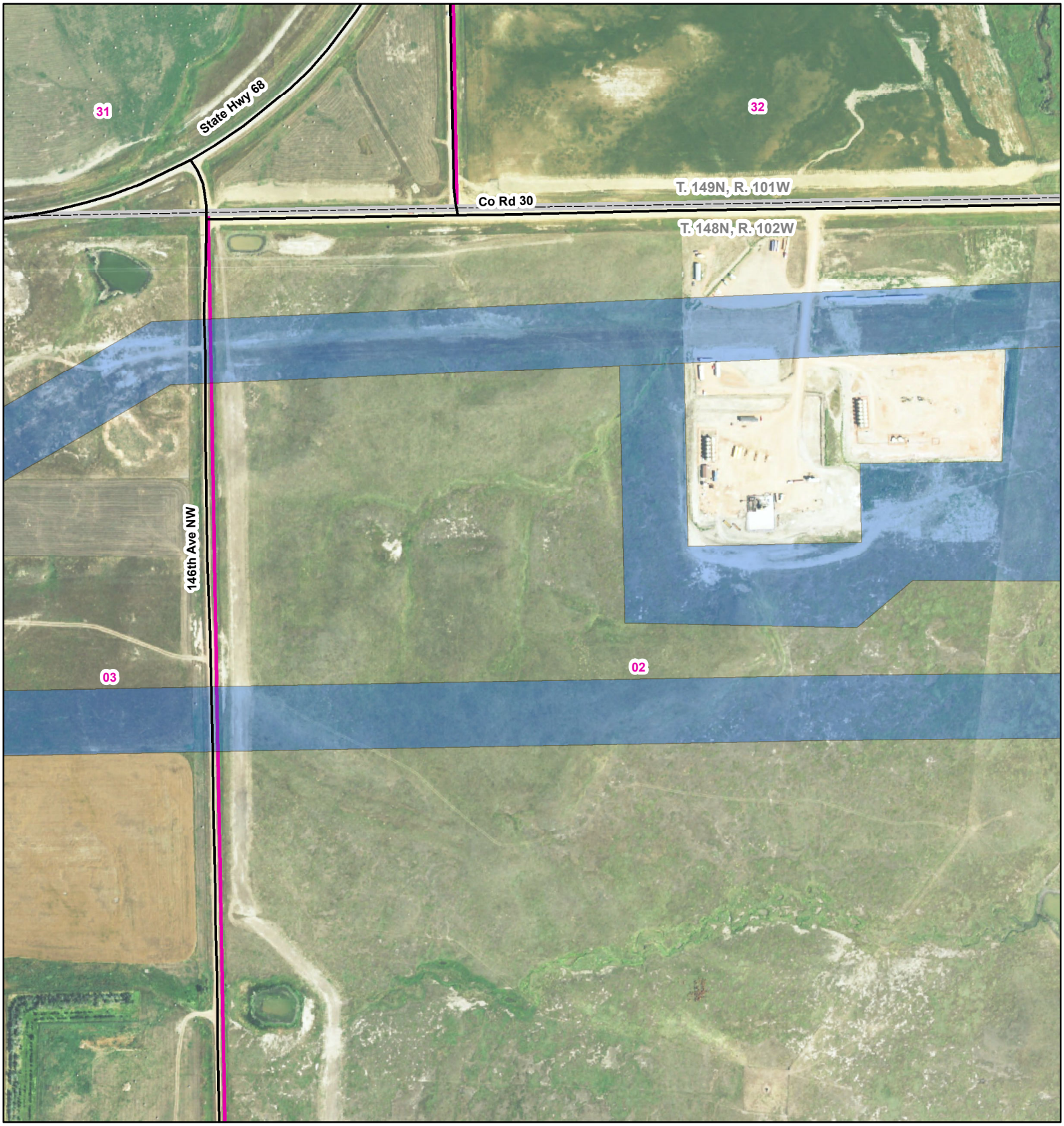

Garden Creek Loop

- Upland Data Point
- Wetland Data Point
- Nest
- Upland Swale
- Existing Road
- Stream
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- Survey Area
- Township/Range Boundary
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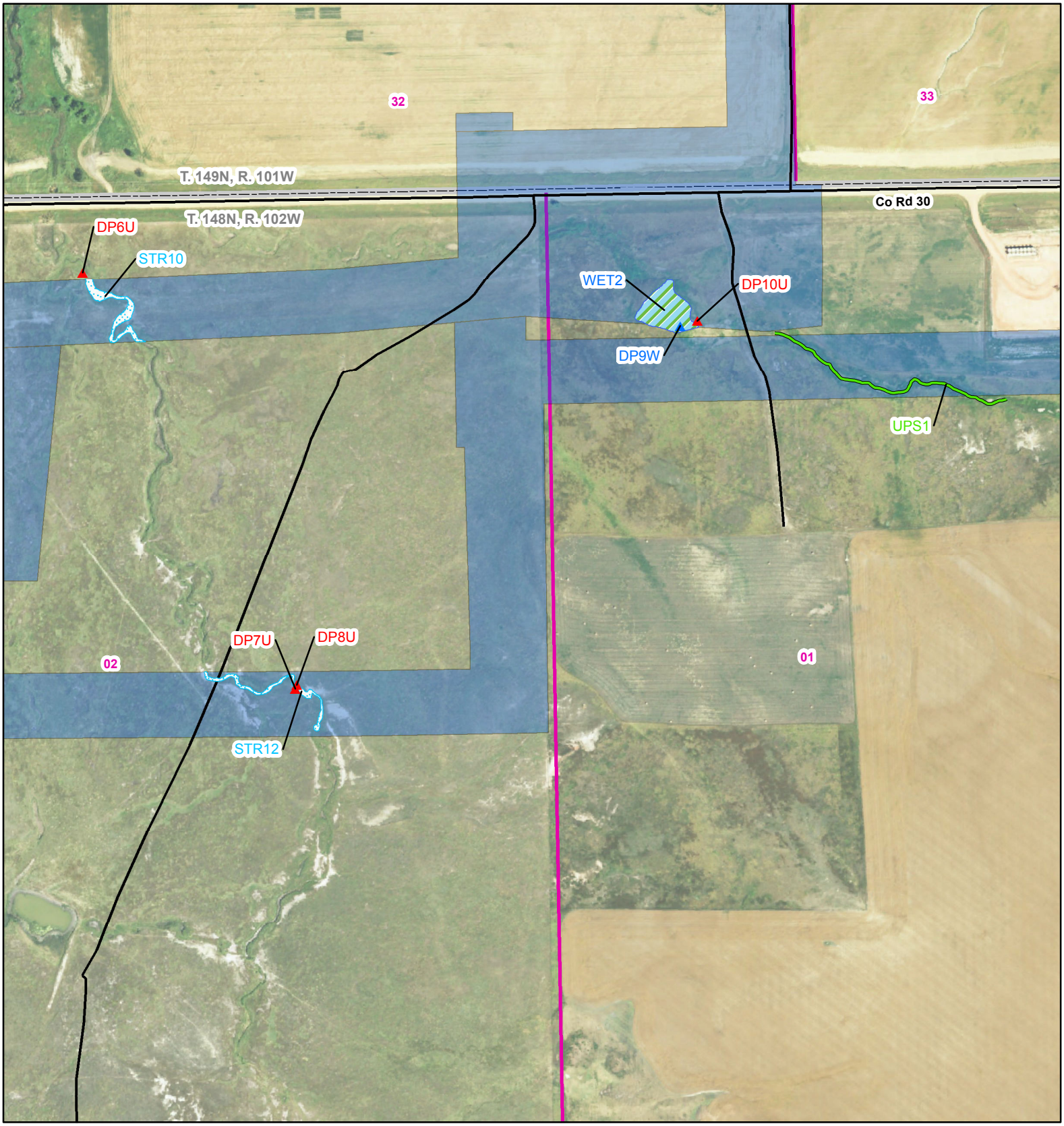

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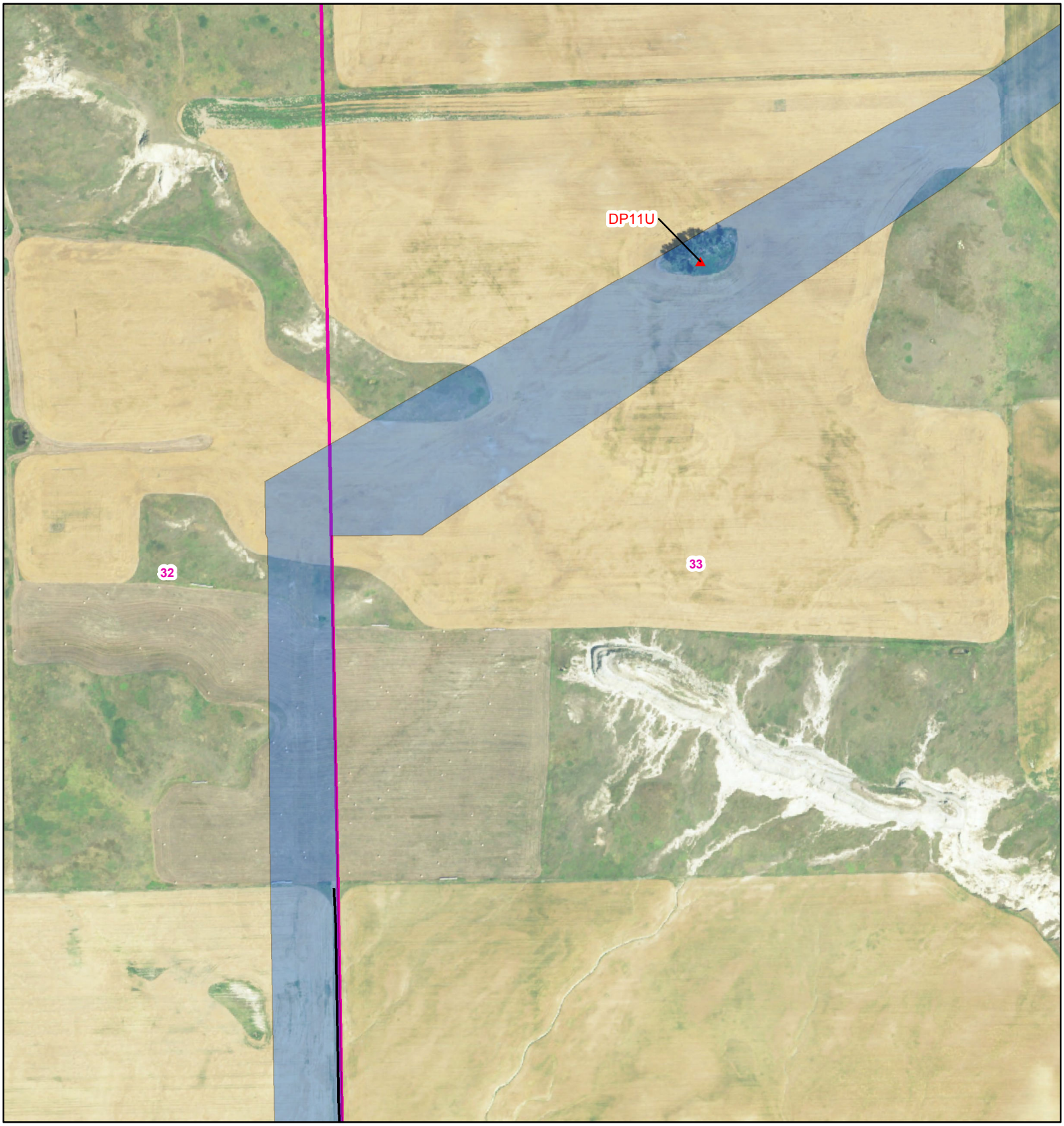

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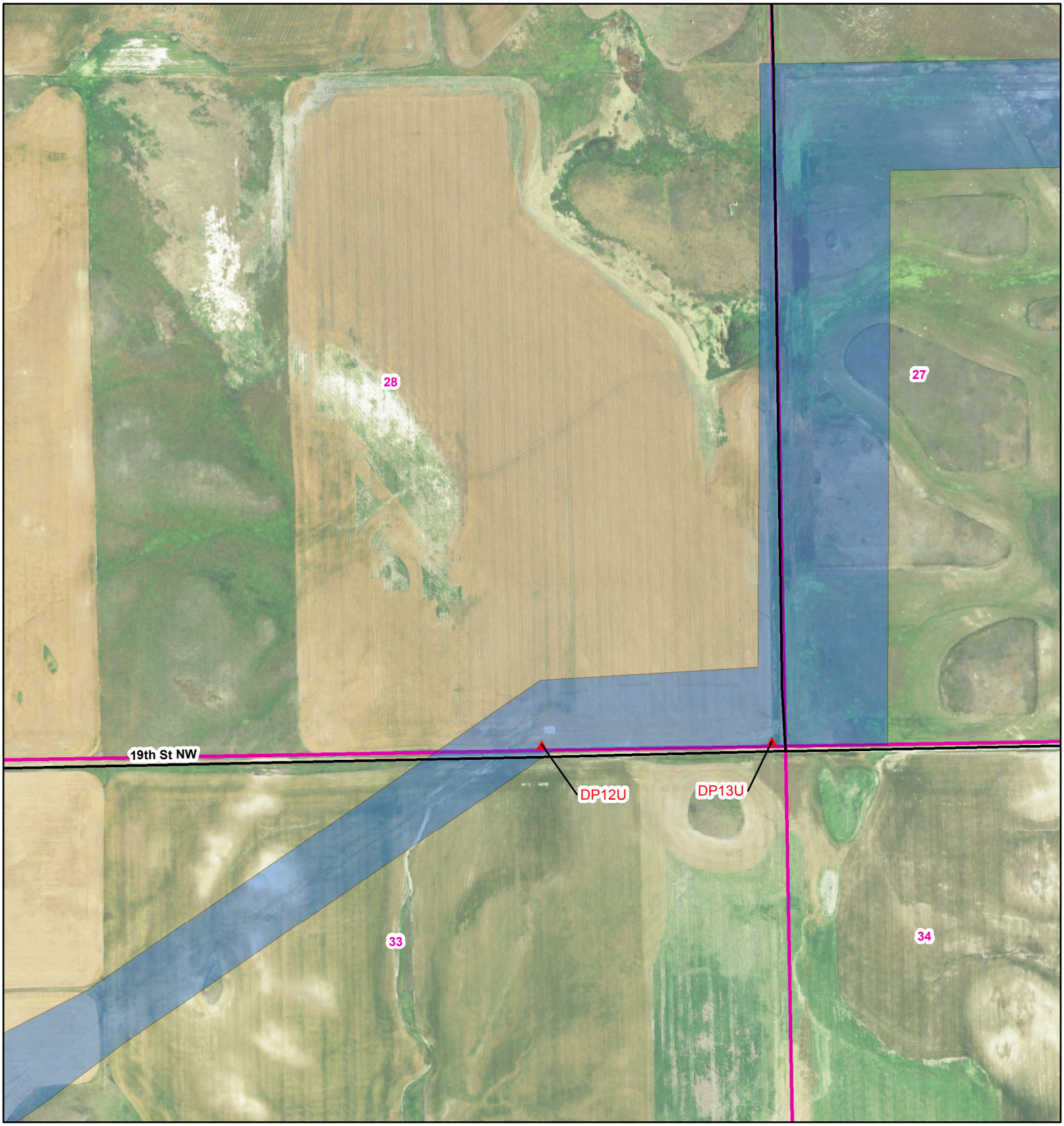

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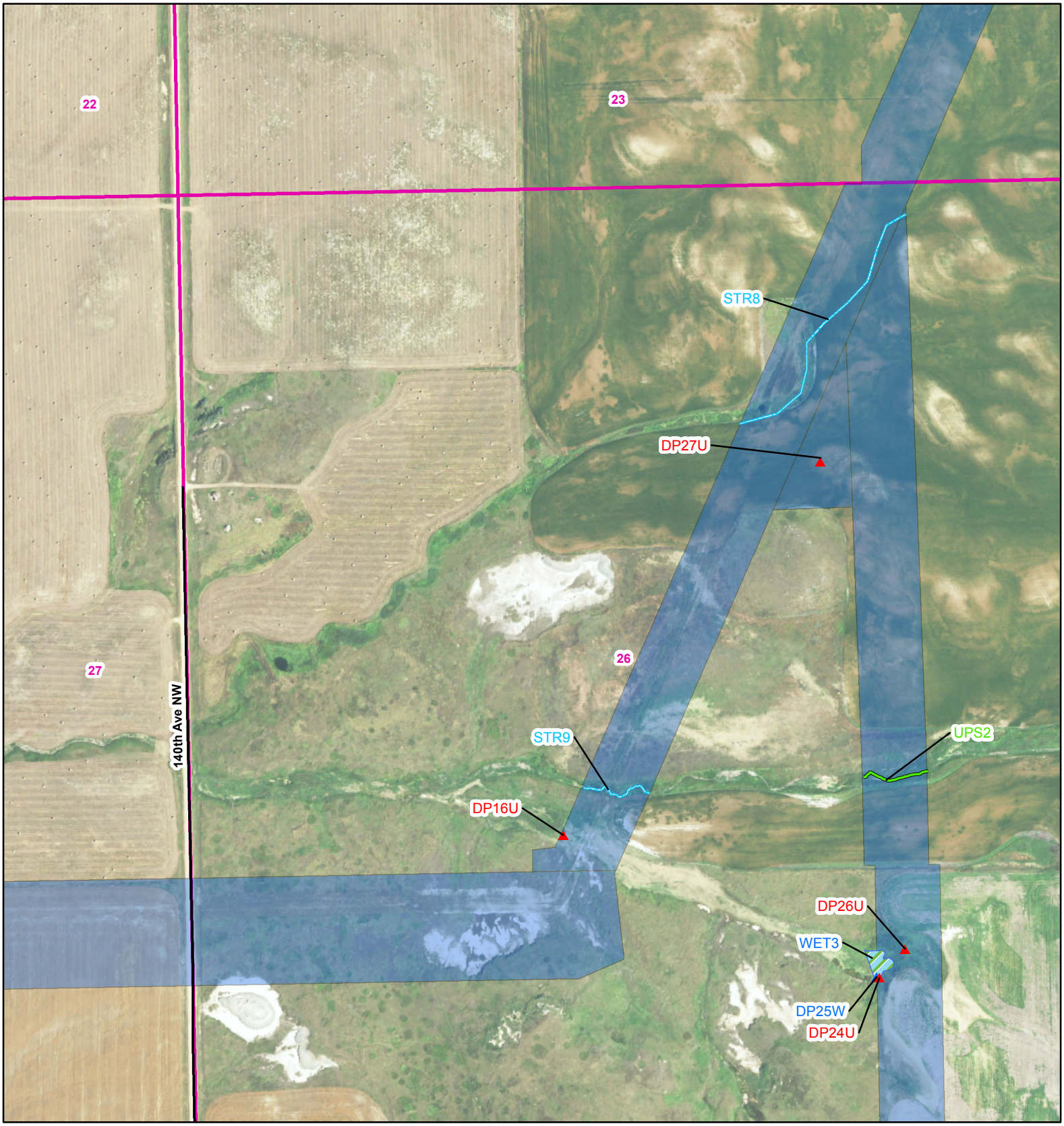

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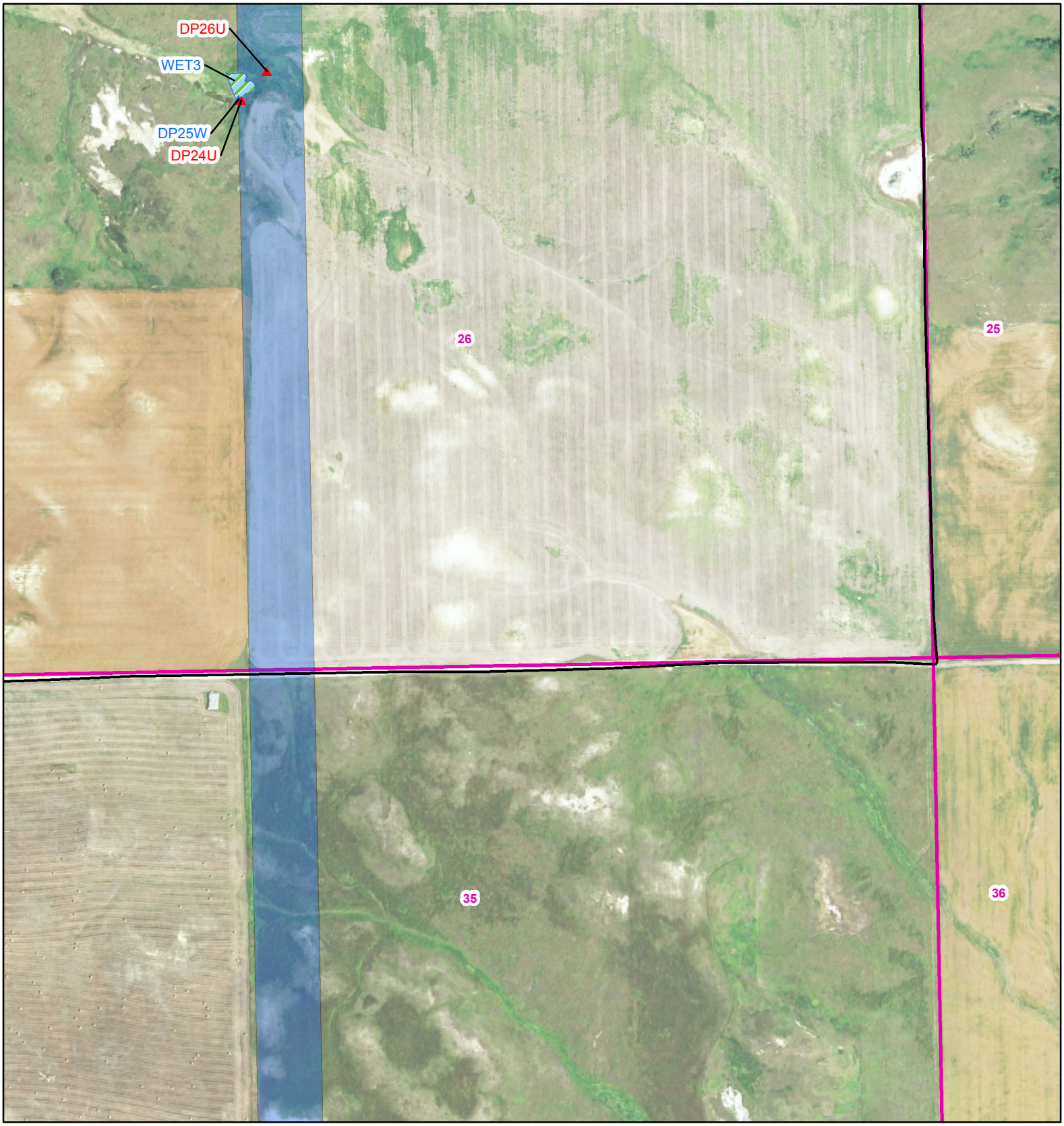

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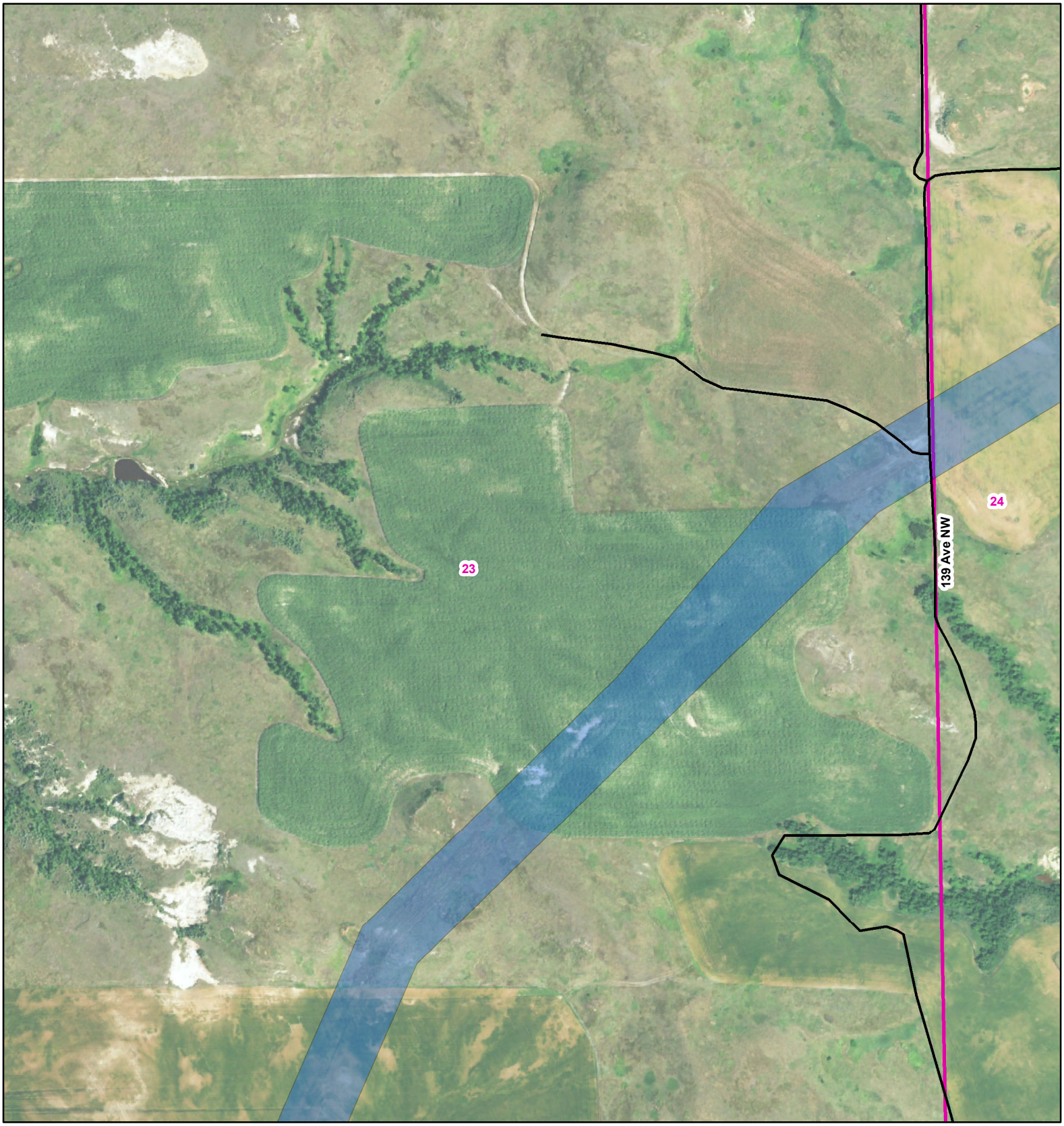

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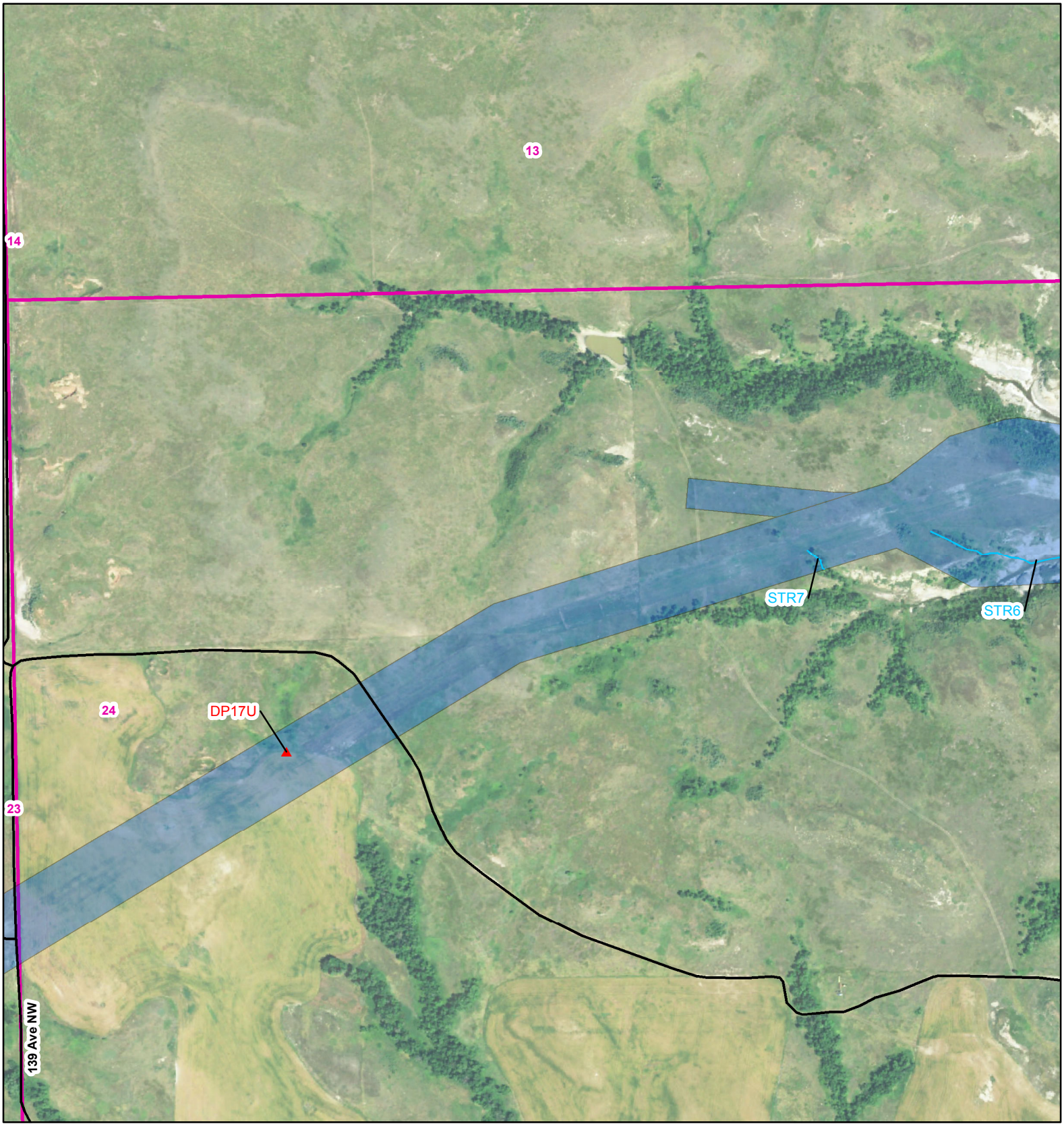

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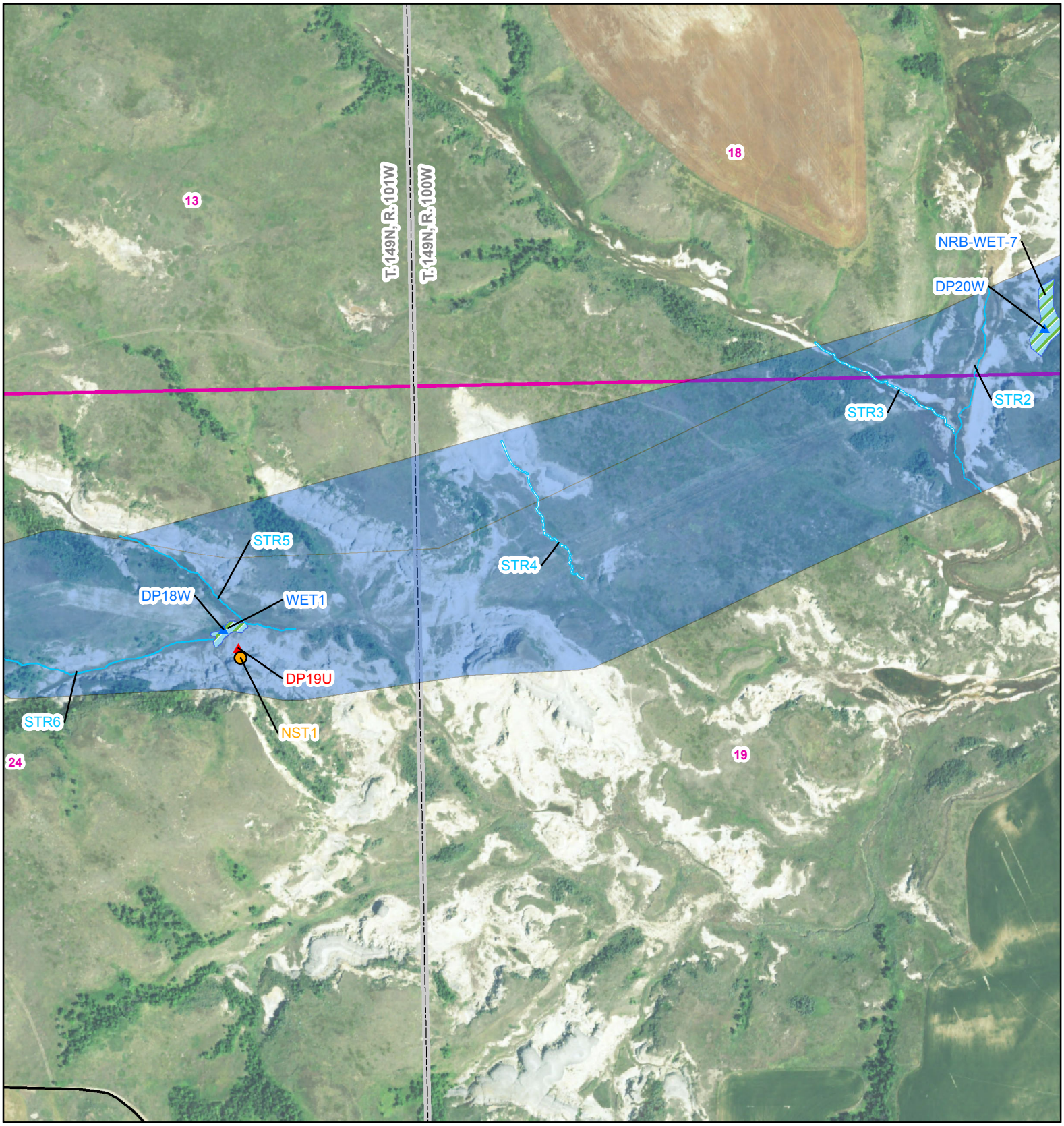

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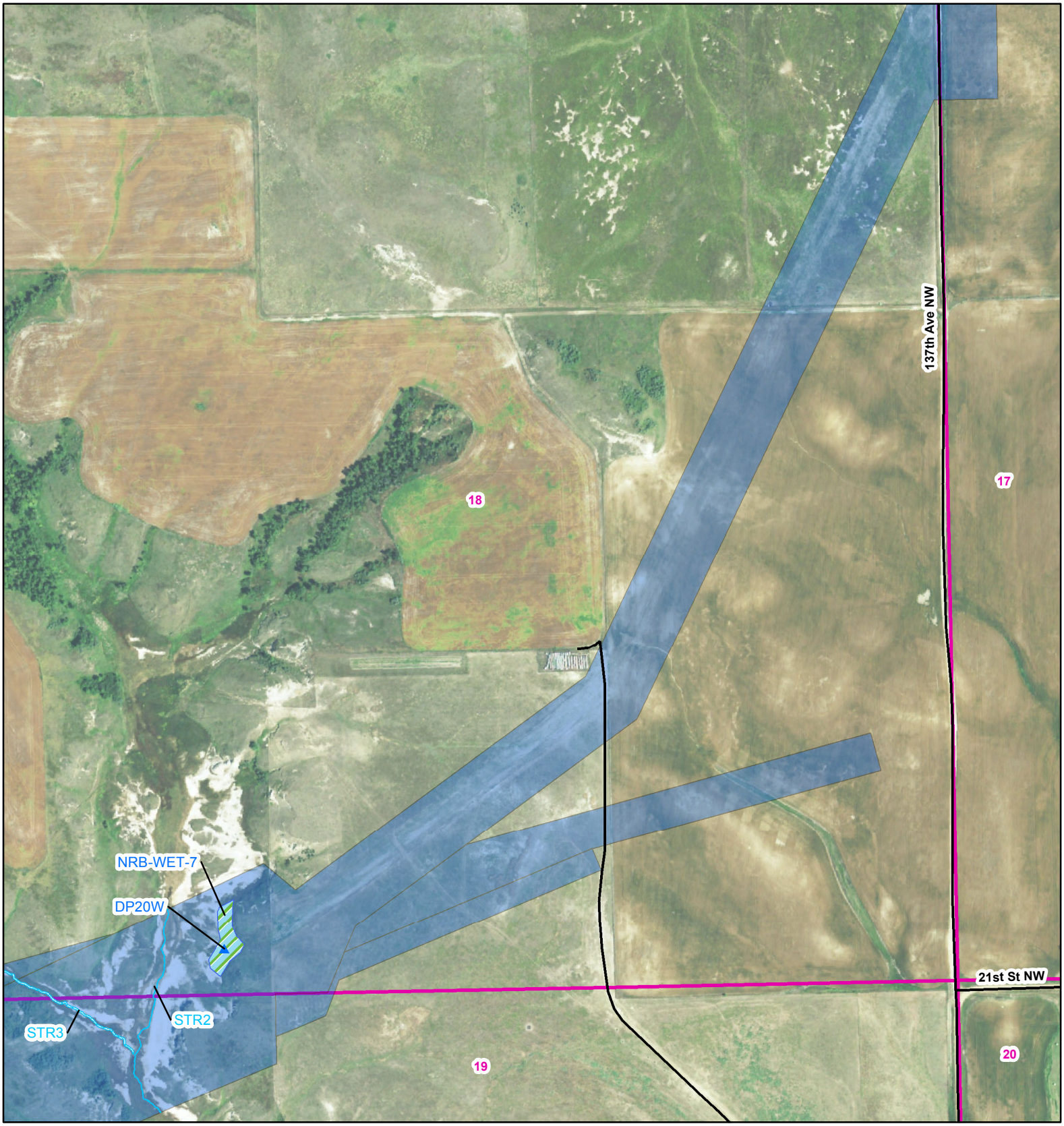

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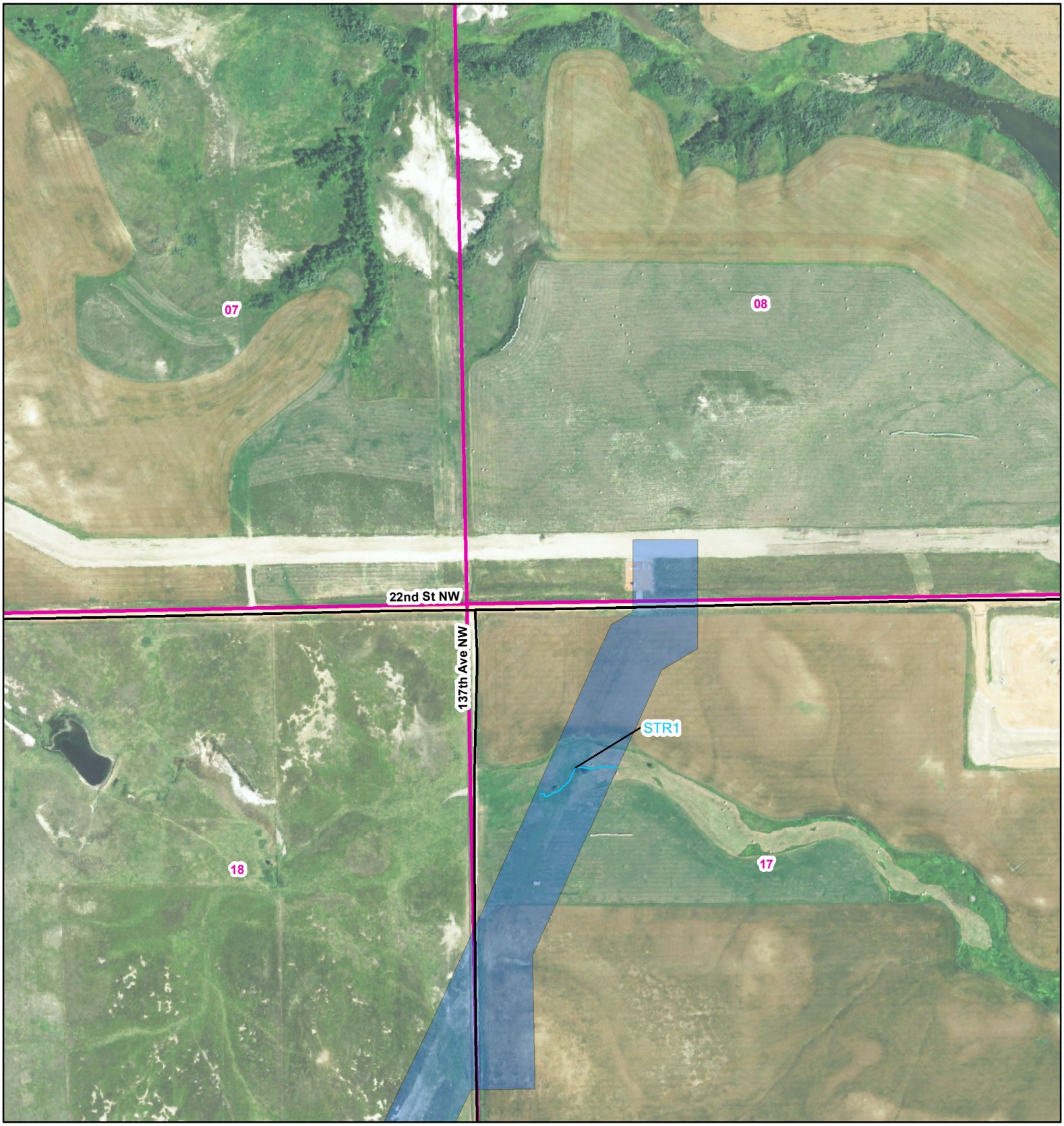

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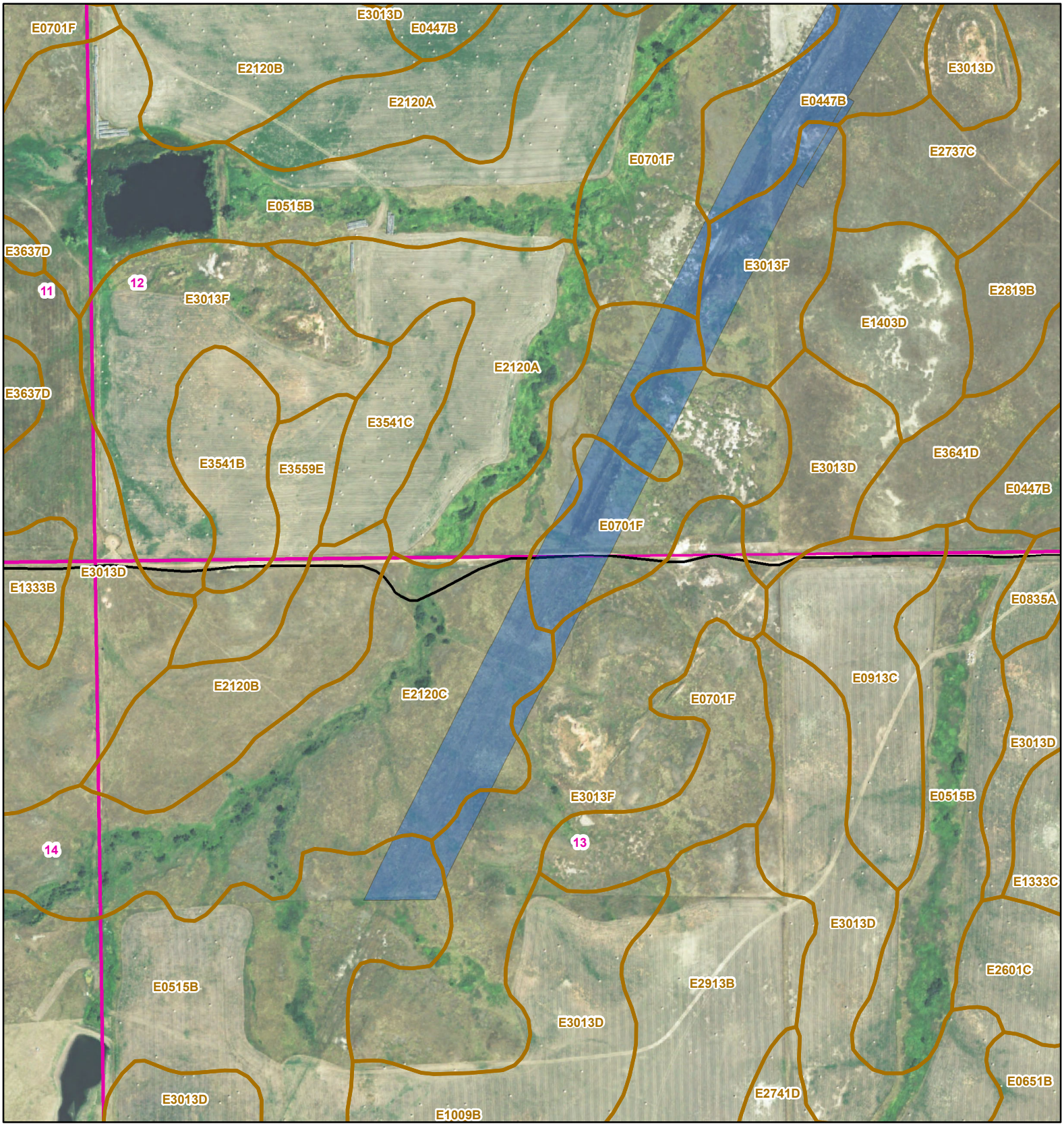

Garden Creek Loop

- Existing Road
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Sather Lake (1995) and Moline School (1995)
T. 148N, R. 103W

McKenzie County, North Dakota

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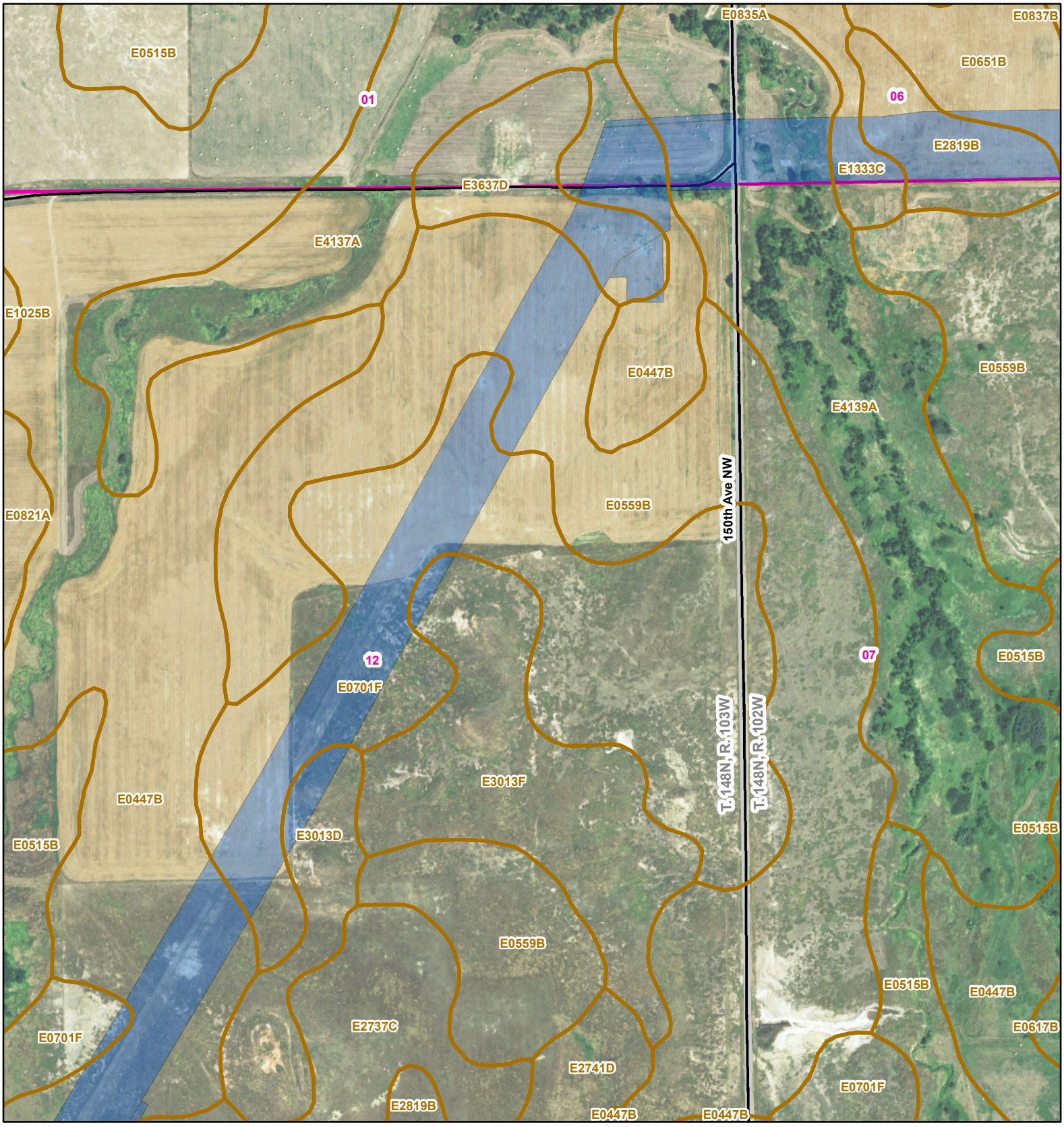

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Moline School (1995)
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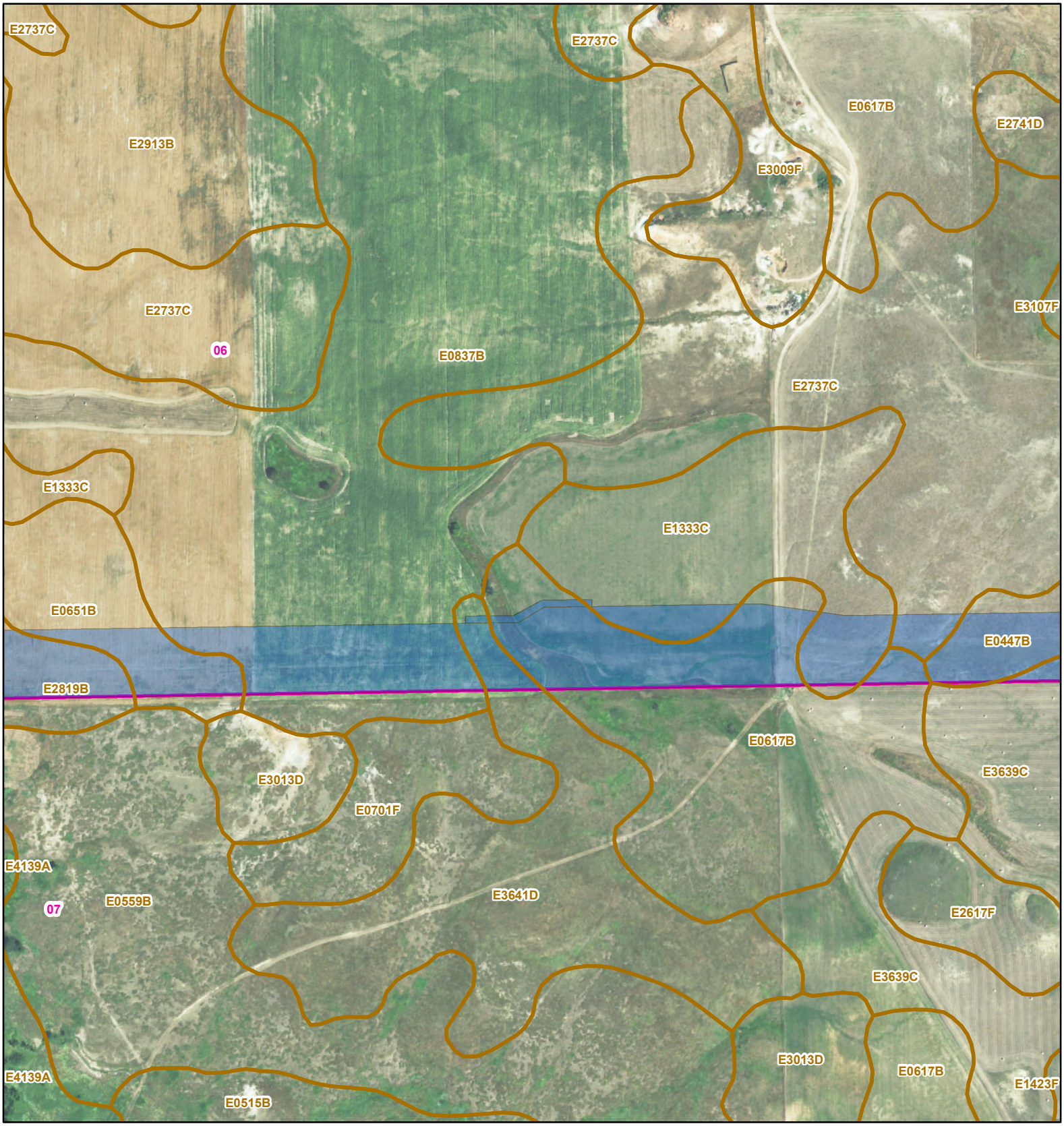

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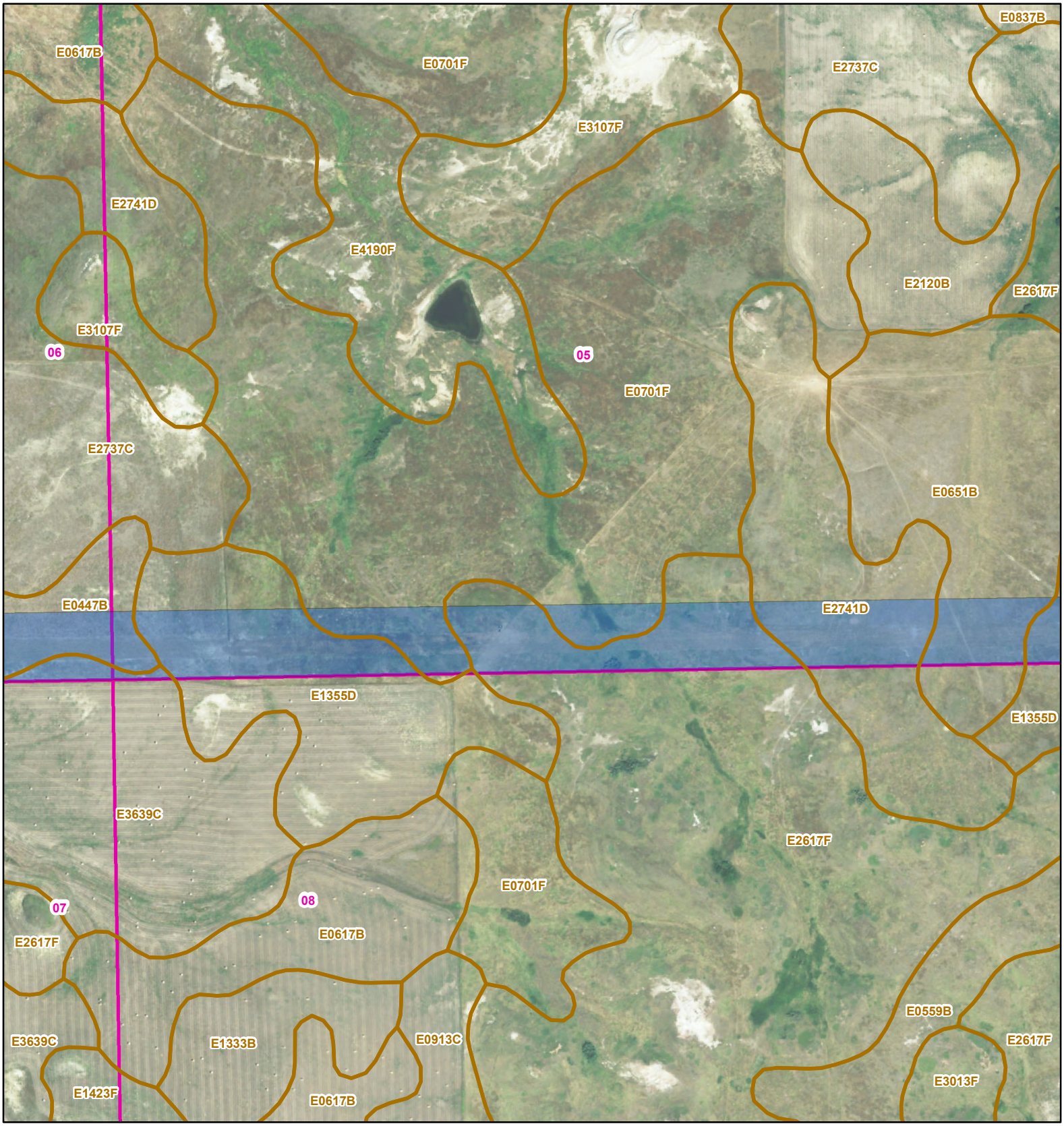

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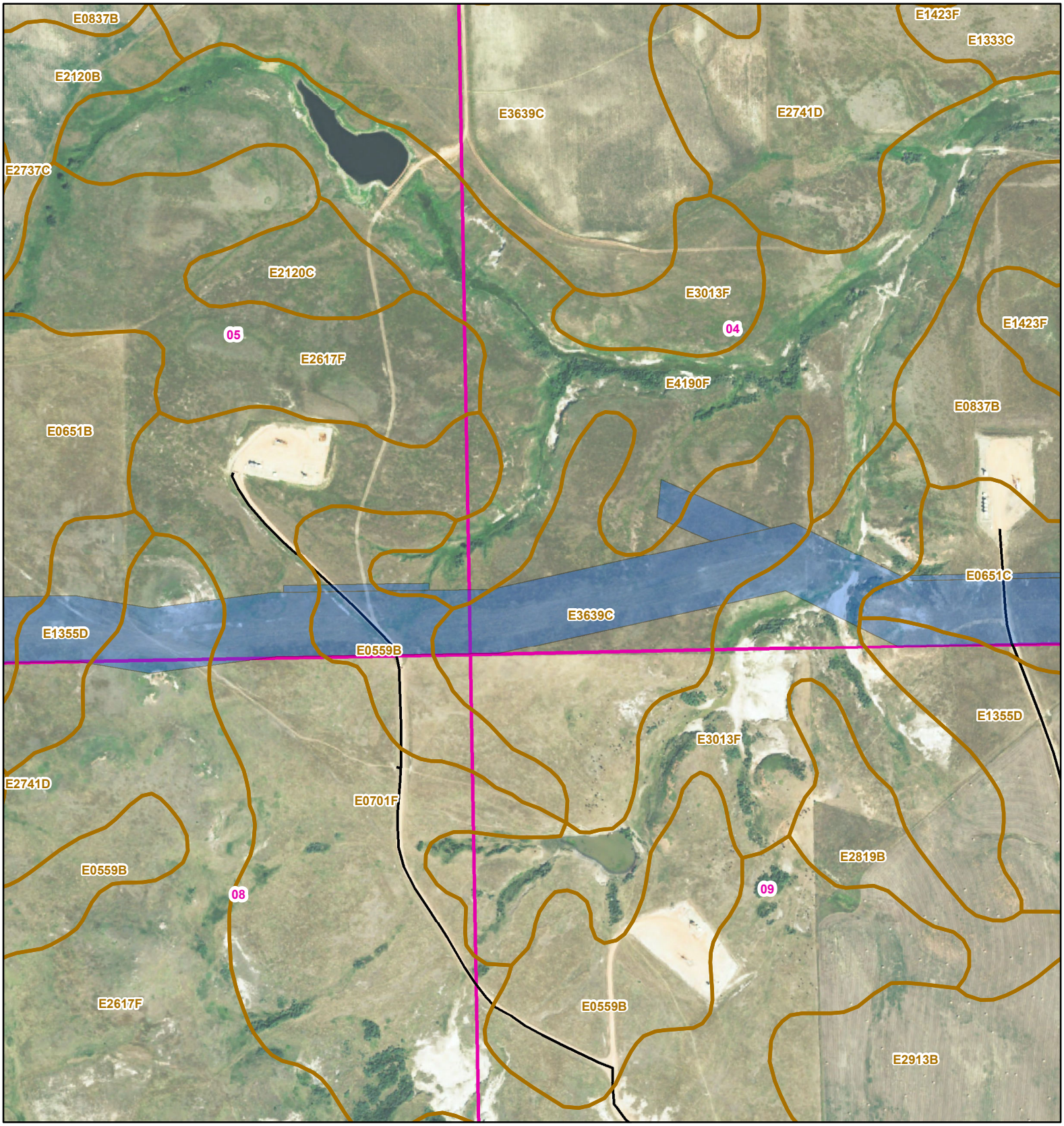

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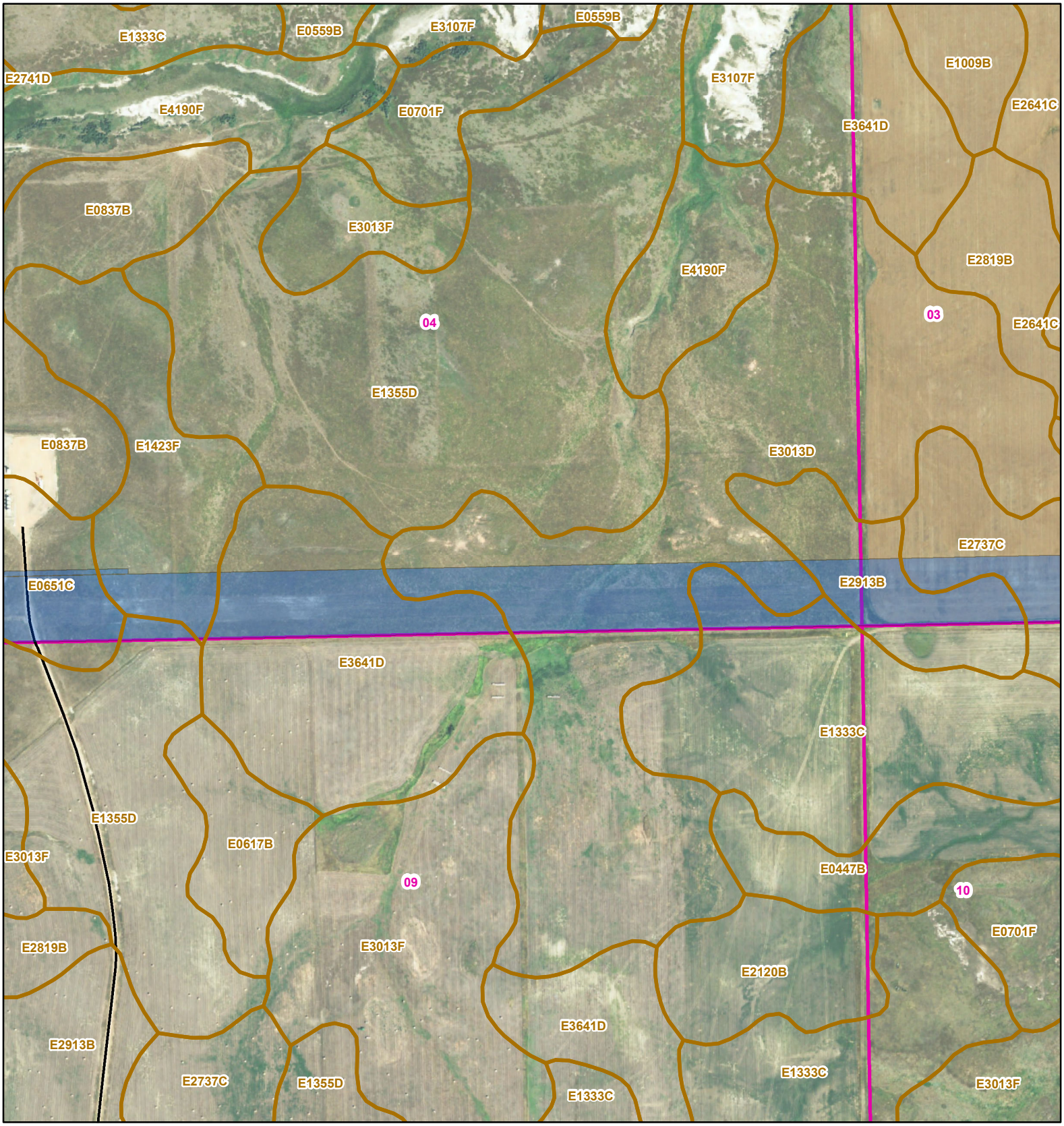

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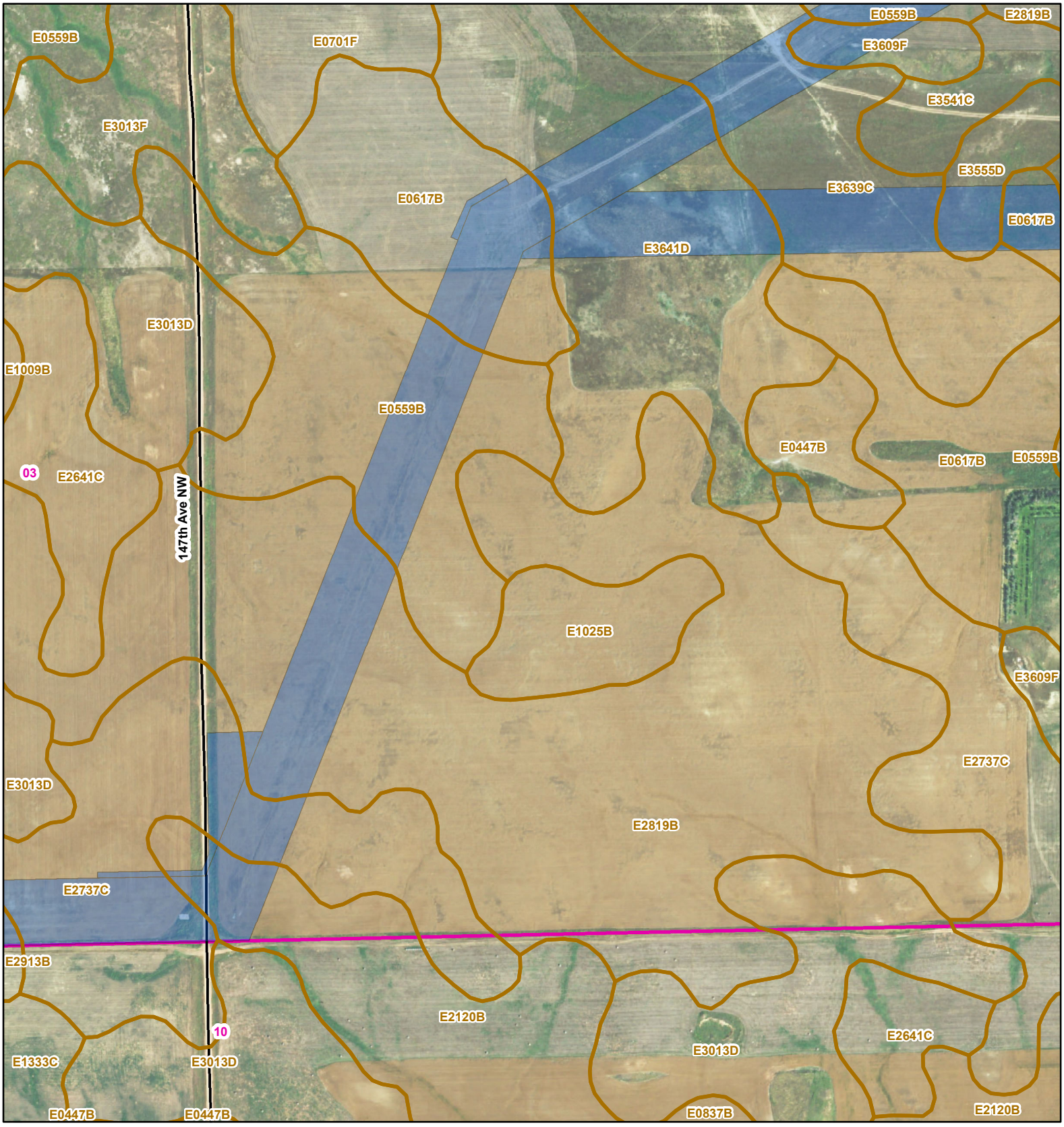

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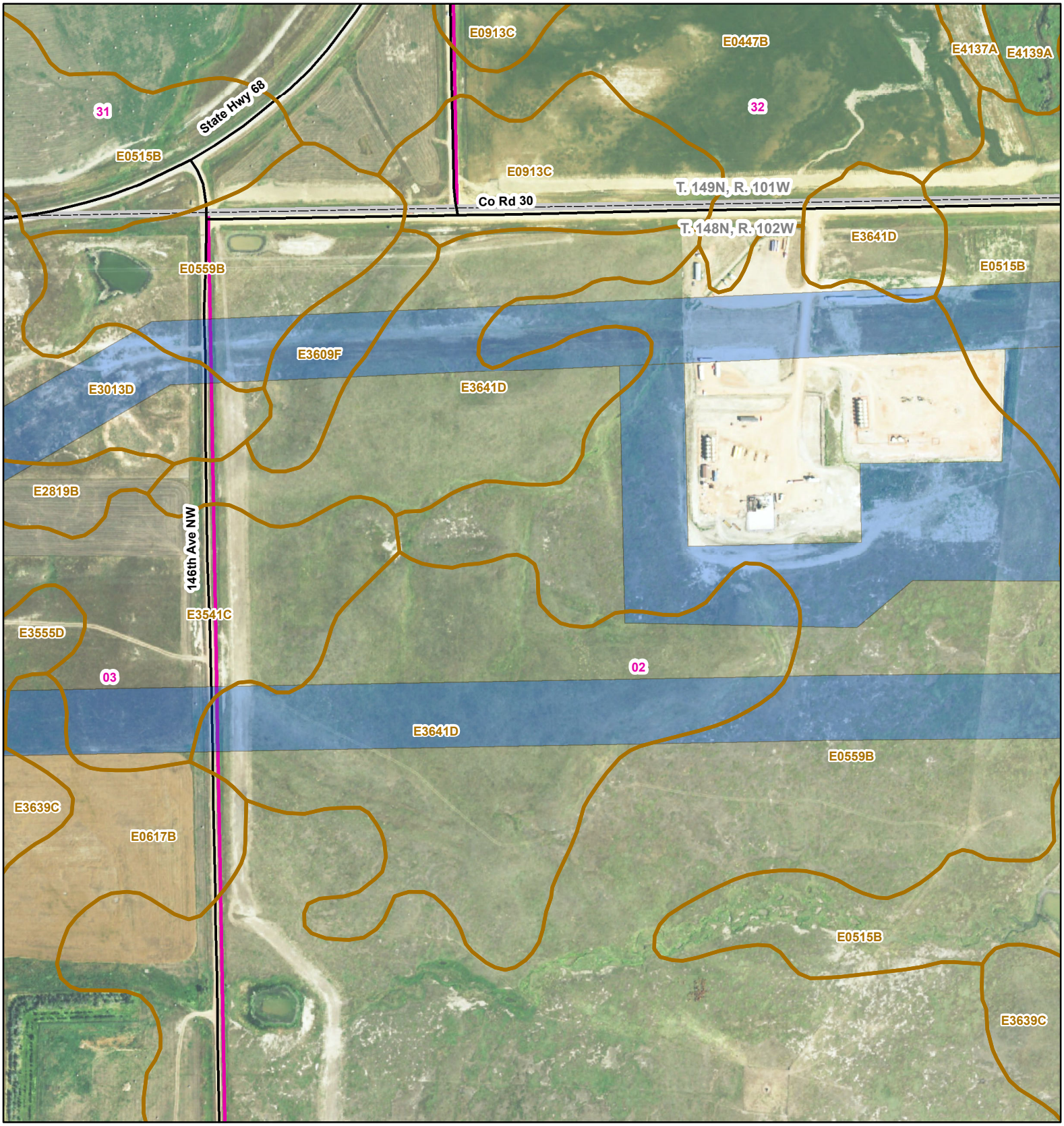

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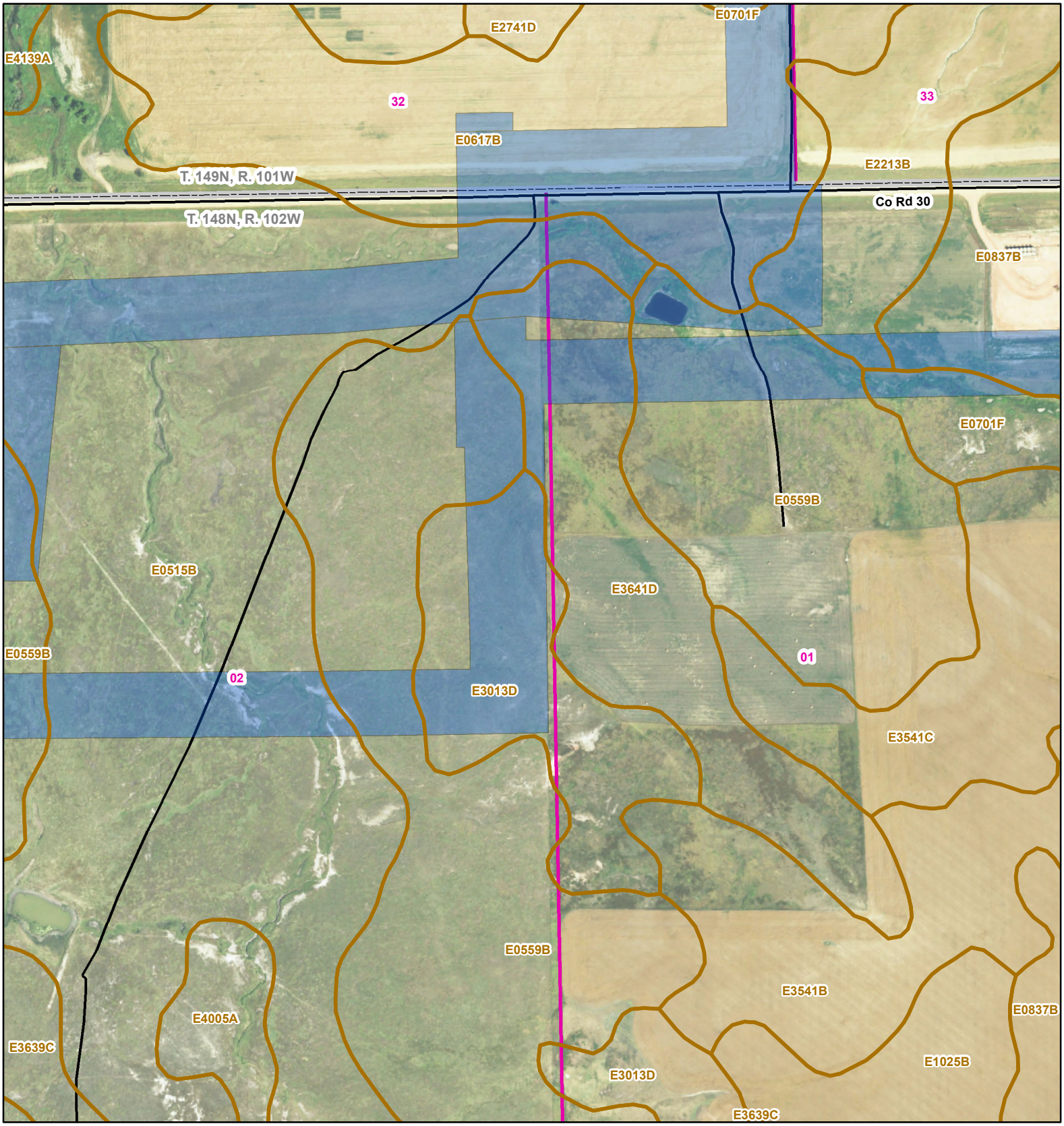

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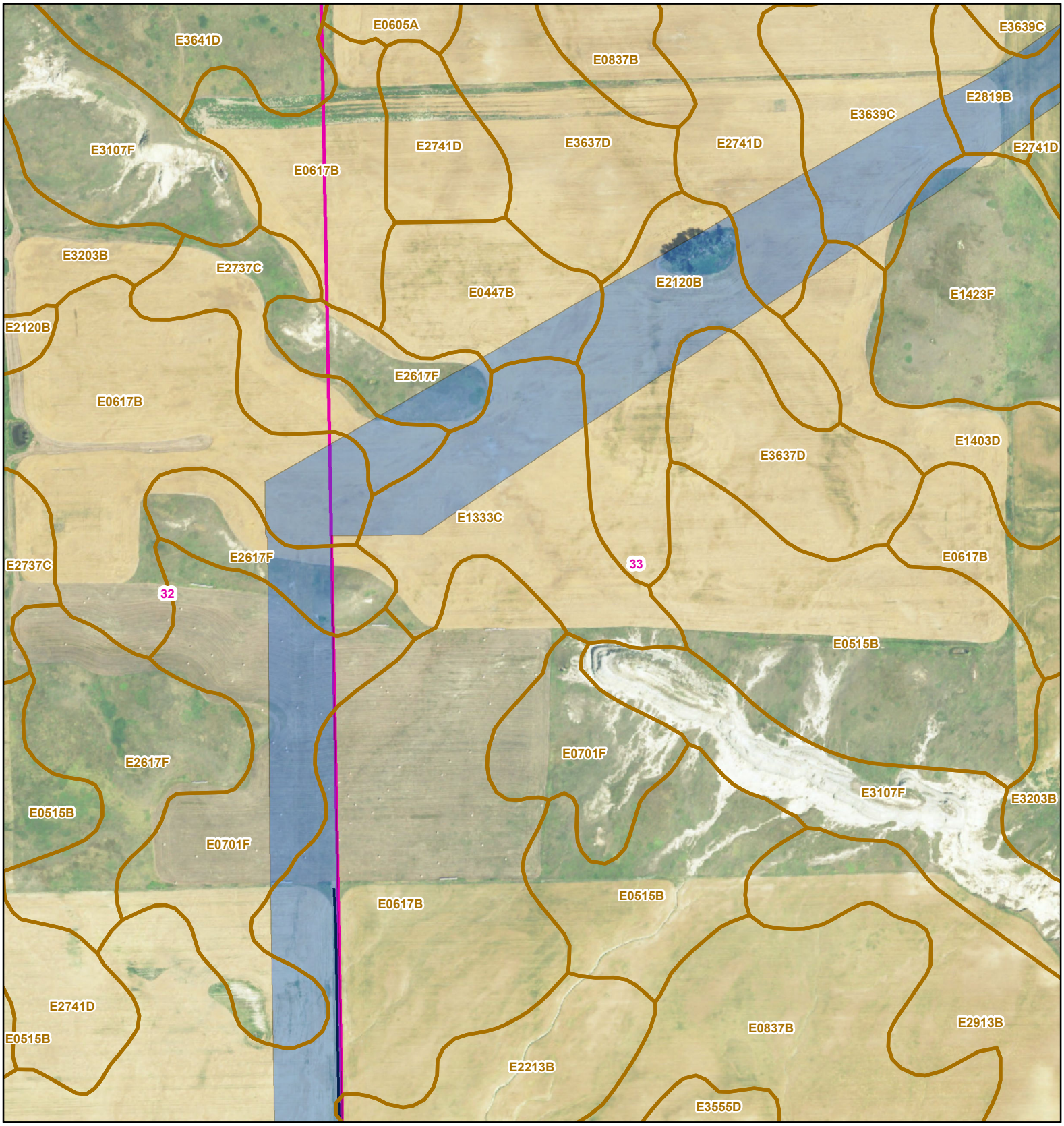

Garden Creek Loop

- Existing Road
- McKenzie County Soils Unit
- Survey Area
- Township/Range Boundary
- Section Boundary

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Feet
0 600 1,200

Meters
0 175 350

Base Map: 2014 NAIP Aerail Imagery
Source: USDA/FSA
Aerial Photography Field Office
Moline School (1995) and Bear Butte (1995)
T. 149N, R. 101W

McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

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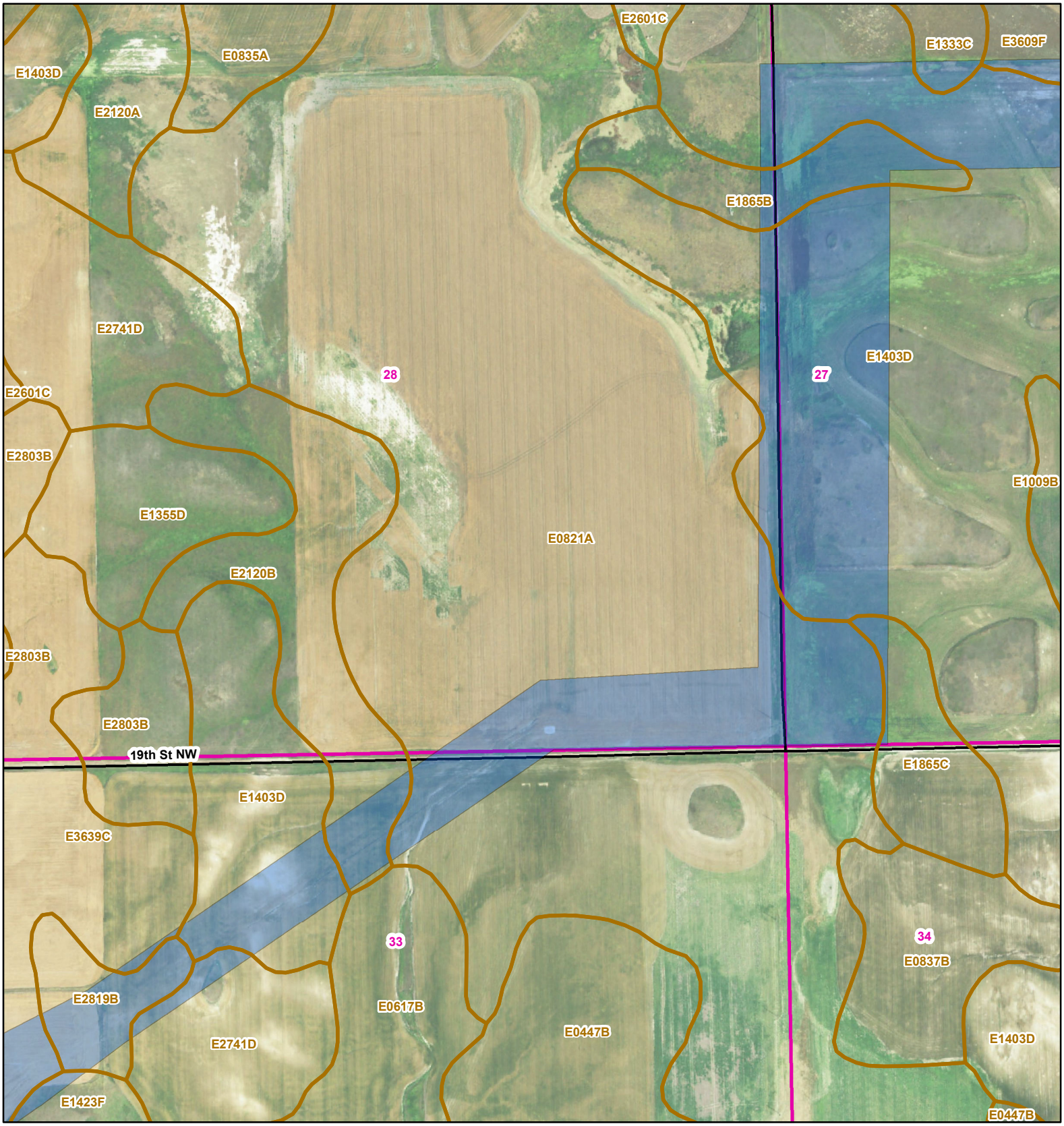

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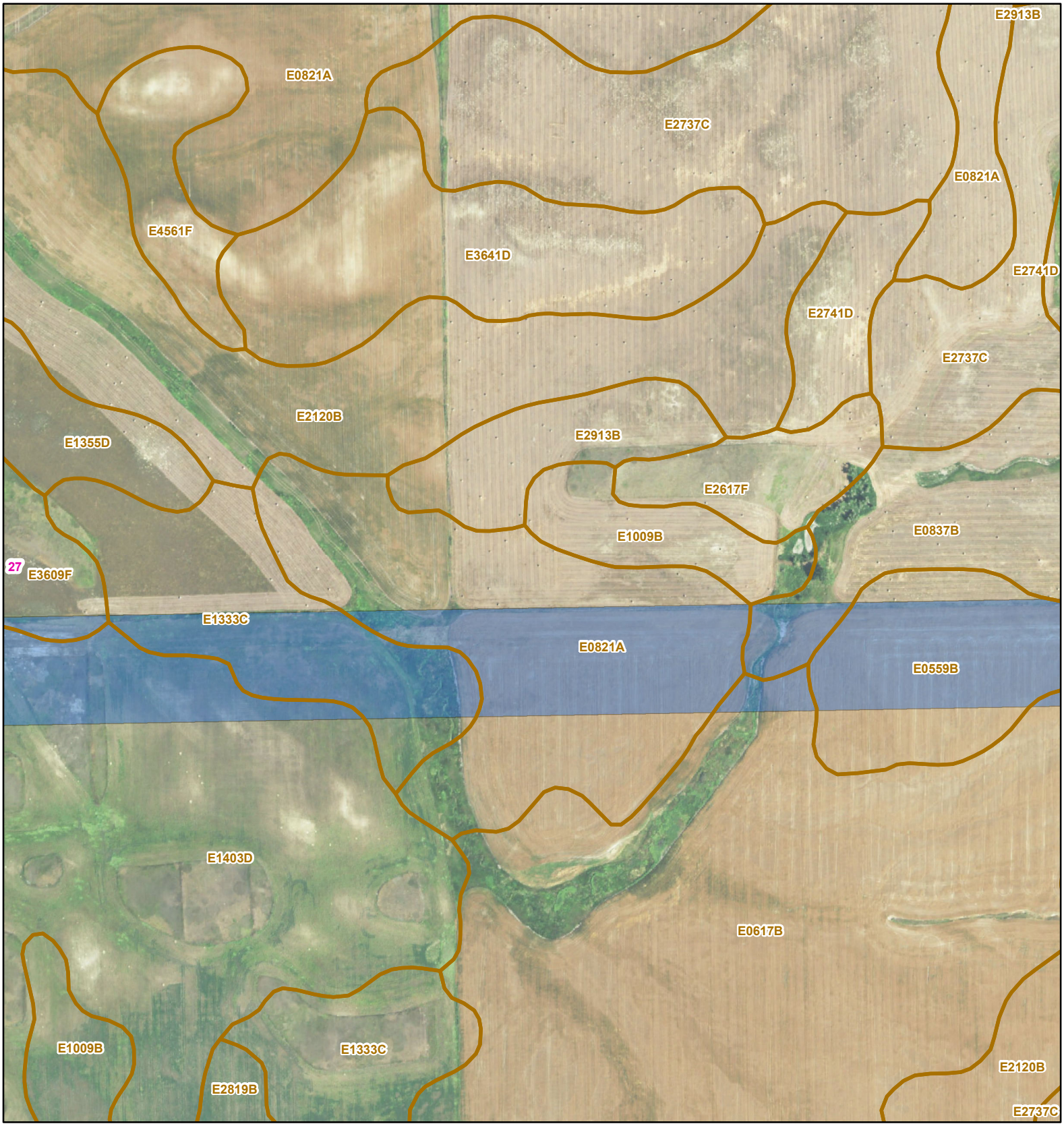

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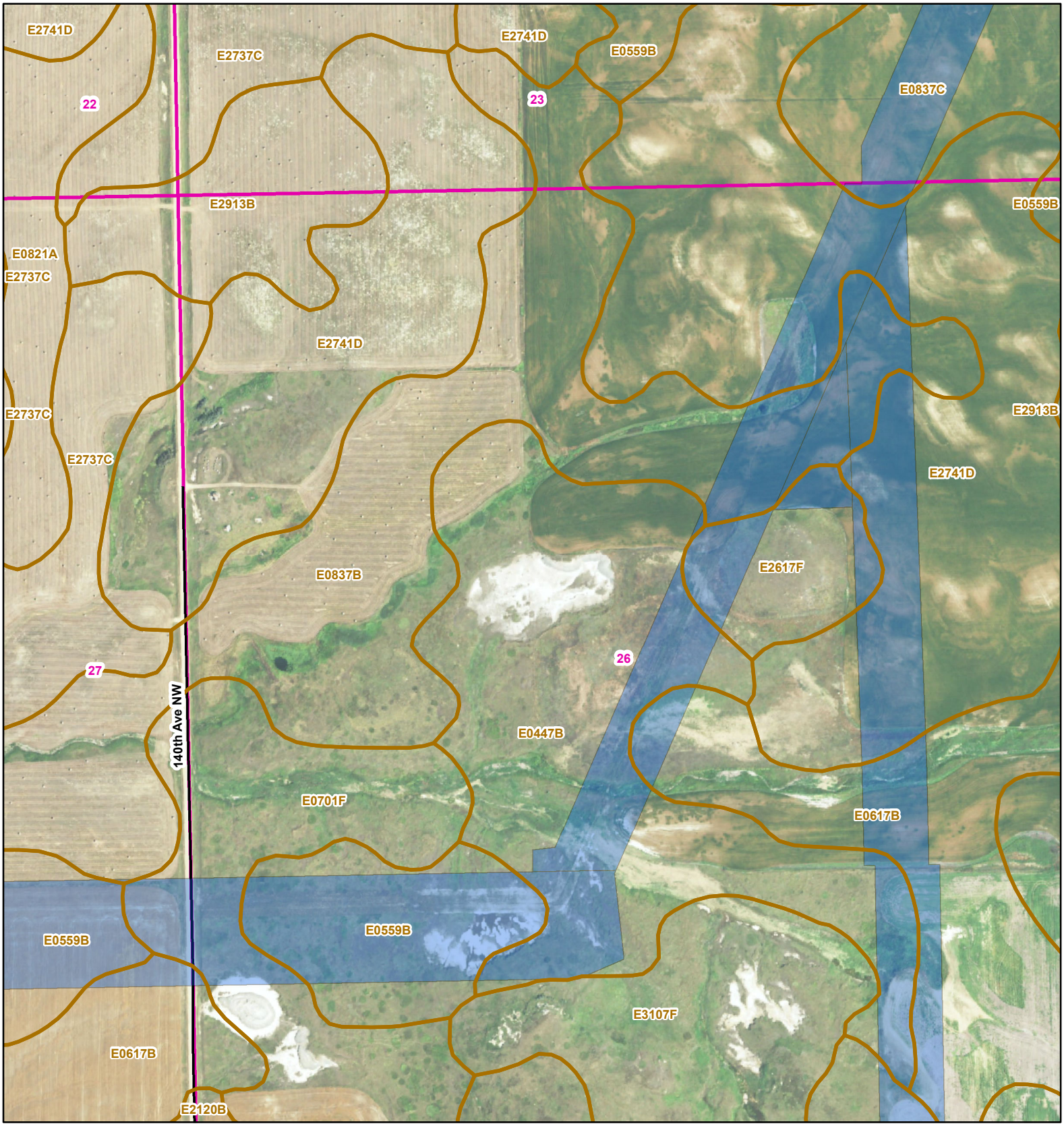

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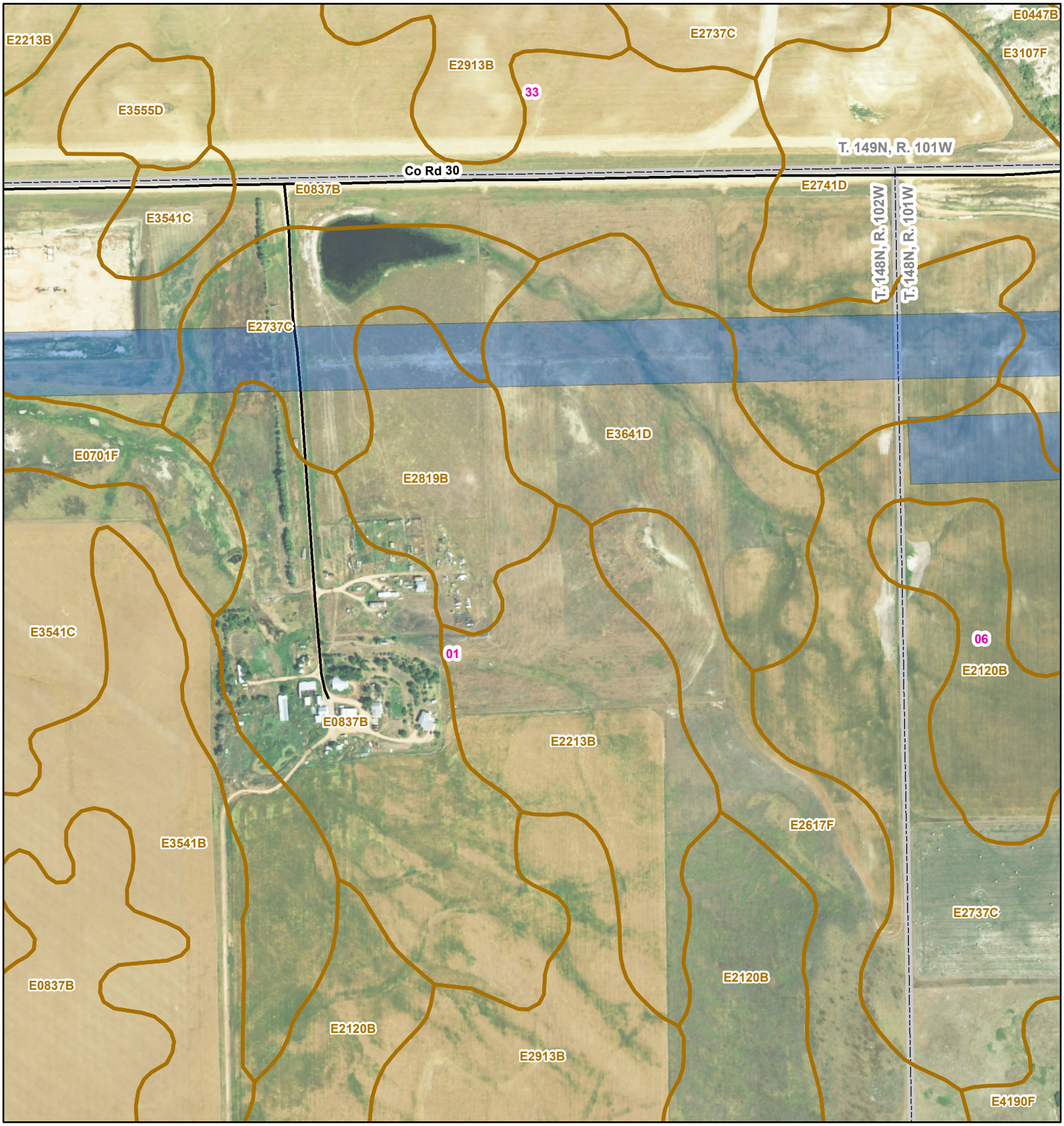

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Source: USDA/FSA
Aerial Photography Field Office
Bear Butte (1995)
T. 149N, R. 101W, T. 148N, R. 102W
and T. 148N, R. 101W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

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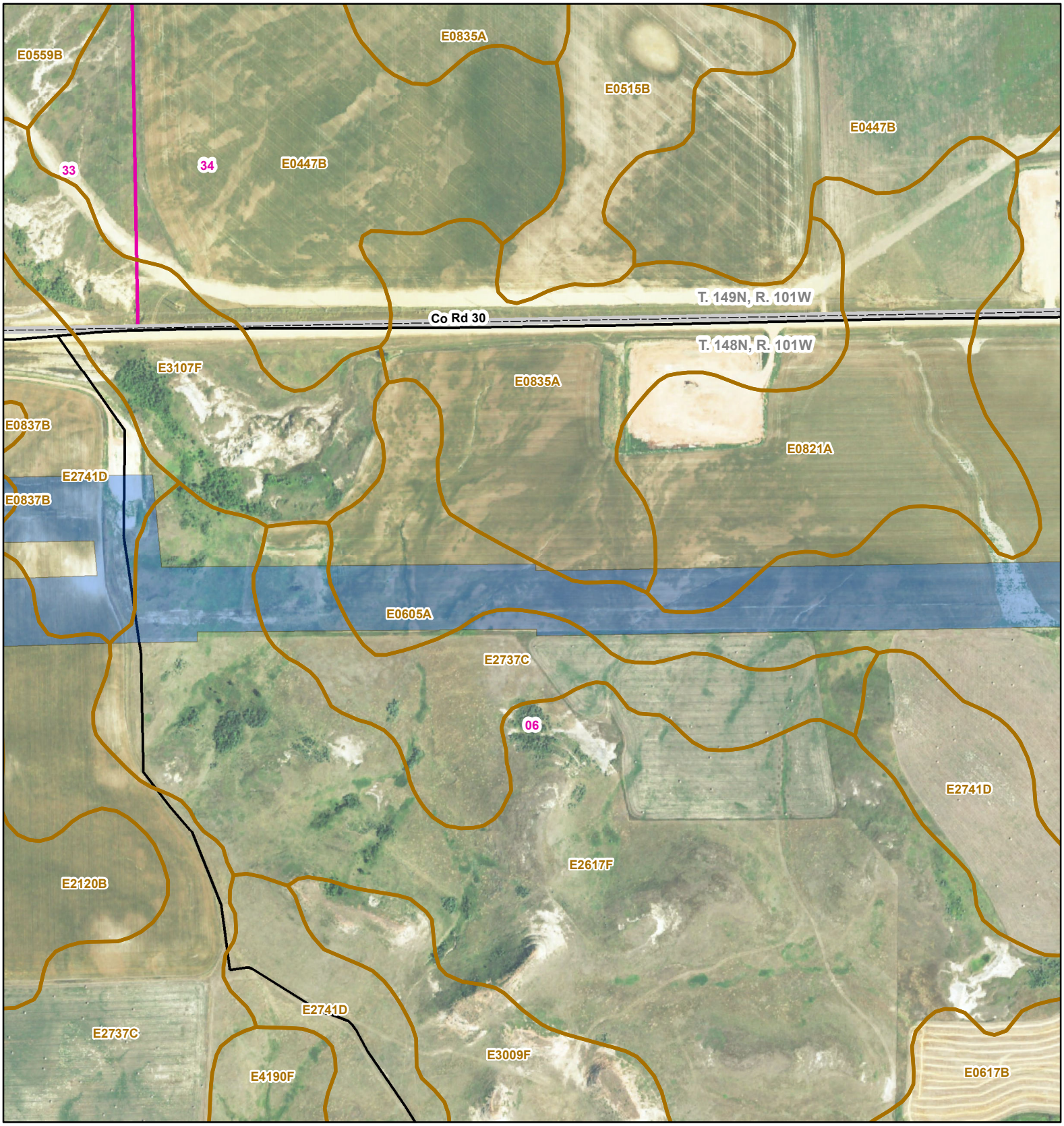

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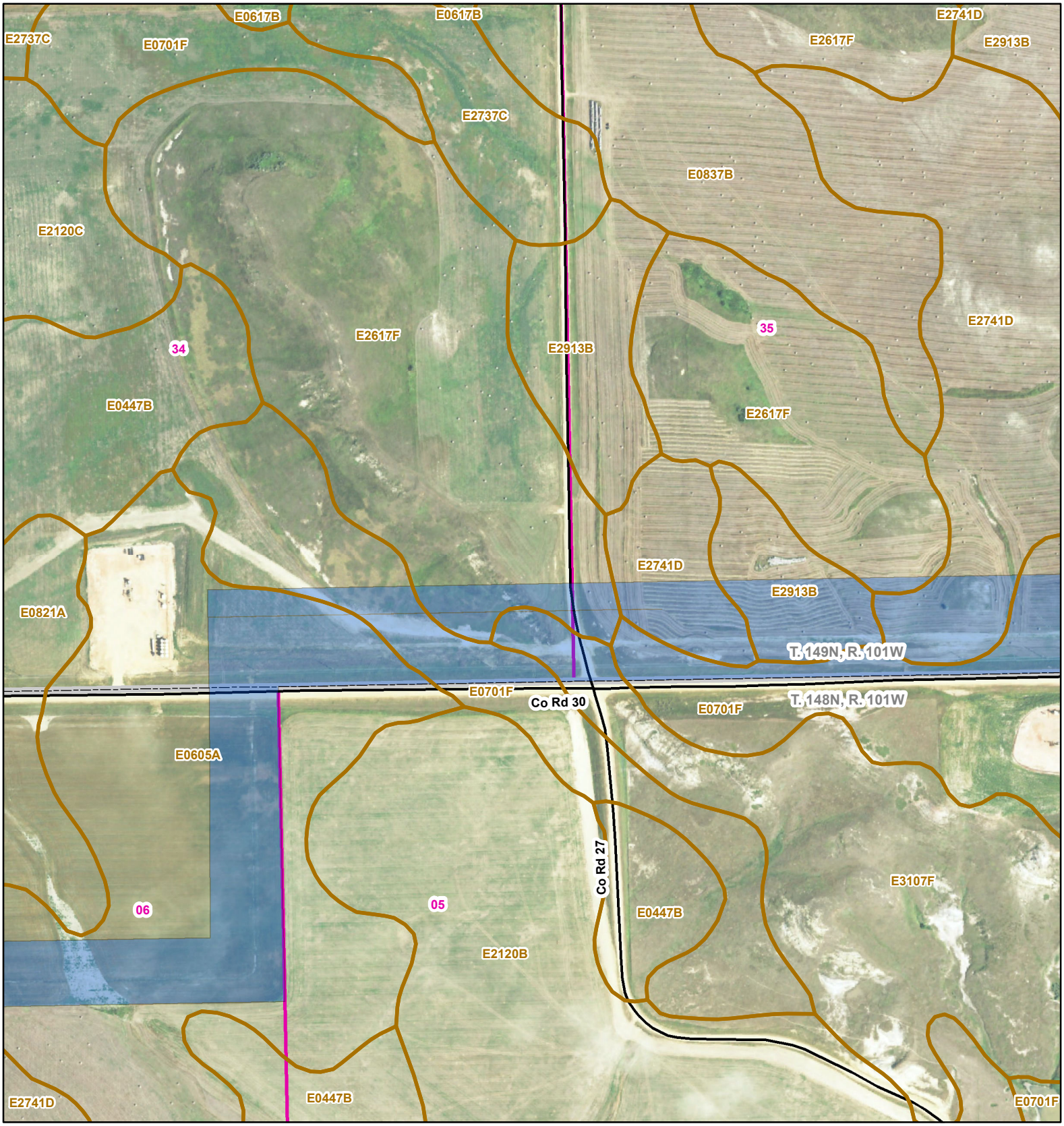

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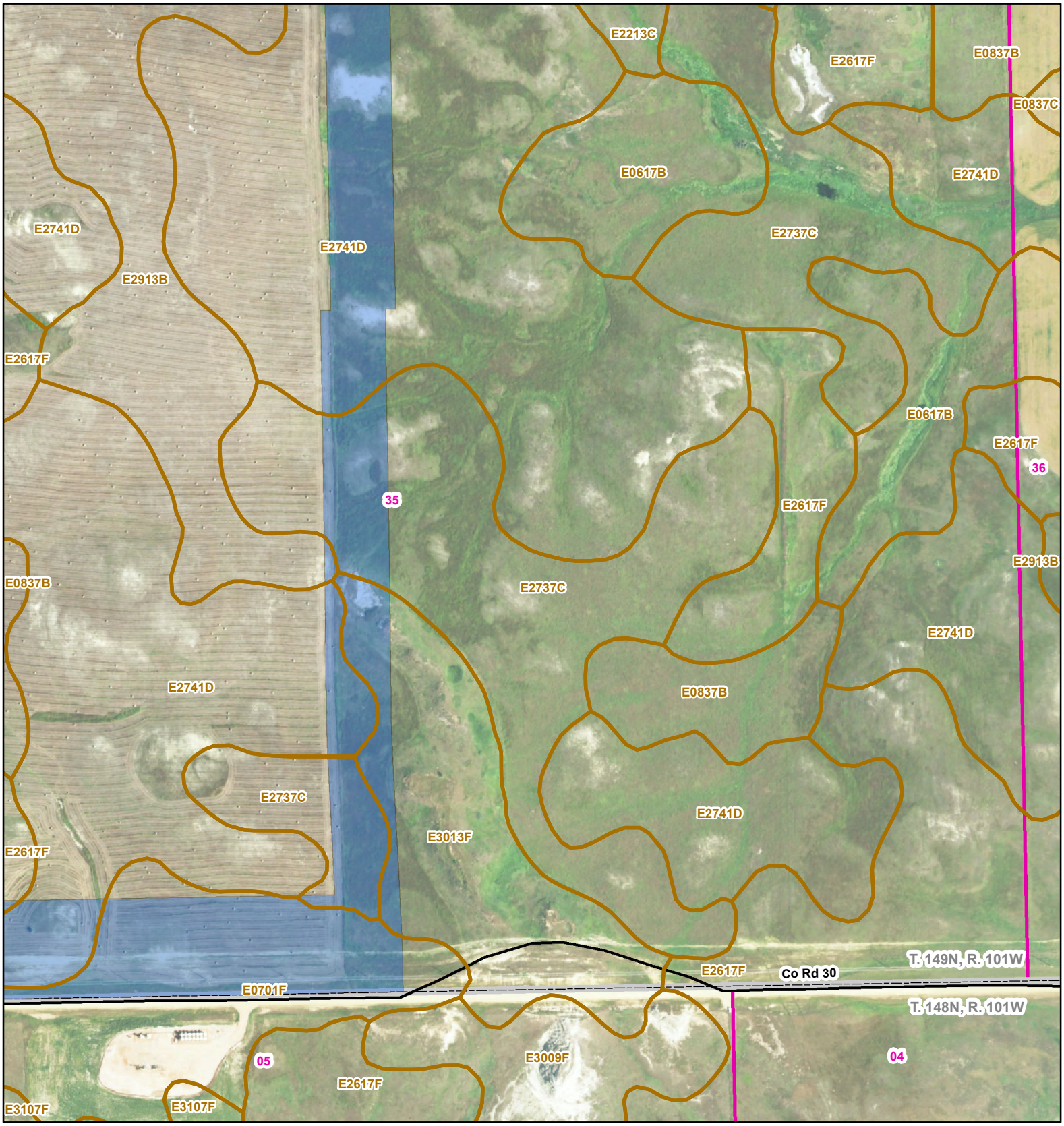

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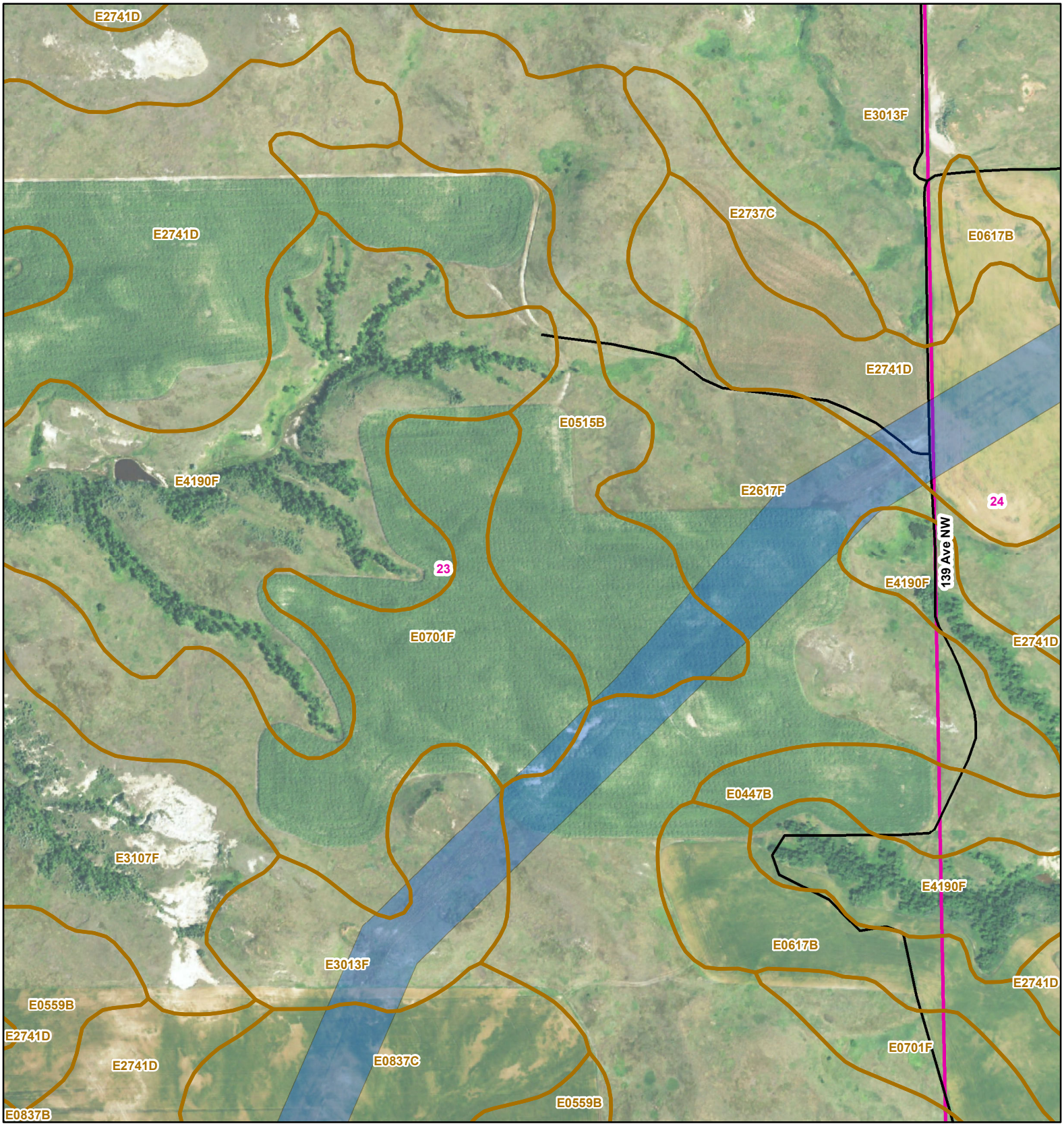

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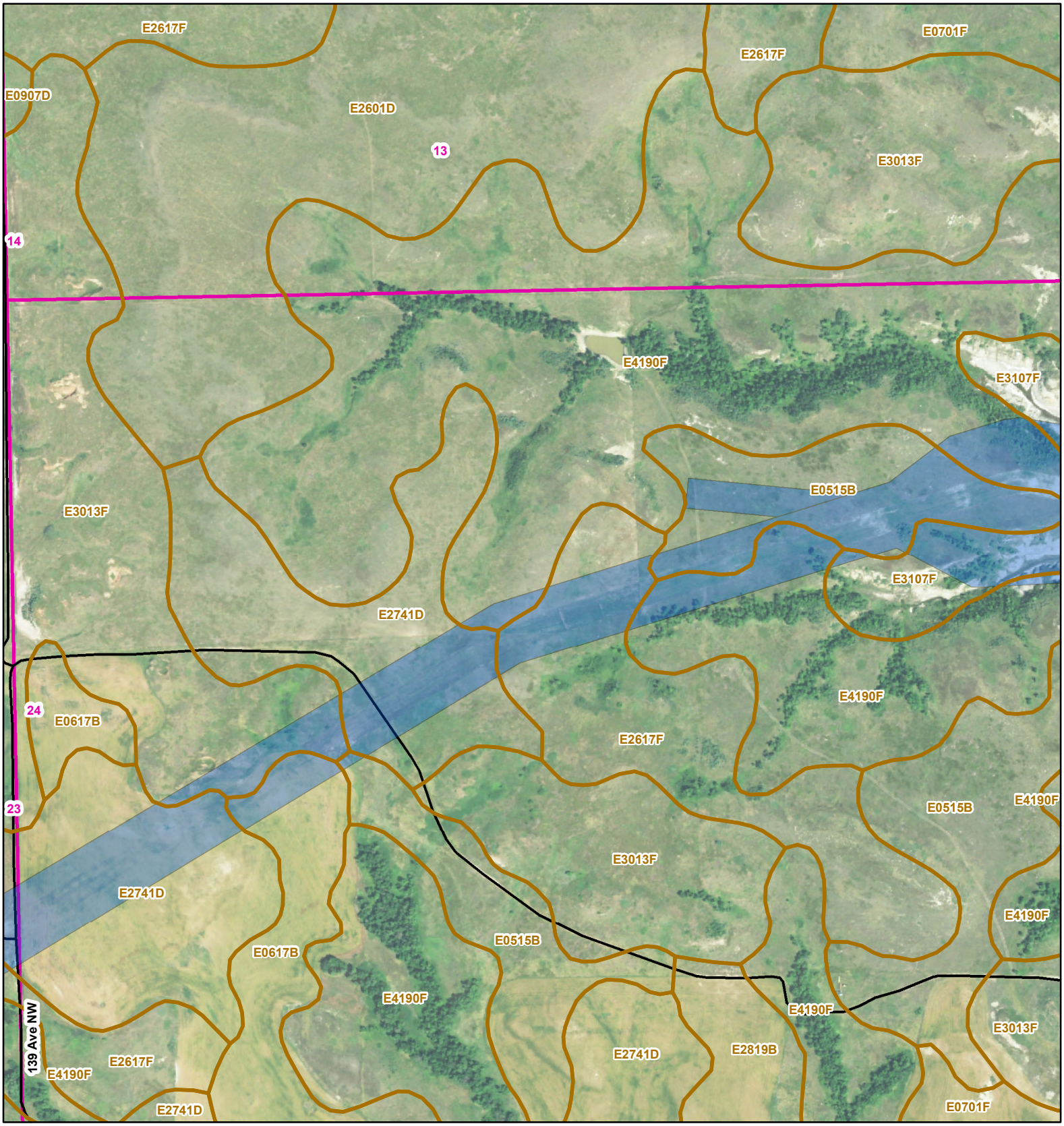

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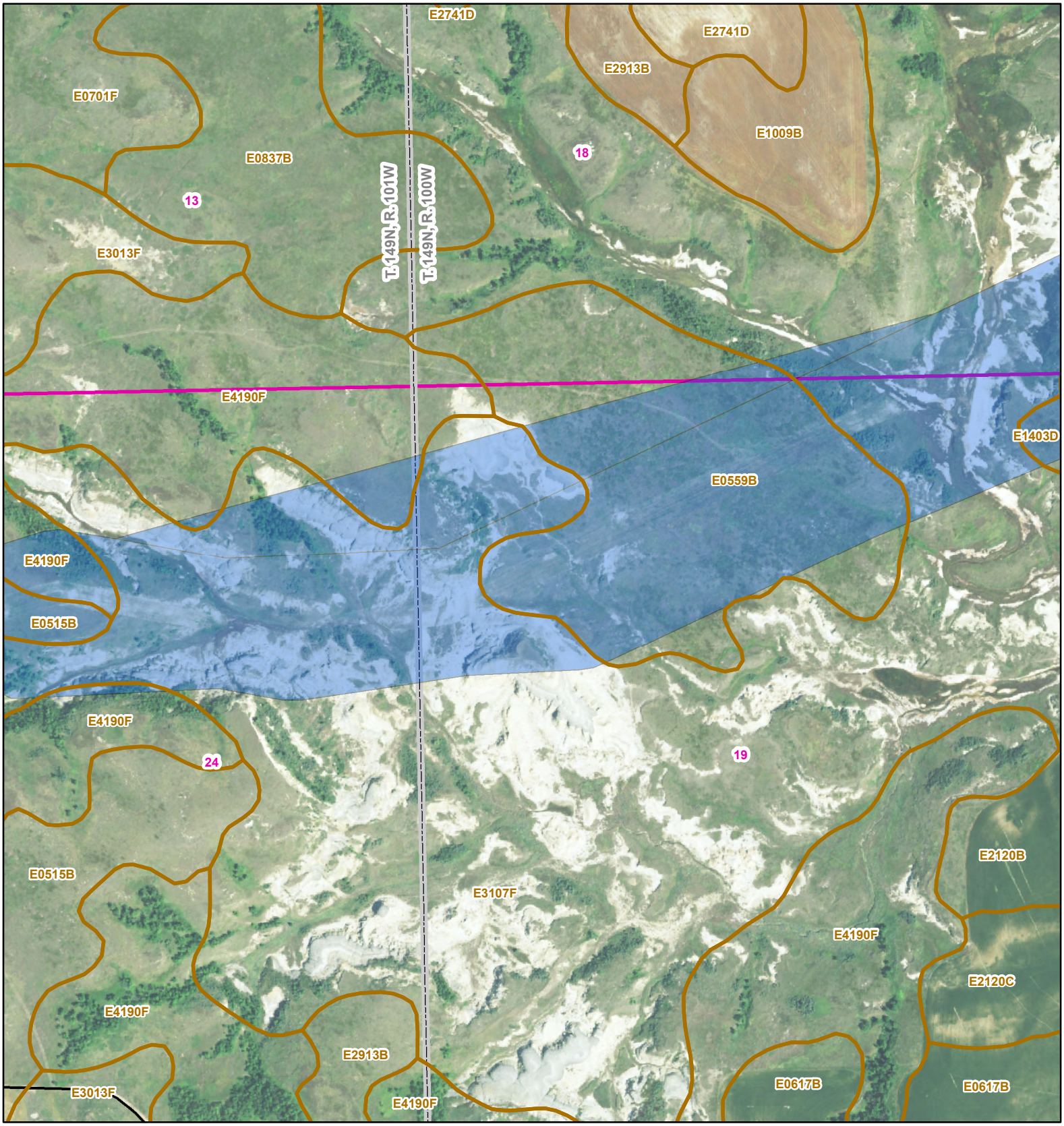

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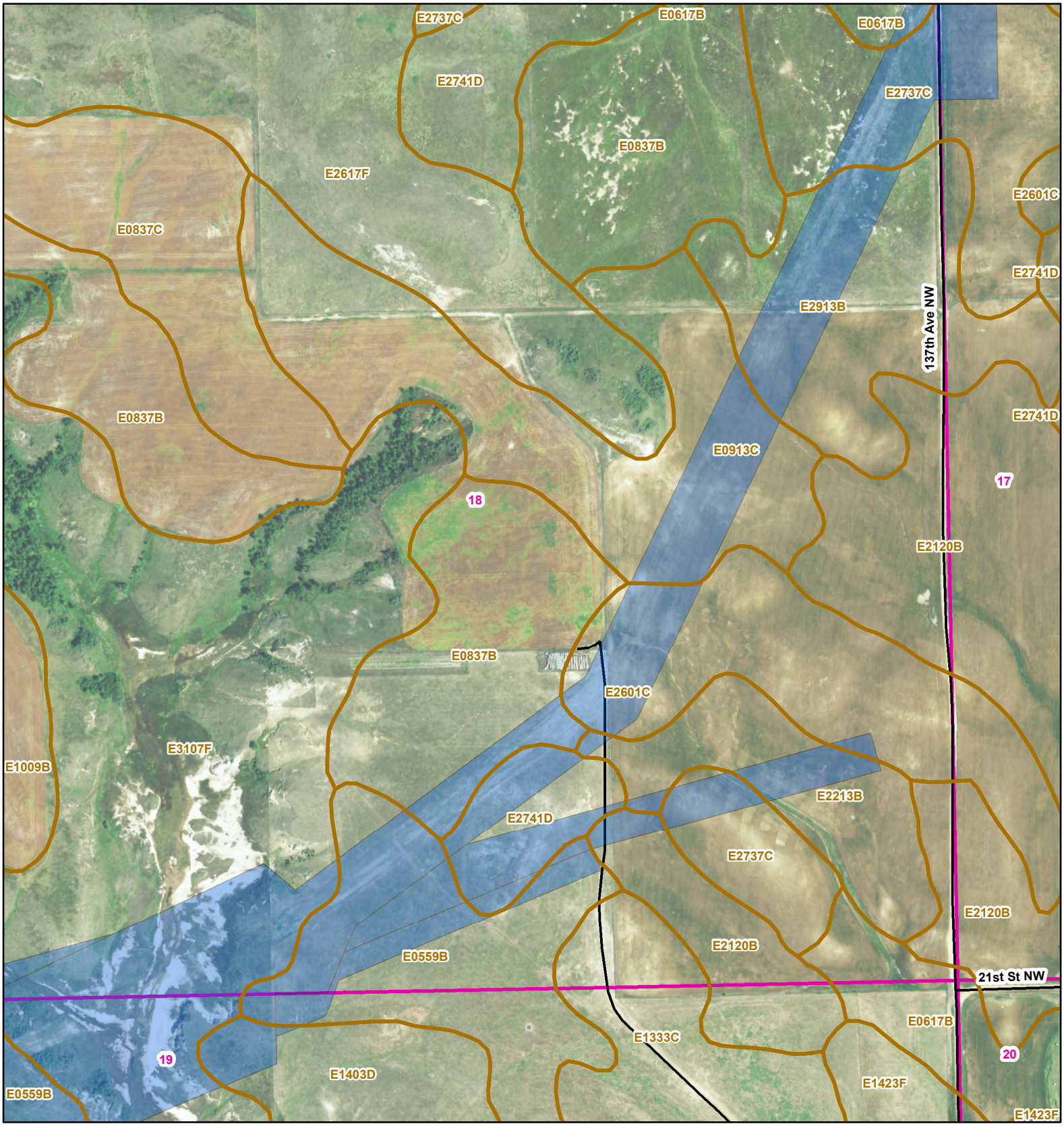

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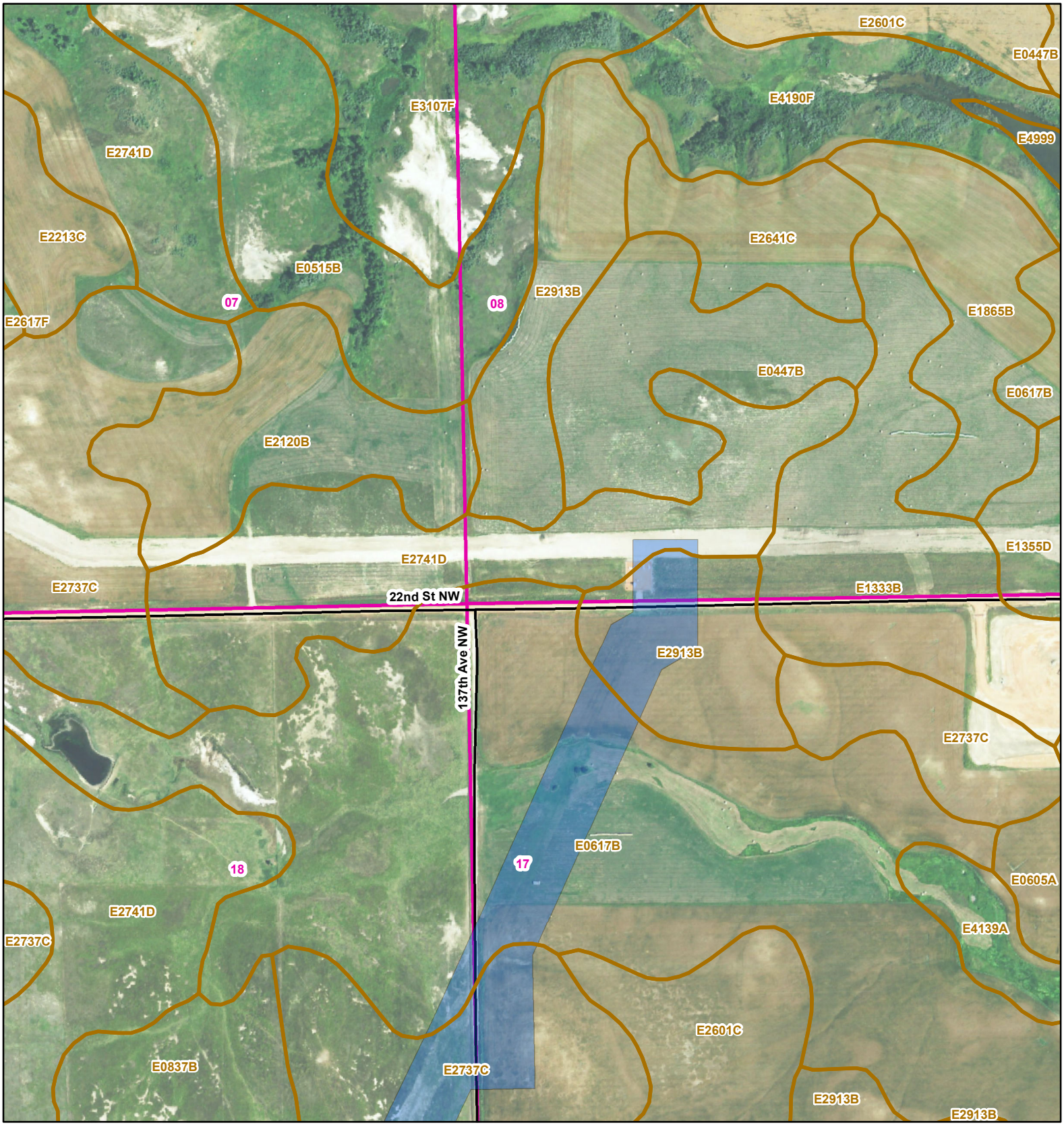

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T. 149N, R. 100W

McKenzie County, North Dakota
Projection: NAD 1983 UTM Zone 13N

N

APPENDIX B
Wetland Delineation Data Forms

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Garden Creek Loop County: McKenzie Sampling Date: July 16, 2015
Applicant/Owner: Oneok State: ND Sampling Point: DP7U
Investigator(s): D. Belisle and E. Krieger Section, Township, Range: SEC. 2, T148N, R102W
Landform (hillslope, terrace, etc.): Drainageway Local relief (concave, convex, none): Concave Slope (%): 0-3%
Subregion (LRR): LRR-F Lat: 47.66949 Long: -103.63420 Datum: NAD-83
Soil Map Unit Name: E0515B - Rhoades-Daglum complex NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes No **X**
Hydric Soil Present? Yes No **X**
Wetland Hydrology Present? Yes No **X**

Is the Sampled Area within a Wetland? **Yes** **No X**

Remarks:
This point was determined not to be within a wetland due to the lack of all three wetland criteria.

VEGETATION - Use scientific names of plants.

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 15 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5 ft.)			
1. *Poa pratensis*	80	Yes	FACU
2. *Hordeum jubatum*	20	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
100 = Total Cover			
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: **1** (A)
Total Number of Dominant Species Across All Strata: **2** (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: **50%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x 1 =	**0**
FACW species	**20**	x 2 =	**40**
FAC species	**0**	x 3 =	**0**
FACU species	**80**	x 4 =	**320**
UPL species	**0**	x 5 =	**0**
Column Totals:	**100** (A)		**360** (B)

Prevalence Index = B/A = **3.60**

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤ 3.0[1]
___ 4 - Morphological Adaptations[1] (Explain)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** **No X**

Remarks:
No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FACU or drier).

SOIL

Sampling Point: **DP7U**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-10	10YR 2/1	100	None	—	—	—	Sandy Loam	
10-20	10YR 4/2	100	None	—	—	—	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ___ No **X** Depth (inches): **N/A**

Water Table Present? Yes ___ No **X** Depth (inches): **N/A**

Saturation Present? (includes capillary fringe) Yes ___ No **X** Depth (inches): **N/A**

Wetland Hydrology Present? **Yes** ___ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Garden Creek Loop County: McKenzie Sampling Date: July 16, 2015
Applicant/Owner: Oneok State: ND Sampling Point: DP8U
Investigator(s): D. Belisle and E. Krieger Section, Township, Range: SEC. 2, T148N, R102W
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Concave Slope (%): 0-3%
Subregion (LRR): LRR-F Lat: 47.66953 Long: -103.63417 Datum: NAD-83
Soil Map Unit Name: E0515B - Rhoades-Daglum complex NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes No **X**
Hydric Soil Present? Yes No **X**
Wetland Hydrology Present? Yes No **X**

Is the Sampled Area within a Wetland? **Yes** **No X**

Remarks:
This point was determined not to be within a wetland due to the lack of all three wetland criteria.

VEGETATION - Use scientific names of plants.

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 15 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5 ft.)			
1. *Poa pratensis*	75	Yes	FACU
2. *Hordeum jubatum*	25	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
100 = Total Cover			
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: **1** (A)
Total Number of Dominant Species Across All Strata: **2** (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: **50%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x 1 =	**0**
FACW species	**25**	x 2 =	**50**
FAC species	**0**	x 3 =	**0**
FACU species	**75**	x 4 =	**300**
UPL species	**0**	x 5 =	**0**
Column Totals:	**100** (A)		**350** (B)

Prevalence Index = B/A = **3.50**

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤ 3.0[1]
___ 4 - Morphological Adaptations[1] (Explain)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** **No X**

Remarks:
No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FACU or drier).

SOIL

Sampling Point: **DP8U**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-6	10YR 2/1	100	None	—	—	—	Sandy Loam	
6-20	10YR 4/2	100	None	—	—	—	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ___ No **X** Depth (inches): **N/A**

Water Table Present? Yes ___ No **X** Depth (inches): **N/A**

Saturation Present? (includes capillary fringe) Yes ___ No **X** Depth (inches): **N/A**

Wetland Hydrology Present? **Yes** ___ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Garden Creek Loop County: McKenzie Sampling Date: July 16, 2015
Applicant/Owner: Oneok State: ND Sampling Point: DP25W
Investigator(s): D. Belisle and E. Krieger Section, Township, Range: Sec. 26, T149N, R101W
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-3%
Subregion (LRR): LRR-F Lat: 47.69522 Long: -103.57263 Datum: NAD-83
Soil Map Unit Name: E3107F - Cabba-Badland complex NWI Classification: Pem-C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes **X** No
Hydric Soil Present? Yes **X** No
Wetland Hydrology Present? Yes **X** No

Is the Sampled Area within a Wetland? **Yes X** **No**

Remarks:
This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

VEGETATION - Use scientific names of plants.

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 15 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5 ft.)			
1. *Hordeum jubatum*	60	Yes	FACW
2. *Beckmannia syzigachne*	40	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
100 = Total Cover			
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across All Strata: **2** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**40**	x 1 =	**40**
FACW species	**60**	x 2 =	**120**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**100** (A)		**160** (B)

Prevalence Index = B/A = **1.60**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ___ 4 - Morphological Adaptations[1] (Explain)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes X** **No**

Remarks:
A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).
A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.0).

SOIL

Sampling Point: **DP25W**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/1	100	None	—	—	—	Sandy Clay	
8-20	2.5Y 4/2	95	7.5YR 5/8	5	C	PL	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- **X** Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** **X** **No** ___

Remarks:

A positive indication of hydric soil was observed.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- **X** High Water Table (A2)
- **X** Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- **X** Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- **X** Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- **X** Saturation Visible on Aerial Imagery (C9)
- **X** Geomorphic Position (D2)
- **X** FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ___ No **X** Depth (inches): **N/A**

Water Table Present? Yes **X** No ___ Depth (inches): **0**

Saturation Present? (includes capillary fringe) Yes **X** No ___ Depth (inches): **0**

Wetland Hydrology Present? **Yes** **X** **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

A positive indication of wetland hydrology was observed (at least two secondary indicators).

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Garden Creek Loop County: McKenzie Sampling Date: July 16, 2015
Applicant/Owner: Oneok State: ND Sampling Point: DP24U
Investigator(s): D. Belisle and E. Krieger Section, Township, Range: Sec. 26, T149N, R101W
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 0-3%
Subregion (LRR): LRR-F Lat: 47.69522 Long: -103.57259 Datum: NAD-83
Soil Map Unit Name: E0447B - Daglum-Belfield complex NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No ____
Are Vegetation **No**, Soil **No**, or Hydrology **No** naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ____ No **X**
Hydric Soil Present? Yes ____ No **X**
Wetland Hydrology Present? Yes ____ No **X**

Is the Sampled Area within a Wetland? **Yes** ____ **No** **X**

Remarks:
This point was determined not to be within a wetland due to the lack of all three wetland criteria.

VEGETATION - Use scientific names of plants.

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 15 ft.)			
1.		#DIV/0!	#N/A
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5 ft.)			
1. *Pascopyrum smithii*	80	Yes	FACU
2. *Sonchus arvensis*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
100 = Total Cover			
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: **1** (A)
Total Number of Dominant Species Across All Strata: **2** (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: **50%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x 1 =	**0**
FACW species	**0**	x 2 =	**0**
FAC species	**20**	x 3 =	**60**
FACU species	**80**	x 4 =	**320**
UPL species	**0**	x 5 =	**0**
Column Totals:	**100** (A)		**380** (B)

Prevalence Index = B/A = **3.80**

Hydrophytic Vegetation Indicators:
____ 1 - Rapid Test for Hydrophytic Vegetation
____ 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤ 3.0[1]
____ 4 - Morphological Adaptations[1] (Explain)
____ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** **X**

Remarks:
No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FACU or drier).

#DIV/0!

SOIL

Sampling Point: **DP24U**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	10YR 5/8	100	None	—	—	—	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ___ No **X** Depth (inches): **N/A**

Water Table Present? Yes ___ No **X** Depth (inches): **N/A**

Saturation Present? (includes capillary fringe) Yes ___ No **X** Depth (inches): **N/A**

Wetland Hydrology Present? **Yes** ___ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

APPENDIX C
Dakota Skipper Survey Protocol

1.0 INTRODUCTION

The Dakota skipper (*Hesperia dacotae*) is listed as threatened under the federal Endangered Species Act (USFWS, 2014) and is an obligate of high-quality prairie habitat that is untilled and dominated by native species which provide the necessary habitat for the four basic life stages of the species. The Dakota skipper utilizes dry-mesic mixed grass and wet-mesic tallgrass prairie remnants characterized by alkaline and composite soils (McCabe, 1981; Royer and Marrone, 1992). Soil conditions appear to be important elements in skipper habitat suitability; soil moisture, humidity, pH, surface temperature, near-surface humidity, and compaction are important influences on larval survival (Cochrane and Delphey, 2002). The species composition of wet-mesic tallgrass and dry-mesic mixed grass habitats for the Dakota skipper differs. In wet-mesic sites, big and little bluestem (*Andropogon gerardii* and *Schizachyrium scoparium*) predominates. These habitat patches also typically contain three nectar plants that bloom synchronously with the adult skipper flight period: wood lily (*Lilium philadelphicum*), bluebell bellflower (*Campanula rotundifolia*), and smooth camus (*Zigadensus elegans*). Dry-mesic upland sites are typically found in rolling terrain and are characterized by the presence of bluestems and needle grasses (*Heterostipa* spp.). *L. philadelphicum* and *C. rotundifolia* are found in these areas as well, but *Z. elegans* is typically absent. Purple coneflower (also known as black-sampson echinacea) (*Echinacea angustifolia*) is often abundant in both dry-mesic prairie, as are other nectar-producing aster family species (e.g., *Ratibida columnifera* and *Gaillardia* spp.) (USFWS, 2014). Adult skipper flight periods may be tied to the *E. angustifolia* blooming period in prairie habitats where this species is present (Royer and Marrone, 1992).

A grassland and native prairie habitat assessment will be conducted to identify and quantify potential Dakota skipper habitat. This field-based assessment will document plant species required by the Dakota skipper for feeding and sheltering within an environmental survey corridor.

1.1 DESKTOP ANALYSIS

SWCA will use Geographic Information Systems ("GIS") to review publicly available land cover data sources within the environmental survey corridor to identify grasslands that may be untilled. Data sources may include the following: National Agricultural Imagery Program ("NAIP") 2012/2013 aerial imagery, National Land Cover Dataset, National Agricultural Statistics Service Cropland Data Layer, U.S. Geological Survey ("USGS") National Gap Analysis Program, USFWS Land Classification (North American Waterfowl Management Plan Prairie Pothole Joint Venture), and lands enrolled in Conservation Reserve Program.

2.0 FIELD SAMPLING PROTOCOLS

Based on desktop analysis, field-based habitat assessments will be conducted throughout an environmental survey corridor in North Dakota to gather data for assessing habitat for Dakota skipper. Field surveys will serve the following three purposes:

- To ground-truth locations of grasslands that were identified during desktop analysis.
- To determine and categorize grasslands identified as tilled or untilled and as predominantly native species or non-native species. Dakota skipper suitable habitat will only occur in native, relatively undisturbed/untilled prairie.
- To determine if grasslands confirmed as native prairie during field surveys contain preferred grass and nectar species for the Dakota skipper.

2.1 FIELD METHODOLGY

During field surveys, SCWA will classify grasslands as tilled or untilled when sufficient evidence is present. Evidence may include piles of rocks and boulders around the perimeter of the grassland (an indicator of past tilling) and topography (e.g., steep slopes that may not have been able to be tilled). SWCA will use this field data in conjunction with the information from the desktop analysis to classify each grassland as tilled or untilled.

SWCA will assess the entire survey area (as determined by desktop analysis) for potentially suitable habitat for Dakota skippers by surveying areas of untilled field-confirmed native prairie. Although a grassland as a whole may not be suitable habitat, smaller patches of suitable habitat may be present within a larger grassland. SWCA will collect the following data during field surveys, based on the habitat preferences described in the final rule for the species (USFWS, 2014):

1. Presence of plants typical of wet-mesic prairie: big and little bluestem, wood lily, bluebell bellflower, smooth camas, Rocky Mountain blazingstar (*Liatris ligulistylis*), Canada goldenrod (*Solidago canadensis*), strict blue-eyed grass (*Sisyrinchium montanum*), common goldstar (*Hypoxis hirsuta*), and black-eyed Susan (*Rudbeckia hirta*).
2. Presence of plants typical of upland (dry) prairie (often found on ridges and hillsides): bluestem grasses, needle grasses, wood lily, bluebell bellflower, purple coneflower, upright prairie coneflower (*Ratibida columnifera*), common blanketflower (*Gaillardia aristata*), and prairie milkvetch (*Astragalus laxmannii*). In North Dakota, an association of bluestems (*Schizachyrium scoparium, Andropogon gerardii*) and needlegrasses, typically invaded by Kentucky bluegrass, typifies dry-mesic Dakota skipper habitat in the rolling terrain of river valleys and the Missouri Coteau (Royer and Marrone, 1992a). A circular plot method will be used to aid in estimating per cent composition of each plant species.
3. The U.S. Forest Service (USFS) developed a GIS tool to focus on habitat available for larval Dakota skipper, Ottoe skipper (*Hesperia ottoe*), and tawny crescent (*Phyciodes batesii*) in drought conditions. Good and Best habitat attributes used in the model include the following.
    a. Higher slope ranges (10% to 35%) represent areas where cattle are less likely to graze and the vegetative community and height of vegetation is suitable habitat for larval survival.

b. Aspects ranging from 315 to 90 degrees (northwest-west to east) represent areas with the highest likelihood of moist soil conditions necessary for larval survival (Royer et al. 2008).

c. Distance from existing range livestock water developments (greater than 264 feet) and naturally occurring wetlands and waterbodies (greater than 660 feet) also represents areas that are less likely to have grazing pressure and have the little bluestem and other tall grass-dominated plant communities intact. The closer an area is to a water source used by livestock, the greater the intensity their vegetation utilization.

Based on these characteristics, a determination will be made in the field as to the suitability of the area to provide habitat for Dakota skipper. SWCA will delineate the boundary of any potentially suitable Dakota skipper habitat within each survey area and will also take photographs of the habitat.

2.2 SURVEY TIMING

Field surveys identifying plant species associated with suitable Dakota skipper habitat will be conducted in late June and/or early July. Surveys may be able to be accomplished outside this window, depending on the condition of vegetation.

2.3 DATA COLLECTION METHODS

2.3.1 Coordinate Systems to be Implemented

All survey crews will use the following coordinate system and projection for all field-collected data acquired during survey efforts. Use of the following coordinate system is mandatory.

- North Dakota: North Dakota State Plane North, NAD 83 survey feet

2.3.2 GIS DATA

Provide the following GIS shapefiles:

1) Shapefile containing results of desktop habitat suitability analysis
2) Shapefile containing results of field-based habitat assessment, including the following attribute data for each desktop habitat polygon:
    a. Site ID
    b. Date surveyed
    c. Survey crew initials
    d. Native or non-native
    e. Tilled or untilled
    f. Suitable or unsuitable
3) Shapefile containing refined areas field-delineated as potentially suitable Dakota skipper habitat (label each polygon using nomenclature described in section 2.3.3. below).

2.3.3 Dakota Skipper Habitat Nomenclature

Dakota skipper habitat nomenclature will be labeled in accordance with the following method.

- DSH-County-Tract-alphabetical designation
  - DSH – Dakota Skipper Habitat
  - County – Two-digit county code
  - Tract – First three numbers of Tract ID
  - Alphabetical designation in order of mapping within a tract

Example: DSHMC127a is the first suitable Dakota skipper habitat area located on tract 127 in McKenzie County, ND.

2.3.4 GPS Units to be Used

Trimble GeoXT
Sub-meter Trimble GeoXT units will be used to document the locations of potentially suitable Dakota skipper habitat in the study area by recording data points representing the habitat boundaries.

3.0 HABITAT ASSESSMENT REPORT

Following the completion of field surveys, a written report will be prepared to include data from the field surveys, maps that display suitable habitat for Dakota skipper, photos, and datasheets.

4.0 REFERENCES

Cochrane, J.F. and P. Delphey. 2002. Status Assessment and Conservation Guidelines; Dakota Skipper *Hesperia dacotae* (Skinner) (*Lepidoptera*: *Hesperiidae*); Iowa, Minnesota, North Dakota, South Dakota, Manitoba, Saskatchewan. U.S. Fish & Wildlife Service (USFWS), Twin Cities Field Office, Minnesota.

McCabe, T.L. 1981. The Dakota skipper, *Hesperia dacotae* (Skinner): range and biology with special reference to North Dakota. Journal of the Lepidopterists' Society 35(3):179-193.

Royer, R.A. and G.M. Marrone. 1992. Conservation status of the Dakota skipper (*Hesperia dacotae*) in North and South Dakota. USFWS, Denver, Colorado.

USFWS (U.S. Fish and Wildlife Service). 2014. Endangered and Threatened Wildlife and Plants; Threatened Species Status for Dakota Skipper and Endangered Species Status for Poweshiek Skipperling; Final Rule. 50 Federal Register 79(206): 63672.

USFWS. 2015. Dakota Skipper. Guidance for Interagency Cooperation under Section 7(a)(2) of the Endangered Species Act. Available at: http://www.fws.gov/midwest/Endangered/insects/dask/pdf/DakotaSkipperS7GuidanceFeb2015.pdf

APPENDIX D
Photographs of Project Area

Figure C.1. Intermittent stream (STR12), facing north (photo taken July 16, 2015).

Figure C.2. Upland swale (UPS1), facing southwest (photo taken July 16, 2015).

Figure C.3. Seasonal wetland (WET3), facing west (photo taken July 16, 2015).

Figure C.4. Upland swale (UPS2), facing east (photo taken July 16, 2015).

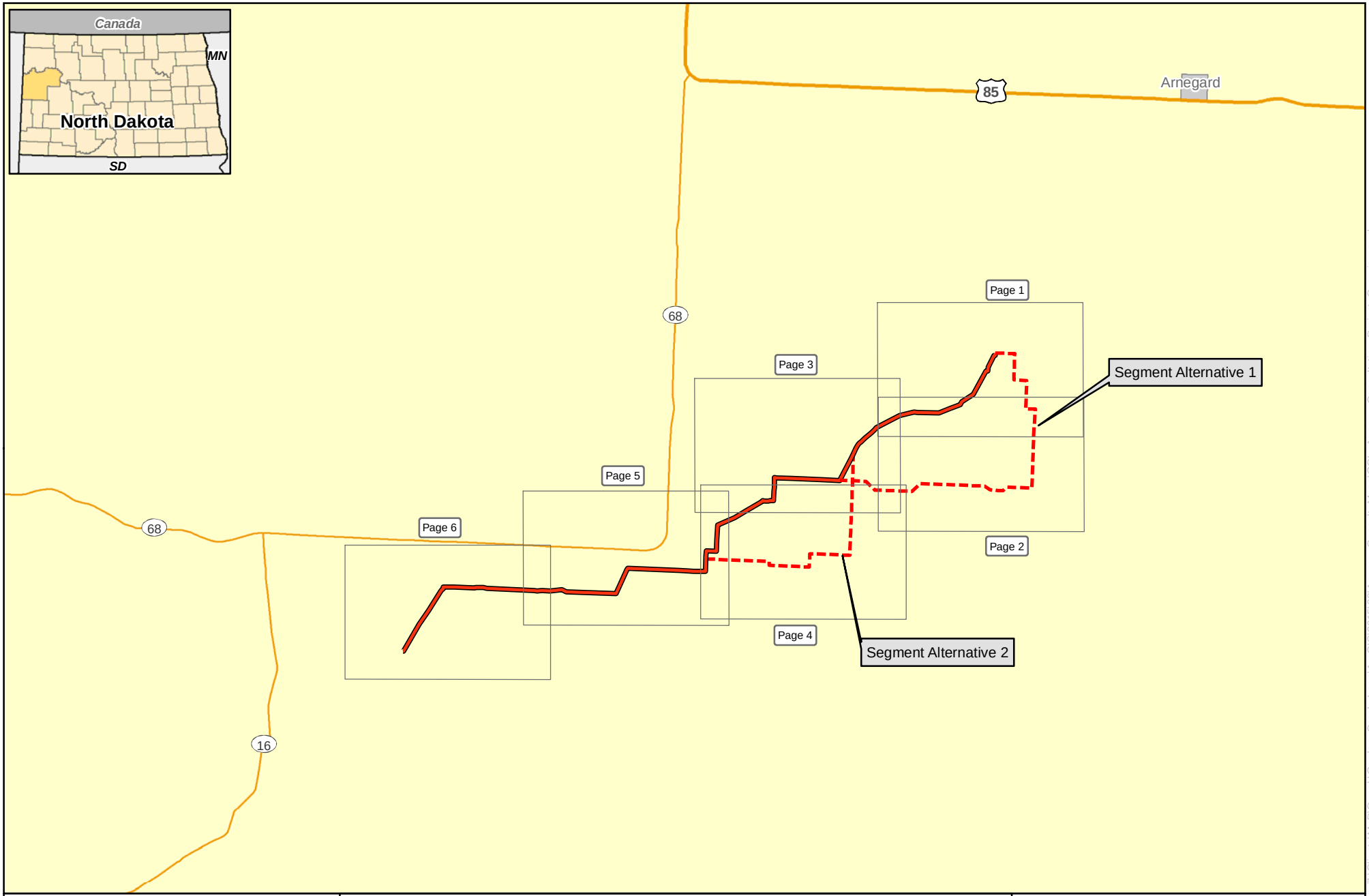
Figure C.4. Ephemeral stream continuation (STR5), facing North (photo taken August 27, 2015).

TREE AND SHRUB INVENTORY PENDING

NOXIOUS WEED SURVEYS PENDING

EXHIBIT D

MAPS SUBMITTED TO ALL AGENCIES



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1 inch = 2.5 miles

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For Environmental Review Purposes Only

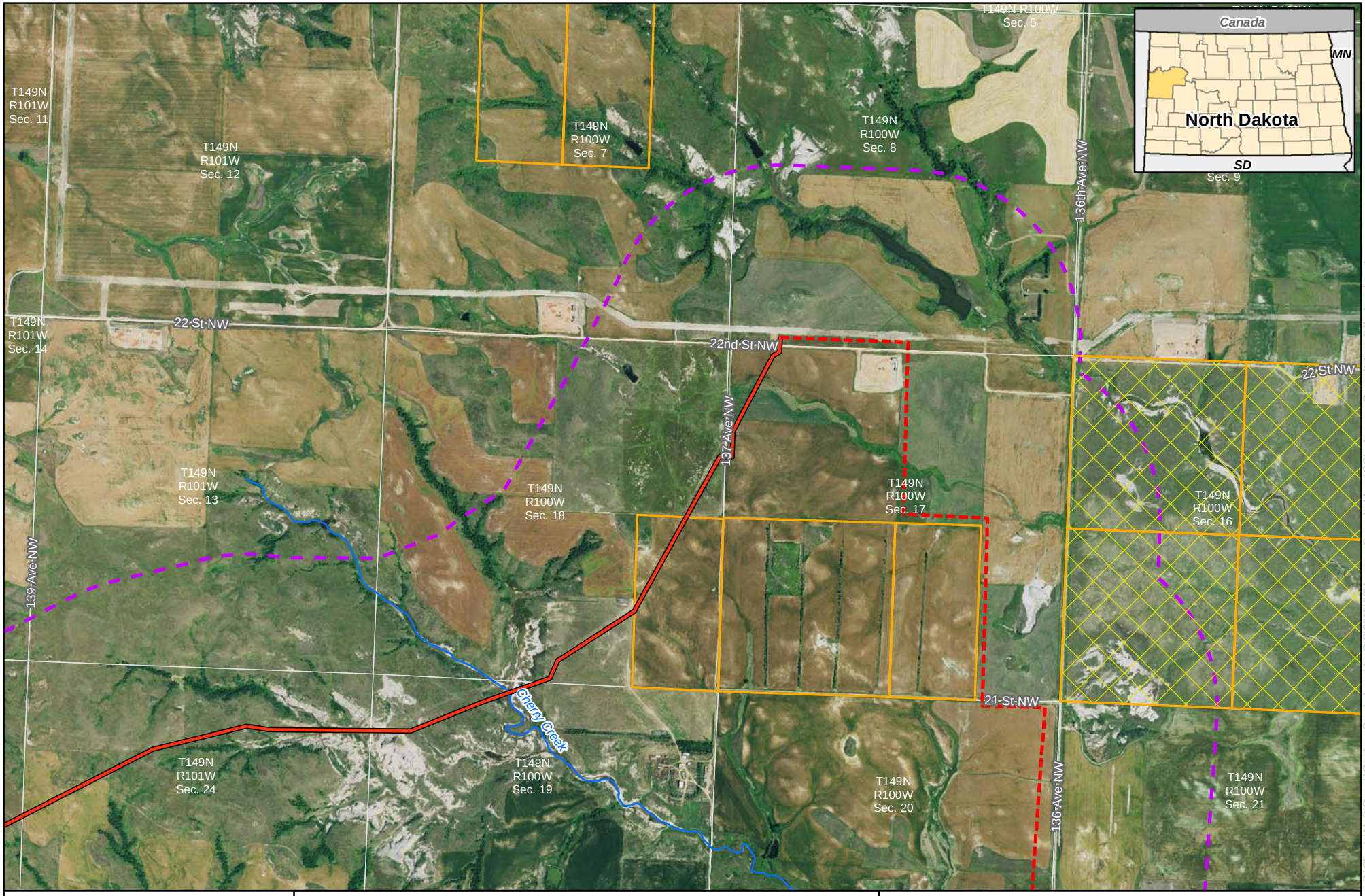
ONEOK Bakken Pipeline
Garden Creek Loop NGL Pipeline Project
Project Location Map
McKenzie County, ND

Preferred Route

Segment Alternative

Source: Z:\Clients\M_P\Oneok\Garden_Creek_Loop\ArcGIS\2015\08\Agency_Consult_Maps\GCL_Agency_Consultation_Project_Overview.mxd

Date: (8/20/2015)



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1 inch = 2,000 feet

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ONEOK Bakken Pipeline
Garden Creek Loop NGL Pipeline Project
Federal and State Lands
McKenzie County, ND

- Preferred Route
- Segment Alternative
- NHD Waterbody
- 1-Mile Buffer
- Section Boundary
- ND Trust Land - Mineral
- ND School Trust Land
- National Grassland

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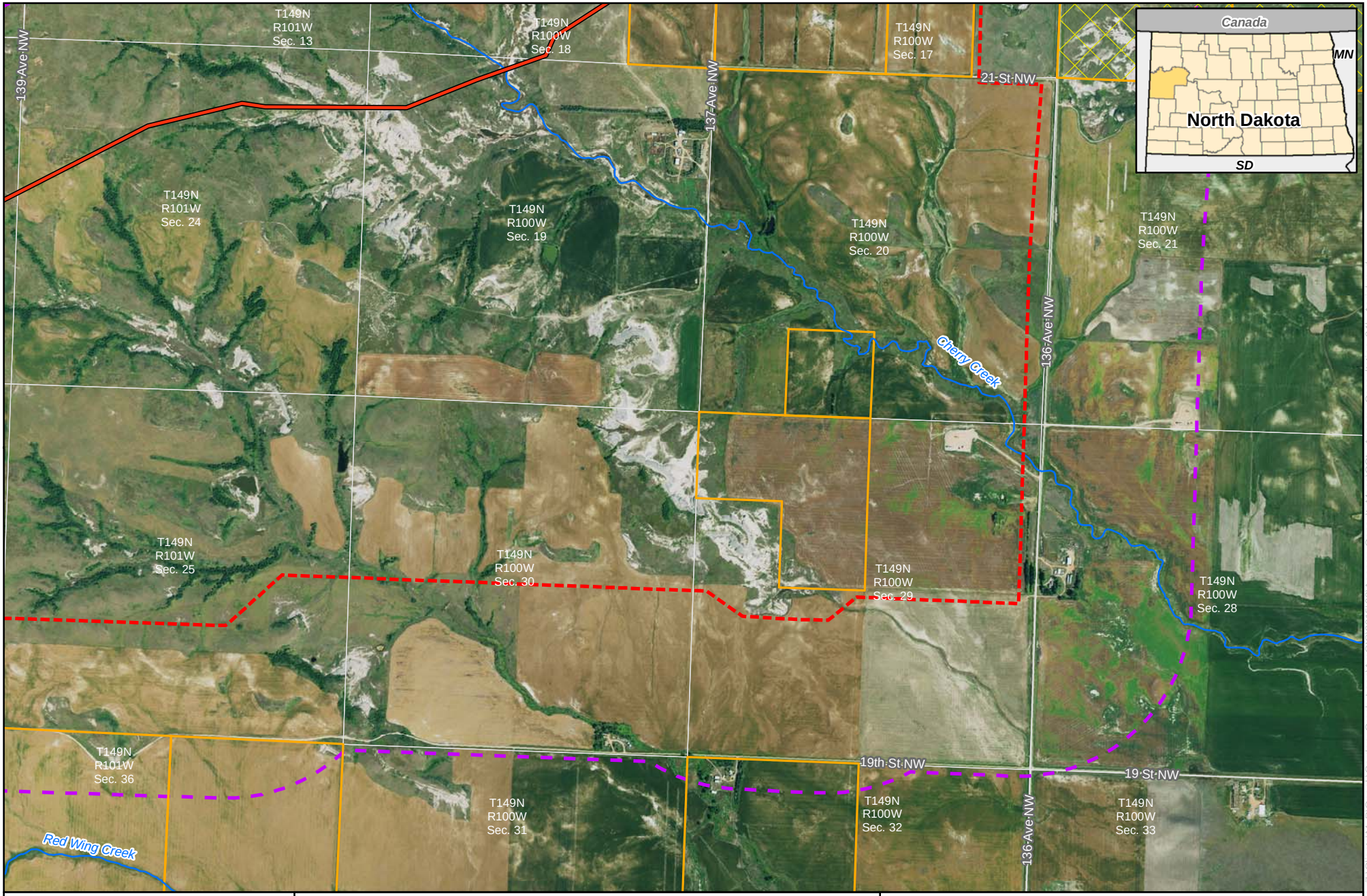

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Federal and State Lands
McKenzie County, ND

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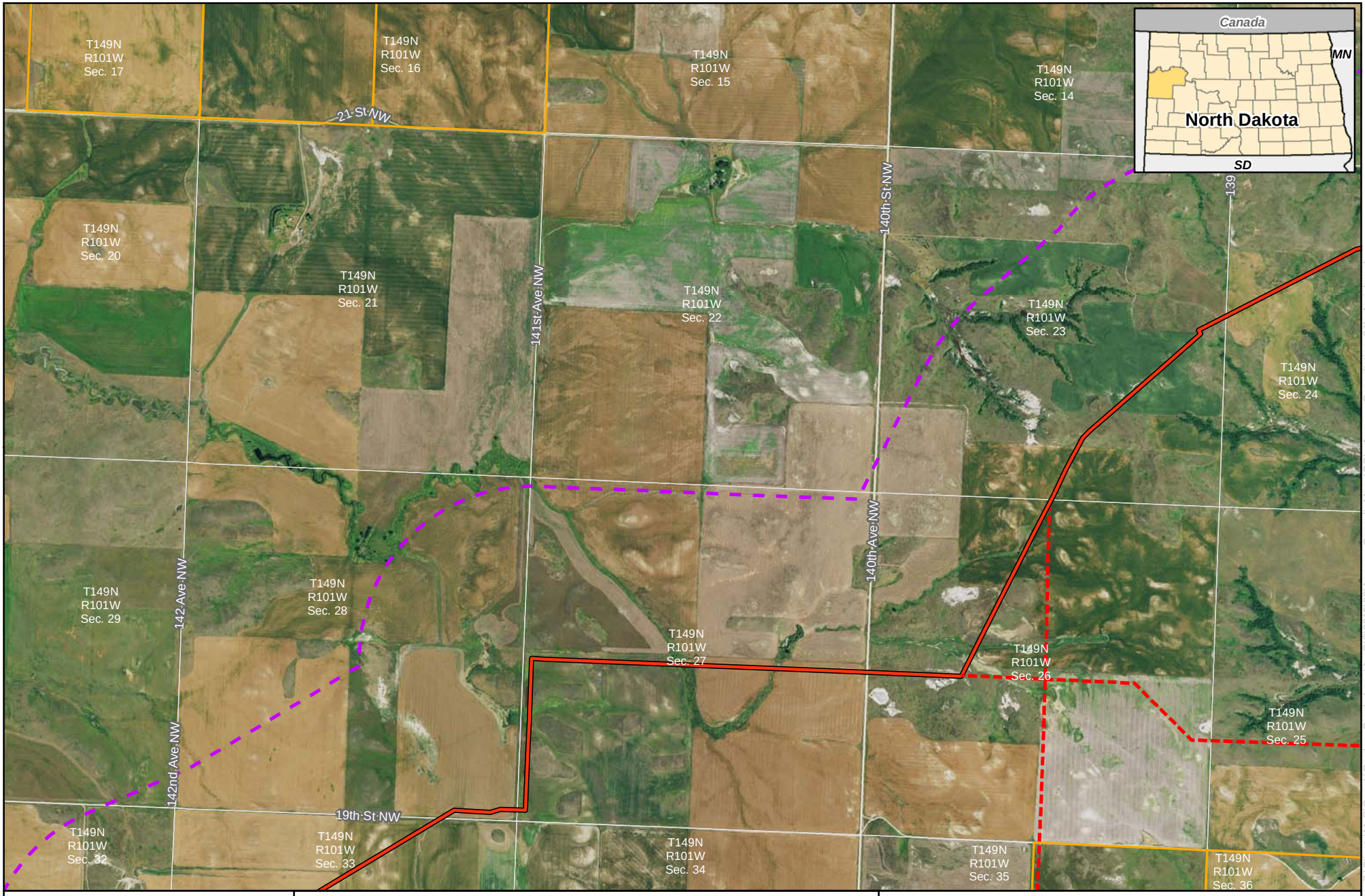

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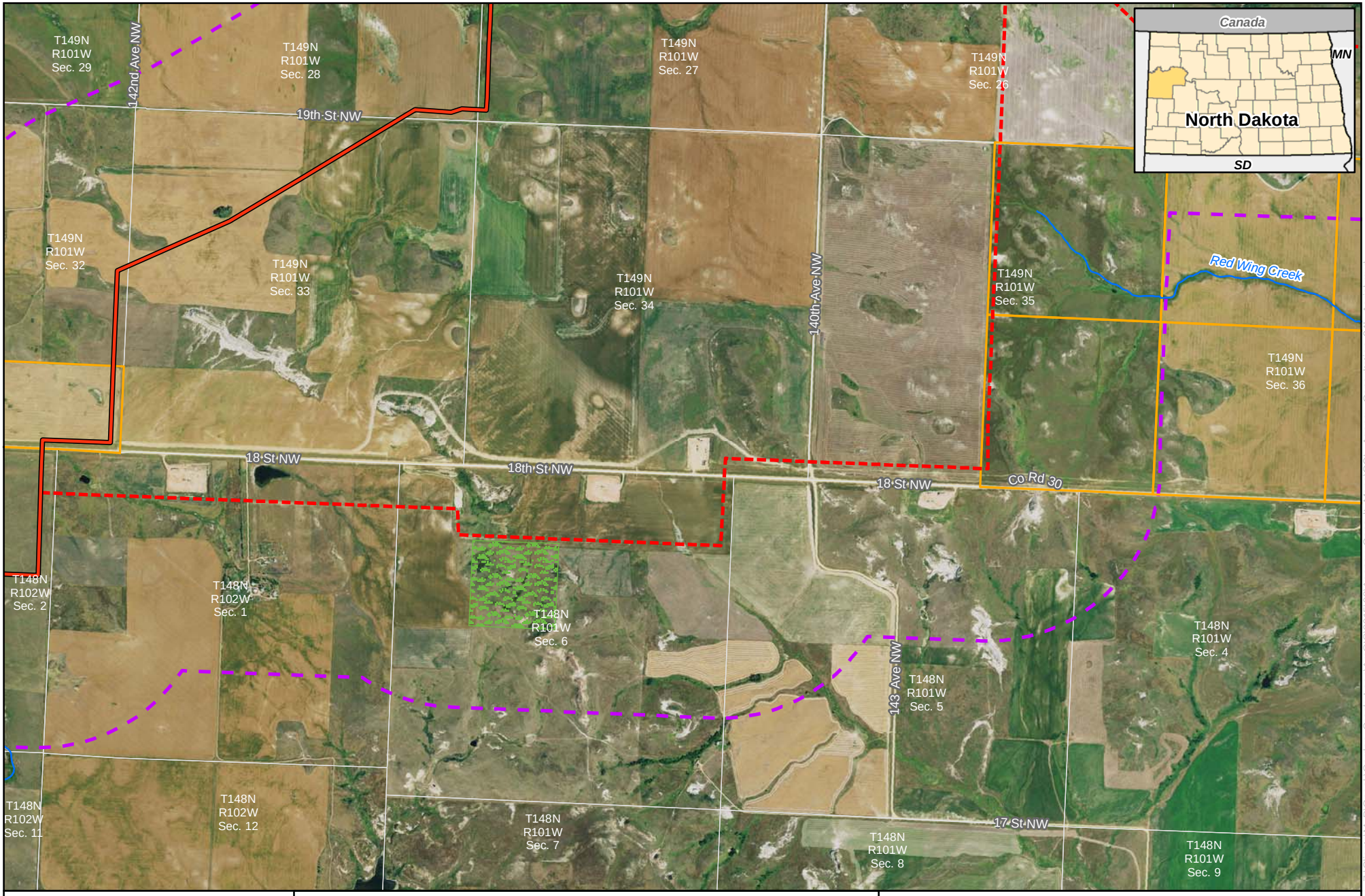

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Page 4 of 6

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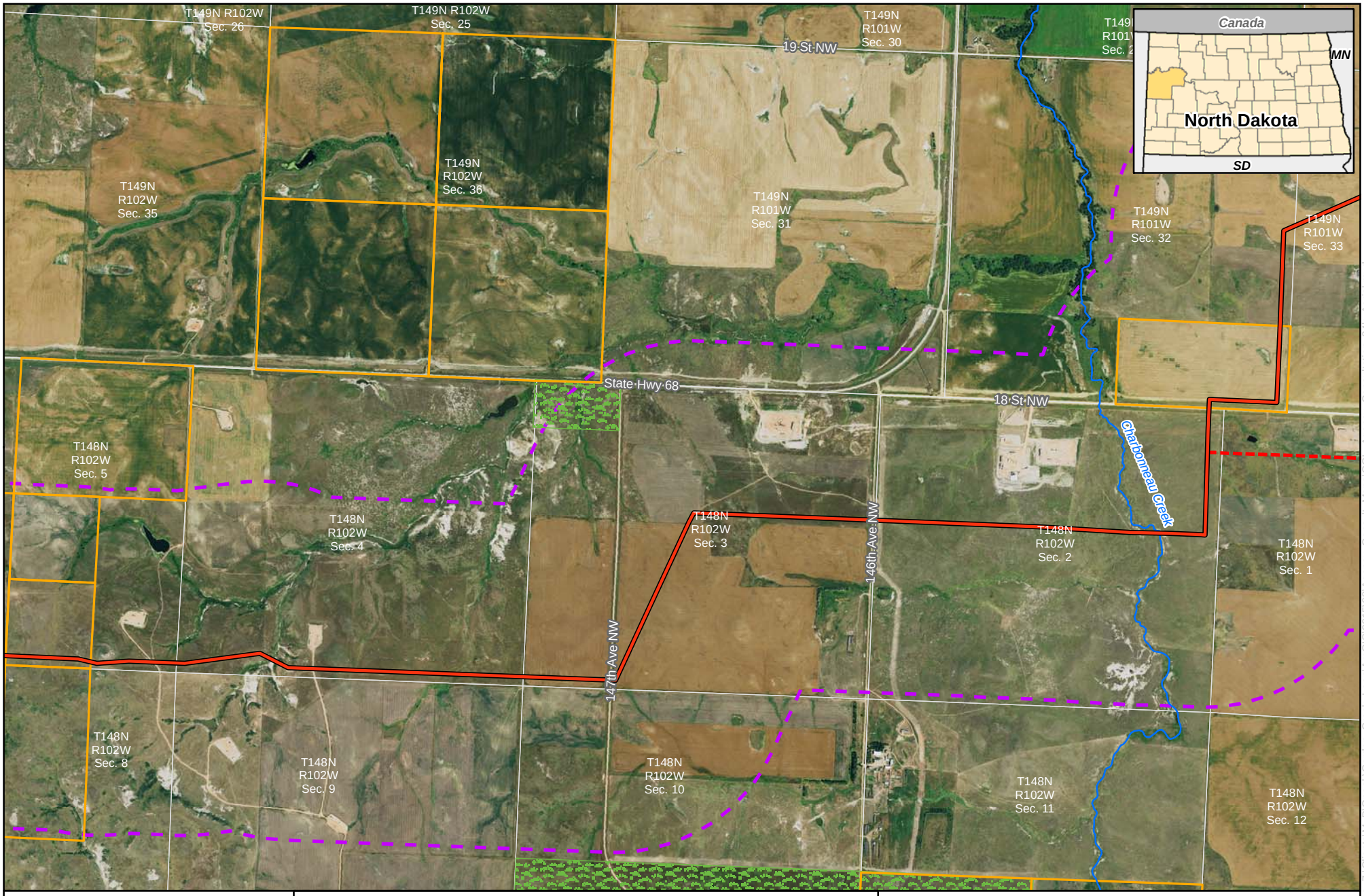

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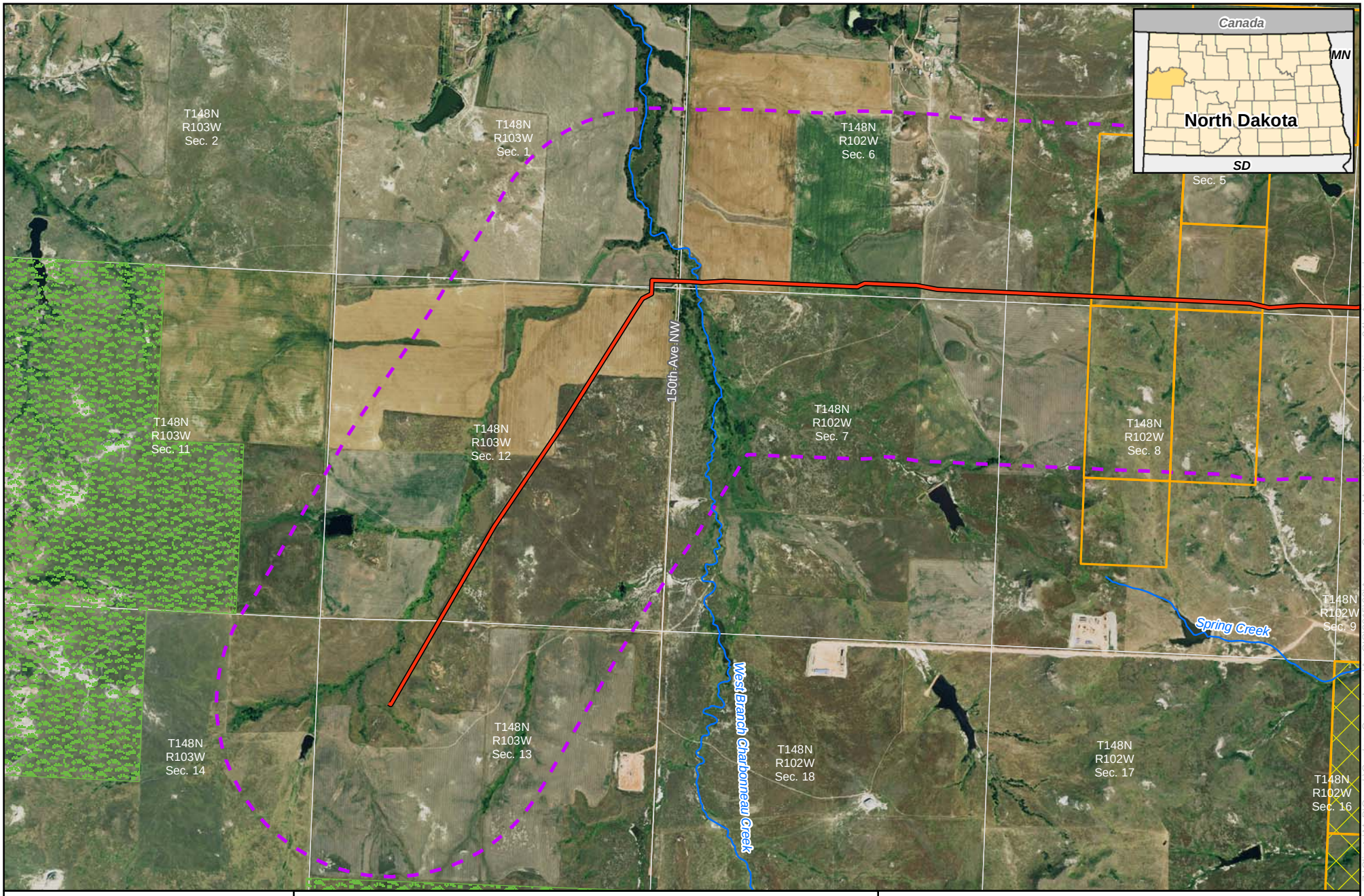

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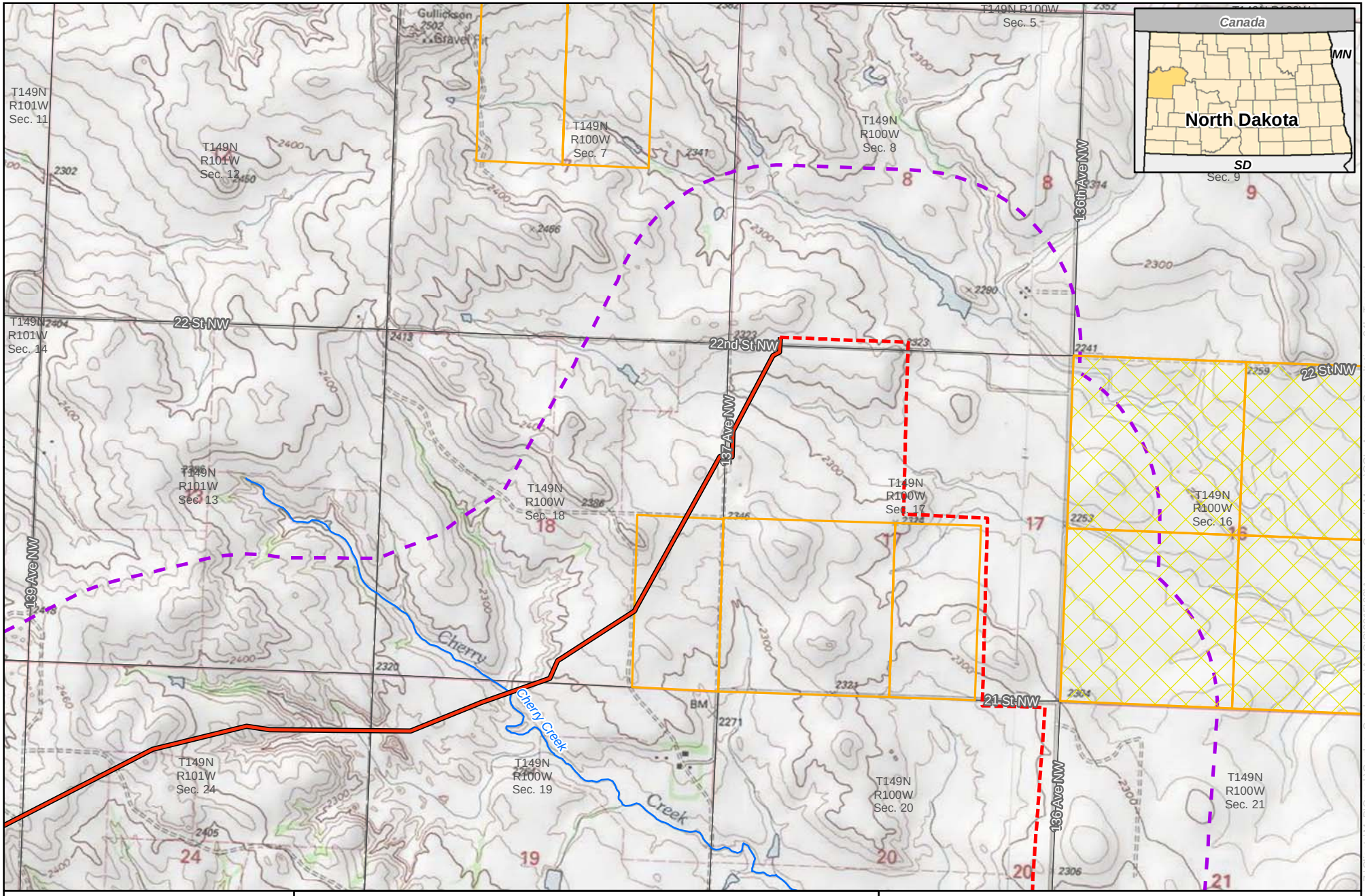

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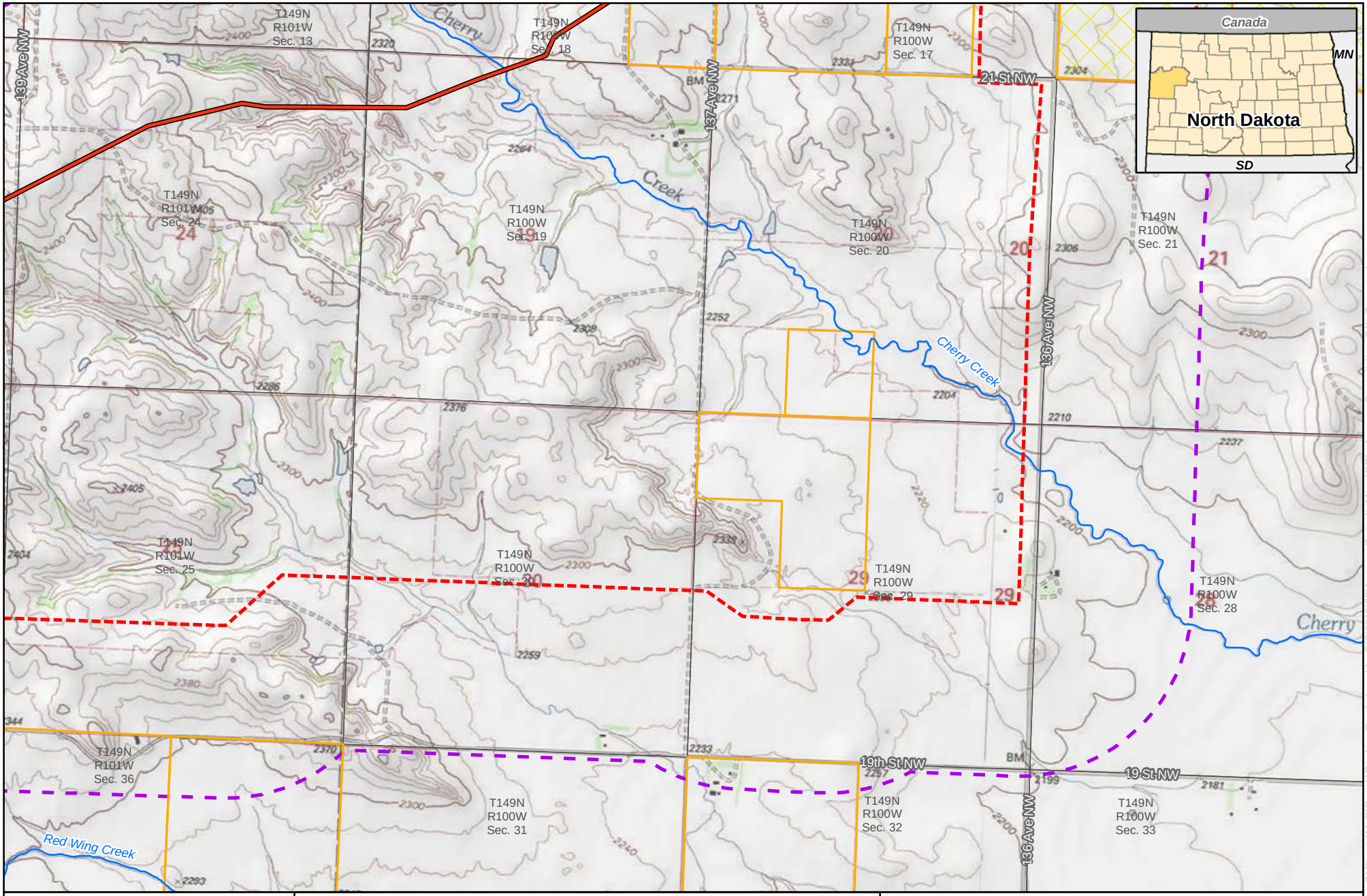

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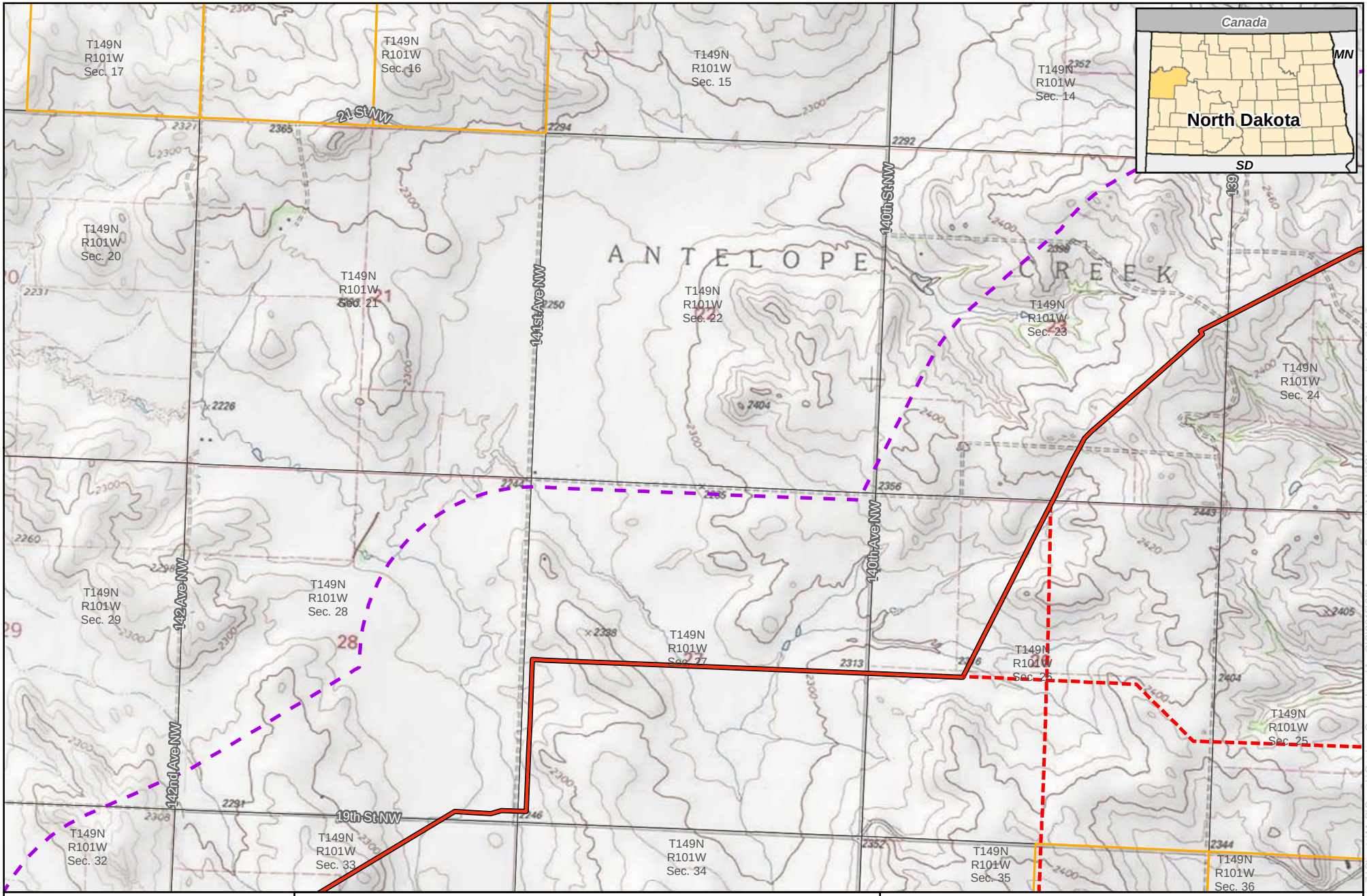

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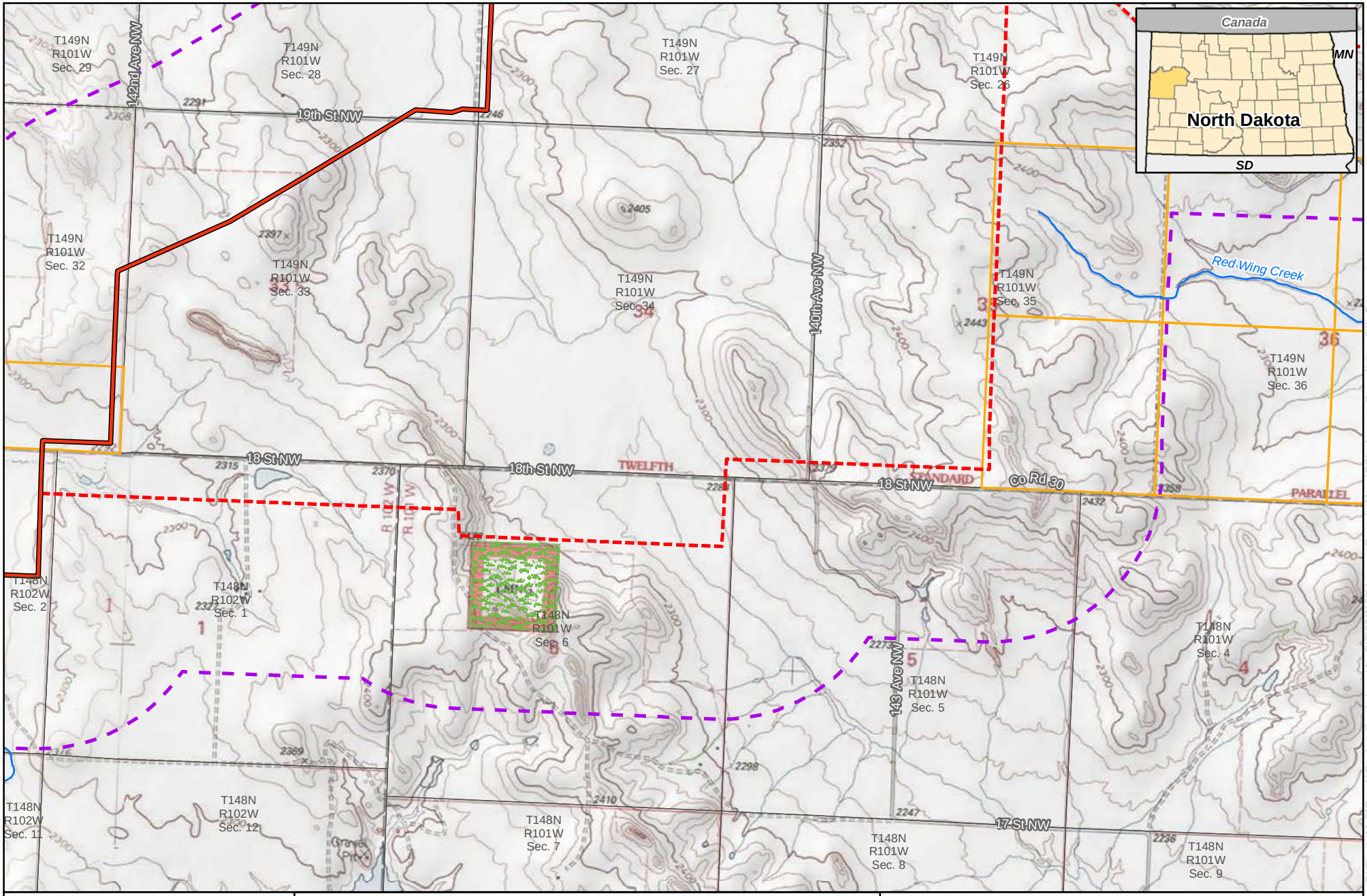

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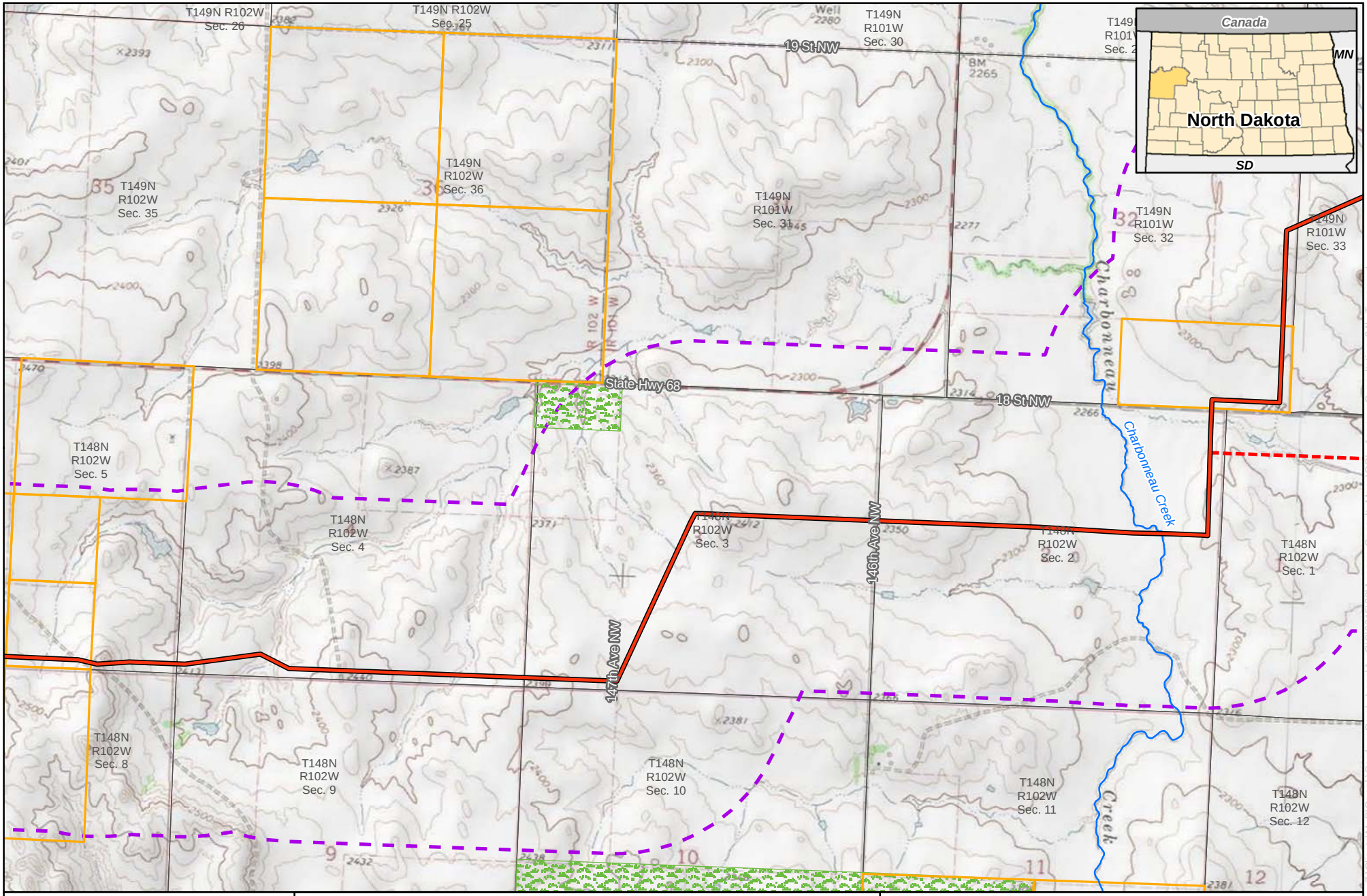

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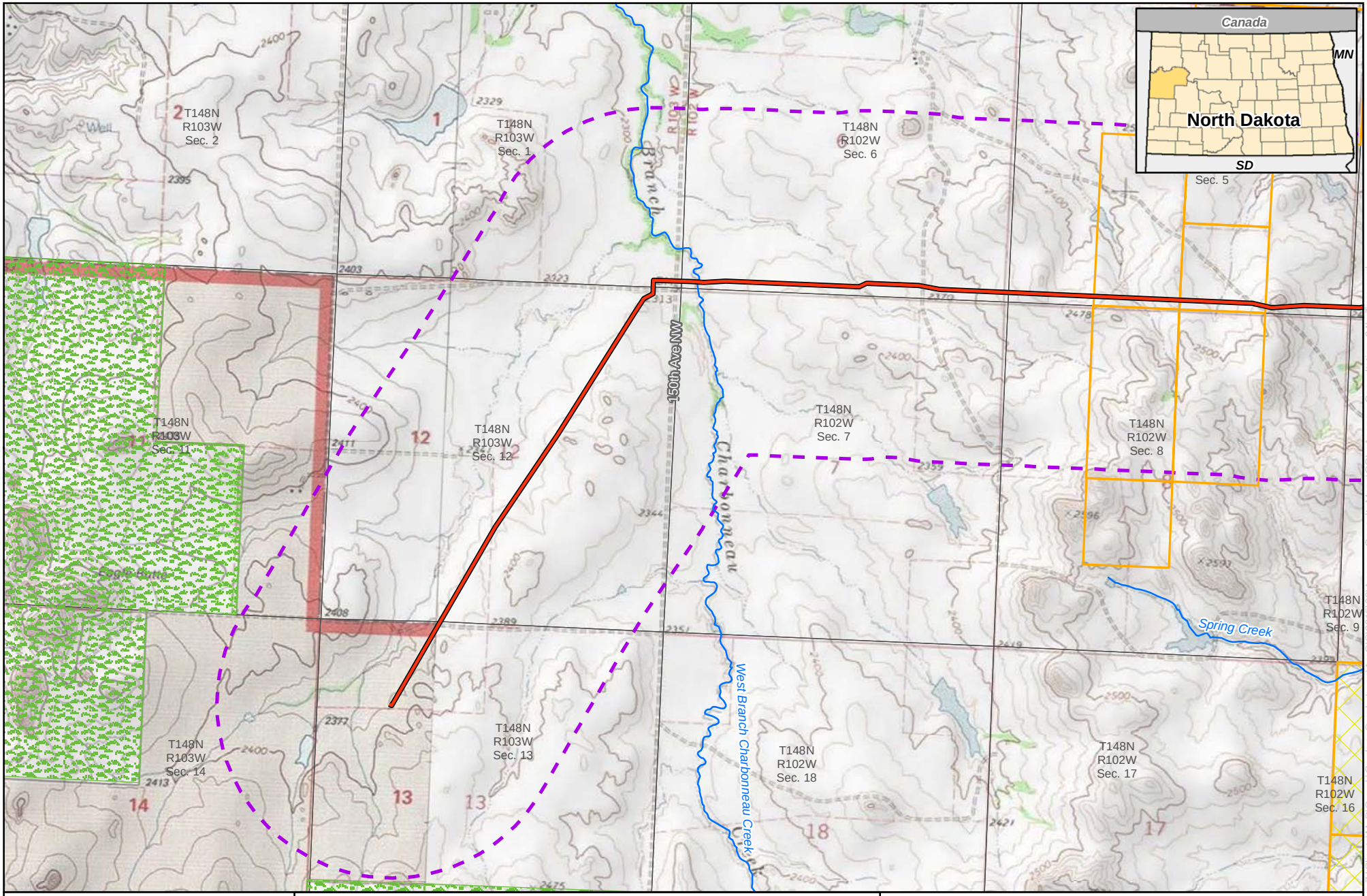

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Date: (8/20/2015)

U.S. FISH AND WILDLIFE SERVICE

ONEOK

CERTIFIED MAIL 7014 1200 0000 2237 3349
RETURN RECEIPT REQUESTED

September 3, 2015

Mr. Scott Larson, Field Supervisor
U.S. Fish and Wildlife Service
North Dakota Field Office
3425 Miriam Avenue
Bismarck, ND 58501-7926

ONEOK Bakken Pipeline, L.L.C.
16" Garden Creek Loop NGL Pipeline Project
Project Notification and Request for Review

Dear Mr. Larson,

As part of the 16" Garden Creek Loop NGL Pipeline Project (Project), ONEOK Bakken Pipeline, L.L.C. (ONEOK) is proposing to construct approximately 15 miles of 16–inch-diameter steel pipeline in McKenzie County, North Dakota. The purpose of the project is to loop ONEOK's existing Garden Creek pipeline and expand its capacity from 74,000 barrels per day (BPD) to 93,000 BPD. The Project will, in part, overlap an existing ONEOK Garden Creek Line pipeline easement and includes the proposed preferred route and two segment alternative routes as depicted on the attached Project location map. The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC); ONEOK plans to submit an application to the NDPSC in October 2015. Construction activities are proposed to begin in spring 2016 and be completed in 3-4 months.

ONEOK respectfully submits this project information to the U.S. Fish and Wildlife Service (USFWS) to review an approximate one-mile-wide "evaluation corridor" centered along the route of the pipeline and segment alternative routes. Project location maps that depict the pipeline route and a one-mile-wide evaluation corridor are enclosed. The Sections, Townships, and Ranges crossed by the Project in North Dakota are presented in the following table:

Township	Range	Sections
Preferred Route		
149 North	100 West	8, 17 - 19
149 North	101 West	23, 24, 26 - 28, 32, 33
148 North	102 West	2 - 6
148 North	103 West	1, 12, 13
Segment Alternative 1		
149 North	100 West	8, 17, 20 ,29, 30
149 North	101 West	25, 26
Segment Alternative 2		
149 North	101 West	26, 34, 35
148 North	101 West	6
148 North	102 West	1, 2

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. No USFWS-managed lands or designated critical habitat are located within the one-mile-wide evaluation corridor. Additionally, ONEOK conducted environmental field surveys of the route in summer 2015 and is currently finalizing its survey reports (available upon request). The majority of the route is co-located with existing linear utilities.

The USFWS's Information Planning and Conservation (IPaC) system was accessed on September 2, 2015 to obtain a list of threatened and endangered species, designated critical habitat, proposed critical habitat, Migratory Birds of Conservation Concern or other natural resources of concern that may be affected by the proposed Project. The results of the review included:

Federally Listed Species:

- Least tern (*Stemula antillarum*) - Endangered
- Piping plover (*Charadrius melodus*) – Threatened with designated critical habitat
- Red Knot (*Calidris canutus rufa*) – Threatened
- Whooping crane (*Grus americana*) - Endangered
- Pallid sturgeon (*Scaphirhynchus albus*) – Endangered
- Dakota Skipper (*Hesperia dacotae*) - Threatened
- Black-footed Ferret (*Mustela nigripes*) – Experimental Population
- Gray wolf (*Canis lupus*) - Endangered
- Sprague's pipit (Anthus spagueiz) – Candidate
- Northern long-eared bat (*Myotis septentrionalis*) – Threatened

Review of the results of the biological field survey conducted for the Project and review of the available data describing the life history, critical habitat, and conservation measures associated with each species has been conducted to evaluate the potential effects of the Project on these resources. The results of this analysis are as follows:

Least tern: In North Dakota, the interior least tern (*Sterna antillarum*) utilizes sparsely vegetated sandbars on the Missouri River. Birds nest, raise young, and forage on barren river sandbars. The species is found primarily on the Missouri River from the Garrison Dam south to Lake Oahe, and also on the Missouri and Yellowstone Rivers upstream of Lake Sakakawea. Approximately 100 pairs breed in North Dakota during the summer before flying to coastal areas of Central and South America and the Caribbean Islands. The Missouri River is located over 17.4 miles from the Project site.

The proposed Project is not located within or adjacent to preferred habitat, and no least terns were observed during the field survey. For these reasons, the Project activities addressed by this letter will have ***no effect*** on the least tern.

Piping plover: Piping plovers (*Charadrius melodus*) are small shore birds found along the Missouri and Yellowstone River systems and in large wetlands. In the Northern Great Plains, piping plovers use shorelines of prairie freshwater lakes, alkali wetlands, and major river systems, including the Missouri River in North Dakota, as primary courtship, nesting, foraging, sheltering, brood-rearing, and dispersal habitat.

The piping plover has the potential to occur within the Project area, however, suitable habitat was not found within the evaluation corridor and no piping plovers were observed during the field survey

effort. The proposed Project is not located within or adjacent to preferred habitat; as such, the Project activities addressed by this letter are ***not likely to adversely affect*** the piping plover.

Additionally, the evaluation corridor does not intersect areas of designated piping plover critical habitat; as such, there will be ***no effect*** on designated piping plover critical habitat.

Red knot: The red knot (*Calidris canutus rufa*) is a large sandpiper noted for its long-distance migration between summer breeding grounds in the Arctic and wintering areas at high latitudes in the Southern Hemisphere. Some red knots wintering in the northwestern Gulf of Mexico migrate through interior North America during both spring and fall and use stopover sites in the Northern Great Plains. The species relies heavily on exposed substrate at wetland edges for stopover habitat; the suitability of a wetland for red knots depends on water levels and may vary annually. Additionally, red knots have been reported to forage in cultivated fields when migrating through interior North America.

Potential impacts on the red knot are similar in nature to those discussed for the whooping crane (below). Construction activities have the potential to discourage individuals from utilizing adjacent agricultural fields, but would not have a measurable or detectable effect on an individual's reproductive capacity or survival. As such, the potential impact would not be significant and would not result in an adverse impact.

Project precautionary measures would be implemented if a red knot is sighted in or near the Project area. As part of pre-construction activities, ONEOK will conduct environmental training with the contractor and construction crews and provide details on this species. ONEOK would voluntarily suspend all heavy equipment operation activities and notify the USFWS should a red knot be spotted within one mile of the Project area. Heavy equipment activities would resume upon the departure of the individual(s).

The proposed Project will not result in a loss of red knot habitat, and no red knots were observed during the field survey. As such, the Project activities addressed by this letter are ***not likely to adversely affect*** the red knot.

Whooping crane: The whooping crane (*Grus americana*) embarks on a bi-annual migration from summer nesting and breeding grounds in Wood Buffalo National Park in northern Alberta to the barrier islands and coastal marshes of the Aransas National Wildlife Refuge on the Gulf Coast of Texas. Twice yearly in the spring and fall, the cranes migrate along the Central Flyway, a migratory corridor approximately 220 miles wide and 2,400 miles in length that includes eastern Montana and portions of North Dakota, South Dakota, Nebraska, Kansas, Oklahoma and eastern Texas. During the migration, cranes make numerous stops, roosting in large shallow marshes and feeding in harvested grain fields. Approximately 75 percent of the whooping crane sightings in North Dakota occur within the Central Flyway. In North Dakota, the whooping crane is not present year-round; they are only present during the twice-yearly migration between winter grounds and summer nesting sites. This species prefers larger wetland complexes for roosting habitat, typically using adjacent uplands for foraging opportunities.

Potential impacts are anticipated to be limited to the time period during active construction should it coincide with the spring migration period. Spring migration by the Aransas/Wood Buffalo population from the Texas Gulf Coast begins between the end of March and mid-April, with the last birds generally leaving Texas by the first of May. Experienced breeders are among the first to arrive in Canadian nesting areas in late April, with the rest of the birds arriving throughout the following 6-8 weeks.

Pipeline construction involves temporary impacts, with a post-construction restoration standard of restoring disturbed areas to their original pre-construction condition. Additionally, as part of pre-construction activities, ONEOK will conduct environmental training with the contractor and construction crews and provide details on this species. If a whooping crane is sighted in or near the Project area, ONEOK would voluntarily suspend all heavy equipment operation activities and notify the USFWS should a whooping crane be spotted within one mile of the Project area. Heavy equipment activities would resume upon the departure of the individual(s).

The proposed Project will not result in a loss of crane habitat, and no whooping cranes were observed during the field survey. As such, the Project activities addressed by this letter are ***not likely to adversely affect*** the whooping crane.

Pallid sturgeon: The preferred habitat of the pallid sturgeon (*Scaphirhynchus albus*) includes the benthic environment associated with swift waters of large turbid, free-flowing rivers with braided channels, dynamic flow patterns, periodic flooding of terrestrial habitats, and requiring extensive micro habitat diversity. In North Dakota, pallid sturgeon populations are fragmented by dams on the Missouri River. Pallid sturgeon are scarce in the upper Missouri River above Ft. Peck Reservoir; in the Missouri and lower Yellowstone Rivers between Ft. Peck Dam and Lake Sakakawea; in the Missouri River downstream of Gavins Point Dam; and in the Mississippi and Atchafalaya Rivers.

The proposed Project is over 17.4 miles from the Missouri River and will not have an impact on pallid sturgeon habitat. Therefore, the Project activities addressed by this letter will have ***no effect*** on this species.

Dakota Skipper: Dakota skippers require untilled, high-quality prairie. Habitat preferred by the skipper is we-mesic prairie with little topographic relief on near-shore glacial lake deposits and in rolling native-prairie terrain over gravelly glacial moraine deposits. Larvae feed on grasses, favoring little bluestem (*Schizachyrium scoparium*). Adults commonly feed on nectar of flowering native forbs such as harebell (*Campanula rotunidfolia*), wood lily (*Lilium philadelphicum*), and purple coneflower (*Echinacea angustifolia*). This species is not known to disperse widely and has low mobility, dispersing a maximum of 0.6-mile. The species is threatened by conversion of native prairie to cultivated agriculture or shrublands, over-grazing, invasive species, gravel mining, and inbreeding. The proposed Project site is primarily cultivated cropland and has been managed as such for more than 20 years. Review of aerial photos and soil survey data indicate that untilled, high-quality prairie dominated by native grasses that contain a high diversity of native forbs are not present within the Project site or within one-half mile of the site. Desktop analysis supported with field studies have concluded that no suitable habitat is present within the Project area; therefore, impacts to the Dakota skipper are not anticipated.

Additionally, the evaluation corridor does not intersect areas of designated Dakota Skipper critical habitat; as such, there will be ***no effect*** on designated piping plover critical habitat.

Black-footed Ferret: Black-footed ferrets inhabit the extensive prairie dog complexes of the Great Plains, typically composed of several smaller colonies close to one another that provide a sustainable prey base. The Black-footed Ferret Survey Guidelines for Compliance with the Endangered Species Act published by the USFWS (1989), states ferrets require black-tailed prairie dog (*Cynomys ludovicianus*) towns or complexes greater than 80 acres in size, and town of this dimension may be important for ferret recovery efforts. This species has not been observed in the wild for more than 20 years and is not anticipated to be impacted by the proposed Project.

Gray wolf: A habitat generalist, the gray wolf (*Canis lupus*) historically occupied most habitat types in North America. They show little preference for one cover type over another and successfully utilize alpine, forest, grassland, shrubland, and woodland habitats across their range. Once thought to require wilderness areas with little to no human disturbance, recent range expansions have demonstrated the species' ability to tolerate higher rates of anthropogenic development than previously thought. Given abundant prey and low rates of human-caused mortality, wolves can survive in proximity to human-dominated environments. North Dakota does not currently have an established breeding population of gray wolves, and observations of wolves are sporadic; it is believed that these individuals are dispersers from adjacent populations (i.e., from Minnesota and Manitoba).

Project precautionary measures would be implemented if a red knot is sighted in or near the Project area. As part of pre-construction activities, ONEOK will conduct environmental training with the contractor and construction crews and provide details on this species. ONEOK would voluntarily suspend all heavy equipment operation activities and notify the USFWS should a gray wolf be spotted within one mile of the Project area. Heavy equipment activities would resume upon the departure of the individual(s).

As only occasional visitors to North Dakota, it is unlikely gray wolf individuals would be impacted by the Project. Individual wolves are transient and highly mobile and would actively avoid the Project upon seeing or hearing construction activities. The Project activities addressed by this letter are ***not likely to adversely affect*** the gray wolf.

Sprague's pipit: The Sprague's pipit (*Anthus spragueii*) is endemic to the Northern Great Plains native short-to-mixed grass prairie and is sensitive to fragmentation and conversion of grassland habitat. Sprague's pipits prefer relatively large prairie patches of at least approximately 72 acres, with larger patches of at least 360 acres preferred. The Sprague's pipit breeds and winters in open grassland with good drainage and no shrubs or trees. This species builds its nest in the form of a cup woven of fine grasses placed on the ground sometimes forming a complete dome.

The Sprague's pipit is currently listed as a candidate species, and as such, is not protected by the federal Endangered Species Act until they are listed. Large tracts of native short-to-mixed grass prairie were not observed within the Project area, and no Sprague's pipits were observed within the study area during the field survey. Suitable habitat for this species is not present within the evaluation corridor; therefore, the Project activities addressed by this letter will have ***no impact*** on this species or its preferred habitat.

Northern long-eared bat: The northern long-eared bat (*Myotis septentrionalis*) is a medium-sized bat of the Vespertilionidae family. During summer, the species roosts singly or in colonies underneath bark, in cavities, or in crevices of both live and dead trees. A habitat generalist, roost tree selection appears also to be opportunistic; the species uses a variety of tree sizes and species. Males and non-reproductive females may also roost in cooler places, like caves and mines. It has also been found, rarely, roosting in structures like barns and sheds. The species overwinters in small crevices or cracks in hibernacula, such as caves and mines with large passages and entrances, constant temperatures, and high humidity with no air currents. Migration to summer habitat occurs between mid-March and mid-May. In North Dakota, the species is most likely to be found in forested wetlands and riparian areas.

On April 1, 2015, the USFWS listed the northern long-eared bat as threatened under Endangered Species Act (ESA) and simultaneously published an interim 4(d) rule; the final listing and interim 4(d) rule took effect as of May 4, 2015. A 4(d) rule is a tool utilized by the USFWS to allow for

flexibility in the implementation of the ESA and to tailor prohibitions to those that make the most sense for protecting and managing at-risk species. This rule, which may be applied only to species listed as threatened, directs the Service to issue regulations deemed "necessary and advisable to provide for the conservation of threatened species."

In areas of the country that have *not* been affected by white-nose syndrome, the interim 4(d) rule exempts incidental take from all activities. McKenzie County, North Dakota currently falls outside of the white-nose syndrome buffer zone, and as such, there are no restrictions for Project activities involving tree clearing at any time of the year in North Dakota. Therefore, the Project activities addressed in this letter will have ***no effect*** on the northern long-eared bat.

USFWS Managed Lands: Conservation programs such as Waterfowl Production Areas (WPA) and wetland and grassland easements represent an important tool used by USFWS to identify and manage high quality wildlife habitat. ONEOK has initiated consultation with the USFWS Lostwood National Wildlife Refuge (NWR) regarding the presence or absence of USFWS managed lands within the proposed study area. ONEOK will work with Lostwood NWR to avoid and minimize impacts to WPAs and easement lands, if present.

Migratory Bird Considerations: USFWS administers various wildlife related mandates of national concern including the Migratory Bird Treaty Act (MBTA). ONEOK understands that unlike the Endangered Species Act, the MBTA has no provisions for the allowance of a take and therefore compliance may best be achieved by avoiding or minimizing the potential to interact with migratory species during the active breeding season. ONEOK also understands that in North Dakota, the breeding season is typically defined as occurring annually from February 1 through July 15.

Based on the current schedule, the Project would begin construction during the 2016 breeding season. In recognition of these facts, ONEOK is proposing to:

1. Conduct pre-construction surveys to determine if migratory bird nests are located in the Project area, and/or
2. Conduct clearing of the project area prior to February 1 and maintain an active construction site through final restoration which is anticipated to occur approximately 3-4 months later.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. ONEOK has retained Merjent, Inc. (Merjent) as its environmental consultant for this project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or phartzheim@merjent.com or me at 918-732-1472 or todd.kelvington@oneok.com.

Sincerely,

Loretta M. Earnest
for Todd Kelvington

Todd Kelvington
Environmental Project Manager

Enclosures: Project overview maps

cc: Paul Hartzheim/Maddy Steffenson, Merjent (pdf)
Tulsa Environment – Large Construction – Garden Creek Loop PL

Telephone Log

Date:	October 6, 2015
To:	Kevin Shelley (Director)
Agency:	U.S. Fish and Wildlife Service, North Dakota Field Office
Phone Number:	701-250-4481
From:	Jennifer Kamm
Company:	Merjent
Phone Number:	612-354-4284
Subject:	ONEOK Bakken Pipeline, L.L.C. (ONEOK): Garden Creek Loop NGL Pipeline Project

On behalf of ONEOK, Ms. Kamm called Mr. Shelley to follow up with a consultation letter sent to the U.S. Fish and Wildlife Service (FWS), North Dakota Field Office on September 2, 2015 requesting review of a 1-mile study area associated with ONEOK's Garden Creek Loop NGL Pipeline Project. Ms. Kamm requested whether the FWS had any comments or concerns about the project related to:

- Federally listed threatened and endangered species and designated critical habitat;
- FWS managed lands;
- Migratory Bird Treaty Act consultation; and
- Bald and Golden Eagle consultation

Mr. Shelley stated that the FWS does not hold any easement interests in McKenzie County. Ms. Kamm stated that field surveys for raptors and suitable habitat for listed species had been conducted and that no raptors or habitat were identified during the surveys. Ms. Kamm also stated that the North Dakota Game and Fish Department and the North Dakota Parks and Recreation Department had been consulted with regarding state listed and sensitive species as well as known locations of bald and golden eagle nest sites. Mr. Shelley stated that he was confident in ONEOK's field survey efforts and had no further comment regarding federally listed species, migratory birds, or bald or golden eagles. Mr. Shelley further indicated that a formal written response to the original ONEOK consultation letter would not be provided.

ONEOK

CERTIFIED MAIL 7014 1200 0000 2237 3400
RETURN RECEIPT REQUESTED

September 3, 2015

Mr. Kory Richardson
U.S. Fish and Wildlife Service
Lostwood National Wildlife Refuge
8315 Highway 8
Kenmare, ND 58746

ONEOK Bakken Pipeline, L.L.C.
16" Garden Creek Loop NGL Pipeline Project
Project Notification and Request for Review

Dear Mr. Richardson,

As part of the 16" Garden Creek Loop NGL Pipeline Project (Project), ONEOK Bakken Pipeline, L.L.C. (ONEOK) is proposing to construct approximately 15 miles of 16–inch-diameter steel pipeline in McKenzie County, North Dakota. The purpose of the project is to loop ONEOK's existing Garden Creek pipeline and expand its capacity from 74,000 barrels per day (BPD) to 93,000 BPD. The Project will, in part, overlap an existing ONEOK Garden Creek Line pipeline easement and includes the proposed preferred route and two segment alternative routes as depicted on the attached Project location map. The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC); ONEOK plans to submit an application to the NDPSC in October 2015. Construction activities are proposed to begin in spring 2016 and be completed in 3-4 months.

ONEOK respectfully submits this Project information to the U.S. Fish and Wildlife Service (USFWS) Lostwood National Wildlife Refuge (NWR) to review an approximate one-mile-wide "evaluation corridor" centered along the route of the pipeline and segment alternative routes. Project location maps that depict the pipeline route and evaluation corridor are enclosed. The Sections, Townships, and Ranges crossed by the Project are presented in the following table:

Township	Range	Sections
Preferred Route		
149 North	100 West	8, 17 - 19
149 North	101 West	23, 24, 26 - 28, 32, 33
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148 North	102 West	1, 2

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK conducted biological field surveys of the route in summer 2015 and is currently finalizing its survey reports (available upon request). The majority of the route is co-located with existing linear utilities.

As indicated above, the purpose of this letter is to provide notification of the proposed Project and to solicit comments that will assist in the regulatory process. It is our understanding that the Lostwood NWR oversees the following:

- Grassland easements,
- Wetland easements, and
- Fee-title lands.

We request a review of the Project area for the presence or absence lands and projects under the direction of these programs. ONEOK is also corresponding with the USFWS, North Dakota Field Office regarding federally listed species, USFWS managed lands, and the Migratory Bird Treaty Act. Copies of correspondence received in response to this letter will be included in the Corridor Certification and Route Permit application to be filed with the NDPSC.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. ONEOK has retained Merjent, Inc. (Merjent) as its environmental consultant for this project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or phartzheim@merjent.com or me at 918-732-1472 or todd.kelvington@oneok.com.

Sincerely,

Loretta M. Earnest
for Todd Kelvington

Todd Kelvington
Environmental Project Manager

Enclosures: Project overview maps

xc: Paul Hartzheim/Maddy Steffenson, Merjent (pdf)
Tulsa Environment – Large Construction – Garden Creek Loop PL

AGENCY RESPONSE PENDING

U.S. DEPARTMENT OF AGRICULTURE

Jennifer Kamm

From: Jennifer Kamm
Sent: Wednesday, September 2, 2015 2:40 PM
To: 'aaron.krauter@nd.usda.gov'; 'Marcy.feilmeier@nd.usda.gov'
Cc: Maddy Steffenson; Paul Hartzheim; 'Todd.Kelvington@oneok.com'; 'Joy.Sober@oneok.com'
Subject: FW: ONEOK Bakken Pipeline, L.L.C. Garden Creek Loop Pipeline Project
Attachments: GCL_Agency_Consultation_24k_Aerial.pdf; GCL_Agency_Consultation_24k_Topo.pdf; GCL_Agency_Consultation_Project_Overview.pdf

Dear Mr. Krauter and Ms. Feilmeier:

As part of the 16" Garden Creek Loop NGL Pipeline Project (Project), ONEOK Bakken Pipeline, L.L.C. (ONEOK) is proposing to construct approximately 15 miles of 16–inch-diameter steel pipeline in McKenzie County, North Dakota. The purpose of the project is to loop ONEOK's existing Garden Creek pipeline and expand its capacity from 74,000 barrels per day (BPD) to 93,000 BPD. The Project will, in part, overlap an existing ONEOK Garden Creek Line pipeline easement and includes the proposed preferred route and two segment alternative routes as depicted on the attached Project location map. The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC); ONEOK plans to submit an application to the NDPSC in October 2015. Construction activities are proposed to begin in spring 2016 and be completed in 3-4 months.

Project location maps are enclosed that depict the pipeline route and an approximate one-mile-wide "evaluation corridor" centered along the preferred pipeline route and two segment alternative routes (a shapefile is available upon request). The Sections, Townships, and Ranges crossed by the Project are presented in the following table:

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149 North	101 West	26, 34, 35
148 North	101 West	6
148 North	102 West	1, 2

ONEOK has retained Merjent, Inc. (Merjent) as its environmental consultant for this project. On behalf of ONEOK, Merjent respectfully submits this Project information to the United States Department of Agriculture (USDA)-Farm Service Agency (FSA) to review the evaluation corridor centered along the route of the pipeline.

ONEOK understands that the FSA has administrative responsibilities to ensure that the provisions of the Conservation Reserve Program (CRP) are maintained throughout the contract period. These provisions state that land enrolled in CRP shall not have the vegetative cover disturbed during the Primary Nesting and Brood Rearing Season (PNS) unless a waiver of these provisions is granted by the FSA.

If the Project would require minimal disturbance to CRP land during the PNS, which in North Dakota is from April 15 through August 1, a request for a waiver to be granted will be sent to the North Dakota State FSA Committee. This request would include the proposed timeframe construction would occur, impact to the land enrolled in CRP and plans to restore CRP cover, if necessary.

Lands enrolled in CRP land are privately owned and information regarding enrollment falls under the Freedom of Information Act. ONEOK is working with landowners during the easement acquisition process to identify presence of CRP enrolled lands within the Project area.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. A hard copy of this request will follow via certified mail. Copies of correspondence received in response to this email will be included in the Corridor Certification and Route Permit application to be filed with the NDPSC. Should you have any questions or require additional information, please contact me at 612-746-1618 or phartzheim@merjent.com or Todd Kelvington of ONEOK at 918-732-1472 or todd.kelvington@oneok.com.

Sincerely,

Jennifer Kamm - for
Paul Hartzheim, M.S.

merjent

Jennifer Kamm

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Minneapolis, MN 55401

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612.354.4284 direct
612.875.0543 cell
612.746.3679 fax

www.merjent.com
jkamm@merjent.com

USDA

United States Department of Agriculture

Farm and Foreign Agricultural Services

Farm Service Agency

North Dakota State Office

1025 28th St. South
Fargo, ND 58103-2372

Phone: (701) 239-5224

Fax: (855) 813-6644

September 10, 2015

Merjent, Inc.
C/O Paul Hartzheim
Tractor Works Building
800 Washington Ave, N. Suite 315
Minneapolis, MN 55401

Dear Mr. Hartzheim,

This letter is in response to your September 2, 2015 letter concerning the proposed ONEOK Garden Creek Loop NGL Pipeline project in McKenzie County, North Dakota. The project would loop ONEOK's existing Garden Creek pipeline and expand its capacity.

Based on the information in your September 2nd letter, it is possible the project could begin in spring 2016, furthermore, it is unknown if, at any time, the project will be crossing land enrolled in the Conservation Reserve Program (CRP). Although the land enrolled in CRP is privately owned, FSA has administrative responsibilities to ensure the provisions of CRP are maintained throughout the contract period.

The land enrolled in CRP shall not have the cover disturbed during the Primary Nesting and Brood Rearing Season (PNS), which in North Dakota, is from April 15 through August 1. No activity is to take place on CRP during the PNS. However, there are exceptions to this provision. If disturbance of the existing cover is minimal, a waiver of this provision could be granted.

If the ONEOK Garden Creek Pipeline Project will need access to CRP during the PNS, a separate formal request to waive this provision must be submitted prior to any disturbance of CRP cover. Only the North Dakota State FSA Committee has the authority to grant a waiver of activity during the PNS. Therefore, if necessary, the request to disturb cover during the PNS shall be sent to the North Dakota State FSA Committee at the address provided on the letterhead of this letter. Such a request should include the proposed timeframe construction will occur, impact to the land enrolled in CRP and plans to restore CRP cover, if necessary.

If there are any questions, please contact this office.

Sincerely,

Aaron Krauter
State Executive Director

Cc: McKenzie County FSA Office
District Director - Honeyman

Jennifer Kamm

From: Jennifer Kamm
Sent: Wednesday, September 2, 2015 2:42 PM
To: 'Hagel, Todd - NRCS, Bismarck, ND'; 'kyle.hartel@nd.usda.gov'
Cc: Maddy Steffenson; Paul Hartzheim; 'Todd.Kelvington@oneok.com'; 'Joy.Sober@oneok.com'
Subject: ONEOK Bakken Pipeline, L.L.C. Garden Creek Loop Pipeline Project
Attachments: GCL_Agency_Consultation_24k_Aerial.pdf; GCL_Agency_Consultation_24k_Topo.pdf; GCL_Agency_Consultation_Project_Overview.pdf

Dear Mr. Hagel and Mr. Hartel:

As part of the 16" Garden Creek Loop NGL Pipeline Project (Project), ONEOK Bakken Pipeline, L.L.C. (ONEOK) is proposing to construct approximately 15 miles of 16–inch-diameter steel pipeline in McKenzie County, North Dakota. The purpose of the project is to loop ONEOK's existing Garden Creek pipeline and expand its capacity from 74,000 barrels per day (BPD) to 93,000 BPD. The Project will, in part, overlap an existing ONEOK Garden Creek Line pipeline easement and includes the proposed preferred route and two segment alternative routes as depicted on the attached Project location map. The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC); ONEOK plans to submit an application to the NDPSC in October 2015. Construction activities are proposed to begin in spring 2016 and be completed in 3-4 months.

Project location maps are enclosed that depict the pipeline route and an approximate one-mile-wide "evaluation corridor" centered along the preferred pipeline route and two segment alternative routes (a shapefile is available upon request). The Sections, Townships, and Ranges crossed by the Project are presented in the following table:

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148 North	102 West	1, 2

ONEOK has retained Merjent, Inc. (Merjent) as its environmental consultant for this project. On behalf of ONEOK, Merjent respectfully submits this Project information to the United States Department of Agriculture (USDA)-Natural Resources Conservation Service (NRCS) to review the evaluation corridor centered along the route of the pipeline. We would specifically like information regarding the following NRCS-administered lands that may be affected by our Project:

- Locations of Wetland Reserve Program and Grassland Reserve Program easements.
- Known locations of noxious and/or invasive weed species along the project route.
- Identification of any lands/easements that may be enrolled in programs administered by the NRCS not described above.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. A hard copy of this request will follow via certified mail. Copies of correspondence received in response to this email will be included in the Corridor Certification and Route Permit application to be filed with the NDPSC. Should you have any questions or require additional information, please contact me at 612-746-1618 or phartzheim@merjent.com or Todd Kelvington of ONEOK at 918-732-1472 or todd.kelvington@oneok.com.

Sincerely,

Jennifer Kamm - for
Paul Hartzheim, M.S.

merjent

Jennifer Kamm

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jkamm@merjent.com

Jennifer Kamm

From: Hagel, Todd - NRCS, Bismarck, ND <Todd.Hagel@nd.usda.gov>
Sent: Wednesday, September 9, 2015 8:08 AM
To: Jennifer Kamm; Hartel, Kyle - NRCS, Watford City, ND
Cc: Maddy Steffenson; Paul Hartzheim; Todd.Kelvington@oneok.com; Joy.Sober@oneok.com
Subject: RE: ONEOK Bakken Pipeline, L.L.C. Garden Creek Loop Pipeline Project

After reviewing the proposed pipeline project, we have determined there are no known WRP, GRP, FRPP, and/or ACEP easements in the area. Regarding noxious weeds, NRCS does not maintain this data. I recommend you contact McKenzie County Weed Control at:

McKenzie County Weed Control
405 3rd Ave NW
Watford City, ND 58854
Phone:(701) 842-4131

If there is any further information you may need please feel free to contact me.

From: Jennifer Kamm [mailto:jkamm@merjent.com]
Sent: Wednesday, September 02, 2015 2:42 PM
To: Hagel, Todd - NRCS, Bismarck, ND <Todd.Hagel@nd.usda.gov>; Hartel, Kyle - NRCS, Watford City, ND <Kyle.Hartel@nd.usda.gov>
Cc: Maddy Steffenson <msteffenson@merjent.com>; Paul Hartzheim <phartzheim@merjent.com>; Todd.Kelvington@oneok.com; Joy.Sober@oneok.com
Subject: ONEOK Bakken Pipeline, L.L.C. Garden Creek Loop Pipeline Project

Dear Mr. Hagel and Mr. Hartel:

As part of the 16" Garden Creek Loop NGL Pipeline Project (Project), ONEOK Bakken Pipeline, L.L.C. (ONEOK) is proposing to construct approximately 15 miles of 16–inch-diameter steel pipeline in McKenzie County, North Dakota. The purpose of the project is to loop ONEOK's existing Garden Creek pipeline and expand its capacity from 74,000 barrels per day (BPD) to 93,000 BPD. The Project will, in part, overlap an existing ONEOK Garden Creek Line pipeline easement and includes the proposed preferred route and two segment alternative routes as depicted on the attached Project location map. The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC); ONEOK plans to submit an application to the NDPSC in October 2015. Construction activities are proposed to begin in spring 2016 and be completed in 3-4 months.

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Sincerely,

Jennifer Kamm - for
Paul Hartzheim, M.S.

merjent

Jennifer Kamm

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jkamm@merjent.com

Jennifer Kamm

From: Hartel, Kyle - NRCS, Watford City, ND <Kyle.Hartel@nd.usda.gov>
Sent: Tuesday, October 6, 2015 2:05 PM
To: Jennifer Kamm
Subject: RE: ONEOK Bakken Pipeline, L.L.C. Garden Creek Loop Pipeline Project

Jennifer,

In response to your questions below;

- The USDA-NRCS does not administer any WRP or GRP easements within this corridor.
- The USDA-NRCS does not track/monitor any noxious weeds in McKenzie County. The McKenzie County Weed Board may be of help regarding this question.
- The USDA-NRCS does not directly administer any other programs in this corridor. It would be best to ask the landowner specifically of any federal cost shared funds that were allocated to conservation practices that may be destroyed/abandoned per the pipeline installation so that reclamation can be completed.

Kyle S. Hartel
District Conservationist
USDA-NRCS Watford City Field Office
(701)842-3628 Ext.3
PO Box 583 109 5th St. SW
Watford City, ND 58854

From: Jennifer Kamm [mailto:jkamm@merjent.com]
Sent: Wednesday, September 02, 2015 2:42 PM
To: Hagel, Todd - NRCS, Bismarck, ND <Todd.Hagel@nd.usda.gov>; Hartel, Kyle - NRCS, Watford City, ND <Kyle.Hartel@nd.usda.gov>
Cc: Maddy Steffenson <msteffenson@merjent.com>; Paul Hartzheim <phartzheim@merjent.com>; Todd.Kelvington@oneok.com; Joy.Sober@oneok.com
Subject: ONEOK Bakken Pipeline, L.L.C. Garden Creek Loop Pipeline Project

Dear Mr. Hagel and Mr. Hartel:

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Sincerely,

Jennifer Kamm - for
Paul Hartzheim, M.S.

merjent

Jennifer Kamm

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612.354.4284 direct
612.875.0543 cell
612.746.3679 fax

www.merjent.com
jkamm@merjent.com

U.S. DEPARTMENT OF DEFENSE

Jennifer Kamm

From: Jennifer Kamm
Sent: Wednesday, September 2, 2015 2:44 PM
To: 'MUNOS, CY I GS-11 USAF AFGSC 91 MMXS/MMXSFK'
Cc: Maddy Steffenson; Paul Hartzheim; 'Todd.Kelvington@oneok.com'; 'Joy.Sober@oneok.com'
Subject: ONEOK Bakken Pipeline, L.L.C. Garden Creek Loop Pipeline Project
Attachments: GCL_Agency_Consultation_24k_Aerial.pdf; GCL_Agency_Consultation_24k_Topo.pdf; GCL_Agency_Consultation_Project_Overview.pdf

Dear Mr. Munos:

As part of the 16" Garden Creek Loop NGL Pipeline Project (Project), ONEOK Bakken Pipeline, L.L.C. (ONEOK) is proposing to construct approximately 15 miles of 16–inch-diameter steel pipeline in McKenzie County, North Dakota. The purpose of the project is to loop ONEOK's existing Garden Creek pipeline and expand its capacity from 74,000 barrels per day (BPD) to 93,000 BPD. The Project will, in part, overlap an existing ONEOK Garden Creek Line pipeline easement and includes the proposed preferred route and two segment alternative routes as depicted on the attached Project location map. The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC); ONEOK plans to submit an application to the NDPSC in October 2015. Construction activities are proposed to begin in spring 2016 and be completed in 3-4 months.

ONEOK has retained Merjent, Inc. (Merjent) as its environmental consultant for this project. On behalf of ONEOK, Merjent respectfully submits this Project information to the U.S. Department of Defense (USDoD) to review a one-mile-wide "evaluation corridor" centered along the route of the pipeline and segment alternative routes. Project location maps that depict the pipeline route and a one-mile-wide evaluation corridor are enclosed (a shapefile is available upon request). The Sections, Townships, and Ranges crossed by the Project are presented in the following table:

Township	Range	Sections
Preferred Route		
149 North	100 West	8, 17 - 19
149 North	101 West	23, 24, 26 - 28, 32, 33
148 North	102 West	2 - 6
148 North	103 West	1, 12, 13
Segment Alternative 1		
149 North	100 West	8, 17, 20 ,29, 30
149 North	101 West	25, 26
Segment Alternative 2		
149 North	101 West	26, 34, 35
148 North	101 West	6
148 North	102 West	1, 2

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. In addition, environmental field surveys were completed in summer 2015. The majority of the route is co-located with existing linear utilities.

As indicated above, the purpose of this message is to provide notification of the Project and to seek your comments that will assist in the regulatory process. It is our understanding that the USDoD-Air force Cable Affairs oversees Intercontinental ballistic missile and launch facilities. We request a review of the evaluation corridor for the presence or

absence of these facilities. A hard copy of this request will follow via certified mail. Copies of correspondence received in response to this email will be included in the Corridor Certification and Route Permit application to be filed with the NDPSC.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact me at 612-746-1618 or phartzheim@merjent.com or Todd Kelvington of ONEOK at 918-732-1472 or todd.kelvington@oneok.com.

Sincerely,

Jennifer Kamm - for
Paul Hartzheim, M.S.

Jennifer Kamm

TractorWorks Building
800 Washington Avenue N.
Suite 315
Minneapolis, MN 55401

612.746.3660 main
612.354.4284 direct
612.875.0543 cell
612.746.3679 fax

www.merjent.com

jkamm@merjent.com

Jennifer Kamm

From: MUNOS, CY I GS-11 USAF AFGSC 91 MMXS/MMXSFK <cy.munos@us.af.mil>
Sent: Wednesday, September 2, 2015 3:22 PM
To: Jennifer Kamm
Subject: RE: ONEOK Bakken Pipeline, L.L.C. Garden Creek Loop Pipeline Project

Jennifer,

The Minot AFB has no assets in the project area in Mckenzie County. We appreciate keeping us informed on all projects. Thanks.

Cy Munos
Cable Affairs Officer
91 MMXS/MMXSFK
Minot AFB, ND
W. 701-723-6053
C. 701-720-8274

-----Original Message-----
From: Jennifer Kamm [mailto:jkamm@merjent.com]
Sent: Wednesday, September 02, 2015 2:45 PM
To: MUNOS, CY I GS-11 USAF AFGSC 91 MMXS/MMXSFK
Cc: Maddy Steffenson; Paul Hartzheim; Todd.Kelvington@oneok.com; Joy.Sober@oneok.com
Subject: ONEOK Bakken Pipeline, L.L.C. Garden Creek Loop Pipeline Project

Dear Mr. Munos:

As part of the 16" Garden Creek Loop NGL Pipeline Project (Project), ONEOK Bakken Pipeline, L.L.C. (ONEOK) is proposing to construct approximately 15 miles of 16-inch-diameter steel pipeline in McKenzie County, North Dakota. The purpose of the project is to loop ONEOK's existing Garden Creek pipeline and expand its capacity from 74,000 barrels per day (BPD) to 93,000 BPD. The Project will, in part, overlap an existing ONEOK Garden Creek Line pipeline easement and includes the proposed preferred route and two segment alternative routes as depicted on the attached Project location map. The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC); ONEOK plans to submit an application to the NDPSC in October 2015. Construction activities are proposed to begin in spring 2016 and be completed in 3-4 months.

ONEOK has retained Merjent, Inc. (Merjent) as its environmental consultant for this project. On behalf of ONEOK, Merjent respectfully submits this Project information to the U.S. Department of Defense (USDoD) to review a one-mile-wide "evaluation corridor" centered along the route of the pipeline and segment alternative routes. Project location

maps that depict the pipeline route and a one-mile-wide evaluation corridor are enclosed (a shapefile is available upon request). The Sections, Townships, and Ranges crossed by the Project are presented in the following table:

Township

Range

Sections

Preferred Route

149 North

100 West

8, 17 - 19

149 North

101 West

23, 24, 26 - 28, 32, 33

148 North

102 West

2 - 6

148 North

103 West

1, 12, 13

Segment Alternative 1

149 North

100 West

8, 17, 20 ,29, 30

149 North

101 West

25, 26

Segment Alternative 2

149 North

101 West

26, 34, 35

148 North

101 West

6

148 North

102 West

1, 2

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. In addition, environmental field surveys were completed in summer 2015. The majority of the route is co-located with existing linear utilities.

As indicated above, the purpose of this message is to provide notification of the Project and to seek your comments that will assist in the regulatory process. It is our understanding that the USDoD-Air force Cable Affairs oversees Intercontinental ballistic missile and launch facilities. We request a review of the evaluation corridor for the presence or absence of these facilities. A hard copy of this request will follow via certified mail. Copies of correspondence received in response to this email will be included in the Corridor Certification and Route Permit application to be filed with the NDPSC.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact me at 612-746-1618 or phartzheim@merjent.com <mailto:phartzheim@merjent.com> or Todd Kelvington of ONEOK at 918-732-1472 or todd.kelvington@oneok.com <mailto:todd.kelvington@oneok.com> .

Sincerely,

Jennifer Kamm - for

Paul Hartzheim, M.S.

Description: Merjent-for-Signature-Block

Jennifer Kamm

TractorWorks Building

612.746.3660 main

800 Washington Avenue N.

612.354.4284 direct

Suite 315

Minneapolis, MN 55401

612.875.0543 cell

612.746.3679 fax

www.merjent.com

jkamm@merjent.com

NORTH DAKOTA GAME AND FISH DEPARTMENT

ONEOK

CERTIFIED MAIL 7014 1200 0000 2237 3370
RETURN RECEIPT REQUESTED

September 3, 2015

Mr. Greg Link, Division Chief
Conservation and Communication Division
North Dakota Game and Fish Department
100 North Bismarck Expressway
Bismarck, ND 58501-5095

ONEOK Bakken Pipeline, L.L.C.
16" Garden Creek Loop NGL Pipeline Project
Project Notification and Request for Review

Dear Mr. Link,

As part of the 16" Garden Creek Loop NGL Pipeline Project (Project), ONEOK Bakken Pipeline, L.L.C. (ONEOK) is proposing to construct approximately 15 miles of 16–inch-diameter steel pipeline in McKenzie County, North Dakota. The purpose of the project is to loop ONEOK's existing Garden Creek pipeline and expand its capacity from 74,000 barrels per day (BPD) to 93,000 BPD. The Project will, in part, overlap an existing ONEOK Garden Creek Line pipeline easement and includes the proposed preferred route and two segment alternative routes as depicted on the attached Project location map. The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC); ONEOK plans to submit an application to the NDPSC in October 2015. Construction activities are proposed to begin in spring 2016 and be completed in 3-4 months.

ONEOK respectfully submits this project information to the North Dakota Department of Game and Fish (NDGF) to review an approximate one-mile-wide "evaluation corridor" centered along the route of the pipeline and segment alternative routes. The Sections, Townships, and Ranges crossed by the Project are presented in the following table:

Township	Range	Sections
Preferred Route		
149 North	100 West	8, 17 - 19
149 North	101 West	23, 24, 26 - 28, 32, 33
148 North	102 West	2 - 6
148 North	103 West`	1, 12, 13
Segment Alternative 1		
149 North	100 West	8, 17, 20 ,29, 30
149 North	101 West	25, 26
Segment Alternative 2		
149 North	101 West	26, 34, 35
148 North	101 West	6
148 North	102 West	1, 2

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK conducted biological field surveys of the route in summer 2015 and is currently finalizing its survey reports (available upon request). The majority of the route is co-located with existing linear utilities.

As indicated above, the purpose of this letter is to provide notification of the proposed Project and to solicit comments that will assist in the regulatory process. It is our understanding that the NDGF oversees the following:

- State Conservation Priority Species,
- Game Refuges,
- Game Managements Areas, and
- PLOTS Lands.

We request a review of the Project area for the presence or absence of sensitive species, lands, and projects under the direction of these programs. Copies of correspondence received in response to this letter will be included in the Corridor Certification and Route Permit application to be filed with the NDPSC.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. ONEOK has retained Merjent, Inc. (Merjent) as its environmental consultant for this project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or phartzheim@merjent.com or me at 918-732-1472 or todd.kelvington@oneok.com.

Sincerely,

Loretta M. Earnest
for Todd Kelvington

Todd Kelvington
Environmental Project Manager

Enclosures: Project overview maps

xc: Paul Hartzheim/Maddy Steffenson, Merjent (pdf)
Tulsa Environment – Large Construction – Garden Creek Loop PL

"VARIETY IN HUNTING AND FISHING"

NORTH DAKOTA GAME AND FISH DEPARTMENT

100 NORTH BISMARCK EXPRESSWAY BISMARCK, NORTH DAKOTA 58501-5095 PHONE 701-328-6300 FAX 701-328-6352

September 30, 2015

Todd Kelvington
Environmental Project Manager
ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103

Dear Mr. Kelvington:

RE: Garden Creek Loop NGL Pipeline Project

ONEOK Bakken Pipeline, LLC is proposing to construct approximately 15 miles of 16-inch diameter steel NGL pipeline to transport natural gas liquids in McKenzie County, North Dakota. The North Dakota Game and Fish Department has reviewed this project for wildlife concerns.

A primary concern is the possible disturbance of native prairie and wooded draws associated with construction of the pipeline and access roads. We ask that work within these areas be avoided to the extent possible, every effort be made to prevent destruction of woody vegetation, and disturbed areas be reclaimed to pre-project conditions.

The National Wetland Inventory indicates various wetlands within the proposed project corridor. Steps should be taken to protect any wetlands that cannot be avoided, no alterations should be made to existing drainage patterns, and above-ground appurtenances should not be placed in wetland areas. Unavoidable destruction or degradation of wetland acres should be mitigated in kind.

Aerial surveys should be conducted for raptor nests before construction begins. We recommend that a ½-mile construction buffer be implemented around active eagle nest sites (known occupied within the past 5 years). Ms. Sandra Johnson, Conservation Biologist, may be contacted at 701-328-6327 for additional information on golden eagle nest sites in the state.

We do not believe this project will have significant adverse effects on wildlife or wildlife habitat, including species of conservation priority, provided these recommendations are implemented where appropriate.

Private Lands Open to Sportsmen (PLOTS) is a public access program which cost-shares with private landowners to help conserve fish and wildlife habitat. PLOTS lands are not owned or managed by the ND Game and Fish Department. Information regarding PLOTS locations is available at: http://gf.nd.gov/hunting/private-land-open-sportsmen. This page is updated to reflect changes as tracts are added or removed.

Sincerely,

Greg Link
Chief
Conservation & Communication Division

js

Jennifer Kamm

From: Johnson, Sandra K. <sajohnson@nd.gov>
Sent: Monday, October 5, 2015 3:35 PM
To: Jennifer Kamm
Subject: RE: ONEOK - 16" Garden Creek Loop NGL Pipeline Project: Project Notification and Request for Review (Bald/Golden Eagles)

Hi Jennifer,
Sorry for the delay, I have been out of the office extensively over the past few weeks. There are no known eagle nests within 1 mile of the proposed pipelines. The closest known nest is 1.3 miles from the west end of the preferred route. Let me know if you have any questions,
Sandy

Sandy Johnson
Conservation Biologist
North Dakota Game and Fish Department
100 N. Bismarck Expwy.
Bismarck, ND 58501-5095
Phone: 701-328-6382
sajohnson@nd.gov
http://gf.nd.gov/

From: Jennifer Kamm [mailto:jkamm@merjent.com]
Sent: Wednesday, September 16, 2015 5:08 PM
To: Johnson, Sandra K. <sajohnson@nd.gov>
Subject: ONEOK - 16" Garden Creek Loop NGL Pipeline Project: Project Notification and Request for Review (Bald/Golden Eagles)

Ms. Johnson,

ONEOK Bakken NGL, L.L.C. (ONEOK) submitted project information to Greg Link of the North Dakota Game and Fish Department (NDGF) on September 3, 2015 for its proposed 16" Garden Creek Loop NGL Pipeline Project (Project). ONEOK is proposing to construct approximately 15 miles of 16–inch-diameter steel pipeline in McKenzie County, North Dakota.

ONEOK has retained Merjent, Inc. (Merjent) as its environmental consultant for this project. On behalf of ONEOK, Merjent respectfully requests bald and golden eagle nest data encompassing a 1-mile study area centered over the proposed route. A shapefile is attached for your use. This request is in conjunction with our original letter to the NDGF. Please send the data agreement to me and I will return a signed copy. Should you have any questions please do not hesitate to contact me at jkamm@merjent.com or 612-354-4284.

Best regards,
Jennifer

merjent

Jennifer Kamm

TractorWorks Building
800 Washington Avenue N.

612.746.3660 main
612.354.4284 direct

Suite 315
Minneapolis, MN 55401

www.merjent.com

612.875.0543 cell
612.746.3679 fax

jkamm@merjent.com

NORTH DAKOTA PARKS AND RECREATION DEPARTMENT

ONEOK

CERTIFIED MAIL 7014 1200 0000 2237 3363
RETURN RECEIPT REQUESTED

September 3, 2015

Kathy Duttenhefner
North Dakota Department of Parks and Recreation
1600 East Century Avenue, Suite 3
Bismarck, ND 58503-0649

ONEOK Bakken Pipeline, L.L.C.
16" Garden Creek Loop NGL Pipeline Project
Project Notification and Request for Review

Dear Ms. Duttenhefner,

As part of the 16" Garden Creek Loop NGL Pipeline Project (Project), ONEOK Bakken Pipeline, L.L.C. (ONEOK) is proposing to construct approximately 15 miles of 16–inch-diameter steel pipeline in McKenzie County, North Dakota. The purpose of the project is to loop ONEOK's existing Garden Creek pipeline and expand its capacity from 74,000 barrels per day (BPD) to 93,000 BPD. The Project will, in part, overlap an existing ONEOK Garden Creek Line pipeline easement and includes the proposed preferred route and two segment alternative routes as depicted on the attached Project location map. The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC); ONEOK plans to submit an application to the NDPSC in October 2015. Construction activities are proposed to begin in spring 2016 and be completed in 3-4 months.

ONEOK respectfully submits this project information to the North Dakota Department of Parks and Recreation (NDPR) to review an approximate one-mile-wide "evaluation corridor" centered along the route of the pipeline and segment alternative routes. The Sections, Townships, and Ranges crossed by the Project in North Dakota are presented in the following table:

Township	Range	Sections
Preferred Route		
149 North	100 West	8, 17 - 19
149 North	101 West	23, 24, 26 - 28, 32, 33
148 North	102 West	2 - 6
148 North	103 West	1, 12, 13
Segment Alternative 1		
149 North	100 West	8, 17, 20 ,29, 30
149 North	101 West	25, 26
Segment Alternative 2		
149 North	101 West	26, 34, 35
148 North	101 West	6
148 North	102 West	1, 2

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK conducted biological field surveys of the route in summer 2015 and is currently finalizing its survey reports (available upon request). The majority of the route is co-located with existing linear utilities.

As indicated above, the purpose of this letter is to provide notification of the proposed Project and to seek your comments that will assist in the regulatory process. It is our understanding that the NDPR oversees the following:

- North Dakota Natural Heritage Inventory system,
- State parks,
- Recreation areas,
- Natural areas, and
- Land and Water Conservation Fund.

We request a review of the Project evaluation corridor for the presence or absence of sensitive species, lands, and projects under the direction of these programs. Copies of correspondence received in response to this letter will be included in the Corridor Certificate and Route Permit application to be filed with the NDPSC.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. ONEOK has retained Merjent, Inc. (Merjent) as its environmental consultant for this project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or phartzheim@merjent.com or me at 918-732-1472 or todd.kelvington@oneok.com.

Sincerely,

Loretta M. Earnest
for Todd Kelvington

Todd Kelvington
Environmental Project Manager

Enclosures: Project overview maps

xc: Paul Hartzheim/Maddy Steffenson, Merjent (pdf)
Tulsa Environment – Large Construction – Garden Creek Loop PL

Jack Dalrymple, Governor
Mark A. Zimmerman, Director

1600 East Century Avenue, Suite 3
Bismarck, ND 58503-0649
Phone 701-328-5357
Fax 701-328-5363
E-mail parkrec@nd.gov
www.parkrec.nd.gov

October 2, 2015

Todd Kelvington
ONEOK
100 West 5th. Street
Tulsa, OK 74103

Re: ONEOK Bakken NGL, LLC – 16" Garden Creek Loop NGL Pipeline Project

Dear Mr. Kelvington,

The North Dakota Parks and Recreation Department has reviewed the above referenced 16" Garden Creek Loop NGL Pipeline Project, in McKenzie County, North Dakota.

Our agency scope of authority and expertise covers recreation and biological resources (in particular rare plants and ecological communities). The project as defined does not affect state park lands that we manage or Land and Water Conservation Fund recreation projects that we coordinate.

The North Dakota Natural Heritage biological conservation database has been reviewed to determine if any plant or animal species of concern or other significant ecological communities are known to occur within an approximate one-mile radius of the project area. Based on this review, there are a couple documented occurrences in our database within or adjacent to project area. Because this information is not based on a comprehensive inventory, there may be species of concern or otherwise significant ecological communities in the area that are not represented in the database. The lack of data for any project area cannot be construed to mean that no significant features are present. The absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources.

The Department recommends that the project be accomplished with minimal impacts and that all efforts be made to ensure that critical habitats not be disturbed in the project area to help secure rare species conservation in North Dakota. Regarding any reclamation efforts, we recommend that any impacted areas be revegetated with species native to the project area.

It is our policy to charge out-of-state requests for data services including data retrieval, data analysis, manual and computer searches, packaging and collection of data. An invoice for services provided has been enclosed.

We appreciate your commitment to rare plant, animal and ecological community conservation, management and inter-agency cooperation to date. For additional information please contact me at (701-328-5370 or kgduttenhefner@nd.gov). Thank you for the opportunity to comment on this proposed project.

Sincerely,

Kathy Duttenhefner, Coordinator
Natural Resources Division

R.USNDNHI*2015_094KD10.20.2015DL10.2.2015

Jack Dalrymple, Governor
Mark A. Zimmerman, Director

1600 East Century Avenue, Suite 3
Bismarck, ND 58503-0649
Phone 701-328-5357
Fax 701-328-5363
E-mail parkrec@nd.gov
www.parkrec.nd.gov

September 22, 2015

Jennifer Kamm
Merjent
800 Washington Ave N, Suite 315
Minneapolis, MN 55401

Re: ONEOK Garden Creek Loop NGL Pipeline Project

Dear Ms. Kamm:

Thank you for your interest in the North Dakota Parks & Recreation Department's (the Department) Natural Heritage Inventory biological conservation database. The Department conducted an environmental review for this project and has sent a response separate from this letter. The information you will find in the attached file represents data for species of concern and significant ecological communities within 1 mile of the project area. Other lands and projects that are owned or managed by the Department were also included in this search such as: state parks, state nature preserves, Land and Water Conservation Fund projects, Recreational Trails Program projects, and Scenic Byways and Backways.

The North Dakota Natural Heritage Inventory (NDNHI) biological conservation database has been accessed to list the occurrences found within the project area. We defer further comments regarding animal species to the North Dakota Game and Fish Department and the United States Fish and Wildlife Service. For a description of the significant ecological communities please see this NatureServe link http://www.natureserve.org/library/northdakotasubset.pdf. For more information regarding any species or community please visit this link to the NatureServe web site http://www.natureserve.org/index.jsp.

Because this information is not based on a comprehensive inventory, there may be species of concern or otherwise significant ecological communities in the area that are not represented in the database. The lack of data for any project area cannot be construed to mean that no significant features are present. The absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources.

Attached to this email message you will find the following documents:

- Shapefile with heritage species and communities - points
- *EORep_DS_fieldnames.xls* – a document to help explain field names in the heritage shapefiles
- *Methodology_guide_2014.doc* – a document with the NDNHI methodology and a guide to the species of concern lists
- *Animal SOC list 2014.xls* and *Plant SOC list 2014.xls* – NDNHI Species of Concern lists

The ND Parks & Recreation Department would appreciate being consulted during the public scoping and/or environmental assessment of the project. Thank you for the opportunity to provide preliminary data for the project site. Please contact me if additional information is needed.

Sincerely,

Kathy Duttenhefner
Coordinator/Biologist
Natural Resource Program
Natural Areas Registry/Natural Heritage Inventory
701-328-5370 (office)
701-220-3377 (cell)
kgduttenhefner@nd.gov

R15-12

NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICE

merjent

p 612.746.3660 ▪ f 612.746.3679

800 Washington Avenue North ▪ Suite 315 ▪ Minneapolis, Minnesota ▪ 55401

September 25, 2015

Mr. Paul Picha
State Historical Society of North Dakota
Archaeology and Historic Preservation Division
612 East Boulevard Ave
Bismarck, ND 58505

Re: Garden Creek Loop NGL Pipeline Project: *A Class I and Class III Cultural Resource Inventory of the Garden Creek Loop NGL Pipeline Project, McKenzie County, North Dakota*

Dear Mr. Picha:

ONEOK Bakken Pipeline, L.L.C. (ONEOK) a wholly owned subsidiary of ONEOK Partners, L.P., owns and operates natural gas liquids (NGLs) assets in North Dakota. As part of the 16-inch Garden Creek NGL Pipeline Loop Project (Project), ONEOK is proposing to construct approximately 14.4 miles of 16–inch-diameter steel Loop pipeline in McKenzie County, North Dakota. Looping a pipeline involves operating a shorter segment of pipeline in parallel with the existing pipeline; the loop is connected to the main pipeline to help reduce pressure drop and increase capacity of the system. The Project will parallel and interconnect with the existing ONEOK Garden Creek 10-inch NGL pipeline, to expand its capacity from 74,000 barrels per day (bpd) to 93,000 bpd. The existing Garden Creek 10-inch NGL pipeline originates at the ONEOK Rockies Midstream, L.L.C. (ORM) Garden Creek Gas Plants, near Watford City, and proceeds generally west and south through McKenzie County. The pipeline crosses the state line into Montana where it can deliver into the ORM Riverview Rail Facility near Sidney, Montana or continue southward on the pipeline. The Project will in part, overlap with the existing Garden Creek 10-inch NGL pipeline easement.

ONEOK will submit a single consolidated application for a Certificate of Corridor Compatibility and Route Permit for the Project to the North Dakota Public Service Commission (NDPSC), as required by *North Dakota Century Code, Energy Conversion and Transmission Facility Siting Act, Chapter 49-22-08* and *NDPSC Administrative Code, Chapter 69-06-05, Certificate of Site or Corridor Compatibility*. In addition, ONEOK expects that the Project will be eligible for coverage under the US Army Corps of Engineers (USACE) Nationwide Permit 12, which authorizes temporary impacts to COE-jurisdictional waters due to construction of utility lines under Sections 404 of the federal Clean Water Act. Construction activities are currently proposed to begin in April 2016 and be completed in August 2016. Restoration activities may extend into fall 2016 and spring 2017, if needed.

With this letter, ONEOK submits the results of its 2015 survey for review and comment in support of the ND PSC process. ONEOK will submit a copy of this letter along with the cover page and abstract or redacted report to NDPSC as a part of the filing, as well as your written response.

In June and July 2015 SWCA Environmental Consultants (“SWCA”), on behalf of ONEOK and Merjent, Inc. (“Merjent”), conducted Class I and Class III studies within a 500 acre Project survey corridor. SWCA

recorded one cultural resource, a historic-period depression of unknown function (32MZ2905). SWCA recommended that site was not eligible for inclusion on the National Register of Historic Places.

With this letter, ONEOK requests that your office comment on the NRHP-eligibility recommendations presented in the attached report. Please send any written correspondence to me at the address noted on the letterhead. Upon receipt, a copy of your response will be submitted to the ND PSC in support of our filing.

Please feel free to contact me (612-746-3660; mmadson@merjent.com) or Todd Kelvington of ONEOK (918-732-1472; Todd.Kelvington@oneok.com) if you have any questions about this report or the Garden Creek Loop NGL Pipeline Project.

Sincerely,

Mike Madson
Senior Cultural Resource Specialist
Merjent, Inc.

Enclosure: *A Class I and Class III Cultural Resource Inventory of the Garden Creek Loop NGL Pipeline Project, McKenzie County, North Dakota* (SWCA Environmental Consultants 2015)

cc: Todd Kelvington, ONEOK
Maddy Steffenson and Paul Hartzheim, Merjent

AGENCY RESPONSE PENDING

NORTH DAKOTA DEPARTMENT OF HEALTH

ONEOK

CERTIFIED MAIL 7014 1200 0000 2237 3394
RETURN RECEIPT REQUESTED

September 3, 2015

Mr. David Glatt
Section Chief
Environmental Health Section
North Dakota Department of Health
600 E. Boulevard Avenue
Bismarck, ND 58505-0200

ONEOK Bakken Pipeline, L.L.C.
16" Garden Creek Loop NGL Pipeline Project
Project Notification and Request for Review

Dear Mr. Glatt,

As part of the 16" Garden Creek Loop NGL Pipeline Project (Project), ONEOK Bakken Pipeline, L.L.C. (ONEOK) is proposing to construct approximately 15 miles of 16–inch-diameter steel pipeline in McKenzie County, North Dakota. The purpose of the project is to loop ONEOK's existing Garden Creek pipeline and expand its capacity from 74,000 barrels per day (BPD) to 93,000 BPD. The Project will, in part, overlap an existing ONEOK Garden Creek Line pipeline easement and includes the proposed preferred route and two segment alternative routes as depicted on the attached Project location maps. The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC); ONEOK plans to submit an application to the NDPSC in October 2015. Construction activities are proposed to begin in spring 2016 and be completed in 3-4 months.

ONEOK respectfully submits this Project information to the North Dakota Department of Health (NDDH) to review an approximate one-mile-wide "evaluation corridor" centered along the route of the proposed pipeline and two segment alternative routes. The Sections, Townships, and Ranges crossed by the Project are presented in the following table:

Township	Range	Sections
Preferred Route		
149 North	100 West	8, 17 - 19
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ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

Township	Range	Sections
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148 North	103 West	1, 12, 13
Segment Alternative 1		
149 North	100 West	8, 17, 20 ,29, 30
149 North	101 West	25, 26
Segment Alternative 2		
149 North	101 West	26, 34, 35
148 North	101 West	6
148 North	102 West	1, 2

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK conducted biological field surveys of the route in summer 2015 and is currently finalizing its survey reports (available upon request). The majority of the route is co-located with existing linear utilities.

As indicated above, the purpose of this correspondence is to provide notification of the Project and to solicit your comments that will assist in the regulatory process. It is our understanding that the NDDH provides guidance for implementing strategies to address environmental impacts and problems associated with new developments, administers the state hazardous waste management program, a water quality management program, an air quality management program, and protection of groundwater and drinking water aquifers. Copies of correspondence received in response to this letter will be included in the Corridor Certification and Route Permit application to be filed with the NDPSC.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. ONEOK has retained Merjent, Inc. (Merjent) as its environmental consultant for this project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or phartzheim@merjent.com or me at 918-732-1472 or todd.kelvington@oneok.com.

Sincerely,

Loretta M. Earnest
for Todd Kelvington

Todd Kelvington
Environmental Project Manager

Enclosures: Project overview maps

cc: Paul Hartzheim/Maddy Steffenson, Merjent (pdf)
Tulsa Environment – Large Construction – Garden Creek Loop PL

NORTH DAKOTA
DEPARTMENT of HEALTH

ENVIRONMENTAL HEALTH SECTION
Gold Seal Center, 918 E. Divide Ave.
Bismarck, ND 58501-1947
701.328.5200 (fax)
www.ndhealth.gov

September 23, 2015

Mr. Todd Kelvington
Environmental Project Manager
ONEOK, Inc.
P.O. Box 871
Tulsa, OK 74102-0871

Re: ONEOK Bakken Pipeline, LLC
Garden Creek Loop NGL Pipeline Project
McKenzie County, North Dakota

Dear Mr. Kelvington:

This department has reviewed the information concerning the above-referenced project submitted under date of September 3, 2015, with respect to possible environmental impacts.

This department believes that environmental impacts from the proposed construction will be minor and can be controlled by proper construction methods. With respect to construction, we have the following comments:

1. All necessary measures must be taken to minimize fugitive dust emissions created during construction activities. Any complaints that may arise are to be dealt with in an efficient and effective manner.

2. Care is to be taken during construction activity near any water of the state to minimize adverse effects on a water body. This includes minimal disturbance of stream beds and banks to prevent excess siltation, and the replacement and revegetation of any disturbed area as soon as possible after work has been completed. Caution must also be taken to prevent spills of oil and grease that may reach the receiving water from equipment maintenance, and/or the handling of fuels on the site. Guidelines for minimizing degradation to waterways during construction are attached.

3. Oil and gas related construction acitivities disturbing one or more acres that have the ability to discharge sediment laden storm water to waters of the state are required to have a permit to discharge storm water runoff until the site is stabilized by the reestablishment of vegetation or other permanent cover. Further information on the storm water permit may be obtained from the Department's website or by calling the Division of Water Quality (701.328.5210). Check with the local officials to be sure any local storm water management considerations are addressed.

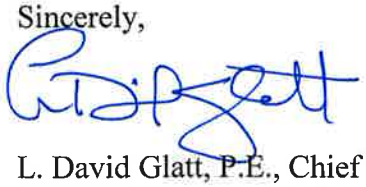
4. Noise from construction activities may have adverse effects on persons who live near the construction area. Noise levels can be minimized by ensuring that construction equipment is equipped with a recommended muffler in good working order. Noise effects can also be minimized by ensuring that construction activities are not conducted during early morning or late evening hours.

5. Projects that involve construction of pipelines should select locations that minimize the potential for environmental damage during construction and in the event of a spill, restrict fluids from reaching surface waters. Environmental damage can be reduced by developing a spill response plan that emphasizes rapid deployment of prepositioned assets necessary to contain spills and subsequent cleanup. Proper surveillance and monitoring of pipelines is necessary for the early detection of leaks.

The department owns no land in or adjacent to the proposed improvements, nor does it have any projects scheduled in the area. In addition, we believe the proposed activities are consistent with the State Implementation Plan for the Control of Air Pollution for the State of North Dakota.

If you have any questions regarding our comments, please feel free to contact this office.

Sincerely,



L. David Glatt, P.E., Chief
Environmental Health Section

LDG:cc
Attach.

NORTH DAKOTA
DEPARTMENT of HEALTH

ENVIRONMENTAL HEALTH SECTION
Gold Seal Center, 918 E. Divide Ave.
Bismarck, ND 58501-1947
701.328.5200 (fax)
www.ndhealth.gov

Construction and Environmental Disturbance Requirements

These represent the minimum requirements of the North Dakota Department of Health. They ensure that minimal environmental degradation occurs as a result of construction or related work which has the potential to affect the waters of the State of North Dakota. All projects will be designed and implemented to restrict the losses or disturbances of soil, vegetative cover, and pollutants (chemical or biological) from a site.

Soils

Prevent the erosion of exposed soil surfaces and trapping sediments being transported. Examples include, but are not restricted to, sediment dams or berms, diversion dikes, hay bales as erosion checks, riprap, mesh or burlap blankets to hold soil during construction, and immediately establishing vegetative cover on disturbed areas after construction is completed. Fragile and sensitive areas such as wetlands, riparian zones, delicate flora, or land resources will be protected against compaction, vegetation loss, and unnecessary damage.

Surface Waters

All construction which directly or indirectly impacts aquatic systems will be managed to minimize impacts. All attempts will be made to prevent the contamination of water at construction sites from fuel spillage, lubricants, and chemicals, by following safe storage and handling procedures. Stream bank and stream bed disturbances will be controlled to minimize and/or prevent silt movement, nutrient upsurges, plant dislocation, and any physical, chemical, or biological disruption. The use of pesticides or herbicides in or near these systems is forbidden without approval from this Department.

Fill Material

Any fill material placed below the high water mark must be free of top soils, decomposable materials, and persistent synthetic organic compounds (in toxic concentrations). This includes, but is not limited to, asphalt, tires, treated lumber, and construction debris. The Department may require testing of fill materials. All temporary fills must be removed. Debris and solid wastes will be removed from the site and the impacted areas restored as nearly as possible to the original condition.

NORTH DAKOTA STATE WATER COMMISSION

ONEOK

CERTIFIED MAIL 7014 1200 0000 2237 3356
RETURN RECEIPT REQUESTED

September 3, 2015

Mr. Todd Sando
State Engineer
North Dakota State Water Commission
600 E. Boulevard Avenue
Bismarck, ND 58505-0200

ONEOK Bakken Pipeline, L.L.C.
16" Garden Creek Loop NGL Pipeline Project
Project Notification and Request for Review

Dear Mr. Sando,

As part of the 16" Garden Creek Loop NGL Pipeline Project (Project), ONEOK Bakken Pipeline, L.L.C. (ONEOK) is proposing to construct approximately 15 miles of 16–inch-diameter steel pipeline in McKenzie County, North Dakota. The purpose of the project is to loop ONEOK's existing Garden Creek pipeline and expand its capacity from 74,000 barrels per day (BPD) to 93,000 BPD. The Project will, in part, overlap an existing ONEOK Garden Creek Line pipeline easement and includes the proposed preferred route and two segment alternative routes as depicted on the attached Project location map. The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC); ONEOK plans to submit an application to the NDPSC in October 2015. Construction activities are proposed to begin in spring 2016 and be completed in 3-4 months.

ONEOK respectfully submits this project information to the North Dakota State Water Commission (NDSWC) to review an approximate one-mile-wide "evaluation corridor" centered along the route of the pipeline and segment alternatives. The Sections, Townships, and Ranges crossed by the Project are presented in the following table:

Township	Range	Sections
Preferred Route		
149 North	100 West	8, 17 - 19
149 North	101 West	23, 24, 26 - 28, 32, 33
148 North	102 West	2 - 6
148 North	103 West	1, 12, 13
Segment Alternative 1		
149 North	100 West	8, 17, 20 ,29, 30
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Segment Alternative 2		
149 North	101 West	26, 34, 35
148 North	101 West	6
148 North	102 West	1, 2

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK conducted environmental field surveys of the route in summer 2015 and is currently finalizing its survey reports (available upon request). The majority of the route is co-located with existing linear utilities.

As indicated above, the purpose of this correspondence is to provide notification of the Project and to solicit comments that will assist in the regulatory process. It is our understanding that the NDSWC administers water appropriation and sovereign lands permit programs, and may also have relevant information regarding rural water supply systems and projects. Copies of correspondence received in response to this letter will be included in the Corridor Certification and Route Permit application to be filed with the NDPSC.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. ONEOK has retained Merjent, Inc. (Merjent) as its environmental consultant for this project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or phartzheim@merjent.com or me at 918-732-1472 or todd.kelvington@oneok.com.

Sincerely,

Loretta M. Earnest
for Todd Kelvington

Todd Kelvington
Environmental Project Manager

Enclosures: Project overview maps

xc: Paul Hartzheim/Maddy Steffenson, Merjent (pdf)
Tulsa Environment – Large Construction – Garden Creek Loop PL

North Dakota State Water Commission

900 EAST BOULEVARD AVENUE, DEPT 770 • BISMARCK, NORTH DAKOTA 58505-0850
701-328-2750 • TDD 701-328-2750 • FAX 701-328-3696 • INTERNET: http://swc.nd.gov

September 18, 2015

Todd Kelvington
ONEOK
100 West Fifth Street
Tulsa, OK 74103

Dear Mr. Kelvington:

This is in response to your request for review of environmental impacts associated with the 15 mile 16" Garden Creek Loop NGL Pipeline Project located in McKenzie County, ND.

The proposed project has been reviewed by State Water Commission staff and the following comments are provided:

- There are no floodplains identified and/or mapped where this proposed project is to take place. The project takes place in an unmapped county. No floodplain permits are necessary from McKenzie County relative to the National Flood Insurance Program.

- The ND State Water Commission (Commission) maintains a network of observation/monitor water wells and the location of gaging stations throughout the state, and many are located close to public right-of-ways. The location information can be obtained from the Commission's website at: http://swc.nd.gov.; then click on "Map and Data Resources"; and then click on "Map Services". Please inform the Water Appropriations Division of the Commission at 701-328-2754, if gaging stations or water wells may be affected by the project or accidently damaged. A copy of the map is enclosed.

- The Western Area Water Supply Authority (WASA) may have water supply infrastructure in the project area. Please contact the WAWSA at 701-774-6605 regarding the location of the water supply pipeline.

- It is the responsibility of the project sponsor to ensure that local, state and federal agencies are contacted for any required approvals, permits, and easements.

- All waste material associated with the project must be disposed of properly and not placed in identified floodway areas.

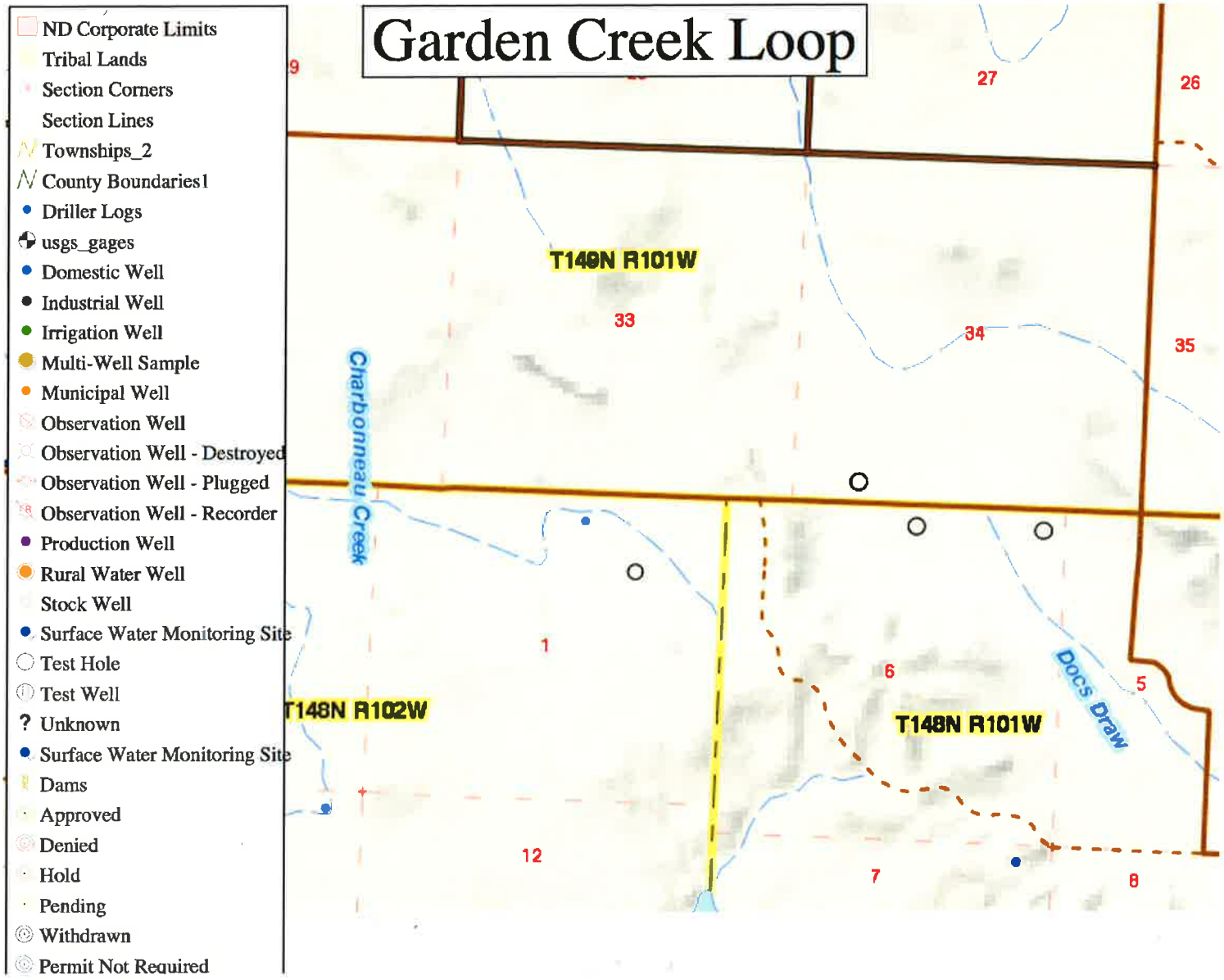
- No sole-source aquifers have been designated in ND.

Thank you for the opportunity to provide review comments. If you have any questions, please call me at 701-328-4967.

Sincerely,

Linda Weispfenning
Water Resource Planner

LW:dm/1570
Encl.


Garden Creek Loop
ND Corporate Limits
Tribal Lands
Section Corners
Section Lines
Townships_2
County Boundaries1
Driller Logs
usgs_gages
Domestic Well
Industrial Well
Irrigation Well
Multi-Well Sample
Municipal Well
Observation Well
Observation Well - Destroyed
Observation Well - Plugged
Observation Well - Recorder
Production Well
Rural Water Well
Stock Well
Surface Water Monitoring Site
Test Hole
Test Well
Unknown
Surface Water Monitoring Site
Dams
Approved
Denied
Hold
Pending
Withdrawn
Permit Not Required
T149N R101W
T148N R102W
T148N R101W
Charbonneau Creek
Docs Draw
9
27
26
33
34
35
1
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5
12
7
8

NORTH DAKOTA DEPARTMENT OF TRUST LANDS

Jennifer Kamm

From: Jennifer Kamm
Sent: Wednesday, September 2, 2015 2:34 PM
To: 'kbayley@nd.gov'
Cc: Maddy Steffenson; Paul Hartzheim; 'Todd.Kelvington@oneok.com'; 'Joy.Sober@oneok.com'
Subject: ONEOK Bakken Pipeline, L.L.C. Garden Creek Loop Pipeline Project
Attachments: GCL_Agency_Consultation_24k_Aerial.pdf; GCL_Agency_Consultation_24k_Topo.pdf; GCL_Agency_Consultation_Project_Overview.pdf

Dear Mr. Bayley:

ONEOK Bakken Pipeline, L.L.C. (ONEOK) has retained Merjent, Inc. (Merjent) as its environmental consultant for this project. On behalf of ONEOK, Merjent respectfully submits this project information to the North Dakota Department of Trust Lands (NDTL) to review an approximate one-mile-wide "evaluation corridor" centered along the route of the pipeline and two segment alternative routes to confirm the locations of Mineral Trust lands. Based on a desktop review, there are several Mineral Trust lands located within the evaluation corridor, including some that are directly crossed. The Project will, in part, overlap an existing ONEOK Garden Creek Line pipeline easement and includes the proposed preferred route and two alternate routes. Project location maps that depict the pipeline route and the evaluation corridor are enclosed (a shapefile is available upon request). The Sections, Townships, and Ranges crossed by the Project are presented in the following table:

Township	Range	Sections
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149 North	100 West	8, 17 - 19
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The purpose of this message is to provide notification of the Project and to confirm the locations of NDTL Mineral Trust Lands (a separate request has been sent regarding School Trust lands). If there are any unique concerns or permitting requirements to cross these parcels, please reply with your comments so we can consider them in our project planning and execution. A hard copy of this request will follow via certified mail. Copies of correspondence received in response to this email will be included in the Corridor Certification and Route Permit application to be filed with the NDPSC.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact me at 612-746-1618 or phartzheim@merjent.com or Todd Kelvington of ONEOK at 918-732-1472 or todd.kelvington@oneok.com.

Sincerely,

Jennifer Kamm - for

Jennifer Kamm

TractorWorks Building
800 Washington Avenue N.
Suite 315
Minneapolis, MN 55401

612.746.3660 main
612.354.4284 direct
612.875.0543 cell
612.746.3679 fax

www.merjent.com

jkamm@merjent.com

Jennifer Kamm

From: Bement, Allisen C. <abement@nd.gov>
Sent: Tuesday, September 8, 2015 9:06 AM
To: Jennifer Kamm
Cc: Todd.Kelvington@oneok.com; Joy.Sober@oneok.com; Paul Hartzheim; Maddy Steffenson
Subject: RE: ONEOK Bakken Pipeline, L.L.C. Garden Creek Loop Pipeline Project

Jennifer,

Thank you for the shapefiles. We agree that the data provided fairly represents the approximate location of the Garden Creek Loop Pipeline Project as indicated by Merjent and the proximity of mineral interests managed by this office, for use in a filing with the PSC in the state of North Dakota.

Allisen Bement
Land Professional
ND Department of Trust Lands
701.328.1952
abement@nd.gov

From: Jennifer Kamm [mailto:jkamm@merjent.com]
Sent: Thursday, September 03, 2015 12:30 PM
To: Bement, Allisen C.
Cc: Todd.Kelvington@oneok.com; Joy.Sober@oneok.com; Paul Hartzheim; Maddy Steffenson
Subject: RE: ONEOK Bakken Pipeline, L.L.C. Garden Creek Loop Pipeline Project

Allisen,

Attached are the shapefiles for the ONEOK Bakken Pipeline, L.L.C. Garden Creek Loop Pipeline Project. They are attached as a .piz, just save it back to .zip on your end. Let me know if you need anything else.

Thanks,
Jennifer

merjent

Jennifer Kamm

TractorWorks Building
800 Washington Avenue N.
Suite 315
Minneapolis, MN 55401

612.746.3660 main
612.354.4284 direct
612.875.0543 cell
612.746.3679 fax

www.merjent.com
jkamm@merjent.com

From: Bement, Allisen C. [mailto:abement@nd.gov]
Sent: Thursday, September 3, 2015 9:31 AM

To: Jennifer Kamm <jkamm@merjent.com>
Cc: Todd.Kelvington@oneok.com; Joy.Sober@oneok.com; Paul Hartzheim <phartzheim@merjent.com>
Subject: RE: ONEOK Bakken Pipeline, L.L.C. Garden Creek Loop Pipeline Project

Good morning Jennifer,

Could you send the shapefile(s) to me, but before you do please rename the .zip file to a .txt or a .doc and the resend.

Thank you,

Allisen Bement
Land Professional
ND Department of Trust Lands
701.328.1952
abement@nd.gov

From: Jennifer Kamm [mailto:jkamm@merjent.com]
Sent: Wednesday, September 02, 2015 2:34 PM
To: Bayley, Keith W.
Cc: Maddy Steffenson; Paul Hartzheim; Todd.Kelvington@oneok.com; Joy.Sober@oneok.com
Subject: ONEOK Bakken Pipeline, L.L.C. Garden Creek Loop Pipeline Project

Dear Mr. Bayley:

ONEOK Bakken Pipeline, L.L.C. (ONEOK) has retained Merjent, Inc. (Merjent) as its environmental consultant for this project. On behalf of ONEOK, Merjent respectfully submits this project information to the North Dakota Department of Trust Lands (NDTL) to review an approximate one-mile-wide "evaluation corridor" centered along the route of the pipeline and two segment alternative routes to confirm the locations of Mineral Trust lands. Based on a desktop review, there are several Mineral Trust lands located within the evaluation corridor, including some that are directly crossed. The Project will, in part, overlap an existing ONEOK Garden Creek Line pipeline easement and includes the proposed preferred route and two alternate routes. Project location maps that depict the pipeline route and the evaluation corridor are enclosed (a shapefile is available upon request). The Sections, Townships, and Ranges crossed by the Project are presented in the following table:

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149 North	101 West	25, 26
Segment Alternative 2		
149 North	101 West	26, 34, 35
148 North	101 West	6
148 North	102 West	1, 2

The purpose of this message is to provide notification of the Project and to confirm the locations of NDTL Mineral Trust Lands (a separate request has been sent regarding School Trust lands). If there are any unique concerns or permitting

requirements to cross these parcels, please reply with your comments so we can consider them in our project planning and execution. A hard copy of this request will follow via certified mail. Copies of correspondence received in response to this email will be included in the Corridor Certification and Route Permit application to be filed with the NDPSC.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact me at 612-746-1618 or phartzheim@merjent.com or Todd Kelvington of ONEOK at 918-732-1472 or todd.kelvington@oneok.com.

Sincerely,

Jennifer Kamm - for
Paul Hartzheim, M.S.

merjent

Jennifer Kamm

TractorWorks Building
800 Washington Avenue N.
Suite 315
Minneapolis, MN 55401

612.746.3660 main
612.354.4284 direct
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www.merjent.com

jkamm@merjent.com

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Jennifer Kamm

From: Jennifer Kamm
Sent: Wednesday, September 2, 2015 2:36 PM
To: 'mhaupt@nd.gov'
Cc: Maddy Steffenson; Paul Hartzheim; 'Todd.Kelvington@oneok.com'; 'Joy.Sober@oneok.com'
Subject: ONEOK Bakken Pipeline, L.L.C. Garden Creek Loop Pipeline Project
Attachments: GCL_Agency_Consultation_24k_Aerial.pdf; GCL_Agency_Consultation_24k_Topo.pdf; GCL_Agency_Consultation_Project_Overview.pdf

Dear Mr. Haupt:

As part of the 16" Garden Creek Loop NGL Pipeline Project (Project), ONEOK Bakken Pipeline, L.L.C. (ONEOK) is proposing to construct approximately 15 miles of 16–inch-diameter steel pipeline in McKenzie County, North Dakota. The purpose of the project is to loop ONEOK's existing Garden Creek pipeline and expand its capacity from 74,000 barrels per day (BPD) to 93,000 BPD. The Project will, in part, overlap an existing ONEOK Garden Creek Line pipeline easement and includes the proposed preferred route and two segment alternative routes. The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC); ONEOK plans to submit an application to the NDPSC in October 2015. Construction activities are proposed to begin in spring 2016 and be completed in 3-4 months.

ONEOK has retained Merjent, Inc. (Merjent) as its environmental consultant for this project. On behalf of ONEOK, Merjent respectfully submits this Project information to the North Dakota Department of Trust Lands (NDTL) to review an approximate one-mile-wide "evaluation corridor" centered along the route of the pipeline and segment alternative routes to confirm the locations of School Trust lands. Based on a desktop review, the evaluation corridor intersects Mineral Trust Lands in T149N, R100W, Section 16. Project location maps that depict the pipeline route and the evaluation corridor are enclosed (a shapefile is available upon request). The Sections, Townships, and Ranges crossed by the Project are presented in the following table:

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The purpose of this email is to provide notification of the Project and to confirm the locations of NDTL School Trust Lands (a separate request has been sent regarding Mineral Trust lands). If there are any unique concerns or permitting requirements to cross these parcels, please reply with your comments so we can consider them in our project planning and execution. A hard copy of this request will follow via certified mail. Copies of correspondence received in response to this email will be included in the Corridor Certification and Route Permit application to be filed with the NDPSC.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact me at 612-746-1618 or phartzheim@merjent.com or Todd Kelvington of ONEOK at 918-732-1472 or todd.kelvington@oneok.com.

Sincerely,

Jennifer Kamm - for
Paul Hartzheim, M.S.

merjent

Jennifer Kamm

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800 Washington Avenue N.
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Minneapolis, MN 55401

612.746.3660 main
612.354.4284 direct
612.875.0543 cell
612.746.3679 fax

www.merjent.com

jkamm@merjent.com

Jennifer Kamm

From: Haupt, Michael L. <mhaupt@nd.gov>
Sent: Wednesday, September 2, 2015 3:02 PM
To: Jennifer Kamm
Cc: Maddy Steffenson; Paul Hartzheim; Todd.Kelvington@oneok.com; Joy.Sober@oneok.com
Subject: RE: ONEOK Bakken Pipeline, L.L.C. Garden Creek Loop Pipeline Project
Attachments: 149-100-16MCK.pdf

Jennifer,

Good afternoon! The ND School Trust has surface in section 16, T149N, R100W, McKenzie County, and has established east and west right of way corridors as shown on the attached aerial photo. Let me know if you have questions. Thanks.

Michael L. Haupt
Land Management Professional, CPRM
North Dakota Department of Trust lands
1707 Nth 9th Street
Bismarck ND 58506-5523
701-328-1916
mhaupt@nd.gov

From: Jennifer Kamm [mailto:jkamm@merjent.com]
Sent: Wednesday, September 02, 2015 2:36 PM
To: Haupt, Michael L.
Cc: Maddy Steffenson; Paul Hartzheim; Todd.Kelvington@oneok.com; Joy.Sober@oneok.com
Subject: ONEOK Bakken Pipeline, L.L.C. Garden Creek Loop Pipeline Project

Dear Mr. Haupt:

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We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact me at 612-746-1618 or phartzheim@merjent.com or Todd Kelvington of ONEOK at 918-732-1472 or todd.kelvington@oneok.com.

Sincerely,

Jennifer Kamm - for
Paul Hartzheim, M.S.

merjent

Jennifer Kamm

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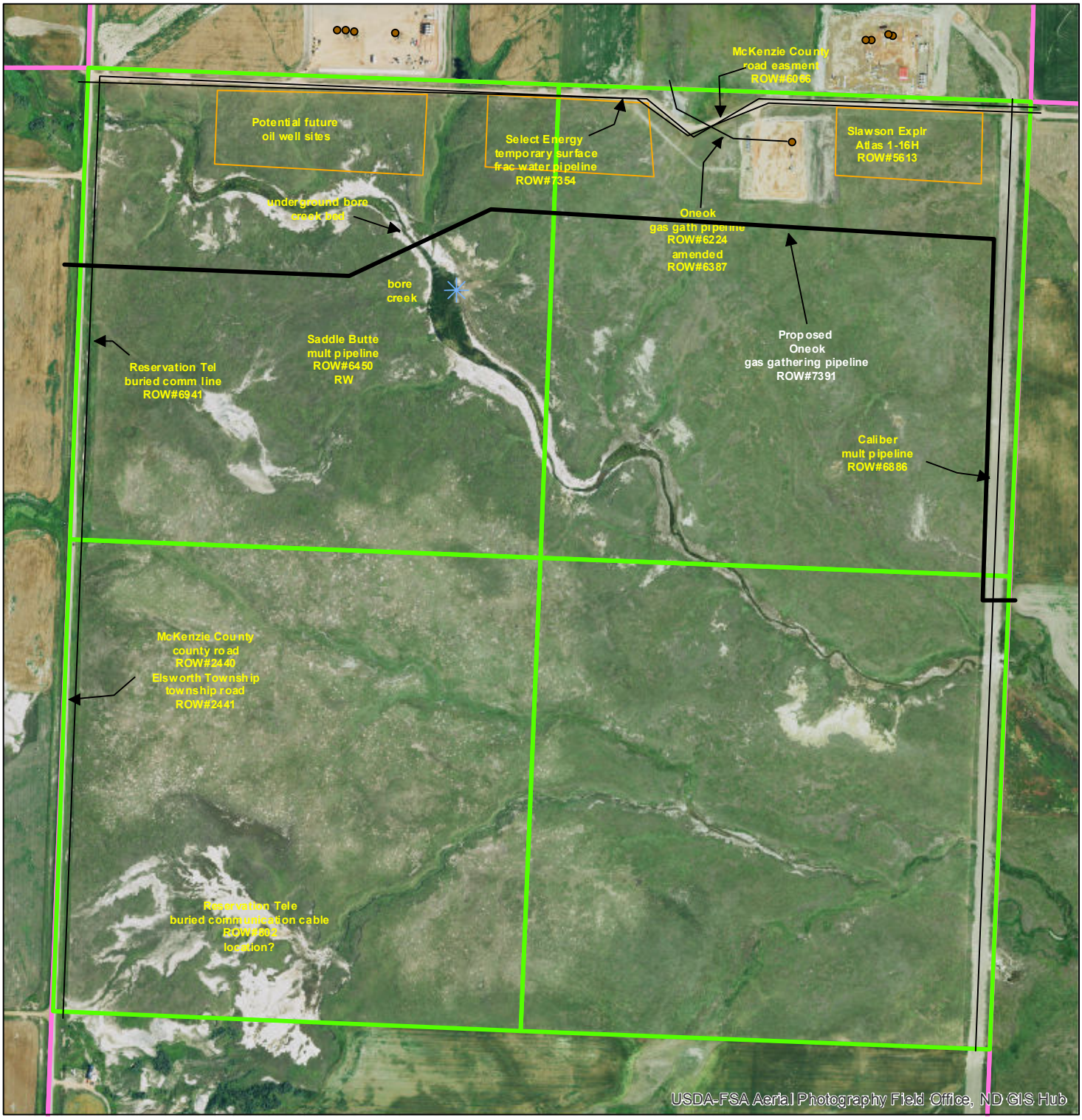
612.875.0543 cell
612.746.3679 fax

www.merjent.com
jkamm@merjent.com

16-T149-R100

McKenzie County

Township: Unorganized



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Map Datum is WGS 84 (same as NAD 83)

0 0.5 1 Miles

Printed: 7/23/2010 -- ND State Land Dept.

McKENZIE COUNTY WATER RESOURCE BOARD

ONEOK

CERTIFIED MAIL 7014 1200 0000 2237 3387
RETURN RECEIPT REQUESTED

September 3, 2015

Jeff Shaffer, Assistant Manager
McKenzie County Water Resource Board
201 5th St NW, Suite 1456
Watford City, ND 58854

ONEOK Bakken Pipeline, L.L.C.
16" Garden Creek Loop NGL Pipeline Project
Project Notification and Request for Review

Dear Mr. Shaffer,

As part of the 16" Garden Creek Loop NGL Pipeline Project (Project), ONEOK Bakken Pipeline, L.L.C. (ONEOK) is proposing to construct approximately 15 miles of 16–inch-diameter steel pipeline in McKenzie County, North Dakota. The purpose of the project is to loop ONEOK's existing Garden Creek pipeline and expand its capacity from 74,000 barrels per day (BPD) to 93,000 BPD. The Project will, in part, overlap an existing ONEOK Garden Creek Line pipeline easement and includes the proposed preferred route and two segment alternative routes as depicted on the attached Project location map. The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC); ONEOK plans to submit an application to the NDPSC in October 2015. Construction activities are proposed to begin in spring 2016 and be completed in 3-4 months.

ONEOK respectfully submits this Project information to the McKenzie County Water Resource Board (WRB) to review an approximate one-mile-wide "evaluation corridor" centered along the route of the pipeline and segment alternative routes. The Sections, Townships, and Ranges crossed by the Project are presented in the following table:

Township	Range	Sections
Preferred Route		
149 North	100 West	8, 17 - 19
149 North	101 West	23, 24, 26 - 28, 32, 33
148 North	102 West	2 - 6
148 North	103 West`	1, 12, 13
Segment Alternative 1		
149 North	100 West	8, 17, 20 ,29, 30
149 North	101 West	25, 26
Segment Alternative 2		
149 North	101 West	26, 34, 35
148 North	101 West	6
148 North	102 West	1, 2

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

September 3, 2015
Jeff Shaffer

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK conducted environmental field surveys of the route in summer 2015 and is currently finalizing its survey reports (available upon request). The majority of the route is co-located with existing linear utilities.

As indicated above, the purpose of this letter is to provide notification of the proposed Project and to solicit comments that will assist in the regulatory process. To facilitate our review, we are requesting the following information be provided:

- Locations of any county-regulated drains, ditches, and/or other drainage features,
- Any special requirements, restrictions, or specifications regarding constructing pipelines across or under county-regulated drainage features,
- Any local ordinances related to drainage, and
- Any permits issued through your office which may be applicable to the project, and a summary of the permit process and anticipated timeframes.

The information that your office provides will assist us in project planning and execution. Copies of correspondence received in response to this letter will be included in the Corridor Certification and Route Permit application to be filed with the NDPSC.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. ONEOK has retained Merjent, Inc. (Merjent) as its environmental consultant for this project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or phartzheim@merjent.com or me at 918-732-1472 or todd.kelvington@oneok.com.

Sincerely,

Loretta M. Earnest
for Todd Kelvington

Todd Kelvington
Environmental Project Manager

Enclosures: Project overview maps

xc: Paul Hartzheim/Maddy Steffenson, Merjent (pdf)
Tulsa Environment – Large Construction – Garden Creek Loop PL

Telephone Log

Date:	October 6, 2015
To:	Jeff Shaffer (Assistant Manager)
Agency:	McKenzie County Water Resource Board
Phone Number:	701-842-2822
From:	Jennifer Kamm
Company:	Merjent
Phone Number:	612-354-4284
Subject:	ONEOK Bakken Pipeline, L.L.C. (ONEOK) – Garden Creek Loop NGL Pipeline Project

On behalf of ONEOK, Ms. Kamm called Mr. Shaffer to follow up with a consultation letter sent to the McKenzie County Water Resource Board (WRB) on September 2, 2015 requesting review of a 1-mile study area associated with ONEOK's Garden Creek Loop NGL Pipeline Project. Information specifically requested included:

- Locations of any county-regulated drains, ditches, and/or other drainage features,
- Any special requirements, restrictions, or specifications regarding constructing pipelines across or under county-regulated drainage features,
- Any local ordinances related to drainage, and
- Any permits issued through your office which may be applicable to the project, and a summary of the permit process and anticipated timeframes.

Mr. Shaffer stated that he had reviewed the letter and that the WRB had no comments or concerns at this time. Mr. Shaffer further indicated that a formal written response to the original ONEOK consultation letter would not be provided.

McKENZIE COUNTY WEED CONTROL BOARD

ONEOK

CERTIFIED MAIL 7014 1200 0000 2237 3332
RETURN RECEIPT REQUESTED

September 3, 2015

Ms. Andrea Higgins
Weed Control Officer
McKenzie County Weed Board
P.O. Box 930
Watford City, ND 58854-0930

ONEOK Bakken Pipeline, L.L.C.
16" Garden Creek Loop NGL Pipeline Project
Project Notification and Request for Review

Dear Ms. Higgins,

As part of the 16" Garden Creek Loop NGL Pipeline Project (Project), ONEOK Bakken Pipeline, L.L.C. (ONEOK) is proposing to construct approximately 15 miles of 16–inch-diameter steel pipeline in McKenzie County, North Dakota. The purpose of the project is to loop ONEOK's existing Garden Creek pipeline and expand its capacity from 74,000 barrels per day (BPD) to 93,000 BPD. The Project will, in part, overlap an existing ONEOK Garden Creek Line pipeline easement and includes the proposed preferred route and two segment alternative routes as depicted on the attached Project location map. The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC); ONEOK plans to submit an application to the NDPSC in October 2015. Construction activities are proposed to begin in spring 2016 and be completed in 3-4 months.

ONEOK respectfully submits this Project information to the McKenzie County Weed Control Board to review an approximate one-mile-wide "evaluation corridor" centered along the route of the pipeline and segment alternative routes. The Sections, Townships, and Ranges crossed by the Project are presented in the following table:

Township	Range	Sections
Preferred Route		
149 North	100 West	8, 17 - 19
149 North	101 West	23, 24, 26 - 28, 32, 33
148 North	102 West	2 - 6
148 North	103 West`	1, 12, 13
Segment Alternative 1		
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Township	Range	Sections
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149 North	101 West	25, 26
Segment Alternative 2		
149 North	101 West	26, 34, 35
148 North	101 West	6
148 North	102 West	1, 2

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK conducted environmental field surveys of the route in summer 2015 and is currently finalizing its survey reports (available upon request). The majority of the route is co-located with existing linear utilities.

Based on a review of the North Dakota Century Code 4.1-47-02 and North Dakota Department of Agriculture (NDDA) guidance documents, the following noxious weeds are currently listed:

- Absinth wormwood (*Artemisia absinthium*)
- Canadian thistle (*Cirsium arvense*)
- Diffuse knapweed (*Centaurea diffusa*)
- Leafy spurge (*Euphorbia esula*)
- Musk thistle (*Carduus nutans*)
- Purple loosestrife (*Lythrum salicaria*)
- Russian knapweed (*Acroptilon repens*)
- Spotted knapweed (*Centaurea masculosa*)
- Yellow toadflax (*Linaria vulgaris*)
- Dalmation toadflax (*Linaria dalmatica*)
- Saltcedar (*Tamarix chinensis*)

In addition to the NDDA noxious weed and invasive species list, McKenzie County has designated the following five species as noxious weeds:

- Black henbane (*Hyoscyamus niger*)
- Common burdock (*Arctium minus*)
- Houndstongue (*Cynoglossum officinale*)
- Halogeton (*Halogeton glomeratus*)
- Baby's breath (*Gypsophila*)

To facilitate our environmental review, we are requesting the following information for the areas crossed that are within the 1-mile wide study area associated with the Project:

- confirmation that the list of noxious weeds above is correct and current;
- known locations of noxious and/or invasive weed species along the proposed route; and
- guidance and/or recommendations for weed control, pesticide use, and non-chemical treatment options.

We ask that your office provide the location, size, and extent of noxious/invasive weeds as a GIS shapefile (if possible), geographic coordinates (e.g., latitude/longitude), Public Land Survey System Section(s), or marked on a map. The information that your office provides will assist us in project planning and execution. Copies of correspondence received in response to this letter will be included in the Corridor Certification and Route Permit application to be filed with the NDPSC.
We appreciate your assistance with this request and look forward to your timely review and comments on this Project. ONEOK has retained Merjent, Inc. (Merjent) as its environmental consultant for this project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or phartzheim@merjent.com or me at 918-732-1472 or todd.kelvington@oneok.com.

Sincerely,

Loretta M. Earnest
For Todd Kelvington

Todd Kelvington
Environmental Project Manager

Enclosures: Project overview maps

xc: Paul Hartzheim/Maddy Steffenson, Merjent (pdf)
Tulsa Environment – Large Construction – Garden Creek Loop PL

Jennifer Kamm

From: Andrea Higgins <mcweed@restel.net>
Sent: Wednesday, October 7, 2015 3:44 PM
To: Jennifer Kamm
Subject: RE: ONEOK_Garden Creek_McKenzie Co_Weeds_Consult_(letter)_20150821.docx

Sir/Madame,
After review of your noxious weed containment plan, I have found that it meets all North Dakota and McKenzie County Weed Law requirements.

PLEASE PRINT AND ATTACH THIS EMAIL TO YOUR C.U.P. TO SHOW YOU HAVE COMPLIED WITH STATE AND COUNTY WEED LAW FOR ERADICATION AND CONTAINMENT OF McKenzie COUNTY NOXIOUS WEEDS.

Also, remember that your property will be periodically and randomly inspected for compliance with your proposed form of weed control – so please be diligent in your efforts to help us with this problem.

Thank you for helping in our continuing efforts to keep McKenzie County noxious weed free.

Thank You

Amber Higgins

Amber Higgins
McKenzie County Weed Officer
Office 701-842-4131
Fax 701-842-4731

From: Jennifer Kamm [mailto:jkamm@merjent.com]
Sent: Wednesday, October 07, 2015 11:48 AM
To: Andrea Higgins
Subject: ONEOK_Garden Creek_McKenzie Co_Weeds_Consult_(letter)_20150821.docx

Please find the attached.

Thanks!

Jennifer

merjent

Jennifer Kamm

TractorWorks Building
800 Washington Avenue N.
Suite 315
Minneapolis, MN 55401

612.746.3660 main
612.354.4284 direct
612.875.0543 cell
612.746.3679 fax

www.merjent.com
jkamm@merjent.com

EXHIBIT E

LANDOWNER WAIVER PENDING