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May 16, 2013

Mr. Darrell Nitschke
Executive Director
NORTH DAKOTA PUBLIC
SERVICE COMMISSION
600 E. Boulevard Avenue, Dept. 408
Bismarck, ND 58505-0480

Dear Mr. Nitschke:

In re: Tesoro High Plains Pipeline Company LLC
Certification for New Ramberg Station Construction
Our File No. 90-532-001

In accordance with North Dakota Century Code § 49-22-03(3), the purpose of this letter is to notify the Public Service Commission ("Commission") that Tesoro High Plains Pipeline Company LLC ("Tesoro") intends to construct certain facilities adjacent to its pipeline, which has been in service since the 1950s.

As Tesoro's existing pipeline predates the siting act codified at NDCC Chapter 49-22, this project qualifies for construction under the certification process as all construction will take place within 350' on either side of the pipeline centerline.

Enclosed herewith is an Affidavit of Rick Weyen setting forth the certification requirements of the siting act, along with (1) New Ramberg Station Environmental Report, Tesoro High Plains Pipeline, which includes a plat depicting the pipeline and the facilities to be built within 350' of the pipeline; and (2) Tesoro High Plains Pipeline: a Class III Inventory of 40 Acres for the Proposed New Ramberg Station Project, Williams County, North Dakota.

Presently, Tesoro plans to commence construction this spring.

Very truly yours,

BRIAN R. BJELLA

bw
Enc.

1 PU-13-224 Filed 05/16/2013 Pages: 83
Letter enclosing certification
Tesoro High Plains Pipeline Company, LLC
Brian Bjella, Crowley Fleck, PLLP

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF NORTH DAKOTA

TESORO HIGH PLAINS PIPELINE COMPANY LLC
CASE NO. PU-_____

CERTIFICATION OF APPLICANT PURSUANT TO NORTH DAKOTA CENTURY CODE § 49-22-03(3)

The undersigned, a duly authorized agent of Tesoro High Plains Pipeline Company LLC. ("Tesoro"), having authority to act on behalf of and by Tesoro, does hereby certify under oath:

1. That Tesoro owns and operates a pipeline located in the NW1/4 of Township 156 North, Range 95 West, Section 32 in Williams County, North Dakota.

2. That the pipeline has been in service since the 1950s, thus being prior to adoption of the siting act on April 9, 1975, codified at NDCC Chapter 49-22.

3. That Tesoro proposes to construct the following described facilities within 350 feet of either side of the centerline of its existing pipeline, thus utilizing the certification process as provided for in NDCC § 49-22-03(3)(a).

4. That the proposed New Ramberg Station consists of four (4) 120,000 barrel (net) storage tanks, multiple pumps and pipeline to storage tank interconnects for transportation of crude oil to multiple destinations via Tesoro's existing pipeline system.

5. That attached hereto and made a part hereof is the *New Ramberg Station Environmental Report* (Environmental Report), prepared for Tesoro by KC Harvey Environmental, LLC.

6. That attached hereto and made a part hereof is the *Class III Inventory of 40 Acres for the Proposed New Ramberg Station Project, Williams County North Dakota* (Class III SHPO Report), prepared for Tesoro by Ethnoscience, Inc.

7. That the *Environmental Report* and *Class III SHPO Report* indicates there are no exclusion or avoidance areas which would be impacted by the proposed construction.

8. That Tesoro will comply with all applicable conditions and protections in siting laws and rules and Commission orders previously issued for any part of the facility.

BEFORE THE PUBLIC SERVICE COMMISSION OF THE STATE OF NORTH DAKOTA

TESORO HIGH PLAINS PIPELINE COMPANY LLC
CASE NO. PU-_____

CERTIFICATION OF APPLICANT PURSUANT TO NORTH DAKOTA CENTURY CODE § 49-22-03(3)

Dated this 15 day of May, 2013

TESORO HIGH PLAINS PIPELINE COMPANY LLC

By _____
Its VICE PRESIDENT, OPERATIONS

STATE OF TEXAS

COUNTY OF BEXAR

Subscribed and sworn to before me this 15TH day of May, 2013.

_____, Notary Public
DENTON County, TEXAS
My Commission Expires: Oct 7, 2014

(S E A L)

WILLIAMS ERIC SMITH, III
Notary Public, State of Texas
My Commission Expires
October 07, 2014

NEW RAMBERG STATION
ENVIRONMENTAL REPORT

Tesoro High Plains Pipeline

KC HARVEY
ENVIRONMENTAL, LLC

New Ramberg Station
Environmental Report

Prepared for:

Wood Group Mustang, Inc.
410 17th Street, Suite 1260
Denver, Colorado 80202

Prepared by:
KC Harvey Environmental, LLC
376 Gallatin Park Drive
Bozeman, MT 59715

May 7, 2013

Table of Contents

List of Tables and Figures

1.0 Introduction

KC Harvey Environmental, LLC (KC Harvey) prepared this environmental report of the proposed project: Tesoro High Plains Pipeline (Tesoro) New Ramberg Station (NR Station). This report was completed to provide information for Tesoro's Application for Certification of Site Compatibility to the North Dakota Public Service Commission (NDPSC). We contacted agencies, reviewed available geographic records and databases, and completed a field site assessment pertinent to all environmental subjects in the application. The site assessment included identification of wetlands, wildlife and raptors, soils, vegetation, and land uses on and within a two-mile area around the project location.

Prior to the field assessment, KC Harvey conducted agency contacts and data reviews related to wildlife, soil, geology, vegetation and water resources. This also included identification of NDPSC identified exclusion and avoidance areas for these resources. Federal and state Agencies were consulted to identify environmental and biological resources in or within the vicinity of the project area. A field assessment was completed on April 25, 2013. The study area included the proposed property boundary and a surrounding two mile buffer in all directions.

2.0 Location

The proposed New Ramberg Station location is on the eastside of 104th Avenue NW and is accessed off an unnamed road north of 60th Street NW (Figure 1). The legal description is the NW1/4 of township 156 north, Range 95 west, section 32.

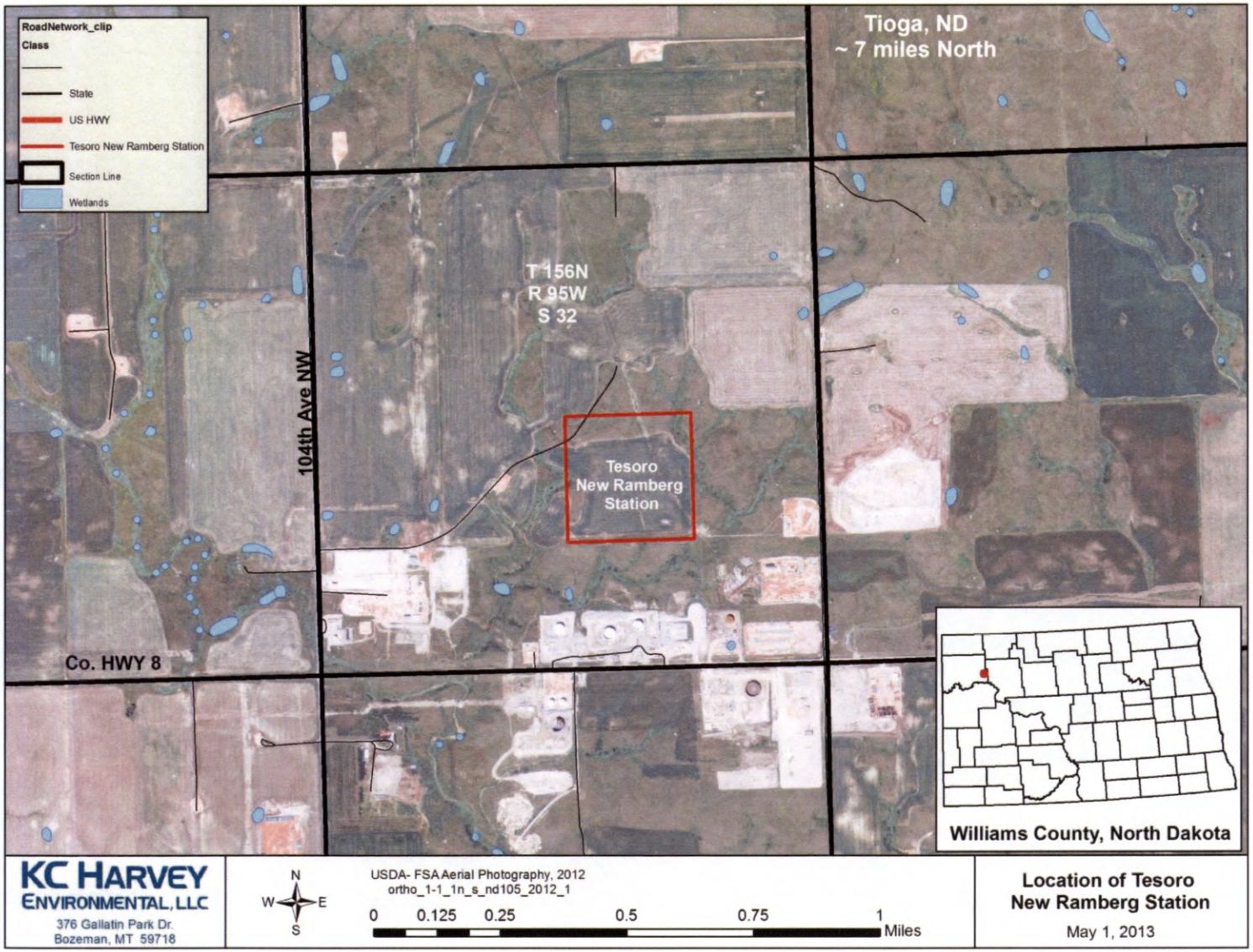


Figure 1. Proposed Tesoro New Ramberg Station project location.

3.0 Agency Consultations

Letters regarding wildlife-related topics were sent to Federal and state Agencies in March 2013. A request for agency data and comments related to the proposed project was initiated through formal letters. These include the United States Fish and Wildlife Service's North Dakota Ecological Services Office (USFWS), the North Dakota Game and Fish Department (NDGF), and the North Dakota Parks and Recreation Department (NDPR).

The North Dakota Department of Health's Division of Water Quality (NDDH) and the United States Army Corps of Engineers (USACE) were formally contacted in April 2013 for information on wetland and water resources.

The sections below summarize the data and comments received from these Agencies.

3.1.1 United States Fish and Wildlife Services (USFWS)

The USFWS was contacted March 27, 2013 via letter and email. The correspondence sought data and comments related to the Endangered Species Act (ESA), the Migratory Bird Treaty Act (MBTA), the Bald and Golden Eagle Protection Act (BGEPA), and other resources of concern existing in or near the project area. The reply letter stamped April 26, 2013 states that the project as described will have no significant impact on fish and wildlife resources. Furthermore, no endangered or threatened species are known to occupy the project area.

A copy of the correspondence with the USFWS is included in Appendix A.

3.1.2 United States Army Corps of Engineers (USACE)

KC Harvey notified the USACE of the project location in April 2013 and that a site assessment and wetland delineation would be completed if any wetlands were found on the site. KC Harvey also noted that if any wetlands were located, project construction would avoid these areas and no impacts to wetlands are anticipated.

Daniel Cimarosti, the State Program Manager from the USACE North Dakota Regulatory Office responded April 17, 2013. The response acknowledged the project and requested submittal of a wetland permit application if wetland impacts are unavoidable.

The site assessment found no wetlands on the property. KC Harvey will notify the USACE of the site assessment completion, provide them the wetland delineation data forms, and indicate that no Jurisdictional Determination is needed.

A copy of the correspondence with the USACE is in Appendix A.

3.1.3 North Dakota Game and Fish Department (NDGF)

The NDGF March 27, 2013 letter requested data and comments on Conservation Priority Species, easements, and other resources of concern existing in or near the project area. John Schumacher, Resource Biologist from the NDGF responded via phone and email, stating the

Agency "does not believe they (the proposed project) will have any significant adverse effects on wildlife or wildlife habitat based on the information provided."

A copy of the correspondence with the NDGF is included in Appendix A.

3.1.4 North Dakota Parks and Recreation (NDPR)

KC Harvey contacted the NDPR on March 28, 2013 via letter and email. The correspondence requested data and comments on NDPR Natural Heritage Inventory occurrences, Natural Areas Registry resources, nature reserves, or other Department interests in or near the project area. The NDPR has not responded concerning the proposed project.

A copy of the correspondence letter sent to the NDPR is included in Appendix A.

3.1.5 North Dakota Department of Health (NDDH)

The NDDH was contacted in April 2013 to determine the presence of protected water resources, wellhead protection areas, or any public water supply resources present within or near the project location. Mr. Dennis Fewless, Director of the NDDH Division of Water Quality responded to our inquiry with a letter dated April 10, 2013. The letter stated the "proposed site is not located over a named groundwater aquifer or within a wellhead protection area." The NDDH stated that the proposed project operations would not likely impact drinking water sources. The NDDH requires a National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharge related to Construction Activities for any disturbance over one acre.

A copy of the correspondence with the NDDH is included in Appendix A.

4.0 Biological Resources

The following sections describe the results and findings of the data analyses, agency correspondence, and field assessment. KC Harvey completed the field site assessment on April 25, 2013 for wetlands, wildlife and raptors, soils, vegetation, land cover, and land uses.

4.1 Wetlands

Prior to the site assessment, a review of topographic maps, satellite imagery, and the National Wetland Inventory (NWI) identified potential wetlands and surface water on the property. All identified aquatic resources were documented according to their resource type (*e.g.* wetland, streams). In addition, all features that potentially hold or convey water were determined to be either ephemeral or perennial water sources.

KC Harvey used the following US Army Corps of Engineers (USACE) methods to determine if the aquatic resources met the USACE definition of a wetland.

- USACE Wetland Delineation Manual (USACE 1987)
- USACE Regional Supplement for the Great Plains Region (USACE 2010)
- USACE National Wetland Plant List (USACE 2012)

As part of the wetland delineations, wetland determination data forms were completed in paired locations with one in a potential wetland location and one in an upland location (Appendix B).

Sample points were GPS located (Figure 2). Vegetation, hydrology and soils were assessed for wetland characteristics, and photographs documented each sample site, soil profile and soil pit.

No wetlands were delineated within the project boundary. USACE wetland delineation data sheets are provided in Appendix A. The site has ephemeral drainages that accumulate and move water (Figure 2). Water was present and flowing during the April survey following a snow event. However, wetland plants and soils were absent from the 'wetland' sample sites. These areas do not meet the USACE definition of a wetland. The vegetation community was a continuation of upland vegetation into the drainage. The water flowing in the drainage bottom is ephemeral spring runoff. The absence of any obligate or facultative wetland plant species indicates the seasonal hydrology is short-term.

Despite the lack of wetland criteria, these drainages will be avoided by construction. No dredge or fill materials will be placed in the drainages. National Pollutant Discharge Elimination System permit erosion control best management practices (BMP) will be implemented during construction. Buffers around the drainage areas are provided in Figure 2. This buffer is part of the BMPs to minimize soil erosion on the slopes and the sedimentation of surface water in the drainage.

4.2 Water Resources

The project area lies within the Lake Sakakawea Watershed (HUC: 10110101), which is part of the Missouri- Little Missouri Subregion and the greater Missouri Region. Surface and groundwater resource data were evaluated for the project area. An unnamed ephemeral creek runs south on the west side of the property boundary and another ephemeral drainage bisects the northeast corner of the property. Figure 3 and 4 also shows streams from the USDA NRCS National Hydrology Dataset and wetlands from the USFWS National Wetland Inventory (USDA NRCS 2011 and USFWS 2013).

The North Dakota Department of Health (NDDH) Section 303(d) List of Waters Needing Total Maximum Daily Loads (TMDL) indicated no TMDL waters in the project areas (NDDH 2010). The NDDH also responded to our Agency correspondence stating no wellhead protection areas or named groundwater aquifer exists in the proposed project location. The NDDH requires a National Pollution Discharge Elimination System (NPDES) general permit for stormwater discharges associated with construction activities (NDR10-0000) for all construction projects where land disturbance is greater than 1 acre. In addition to obtaining a NDR10-0000, TESORO would be required to prepare a Stormwater Pollution Prevention Plan (SWPPP).

Figure 2. Wetland delineation field data points, drainage boundaries and water resources.

4.3 Raptors, Migratory Birds, and Wildlife

Raptors and migratory bird species are protected against impacts of direct mortality, habitat degradation, and/or displacement of individual birds through the MBTA, BGEPA, and ESA. A raptor survey was conducted on site and within two miles the project boundary on April 25, 2013. One red-tailed hawk (*Buteo jamaicensis*) and one Northern harrier (*Circus cyaneus*) were observed in flight but no raptors nests were found. The northern harrier is a North Dakota Level II Species of Conservation Priority. It is the only species of North Dakota's one hundred Species of Conservation Priority observed in the vicinity of the project area.

Nesting habitat of red-tailed hawks is limited to occasional cottonwood trees along drainages and planted trees in shelterbelts surrounding farmsteads. As nesters on elevated ground or in shrubs and dense grasses, nesting habitat for the northern harrier is more abundant in the project area vicinity.

Wildlife presence and sign was recorded while walking the property in April 2013. Wildlife utilizing the property includes deer, pheasants, coyotes, burrowing mammals, geese, and songbirds. Wildlife sign and songbirds were especially abundant in the shrubs within the drainages.

4.4 Threatened and Endangered Species

Assessments for federally listed threatened, endangered and candidate species were conducted by agency consultation and by determining if potential habitats exist within the project area. Currently, five federally listed species have been documented in Williams County, including:

- Gray Wolf (*Canis lupus*)
- Interior Least Tern (*Sterna antillarum*)
- Pallid Sturgeon (*Scaphirhynchus albus*)
- Piping Plover (*Charadrius melodus*)
- Whooping Crane (*Grus americana*)

No threatened or endangered species or critical habitat areas of concern were located during the field survey.

Suitable habitat for the interior least tern and pallid sturgeon is limited to the Missouri River system which is outside the project area. There is also no potential habitat for gray wolves and none were not observed during the site assessment. Piping plover are shorebirds and no shoreline habitat is in or near the project location. These four species will not be affected by the proposed project.

Whooping cranes have the potential to fly over, temporarily feed, or loaf in the area during spring and fall migration. Whooping cranes were not observed during the field assessment; however, there is suitable habitat located near the project area. Whooping cranes preferred habitat includes large marshy wetlands and croplands. Cropland is present in the vicinity of the project. If individuals migrate through the project area, they will likely avoid the project area and utilize adjacent croplands away from the proposed development. If a whooping crane is sighted

within one-mile of project area, the USFWS will be contacted immediately. The proposed project is not likely to adversely affect this species.

4.5 Soils

KC Harvey reviewed the United States Department of Agriculture Natural Resources Conservation Service (USDA NRCS) Soil Survey Geographic Database (SSURGO) soil data from Williams County (USDA NRCS 2012). No Prime Farmland was found within the proposed project area; however the majority of the proposed property contains Farmland of Statewide Importance (Figure 3). Soils within and surrounding the project are described as partially hydric with no probable flood occurrence.

4.6 Vegetation

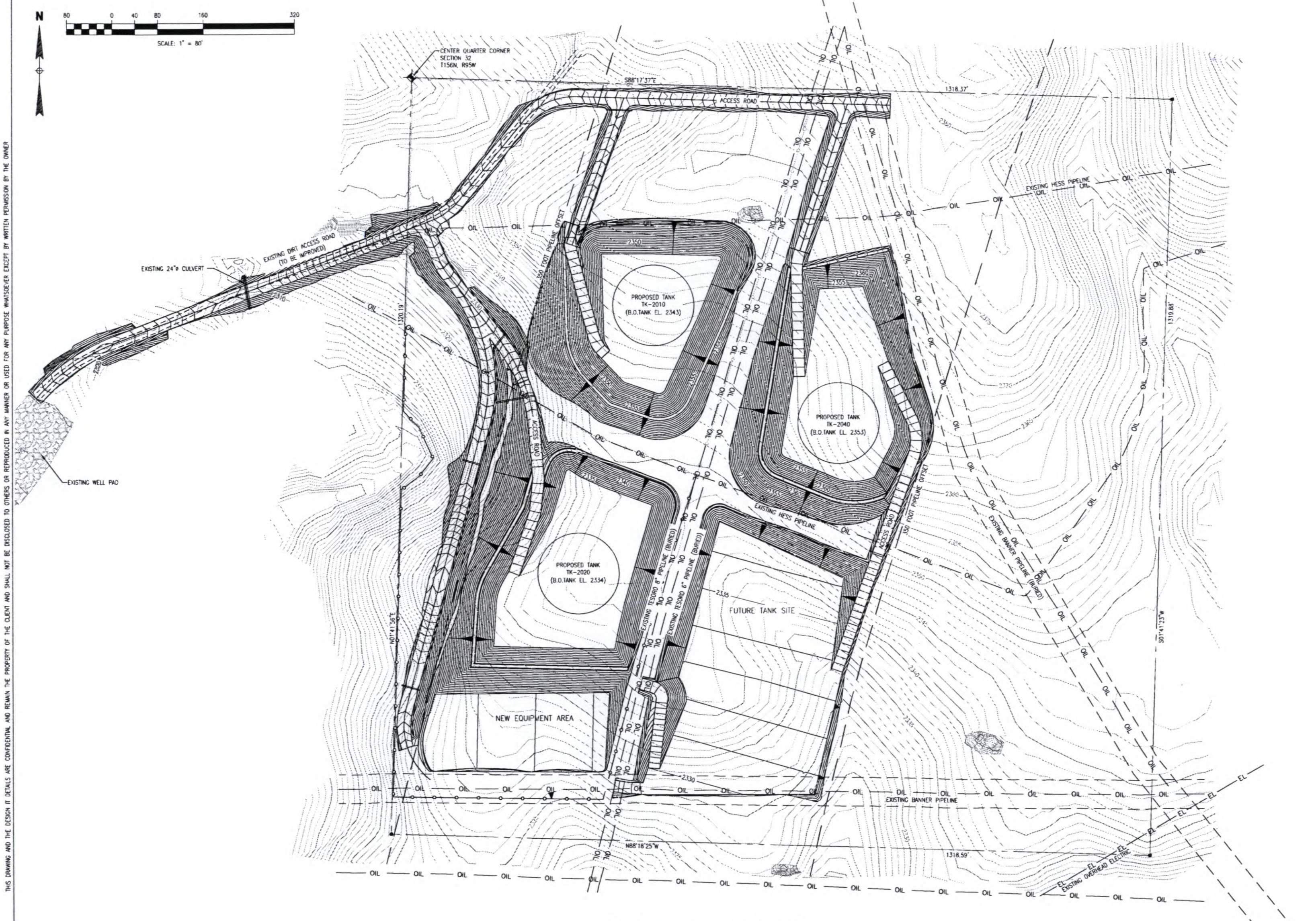
The vegetation on the site consists primarily of annual wheat crop. The grassland in the northern part of the property is a mix of non-native pasture grasses (smooth brome [*Bromus inermis*] and bluegrass [*Poa* spp]) with native prairie forbs. Native shrub species including chokecherry (*Prunus virginiana*) and snowberry (*Symphoricarpos occidentalis*) are common in the drainages and slopes of the property. No trees are present. Canada thistle (*Circium arvense*), a noxious weed species, is present at low coverage along the drainages.

4.7 Land Cover and Land Uses

Land cover from the National Land Cover Database (NLCD) from the Multi-Resolution Land Characteristics Consortium (MRCL) was evaluated in the project area (Homer, et al. 2007). According to the NLCD database, the proposed project area consists mainly of cultivated crops with grasslands on the north quarter and a small patch of shrubs on the west side.

The land cover was ground-truthed during the site assessment. The land cover assessment of the site and surrounding area (two-mile radius) was conducted by walking the site and delineating the vegetation community boundaries and plant species within each community (Figure 4). The property consists primarily of agricultural cropland for wheat production. The northern portion of the property is mixed native and non-native grasses. There are drainages on the northeast and west portions of the property that contain shrubs. Wildlife sign was abundant indicating wildlife (*e.g.,* deer, coyote, upland birds) regularly use the site, particularly along the drainages and shrubs.

Adjacent land uses within two miles of the property include agricultural pasture and cropland, and industrial use.



TANK CONTAINMENT GRADING PLAN

SCALE: 1"=80'

LEGEND:

2225 (existing contours)	EXISTING GROUND TOPOGRAPHY (SEE NOTE 1)
2225	PROPOSED TOPOGRAPHY
	PROPERTY LINE
	350 FOOT OFFSET FROM EXISTING PIPELINE
	PIPELINE EASEMENT (APPROXIMATE)
OIL	EXISTING OIL PIPELINE
CREST / TOE	SLOPE ARROW

GENERAL NOTES:

1. EXISTING GROUND TOPOGRAPHY GENERATED FROM SURVEY DATA PROVIDED BY BARTLETT & WEST.
2. CALL NORTH DAKOTA ONE CALL AT LEAST TWO BUSINESS DAYS BEFORE BEGINNING ANY EXCAVATION AT 811 OR 1-800-795-0555.

NOTES

REFERENCE DRAWINGS	REV.	REVISION	DATE	DRAWN	CHKD.	APPD.
	D	REVISED ISSUE FOR INFORMATION	05/13/13	MRJ	RMR	RMR
	C	ISSUED FOR INFORMATION	04/22/13	MRJ	RMR	RMR
	B	ISSUED FOR PERMIT	11/29/12	MRJ	RMR	RMR
	A	ISSUED FOR INTERNAL REVIEW	11/29/12	MRJ		

DRAWING APPROVAL	SIGNATURE	DATE
DRAWN BY	MRJ	11/29/12
CHECKED BY		
IN HOUSE APPD.		
CLIENT APPD.		
CLIENT APPD.		
CLIENT APPD.		
CLIENT PROJECT NUMBER	PROJECT NUMBER M0020653	

CLIENT: TESORO

Wood Group Mustang, Inc.
FORMERLY MUSTANG ENGINEERING, L.P.

PRJ. TITLE: TIOGA/NEW RAMBERG

DWG. TITLE: NEW RAMBERG OVERALL CONCEPTUAL GRADING PLAN

IMAGE No. M0020653-04-05-485-1900

SCALE 1"=80' | DWG. No. M0020653-04-05-485-1900 | REV. D

FILE PATH: P:\M0020653 TESORO RAMBERG TANK PROJECT\08 DELIVERABLES WIP\04.05 CIVIL\04.05.485 CIVIL DRWGS - DENVER\M0020653-04-05-485-1900.DWG BY:MJJUNEA DATE:May 13, 2013 2:56pm

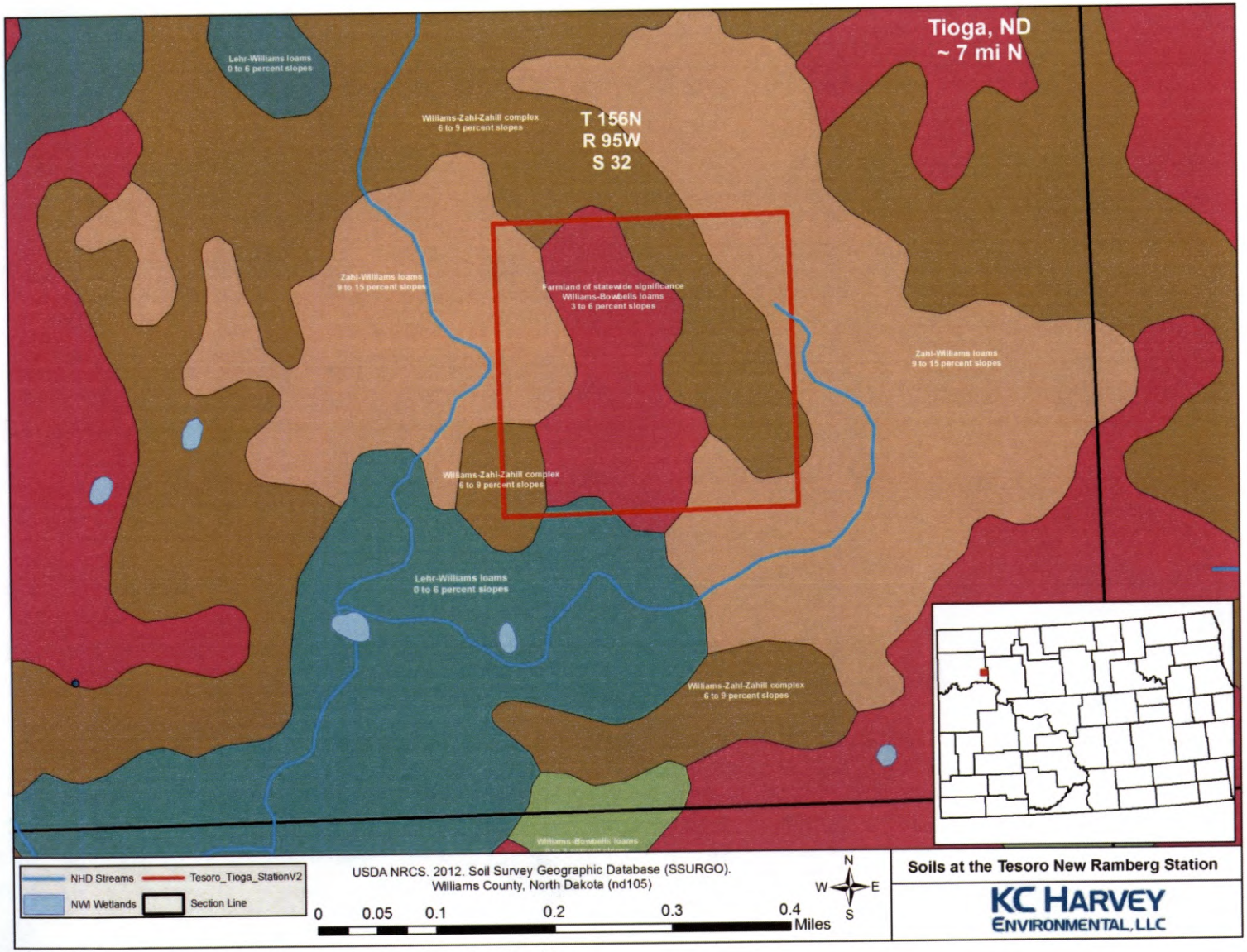


Figure 3. USDA surveyed soils at the proposed project location.

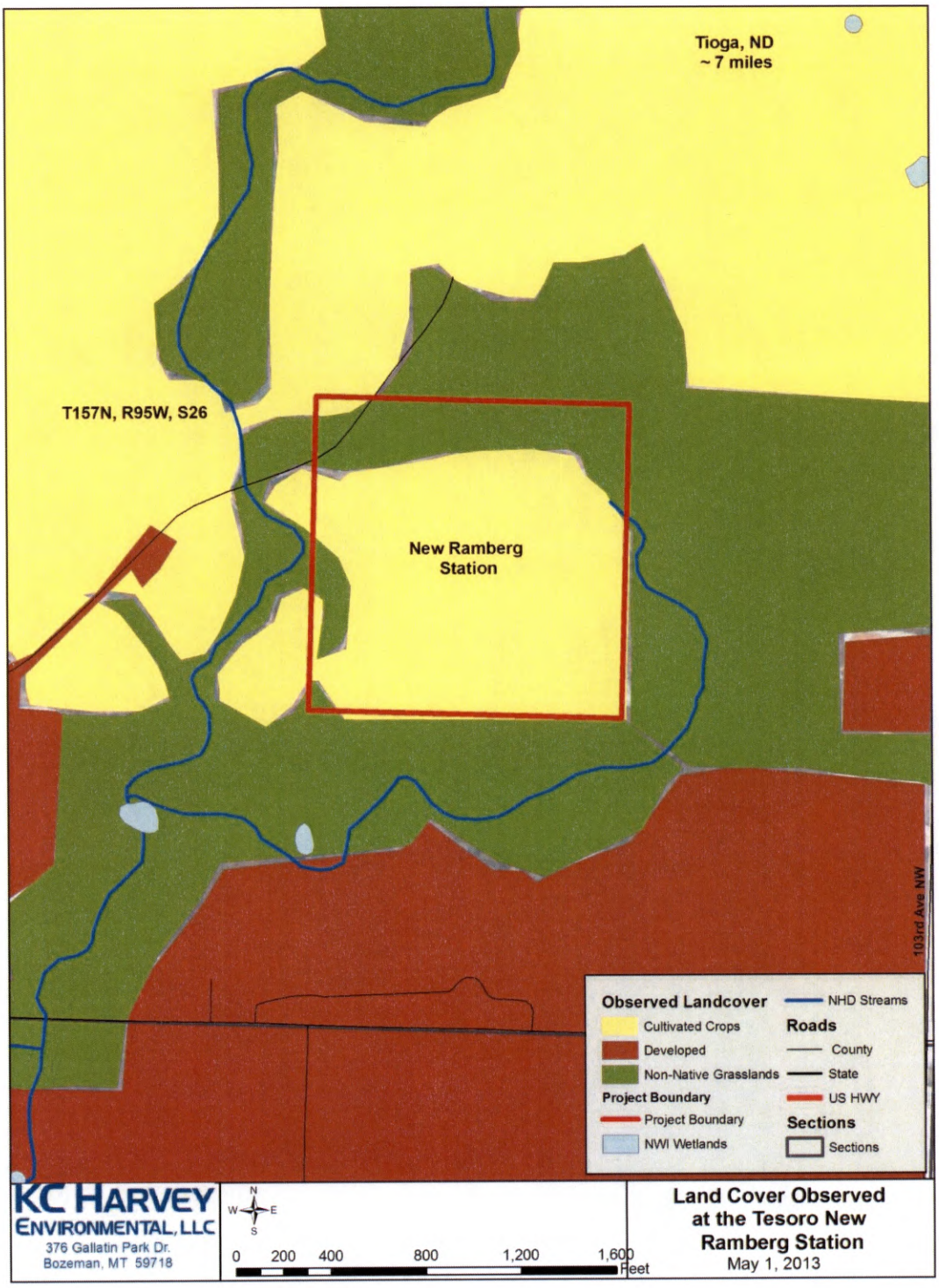


Figure 4. Land cover observed in and around the proposed project area.

5.0 Exclusion and Avoidance Conclusions

The North Dakota Administrative Code (North Dakota Century Code Laws) Chapter 69-06-08-01, Energy Conversion Facility Siting Criteria was used a guideline for determining Exclusion and Avoidance Areas in the proposed project area. Selection criteria included potential impacts, mitigation measures where appropriate are provided below.

5.1 Exclusion Areas

According to the NDAC, Exclusion Areas are geographic areas where no construction activity is allowable. Buffer zones are established at designated widths in order to protect the exclusion area resource. Table 1 indicates the types of exclusion zones specified by the NDPSC and the presence in the project and/ or the study area.

Table 1. Exclusion Area criteria for the proposed project area and surrounding study area.

Exclusion Areas	In Study Area	Within Project Boundary
National Monuments	No	No
National Wilderness Areas	No	No
National Wildlife Refuges	No	No
State Wild, Scenic, or Recreational Rivers	No	No
State Game Refuges	No	No
State Game Management Areas	No	No
State Management Areas	No	No
State Forests	No	No
State Forest Management Lands	No	No
State Grasslands	No	No
State Parks and Forest	No	No
State Historic Sites	No	No
State Monuments	No	No
State Historical Markers	No	No
State Archaeological Sites	No	No
State Nature Preserves	No	No
State or National Grasslands	No	No
Other Historical Resources	No	No

Exclusion Areas	In Study Area	Within Project Boundary
County Parks	No	No
County Recreational Areas	No	No
Municipal Parks	No	No
Parks owned or administered by other Governmental Subdivisions	No	No
Prime and Unique Farmlands	No	No
Critical Habitats defined by the USFWS	No	No
Irrigated Land	No	No
Areas of unique animals or plant species	No	No

There are no Exclusion Areas in the proposed project area.

5.2 Avoidance Areas

Avoidance Areas are defined by the NDAC as geographic areas which may be impacted by the proposed management, the orderly siting of the facility, system reliability and integrity, the efficient use of resources, and alternative sites. Table 2 lists the criteria and determined Avoidance Areas observed during the site assessment.

Table 2. Avoidance Area criteria for the proposed project area and surrounding study area.

Avoidance Areas	In Study Area	Within Project Boundary
Historical Resources not Designated as Exclusion Areas	No	No
Areas Which Are Geologically Unstable	No	No
Within Five Hundred Feet [152.4 Meters] of a Residence, School, or Place of Business	No	No
Areas within 100-year Floodplain	No	No
Woodlands	No	No
Wetlands and Watercourses	Yes	Yes
Reservoirs and Municipal Water Supplies	No	No
Water Sources for Organized Rural Water Districts	No	No
Areas of Recreational Significance Which Are Not Designated as Exclusion Areas	No	No

Figure 5 indicates the Avoidance Areas for the proposed project. Two drainages (watercourses) are present on the west and east sides of the proposed project location. The Avoidance Area on the east covers approximately 1.65 acres. The Avoidance Area on the west is approximately 0.79 acres.

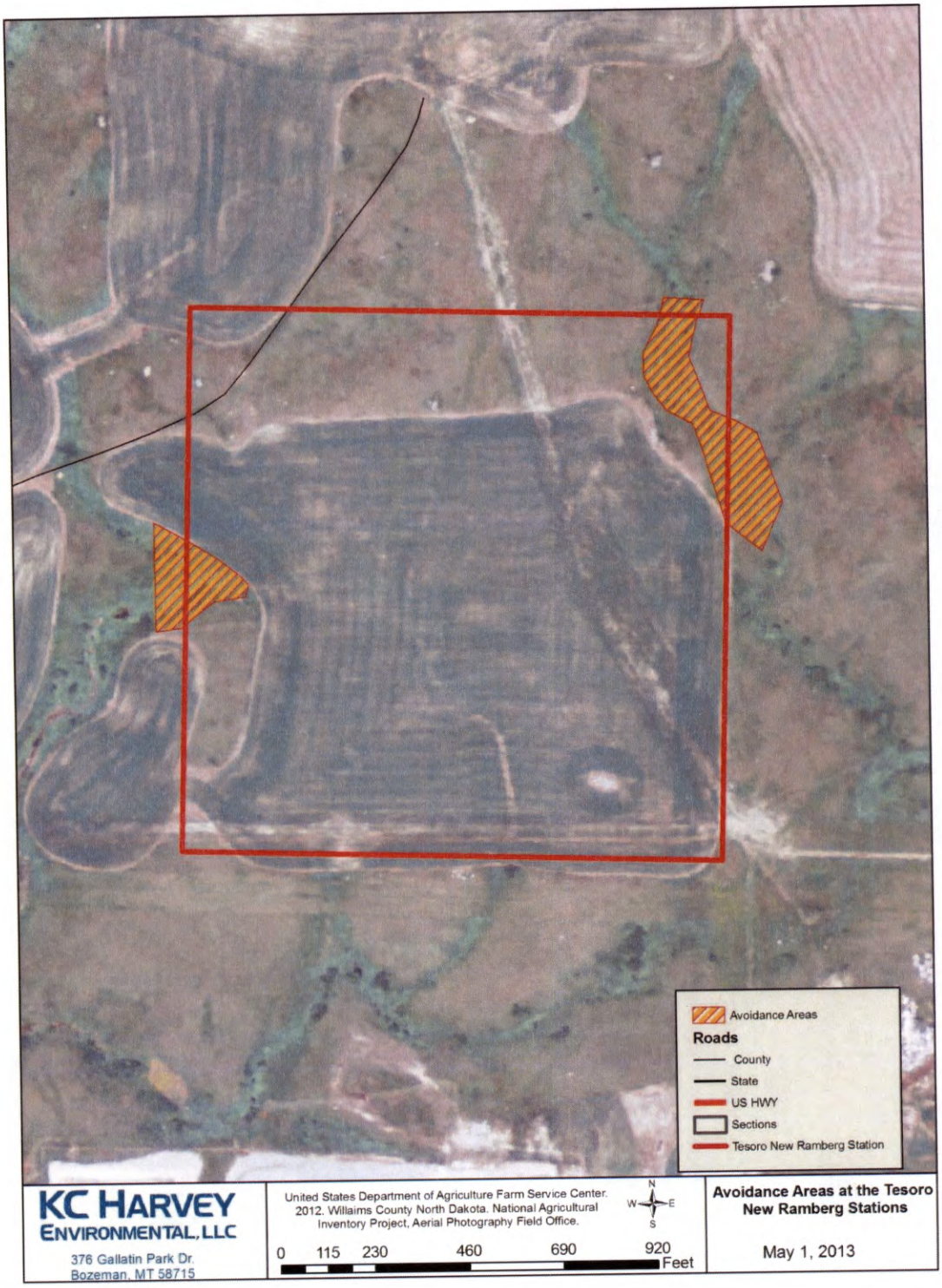


Figure 5. Avoidance Areas at the proposed project location.

5.3 Selection Criteria

Table 3 indicates the NDPSC selection criteria as defined in the NDAC and the potential impacts from the project location.

Table 3. Selection Criteria and potential impacts from the proposed project.

Selection Criteria	Potential Impacts Resulting From Project
Agricultural Production	Minimal
Family Farms and Ranches	None
Land Suitable for Irrigation	None
Surface and Groundwater Flow Patterns	Avoidance Areas
Noise Sensitive Areas	None
Visual Effects	None
Extractive and Storage Resources	None
Wetlands/ Watercourses	Avoidance Areas
Woodlands	None
Communication or Electric Control Facilities	None
Human Health and Safety	Future Potential
Animal Health and Safety	None
Plant Life	Minimal

5.4 Agricultural Production

The property is currently used for the production of annual wheat crops. The proposed development will decrease agricultural production by 29.7 acres. There are family farms within the vicinity (2 mile radius) of the proposed project location. Minimal impact to agricultural production is expected due to the development of the proposed project.

5.5 Noise and Visual Effects

The surrounding and adjacent land use to the south is industrial. The New Ramberg/ Beaver Lodge Station is directly south of the proposed project location. Another industrial station is directly west of the site. In addition, a new industrial site is being developed within one mile of the eastern boundary. The proposed location is also within the Beaver Lodge Oil Field. Noise or visual effects are not foreseen due to the proposed project.

5.6 Wetlands

During the site assessment the presence or absence of wetlands was determined using USACE methods (USACE 1987 and 2010). No wetlands were located within the property boundaries. USACE wetland delineation data sheets are provided in Appendix B. The site has two ephemeral

drainages. Water was present and flowing during the April survey. However, wetland plants and soils were absent from the site. These areas do not meet the USACE definition of a wetland.

5.7 Human Health Safety

No known impacts to human health or safety besides future operation at the New Ramberg Station are foreseen from the development of the proposed project.

5.8 Vegetation

Vegetation at the proposed project location consists mainly of cultivated crops with the north ¼ of the property being non-native and native grass species. Minimal impacts to the vegetation communities are expected from the development of the proposed project.

6.0 Qualifications of Persons Contributing to the Study

David Cameron has practiced as a professional engineer in four states and is a specialist in reclamation design with 31 years of professional experience in North America, Mexico, South America, and Australasia. David has a B.S. degree in Civil Engineering with an emphasis on geotechnical engineering from the University of Colorado. He also has vast experience in development and implementation of reclamation plans for mining, oil and gas, and other energy related projects.

Monica Pokorny has a Master of Science in Land Resources and Environmental Sciences from Montana State University. She has 17 years of experience doing biological assessments, field sampling, reclamation design and implementation, and reporting.

Loren Franklin has a Bachelor of Science in Biomedical Sciences and a Master of Science in Land Rehabilitation. She has 6 years of experience being a reclamation scientist and her project experience emphasizes human and ecological risk assessment, environmental sampling, and reclamation planning, construction, and monitoring. Her specialties also include GPS, GIS, and database compilation.

Brad Kovach has a Bachelor of Science in Biology and 22 years of experience in environmental services. His experience includes facility siting and permitting, resource assessments, and project management.

7.0 References

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8.0 Appendix A: Correspondence with Federal and State Agencies

KC HARVEY

March 27, 2013

Jeffrey Towner, Field Supervisor
U.S. Fish and Wildlife Service
North Dakota Field Office
3425 Miriam Avenue
Bismarck, North Dakota 58501-7926

RE: Request for Agency Coordination in Regards to a State of ND PSC Permit Application for a Certificate of Site Compatibility: Proposed Tesoro New Ramberg Tank Farm in Williams County, North Dakota

Dear Mr. Towner,

Tesoro High Plains Pipeline (Tesoro) proposes construction to build a new tank farm/ station located south of Tioga in Williams County, North Dakota. The proposed site is approximately 40 acres in the NW¼ of the SE¼ of Section 32, Township 156 North, Range 95 West (Figure 1). The new construction (the Project) will add crude oil storage tanks and pumping capabilities to the existing Ramberg Station. The Project area is located 7.3 miles south of Tioga, North Dakota and approximately 830 feet north of the existing Ramberg Station in the Beaver Lodge Oil Field. Tesoro is preparing an application to the State of North Dakota Public Service Commission (PSC) for a Certificate of Site Compatibility.

KC Harvey Environmental, LLC is conducting the environmental analyses and preparing the respective narrative for the PSC application. Tesoro will submit the completed application for the PSC approval process. In accordance with the PSC application guidance, we are requesting technical data and comments pursuant to your Agency's interests. This is in accordance with the North Dakota Century Code Chapter 49-22-14.1 of the Energy Conversion and Transmission Facility Siting Act outlining cooperation with state and federal agencies.

Project preliminary planning and design is currently underway. A spring 2013 site assessment will be conducted for wetlands, land cover, and biological resources. In accordance with the PSC application requirement, we are requesting preliminary comments and data from the U.S. Fish and Wildlife Service (USFWS) North Dakota Ecological Services Office in advance of the site assessment. Please provide comments related to the Endangered Species Act (ESA), the Migratory Bird Treaty Act (MBTA), the Bald and Golden Eagle Protection Act (BGEPA), and other resources of concern existing in or near the project area.

We are also contacting the North Dakota Game and Fish Department (NDGF) regarding the North Dakota Conservation Priority Species and State easements, as well as the North Dakota Parks and Recreation Department (NDPR) for Natural Heritage Species.

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376 Gallatin Park Drive
Bozeman, Montana 59715

T 406-585-7402
F 406-585-7428
www.kcharvey.com

We will subsequently coordinate with you and other agencies if resources of concern are identified. We will also address your findings, recommendations, and the results of the site assessment in the PSC permit application. The PSC notice of filing will likely occur in the Spring of 2013. The site assessment will be completed prior to the filing.

Written responses can be sent to my attention at:

376 Gallatin Park Dr.
Bozeman, MT 59715
lbarber@kcharvey.com

Please feel free to call me at 406-585-7402, extension 19 or by email at lbarber@kcharvey.com with any questions or requests for additional information.

Thank you for your consideration in this matter.

Sincerely,

Loren M.B. Franklin, M.S.
Reclamation Scientist
KC Harvey Environmental, LLC

Kari Thorsteinson

From:	Loren Barber
Sent:	Thursday, March 28, 2013 3:01 PM
To:	kari_thorsteinson@fws.gov
Subject:	Attn: Jeffrey Towner, Re: ND PSC Application preliminary contact
Attachments:	Tesoro_TankFarm_PSCletter032713_USFWS.pdf

Dear Mr. Towner,

I am contacting you regarding two North Dakota PSC Applications for Certificate of Site Compatibility. Please see my first email regarding the first proposed location (I could not send both letters in one email, sorry for the inconvenience). The second proposed project is a new tank farm near the existing Tesoro Ramberg Station (New Ramberg Tank Farm), approximately 7 miles south of Tioga.

Please see the attached letter requesting data and comments from the USFWS regarding the second proposed location. I have also sent a copy of this letter to your office via US mail. Please contact me with any questions. Thank you in advanced for your time.

Sincerely,

Loren Franklin
Reclamation Scientist

Reclamation Research Group
A Division of
KC Harvey Environmental, LLC
376 Gallatin Park Drive
Bozeman, Montana 59715 USA

Phone: 406.585.7402, ext 19
Cell: 406.570.5410
Fax: 406.585.7428
lbarber@kcharvey.com

KC HARVEY
ENVIRONMENTAL, LLC

KC HARVEY

U.S. FISH AND WILDLIFE SERVICE

ECOLOGICAL SERVICES
ND FIELD OFFICE

Project as described will have no significant impact on fish and wildlife resources. No endangered or threatened species are known to occupy the project area. IF PROJECT DESIGN CHANGES ARE MADE, PLEASE SUBMIT PLANS FOR REVIEW.

4-26-13 Jeffrey K. Towner
Date Jeffrey K. Towner
Field Supervisor

March 27, 2013

Jeffrey Towner, Field Supervisor
U.S. Fish and Wildlife Service
North Dakota Field Office
3425 Miriam Avenue
Bismarck, North Dakota 58501-7926

RE: Request for Agency Coordination in Regards to a State of ND PSC Permit Application for a Certificate of Site Compatibility: Proposed Tesoro New Ramberg Tank Farm in Williams County, North Dakota

Dear Mr. Towner,

Tesoro High Plains Pipeline (Tesoro) proposes construction to build a new tank farm/ station located south of Tioga in Williams County, North Dakota. The proposed site is approximately 40 acres in the NW¼ of the SE¼ of Section 32, Township 156 North, Range 95 West (Figure 1). The new construction (the Project) will add crude oil storage tanks and pumping capabilities to the existing Ramberg Station. The Project area is located 7.3 miles south of Tioga, North Dakota and approximately 830 feet north of the existing Ramberg Station in the Beaver Lodge Oil Field. Tesoro is preparing an application to the State of North Dakota Public Service Commission (PSC) for a Certificate of Site Compatibility.

KC Harvey Environmental, LLC is conducting the environmental analyses and preparing the respective narrative for the PSC application. Tesoro will submit the completed application for the PSC approval process. In accordance with the PSC application guidance, we are requesting technical data and comments pursuant to your Agency's interests. This is in accordance with the North Dakota Century Code Chapter 49-22-14.1 of the Energy Conversion and Transmission Facility Siting Act outlining cooperation with state and federal agencies.

Project preliminary planning and design is currently underway. A spring 2013 site assessment will be conducted for wetlands, land cover, and biological resources. In accordance with the PSC application requirement, we are requesting preliminary comments and data from the U.S. Fish and Wildlife Service (USFWS) North Dakota Ecological Services Office in advance of the site assessment. Please provide comments related to the Endangered Species Act (ESA), the Migratory Bird Treaty Act (MBTA), the Bald and Golden Eagle Protection Act (BGEPA), and other resources of concern existing in or near the project area.

We are also contacting the North Dakota Game and Fish Department (NDGF) regarding the North Dakota Conservation Priority Species and State easements, as well as the North Dakota Parks and Recreation Department (NDPR) for Natural Heritage Species.

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KC HARVEY

April 8, 2013

Dan Cimarosti, Program Manager
U.S. Army Corps of Engineers, Omaha District
North Dakota Regulatory Office
1513 South 12th Street
Bismarck, North Dakota 58504

RE: Request for Agency Coordination Regarding a PSC Permit Application for a Certificate of Site Compatibility-Proposed Tesoro New Ramberg Tank Farm ,Williams County, North Dakota

Dear Mr. Cimarosti,

Tesoro High Plains Pipeline (Tesoro) proposes construction to build a new tank farm/ station located south of Tioga in Williams County, North Dakota. The proposed site is approximately 40 acres in the NW¼ of the SE¼ of Section 32, Township 156 North, Range 95 West (Figure 1). The new construction will add crude oil storage tanks and pumping capabilities to the existing Ramberg Station. The project area is located 7.3 miles south of Tioga, North Dakota and approximately 830 feet north of the existing Ramberg Station in the Beaver Lodge Oil Field. Tesoro is preparing an application to the State of North Dakota Public Service Commission (PSC) for a Certificate of Site Compatibility.

KC Harvey Environmental, LLC is conducting the environmental analyses and preparing the respective narrative for the PSC application to be submitted by Tesoro. In accordance with the PSC application guidance, we are requesting any preliminary data and comments pursuant to your Agency's interests. This is in accordance with the North Dakota Century Code Chapter 49-22-14.1 of the Energy Conversion and Transmission Facility Siting Act outlining cooperation with state and federal agencies.

Project preliminary planning and design is currently underway. A spring 2013 site assessment will be conducted for wetlands, land cover, and biological resources. During this site assessment we will be conducting wetland delineation in accordance with the U.S. Army Corps of Engineers (USACE) 1987 wetland delineation manual. We will submit a completed delineation report to your office. To the greatest practicable extent, Tesoro will design the new tank station to avoid all wetlands identified within the project boundary. No permanent or temporary wetland impacts are anticipated.

The project will include pertinent evaluations and coordination with the following Agencies:

- U.S. Fish and Wildlife Service North Dakota Ecological Services Office
- North Dakota State Historic Preservation Office (SHPO)
- North Dakota Department of Health

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DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
NORTH DAKOTA REGULATORY OFFICE
1513 SOUTH 12TH STREET
BISMARCK ND 58504-6640

REPLY TO
ATTENTION OF

April 17, 2013

North Dakota Regulatory Office

Loren M.B. Franklin
KC Harvey Environmental LLC
376 Gallatin Park Drive
Bozeman, Montana 59715

Dear Loren M.B. Franklin:

This is in response to your letter dated April 8, 2013, requesting US Army Corps of Engineers (Corps) comments regarding the Tesoro New Ramberg Tank Farm project located in Section 32, Township 156 North, Range 95 West, Williams County, North Dakota.

Based on the information contained within your letter, it appears a Department of the Army permit may be required for all or part of your proposed project(s). In order for us to fully evaluate your project(s), please complete and submit the Corps permit application (copy enclosed). Be sure to accurately describe all proposed work and construction methodology. Once the application is complete, please mail it to the letterhead address.

Please be advised, Corps regulatory offices administer Section 10 of the Rivers and Harbors Act (Section 10) and Section 404 of the Clean Water Act (Section 404). Section 10 regulates work impacting navigable waters. Section 10 waters in North Dakota are the Missouri River (including Lake Sakakawea and Lake Oahe), Yellowstone River, James River south of the railroad track in Jamestown, North Dakota, Bois de Sioux River, Red River of the North, and the Upper Des Lacs Lake. Work over, in, or under navigable waters is considered to have an impact. Section 404 of the Clean Water Act regulates the discharge of dredged or fill material (temporarily or permanently) in waters of the United States. Waters of the United States may include, but are not limited to, rivers, streams, ditches, coulees, lakes, ponds, and their adjacent wetlands. Fill material includes, but is not limited to, rock, sand, soil, clay, plastics, construction debris, wood chips, overburden from mines or other excavation activities and materials used to create any structure or infrastructure in waters of the United States.

Do not hesitate to contact this office by letter or telephone (701) 255-0015 if we can be of further assistance.

Sincerely,

Daniel E. Cimarosti

Daniel E. Cimarosti
State Program Manager
North Dakota Regulatory Office

Enclosure

KC HARVEY

March 27, 2013

Steve Dyke, Conservation Supervisor
North Dakota Game and Fish Department
100 N Bismarck Expressway
Bismarck, ND 58501-5095

RE: Request for Agency Coordination in Regards to a State of ND PSC Permit Application for a Certificate of Site Compatibility: Proposed Tesoro New Ramberg Tank Farm in Williams County, North Dakota.

Dear Mr. Dyke,

Tesoro High Plains Pipeline (Tesoro) proposes construction to build a new tank farm/ station located south of Tioga in Williams County, North Dakota. The proposed site is approximately 40 acres in the NW¼ of the SE¼ of Section 32, Township 156 North, Range 95 West (Figure 1). The new construction (the Project) will add crude oil storage tanks and pumping capabilities to the existing Ramberg Station. The Project area is located 7.3 miles south of Tioga, North Dakota and approximately 830 feet north of the existing Ramberg Station in the Beaver Lodge Oil Field. Tesoro is preparing an application to the State of North Dakota Public Service Commission (PSC) for a Certificate of Site Compatibility.

KC Harvey Environmental, LLC is conducting the environmental analyses and preparing the respective narrative for the PSC application. Tesoro will submit the completed application for the PSC approval process. In accordance with the PSC application guidance, we are requesting technical data and comments pursuant to your Agency's interests. This is in accordance with the North Dakota Century Code Chapter 49-22-14.1 of the Energy Conversion and Transmission Facility Siting Act outlining cooperation with state and federal agencies.

Project preliminary planning and design is currently underway. A spring 2013 site assessment will be conducted for wetlands, land cover, and biological resources. In accordance with the PSC application requirement, we are requesting preliminary comments and data from the North Dakota Game and Fish Department (NDGF) in advance of the site assessment. This includes NDGF Conservation Priority Species, easements, and other resources of concern existing in or near the project area.

We will also contact the U.S. Fish and Wildlife Service (USFWS) North Dakota Ecological Services Office regarding the Endangered Species Act (ESA), the Migratory Bird Treaty Act (MBTA), the Bald and Golden Eagle Protection Act (BGEPA), and conservation easements and Refuge lands.

We will subsequently coordinate with you and other agencies if resources of concern are identified. We will also address your findings, recommendations, and the results of the site

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assessment in the PSC permit application. The PSC notice of filing will likely occur in the Spring of 2013. The site assessment will be completed prior to the filing.

Written responses can be sent to my attention at:

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Bozeman, MT 59715
lbarber@kcharvey.com

Please feel free to call me at 406-585-7402, extension 19 or by email at lbarber@kcharvey.com with any questions or requests for additional information.

Thank you for your consideration in this matter.

Sincerely,

Loren M.B. Franklin, M.S.
Reclamation Scientist
KC Harvey Environmental, LLC

From: Schumacher, John D.
To: Loren Barber
Subject: Tesoro Projects in Williams Co -- Tioga Truck Station & Ramberg Tank Farm
Date: Wednesday, April 24, 2013 5:10:44 PM

Hi Loren,

This is a follow-up to our phone conversation.

The North Dakota Game and Fish Department has reviewed these projects for wildlife concerns. We do not believe they will have any significant adverse effects on wildlife or wildlife habitat based on the information provided.

If you have any questions please let me know.

JOHN SCHUMACHER
RESOURCE BIOLOGIST
ND GAME AND FISH DEPT
701.328.6321

KC HARVEY

March 28, 2013

Mark Zimmerman, Director
North Dakota Parks and Recreation Department
1600 E. Century Avenue, Suite 3
Bismarck, ND 58503-0649

RE: Request for Agency Coordination in Regards to a State of ND PSC Permit Application for a Certificate of Site Compatibility: Proposed Tesoro New Ramberg Tank Farm in Williams County, North Dakota

Dear Mr. Zimmerman,

Tesoro High Plains Pipeline (Tesoro) proposes construction to build a new tank farm/ station located south of Tioga in Williams County, North Dakota. The proposed site is approximately 40 acres in the NW¼ of the SE¼ of Section 32, Township 156 North, Range 95 West (Figure 1). The new construction (the Project) will add crude oil storage tanks and pumping capabilities to the existing Ramberg Station. The Project area is located 7.3 miles south of Tioga, North Dakota and approximately 830 feet north of the existing Ramberg Station in the Beaver Lodge Oil Field. Tesoro is preparing an application to the State of North Dakota Public Service Commission (PSC) for a Certificate of Site Compatibility.

KC Harvey Environmental, LLC is conducting the environmental analyses and preparing the respective narrative for the PSC application. Tesoro will submit the completed application for the PSC approval process. In accordance with the PSC application guidance, we are requesting technical data and comments pursuant to your Agency's interests. This is in accordance with the North Dakota Century Code Chapter 49-22-14.1 of the Energy Conversion and Transmission Facility Siting Act outlining cooperation with state and federal agencies.

Project preliminary planning and design is currently underway. A spring 2013 site assessment will be conducted for wetlands, land cover, and biological resources. In accordance with the PSC application requirement, we are requesting preliminary comments and data from North Dakota Parks and Recreation Department in advance of the site assessment. Please provide comments and data on project area North Dakota Natural Heritage Inventory occurrences, Natural Areas Registry resources, nature reserves, or other Department interests.

We are also contacting the U.S. Fish and Wildlife Service (USFWS) North Dakota Ecological Services Office regarding the Endangered Species Act (ESA), the Migratory Bird Treaty Act (MBTA), the Bald and Golden Eagle Protection Act (BGEPA), and conservation easements and Refuge lands. In addition, we are contacting the North Dakota Game and Fish Department (NDGF) regarding the North Dakota Conservation Priority Species and State easements.

We will subsequently coordinate with you and other agencies if resources of concern are identified. We will also address your findings, recommendations, and the results of the site

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assessment in the PSC permit application. The PSC notice of filing will likely occur in the Spring of 2013. The site assessment will be completed prior to the filing.

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lbarber@kcharvey.com

Please feel free to call me at 406-585-7402, extension 19 or by email at lbarber@kcharvey.com with any questions or requests for additional information.

Thank you for your consideration in this matter.

Sincerely,

Loren M.B. Franklin, M.S.
Reclamation Scientist
KC Harvey Environmental, LLC

KC HARVEY

April 4, 2013

Dennis Fewless, Director
North Dakota Department of Health
Division of Water Quality
918 East Divide Avenue, 4th Floor
Bismarck, ND 58501-1947

RE: Request for Agency Coordination in Regards to a State of ND PSC Permit Application for a Certificate of Site Compatibility: Proposed Tesoro New Ramberg Tank Farm in Williams County, North Dakota

Dear Mr. Fewless,

Tesoro High Plains Pipeline (Tesoro) proposes construction to build a new tank farm/ station located south of Tioga in Williams County, North Dakota. The proposed site is approximately 40 acres in the NW¼ of the SE¼ of Section 32, Township 156 North, Range 95 West (Figure 1). The new construction (the Project) will add crude oil storage tanks and pumping capabilities to the existing Ramberg Station. The Project area is located 7.3 miles south of Tioga, North Dakota and approximately 830 feet north of the existing Ramberg Station in the Beaver Lodge Oil Field. Tesoro is preparing an application to the State of North Dakota Public Service Commission (PSC) for a Certificate of Site Compatibility.

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Project preliminary planning and design is currently underway. A spring 2013 site assessment will be conducted for wetlands/ water resources, land cover, and biological resources. In accordance with the PSC application requirement, we are requesting preliminary comments and data from the North Dakota Department of Health (NDDH), Division of Water Quality in advance of the site assessment. Please provide comments related to any protected surface waters, groundwater, well head protection areas, and other resources of concern existing in or near the project area.

We will subsequently coordinate with you and other agencies if resources of concern are identified. We will also address your findings, recommendations, and the results of the site assessment in the PSC permit application. The PSC notice of filing will likely occur in the Spring of 2013. The site assessment will be completed prior to the filing.

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lbarber@kcharvey.com

Please feel free to call me at 406-585-7402, extension 19 or by email at lbarber@kcharvey.com with any questions or requests for additional information.

Thank you for your consideration in this matter.

Sincerely,

Loren M.B. Franklin, M.S.
Reclamation Scientist
KC Harvey Environmental, LLC

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

April 10, 2013

Mr. Loren M.B. Franklin, M.S.
KC Harvey Environmental, LLC
376 Gallatin Park Drive
Bozeman, MT 59715

Re: Proposed Tesoro New Ramberg Tank Farm, Williams County, North Dakota

Mr. Franklin,

The North Dakota Department of Health (NDDH) has reviewed your April 4, 2013 Request for Agency Coordination letter regarding the Proposed Tesoro New Ramberg Tank Farm. In your letter, you requested our comments related to any protected surface waters, groundwater resources, wellhead protection areas, and other resources of concern at, or in the vicinity of, the proposed project area.

The proposed site is not located over a named groundwater aquifer or within a wellhead protection area (see Figure 1); several wells are located south and southwest of the proposed site. Based on a review of available groundwater information, it does not appear that site operations would impact underground sources of drinking water.

Projects disturbing one or more acres 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. An industrial storm water discharge permit also may be required based on the type of industrial activity at the facility. A wastewater discharge permit is required if the facility will discharge process wastewater to waters of the state. Further information on the discharge permits may be obtained from the Department's website or by calling the Division of Water Quality at 701-328-5210.

Other state and federal agencies may require notification or permits for your project; some of these agencies are listed on the enclosed Environmental Contact Information for Water Related Development sheet. In addition, cities or counties may impose additional requirements and/or specific best management practices for construction affecting their storm drainage system, and may require provisions to address the quality of post-construction storm water runoff from new development and redevelopment projects. Check with the local officials to be sure any local storm water management considerations are addressed.

Please feel free to contact me at 701-328-5210 if you have any questions or require any additional information from the NDDH.

Sincerely,

Dennis Fewless, Director
NDDH – Division of Water Quality

Encl.

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

May 1, 2013

Loren Barber
KC Harvey Environmental, LLC
376 Gallatin Park Drive
Bozeman, MT 59715

Re: Proposed Upgrade to the Tesoro Tioga Truck Station, Williams County, ND

Dear Loren Barber,

The North Dakota Parks and Recreation Department (the Department) has reviewed the above referenced proposal for the proposed upgrade to the Tesoro Tioga truck station in Williams 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 no 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.

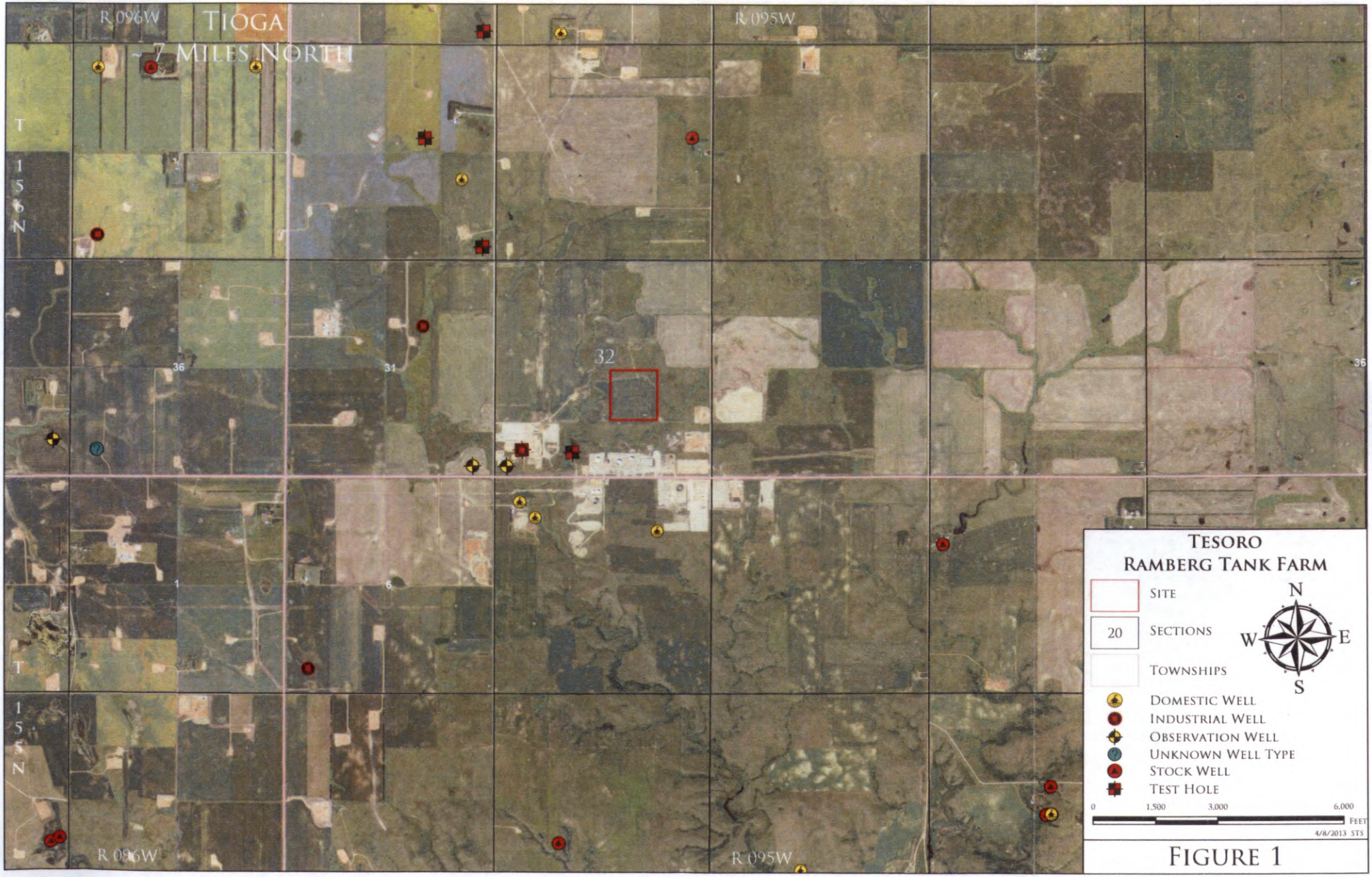
The Department recommends that the project be accomplished with minimal impacts and that all efforts be made to ensure that critical habitats not be disturbed in the project area to help secure rare species conservation in North Dakota. Regarding any reclamation efforts, we recommend that any impacted areas be revegetated with species native to the project area.

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*2013-048KD5/1/2013DL5.1.2013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UNKNOWN WELL TYPE
STOCK WELL
TEST HOLE
0
1,500
3,000
6,000
FEET
4/8/2013 STS

FIGURE 1

9.0 Appendix B: US Army Corps of Engineers Wetland Assessment Forms

WETLAND DETERMINATION DATA FORM – Great Plains Regional Supplement

Project/Site: New Ramberg Station City/County: Williams Sampling Date: 4-25-13

Applicant/Owner: Tesoro High Plains Pipeline State: ND Sampling Point: U1-NR

Investigator(s): Monica Pokorny, Dave Cameron Section, Township, Range: 32, 156N, 95W

Landform (hillslope, terrace, etc.): upland Local relief (concave, convex, none): hillside Slope (%): 15%

Subregion (LRR): _____ Lat: 48.2911 N Long: -102.9207 Datum: NAD 1983

Soil Map Unit Name: Zahl-Williams loams, 9 to 15% - partially hydric soil NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ 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 ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○	No ◉	
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. --			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Symphoricarpos occidentalis	10%		UPL
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Bromus inermis	95%		UPL
2. Cirsium arvense	5%		FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. --			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

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] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 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 ◉

Remarks:

SOIL

Sampling Point: U1-NR

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	5YR 2.5/1							fine roots with clay and organic
2-12	2.5YR 3/2						clay loam	more green / yellow

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

Hydric Soil 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 present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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 ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

above break in shrubs along the draw

WETLAND DETERMINATION DATA FORM – Great Plains Regional Supplement

Project/Site: New Ramberg Station City/County: Williams Sampling Date: 4-25-13

Applicant/Owner: Tesoro High Plains Pipeline State: ND Sampling Point: W1-NR

Investigator(s): Monica Pokorny, Dave Cameron Section, Township, Range: 32, 156N, 95W

Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): concave Slope (%): 8%

Subregion (LRR): _____ Lat: 48.2911 N Long: -102.9209 W Datum: NAD 1983

Soil Map Unit Name: Zahl-Williams loam, 9 to 15% - partially hydric soil NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ 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 ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. --			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Prunus virginiana	20%		FACU
2. Symphoricarpos occidentalis	5%		UPL
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Bromus inermis	100%		UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. --			
2.			
	_____ = Total Cover		
% Bare Ground in Herb Stratum _____			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

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] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 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 ◉

Remarks:

SOIL

Sampling Point: W1-NR

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2								organic duff
2-12	5YR 2.5/1						loam	

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

Hydric Soil 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 present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

soil pit 4 feet from water flow line

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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 ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

no saturation or high water table; seasonal flow of water in drainage.

WETLAND DETERMINATION DATA FORM – Great Plains Regional Supplement

Project/Site: New Ramberg Station City/County: Williams Sampling Date: 4-25-13

Applicant/Owner: Tesoro High Plains Pipeline State: ND Sampling Point: U2-NR

Investigator(s): Monica Pokorny, Dave Cameron Section, Township, Range: 32, 156N, 95W

Landform (hillslope, terrace, etc.): upland Local relief (concave, convex, none): hillside Slope (%): 15%

Subregion (LRR): Lat: 48.2897 N Long: -102.92553 W Datum: NAD 1983

Soil Map Unit Name: Zahl-Williams loams, 9 to 15% - partially hydric soil NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ 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 ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. --			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1. Prunus virginiana	10%		FACU
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size:)			
1. Bromus inermis	100%		UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	= Total Cover		
Woody Vine Stratum (Plot size:)			
1. --			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

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] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 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 ◉

Remarks:

SOIL

Sampling Point: U2-NR

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	duff							fine roots with clay and organic
3-12	5YR 3/1						clay loam	

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

Hydric Soil 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 present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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 ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

above break in shrubs along the draw

WETLAND DETERMINATION DATA FORM – Great Plains Regional Supplement

Project/Site: New Ramberg Station City/County: Williams Sampling Date: 4-25-13

Applicant/Owner: Tesoro High Plains Pipeline State: ND Sampling Point: W2-NR

Investigator(s): Monica Pokorny, Dave Cameron Section, Township, Range: 32, 156N, 95W

Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): concave Slope (%): 5%

Subregion (LRR): Lat: 48.2896 N Long: -102.9257W Datum: NAD 1983

Soil Map Unit Name: Zahl-Williams loams, 9 to 15% - partially hydric soil NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ 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 ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. --			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1. Prunus virginiana	10%		FACU
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size:)			
1. Bromus inermis	95%		UPL
2. Cirsium arvense	5%		FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	= Total Cover		
Woody Vine Stratum (Plot size:)			
1. --			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

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] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 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 ◉

Remarks:

SOIL

Sampling Point: W2-NR

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5 YR 3/2						loam	

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

Hydric Soil 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 present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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 ○ Depth (inches): _____

Water Table Present? Yes ◉ No ○ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): _____

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Tesoro High Plains Pipeline: A Class III Inventory of 40 Acres for the Proposed New Ramberg Station Project, Williams County, North Dakota

Prepared by:

Jennifer Thomas
and
Patrick Kuntz

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May 7, 2013

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INTRODUCTION

Tesoro High Plains Pipeline (Tesoro) proposes to construct a crude oil storage facility roughly seven miles south of Tioga in Williams County, North Dakota (Figure 1). The project will include multiple crude oil storage tanks, pipeline pumps and ancillary equipment. The project area is located in the southeast quarter of Section 32 of T156N R95W and consists of just under 40 acres situated on private land. The North Dakota Public Service Commission is the lead agency on this project. Tesoro contacted Wood Group Mustang, Inc. (WGMI) to complete the environmental assessment. Prior to construction, a cultural resource inventory is required to ascertain whether the proposed undertaking will adversely affect culturally significant resources. WGMI contracted Ethnoscience, Inc. (Ethnoscience) to complete the necessary resource investigations. The following report is the result of this investigation. Attached is a Class I cultural resource background review for the area (Stokes 2012- Appendix A).

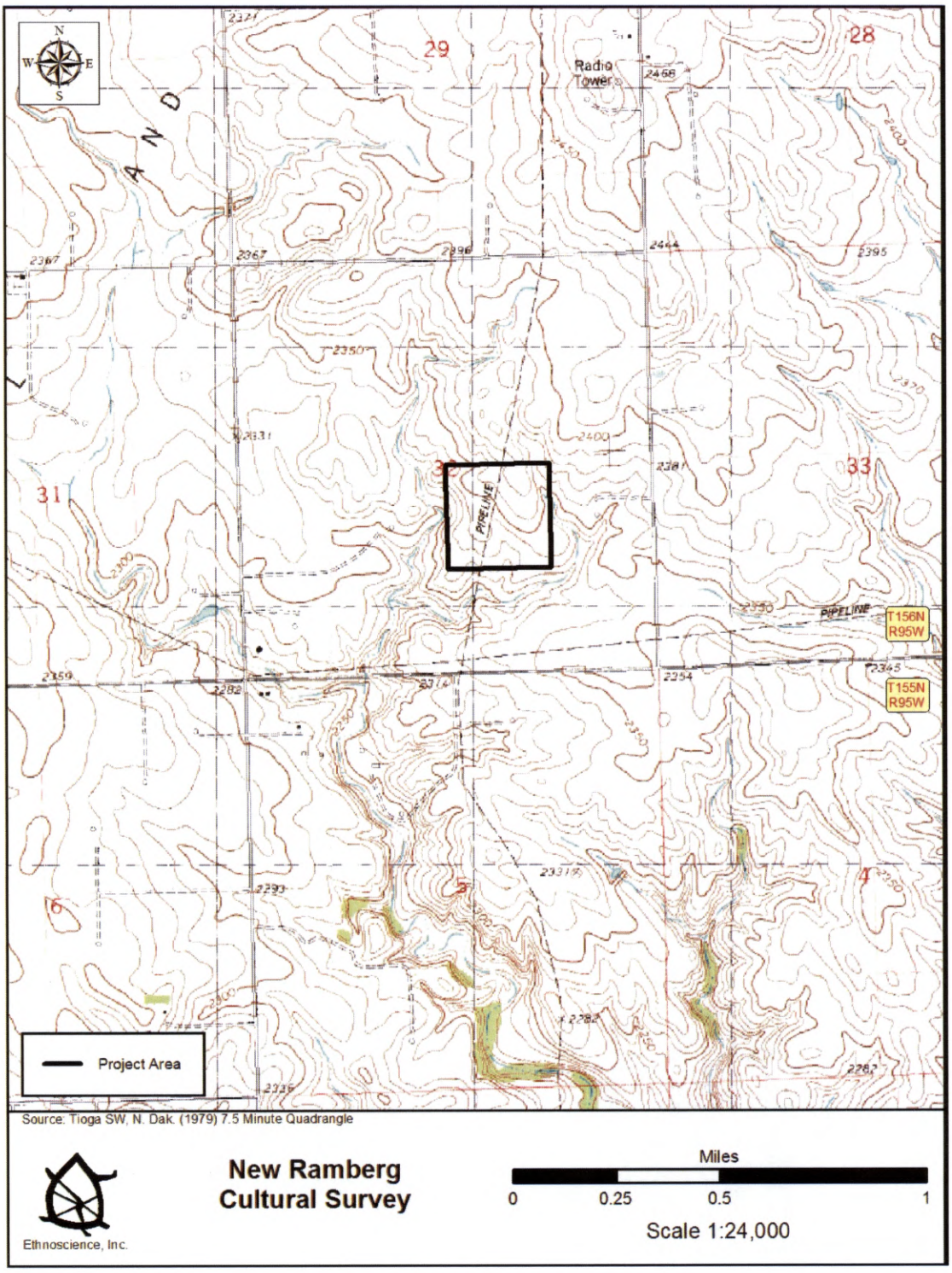

Figure 1: *Topographic Project Area Map.*

ENVIRONMENT

The project area is located within the glaciated plains of the Missouri Plateau. The general terrain is characterized by undulating hills intersected with numerous kettle ponds and creeks. The Missouri River, the primary water source of this region, flows less than 10 miles to the south of the project area. Soils in this region are comprised of well-drained clay loams (USDA 2013). The project area is situated in a cultivated field. Ground surface visibility at the time of survey was 50 percent.

CULTURAL SETTING

The project area is situated in the Garrison Study Unit. The North Dakota Comprehensive Plan for Historic Preservation (SHSND 2008) provides a detailed description of the cultural setting of the general area and will not be repeated here. Archaeological Consulting Services, Ltd. completed a Class I cultural resource background review for this project with a detailed culture history (Stokes 2012). Their report is attached to this report as Appendix A.

METHODS

Ethnoscience archaeologist Patrick Kuntz conducted a Class III cultural resource inventory of the project area on April 30, 2013. Prior to fieldwork, the shape files of the proposed construction area, as well as the location of previously recorded sites and isolates, were loaded onto a hand-held global positioning system (GPS) unit. This GPS unit was used in the field to identify the project area and aid in the identification of previously recorded sites and isolates. The inventory consisted of a 100 percent pedestrian survey utilizing 30-m transects across the project area. The project area was photographed and notes were taken during the inventory.

PREVIOUS INVESTIGATIONS

Prior to fieldwork, a record and literature search was conducted for previously recorded cultural properties and inventories within the proposed project area. The files search, obtained from the North Dakota State Historical Society, indicates there have been ten inventories within Section 32 of T156N R95W (Table 1). From these inventories, only one site was identified. Site 32WI1141 does not fall within the current project area.

Table 1: *Previous Investigations*

Date	Author	Title	Associated Sites	Manuscript Number
1984	Kuehn, D. and J. Borchert	Archaeological Investigations Along the Portal Beaver Lodge to Alexander Pipeline Williams and McKenzie Counties, ND.		3251
1987	Metcalf, M. and K. Schweigert	Cultural Resources Investigations on the North Dakota Segment of the Exxon Company, USA Bairoil-Dakota CO2 Pipeline Project, Golden Valley, Billings, Stark, Dunn, McKenzie, and Williams Counties, Western North Dakota Vols 1 and 2.		4319
1992	Olson, B.	Amerada Hess Corporation, 10 inch Natural Gas Pipeline Project Cultural Resources Inventory McKenzie and Williams Counties, North Dakota and Final Report.		5749
2006	Harty, J., P. Heiner, and J. Morrison	Enbridge Pipelines (North Dakota) LLC, North Dakota Pipeline Expansion Project: A Class II and III ultural Resource Inventory and Evaluative Testing of Three Sites, Williams County, ND.		9856
2009	Markman, J., A. Hutchinson, and A. Wuenschel	A Class I and Class III Cultural Resource inventory of the Red Sky Oil Pipeline in Mountrail and Williams Counties, ND.		11243
2010	Harty, J., M. Shropshire, and D. Klinner	SORTI and Dunn Pipeline Projects: A Class III Cultural Resource Inventory, Williams and McKenzie County, ND.		11790
2010	Klinner, D., J. Harty, and M. Shropshire	Beaver Lodge to Berthold Pipeline: A Class III Cultural Resource Inventory, Mountrail, Ward, and Williams Counties, ND.		11686
2011	Lechert, S. and C. Herson	A Class I and Class III Cultural Resource Inventory of the Hess Ramberg Crude Stabilization Facility, Williams County, North Dakota.	32WI1141	12260
2012	Altizer, K. and D. Reinhart	A Class I and Class III Cultural Resource Inventory of the Hess RTF Tie-in Project, Williams County, North Dakota.		13339

2012	Riordan, C.	Addendum to the Class I and Class III Cultural Resource Inventory of the Hess RTF Tie-in Project, Williams County, North Dakota.		13743

RESULTS AND RECOMENDATIONS

The Class III cultural resource inventory identified no sites or isolated finds. Based on the results of inventory, Ethnoscience recommends a finding of ***No Historic Properties Affected*** for the proposed project as inventoried within the defined inventory. No cultural resources were identified in the inventory area and the shallow nature of the glaciated environment indicates there is little potential for intact buried deposits. Ethnoscience recommends no further cultural resource work prior to construction.

BIBLIOGRAPHY

State Historical Society North Dakota (SHSND)
2008 *North Dakota Comprehensive Plan for Historic Preservation: Archaeological Component*. State Historical Society of North Dakota, Bismarck.

APPENDIX A: CLASS I CULTURAL RESOURCE BACKGROUND REVIEW

CLASS I CULTURAL RESOURCE BACKGROUND REVIEW FOR TESORO'S PROPOSED NEW RAMBERG STATION NEAR TIOGA, WILLIAMS COUNTY, NORTH DAKOTA

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CULTURAL RESOURCE, ENVIRONMENTAL MANAGEMENT AND GIS SERVICES

CLASS I CULTURAL RESOURCE BACKGROUND REVIEW FOR TESORO'S PROPOSED NEW RAMBERG STATION NEAR TIOGA, WILLIAMS COUNTY, NORTH DAKOTA

DRAFT

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November 20, 2012

Report Abstract

REPORT TITLE:	Class I Cultural Resource Background Review for Tesoro's Proposed New Ramberg Station near Tioga, Williams County, North Dakota
DATE OF REPORT:	November 20, 2012
AGENCY:	North Dakota Public Service Commission
AGENCY NO.:	Unassigned
ACS PROJECT NO.:	12-256-LRVW(b)
PROJECT DESCRIPTION:	Tesoro High Plains Pipeline (Tesoro) plans to develop its proposed New Ramberg Station. Tesoro owns and operates a 233-mile-long existing underground petroleum gathering and mainline pipeline system that extends from eastern Montana through North Dakota to Mandan, Morton County, and also extends northward to the US-Canadian International Border where a Tesoro transmission line ties into a pipeline system near the town of Lignite in Burke County, North Dakota. Specifically, Tesoro proposes to construct a new a new crude oil storage and pumping facility near their existing Ramberg Station located in Williams County, North Dakota. Initial storage capacity will consist of two 120,000 barrel storage tanks with the capability to accept crude oil from the existing 6" and 8" pipelines and subsequently transport this same crude throughout the Tesoro pipeline system located within North Dakota.
LOCATION:	NW ¼ of the SE ¼ in Section 32, Township 156 North, Range 95 West of the 5th Principal Meridian, Williams County, North Dakota
NO. OF PARCEL ACRES:	39.95
METHODOLOGY:	Sources examined include the North Dakota State Historic Preservation Office (SHPO)/State Historical Society archives, National Register of Historic Places website, and historic General Land Office (GLO) maps
NUMBER OF SITES:	5 Within project area: 0 Within review area but outside project area: 5
ELIGIBLE SITES:	0 Within project area: 0 Within review area but outside project area: 0
SITES OF UNKNOWN ELIGIBILITY:	3 Within project area: 0 Within review area but outside project area: 3: (32WI100, 32WI138, and 32WI1141)
NOT ELIGIBLE SITES:	2 Within project area: 0 Within review area but outside of project area: 2 (32WI99 and 32WI1212)
COMMENTS:	ACS' background research review for the Tesoro High Plains Pipeline proposed New Ramberg Station development project documented 13 previous projects and 5 previously recorded cultural resources within the project's one mile buffer review area. However, none of the cultural resources occur directly within the New Ramberg Station project area. The records check also revealed that the

project area has not been surveyed at the Class III level. The cultural resources indicate that the general area has a prehistoric/protohistoric Native American presence, although the sites appear to be related to resource procurement and processing and not longer-term habitation. The later Historic period sites are all related to post-1880 Euroamerican settlement and expansion into the Tioga area, including farm/ranching related architectural features and cultural artifacts. ACS recommends that previous survey coverage should be viewed as moderately dense and known cultural resources as low, although site density increases greatly just to the south along an incised drainage channel and its tributaries.

As a result of this Class I background research, ACS recommends that the New Ramberg Station project area should be surveyed at the Class III level. The presence of known Native American sites in the review area and the presence of an incised drainage channel and tributaries with higher density of sites just to the south, indicate that previously unrecorded cultural resources may be present. In fact, the New Ramberg Station is located between two of the northern tributaries of this drainage system, indicating that the possibility for unrecorded sites is at least moderate in the project area. Based on a conversation between the report author and Paul Picha, Chief Archaeologist at the NDSHPO, on November 2, the state's position is that intact cultural resources may exist beneath plow zones and should be taken into consideration when making recommendations for any additional cultural resource investigation.

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Introduction

Tesoro High Plains Pipeline (Tesoro) plans to develop its New Ramberg Station near its existing Ramberg facility near Tioga in Williams County, North Dakota. Tesoro owns and operates a 233-mile-long existing underground petroleum gathering and mainline pipeline system that extends from eastern Montana through North Dakota to Mandan, Morton County, and also extends northward to the US-Canadian International Border where a Tesoro transmission line ties into a pipeline system near the town of Lignite in Burke County, North Dakota. As part of the expansion process, Tesoro is utilizing the North Dakota Public Service Commission's certification process to undertake construction of facilities at the proposed New Ramberg Station. As part of the process, a cultural resources Class I records check and overview was undertaken for the project area; the Class I document will assess the potential for significant cultural resources in the project area and provide recommendations for resource management.

Specifically, Tesoro proposes construct a new a new crude oil storage and pumping facility near their existing Ramberg Station located in Williams County, North Dakota. Initial storage capacity will consist of two 120,000 barrel storage tanks with the capability to accept crude oil from the existing 6" and 8" pipelines and subsequently transport this same crude throughout the Tesoro pipeline system located within North Dakota.

At the request of Ms. Teresa Harris of GES, Inc., who is preparing the North Dakota Public Service Commission documentation on behalf of Tesoro, Archaeological Consulting Services, Ltd. (ACS) of Tempe, Arizona, was asked to perform the Class I research for this project. ACS applied to the North Dakota Secretary of State office for a "Foreign Business" license and to the State Historic Society of North Dakota/State Historic Preservation Office (SHSND/SHPO) for a cultural resources state permit; both were granted to ACS, with Dr. Robert J. Stokes listed as the ACS qualified and permitted archaeologist. Dr. Stokes conducted the records check at the SHSND office on October 19, 2012 focusing on the project area and a one-mile review buffer around it.

The results indicate that the project area has not been previously surveyed and that no known cultural resources occur within it; however, ACS recommends that the project area should be surveyed at the Class III level prior to ground-disturbing activities associated with this project.

Project and Review Buffer Areas

The project area occurs in portions of NW¼ of the SE¼ in Section 32, Township 156 North, Range 95 West of the 5th Principal Meridian, Williams County, North Dakota as shown on the USGS 7.5′ Tioga SW, North Dakota topographic quadrangle (Figure 1). The one-mile review buffer surrounding the project area occurs in portions of Sections 30–32 of Township 156 North, Range 95 West and Sections 4–6 of Township 155 North, Range 95 West, which occurs several miles south of the City of Tioga. No state, federal, or tribal lands appear to be in the review area. The parcel is currently used for farming.

The project area lies within the Garrison Study Unit (GSU) as defined in the North Dakota Statewide Historic Preservation Plan (NDSHPP) (Gregg and Swenson 2008). Vegetation in the GSU is part of the Northern Temperate Grassland biome (Gregg and Swenson 2008; Shelford 1963:329), which is a semi-arid climate that fosters extensive development of mixed grass prairie (blue grama grass, needle-and-thread grass, and western wheatgrass) (Dodds 1979; Whitman and Wali 1975). Forests occur along the major rivers and streams, with mixed overstory and understory species in transitional zones; elevation and exposure are the two most important components of determining vegetation biomes. Nonnative species occur within towns and on farms and ranches as a result of modern landscaping and agriculture. Fauna species typically supported in this biome includes pronghorn and bison in the grasslands, and white-tail deer, otter, porcupine, and other mammal species along the rivers, streams, and forests/woodlands.

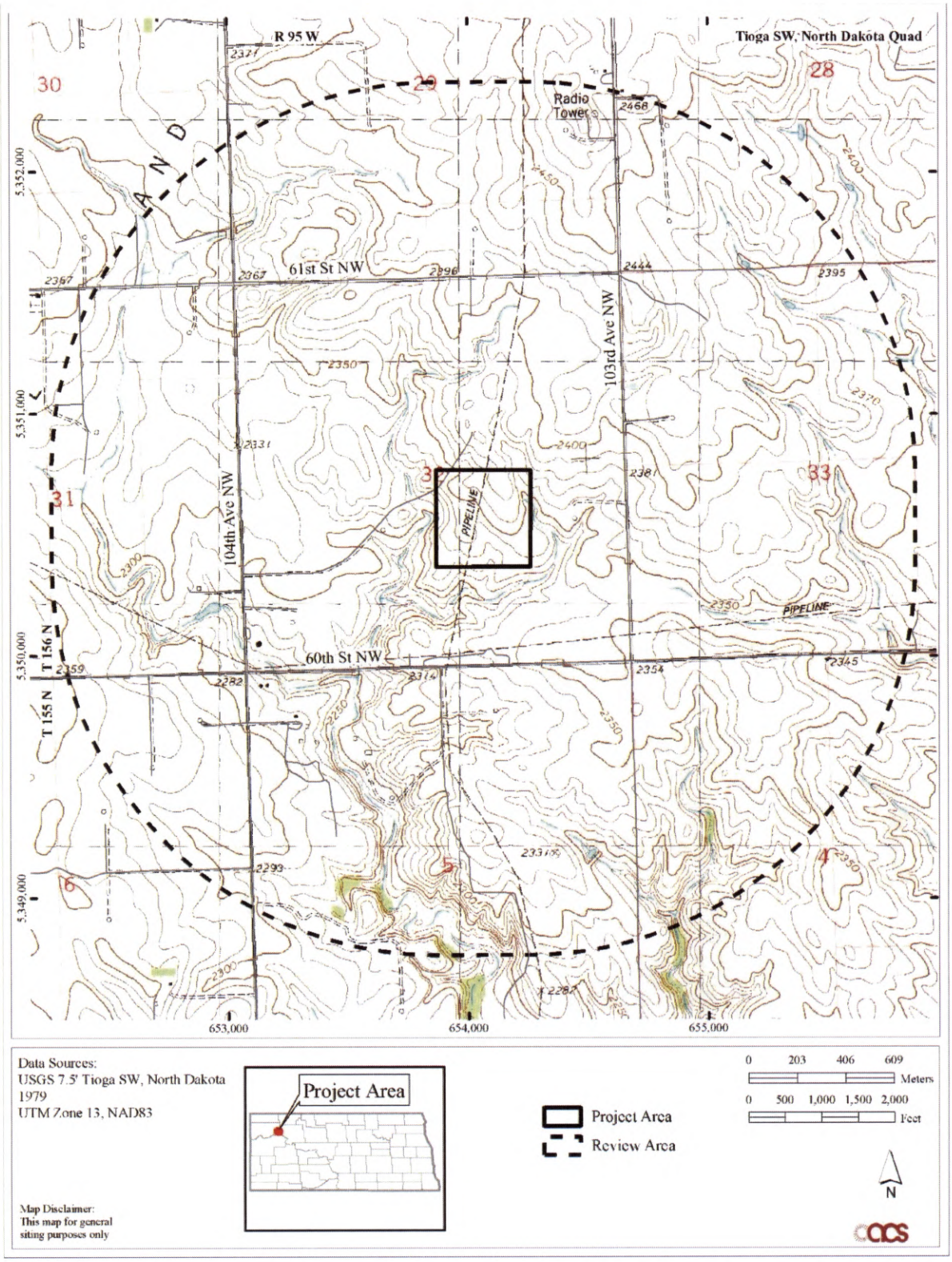

Figure 1. Portion of the USGS 7.5′ Tioga SW, North Dakota topographic quadrangle showing the location of the project area and review area.

Culture History

The NDSHPP (Gregg and Swenson 2008:B13–B49) provides a concise cultural background for the state, with specific discussions of sites recorded, survey coverage, and research themes, contexts, and questions for individual study units, including the GSU. The summary below is largely adapted from that document and is supplemented with information specific to the general project area as appropriate.

Prehistoric Periods

Prehistoric site and artifact remains found in North Dakota span the entire continuum of human occupation of North America, from the ancient Paleo-Indian and Archaic periods to the transitional Plains Woodland and Plains Village periods, to the transformative Protohistoric and Historic periods (Equestrian/Fur Trade, Euroamerican) in the Northern Plains (described as "lifeways" in the NDSHPP). Identifiable Native American tribal groups who occupied lands in central and western North Dakota include the Mandan, Arikara, Hidatsa, Assiniboine, and Sioux; these groups represent both the precontact hunting and gathering/farming societies and post-contact nomadic equestrian societies from the 1700s to late 1800s prior to the destruction of bison herds and resettlement onto reservations, and the subsequent expansion of Euroamerican settlement.

Paleo-Indian Period

The earliest well-documented and generally accepted human presence in the interior portions of North America (that is, below Alaska) belongs to a nomadic big-game hunting culture called Clovis, named after the type site of Blackwater Draw located near Clovis, New Mexico (Sellards 1952). Based on radiocarbon dates that tightly cluster from a variety of sites across most of North American below Canada (Haynes 1966), Clovis is dated from 11,500 to 11,000 B.P. (9500 to 9000 B.C.). Clovis sites are identified when butchered remains of large extinct megafauna, such as mammoths (Frison 1978), are found in association with distinctive large lanceolate spear points with fluted bases, although the number of such finds in North Dakota is low (Huckell and Kilby 2008). The Clovis Paleo-Indians also likely made use of plant foods, but direct evidence is much more limited compared to faunal remains.

In the Central and Northern Plains, the Goshen Complex appears to overlap terminal Clovis, and may represent a transition from Clovis to the better known Folsom Complex, at least in some parts of the western United States and Canada (Frison 1986). As the larger Ice Age mammals became extinct, human hunters increasingly turned to hunting bison and smaller surviving mammals during post-Clovis times. By the time of the final Paleo-Indian traditions in the Northern Plains (ca. 5500–5000 B.C.), such as Hell Gap, Cody, and Pryor Stemmed (Gregg and Swenson 2008), post-Pleistocene environmental and biotic changes were complete, turning the former tundras and boreal forests of the north into extensive grasslands with patchy woodlands along rivers.

Plains Archaic Period

The Plains Archaic period (5500 B.C.–A.D. 700) represents post-Pleistocene adaptations across the Northern Plains, with many groups turning more heavily towards hunting a wider variety of smaller animals (although bison remained important) and making extensive use of plant resources, such as grasses, nuts, tubers, aquatic plants, and fruits in North Dakota and adjacent areas, such as the Canadian Plains (Clark and Wilson 1981; Dyck and Morlan 2001). New tools appear during the Archaic, including ground stone tools for processing seeds and nuts into ground meal. In general, projectile points became smaller, less well-crafted, and more regionalized with regard to styles than seen previously. Groups still moved frequently, but largely within recognized territories, setting the stage for the later identifiable indigenous Native American groups of the later periods.

Plains Woodland Period

The Plains Woodland period across the Northern Plains represents an increased level of settling down into small hamlets and restricted resource territories as more groups began to experiment with gardening of

domesticated plants, in addition to producing pottery and increasing use of bow and arrow technology for hunting towards the end of the period (Gregg 1985; Johnson 2001). Across North Dakota, the Plains Woodland tradition varies, as some groups along major rivers experimented more with gardening while other nomadic groups continued Plains Archaic lifeways; as a result, the Plains Woodland period spans the time frame beginning ca. A.D. 700 and terminating ca. 1500—that is, towards the end of the period, some groups adopted heavier use of agriculture (Plains Village period) while others relied heavily on hunting and gathering with opportunistic gardening. During the Plains Woodland, pottery is generally poorly made and undecorated, reflecting its occasional use. Small hamlets also appear along rivers and sheltered areas, although none likely contain more than several extended families. In some areas, mound burials appear, which may indicate some level of contact or knowledge of "Moundbuilder" practices of the far-flung Hopewell Culture and its northwestern Mississippi/Missouri River variants (Johnson 1976).

Plains Village Period

The Plains Village period in North Dakota (A.D. 1000–1850) represents the adoption of an agricultural lifestyle among the groups living along the major rivers, including the Middle and eventually Upper Missouri River valley (Lehmer 1971; Wood 2001). Although scientific studies of Plains Village sites demonstrates the increasing reliance on agriculture, domesticated foods never amounted to more than 50 percent of the diet; that is, hunting and gathering wild resources was still an important subsistence pattern. The small Plains Woodland hamlets became larger semi-permanent to permanent villages composed of earthlodges, storage features, fortifications, and sometimes plazas and other public features. At many villages, large trash mounds began to appear, attesting to an increasingly settled lifestyle and growing population. Ceramic technology improves and distinctive pottery styles and decorations begin to appear; these traditions often correlate with identifiable bands and tribes (i.e., ethnic groups), such as the Archaic Mandan and Coalescent Hidatsa. Bison scapula hoes are ubiquitous at Plains Village sites, as are end scrapers and arrow points.

The extended Middle Missouri Variant (A.D. 1100–1550), also referred as the "Archaic Mandan," represents a Plains Village tradition in south-central North Dakota, primarily focused along the Middle Missouri River and its tributaries (Wood 2001). This variant represents the first well-documented Plains Village tradition in North Dakota and likely represents an extension northward of groups from the south. The North Dakota villages tend to be smaller than their southern counterparts, with an average of 10 to 15 homes (earthlodges) per village compared to over 30 to the south. Sites are common in the river valleys and some may have grown in size as time passed. A new pottery attribute is introduced, comprised of a rounded lip/rim and a smooth curved neck. The succeeding Terminal Middle Missouri Variant (A.D. 1550–1675) represents an increase in village size and the use of central plazas, and the introduction of extensive fortifications surrounding the unprotected sides of the village (e.g., the Huff Site [32MO11]). The number of villages appears to decrease as populations aggregate at these larger protected sites. Houses tended to be more square in shape and were built in alignments with storage pits both inside and outside houses. It is not until the later stages of the Terminal Missouri Variant that round houses that resemble the well-known earthlodges begin to appear. Pottery tends to be thicker and occasionally make use of a fillet design element.

The Initial Coalescent Variant (A.D. 1450–1550) represents another episode of southern migrants moving northward into the Upper Missouri River of North Dakota, most likely the ancestral Arikara (Krause 2001; Lehmer 1971). It is thought that this push into the Missouri River valley sparked conflict among the settled groups already present and explains the appearance of fortifications at many villages; the Crow Site (39BF11) has produced evidence of conflict. The Extended Coalescent Variant (A.D. 1500–1700) represents a continued push further up the Missouri River valley. Sites of this period tend to decrease, while the size of occupied villages increases. These sites also remain heavily fortified. The Extended Coalescent/Terminal Coalescent represents an important transition with regard to the ancestral Mandan and Arikara as the traits comprising the Coalescent (Arikara) and Middle Missouri (Mandan) merge,

creating what appears to be a single cultural tradition to archaeologists, although clearly the ethnic identities of these groups remained intact.

Historic Period

Direct contact with Europeans eventually reached the indigenous groups of North Dakota in the 1700s, although European goods and horses had already filtered into the Great Plains from the east, southwest, and Great Lakes/Canada. This period is often referred to as the Post-Contact Coalescent period (A.D. 1700–1850), with the existing villages becoming involved with the European/Euroamerican trade network (Lehmer 1971), especially the fur trade. Pierre Gaultier de Varennes Siure de la Verendrye (Dill and Holland 1983) is thought to be among the earliest to contact the Mandan, Arikara, and Hidatsa groups along the Missouri River, bringing these groups into the Great Lakes/Canadian fur trade network. The first documented Euroamericans to visit these groups was the famed Meriwether and Lewis expedition up the Missouri River in the early 1800s on their voyage of exploration of the Louisiana Purchase for President Jefferson. Some of the villages visited by Meriwether and Lewis are now preserved as part of the Knife River Indian Villages National Historic Sites along the river west of Washburn. Although Meriwether and Lewis brought some European goods with them for trade and gifts as they traveled, the expedition's impact was minimal compared to the subsequent establishment of trading posts and forts throughout the remainder of the early to mid-1800s, such as St. Louis Missouri Fur Company posts and forts such as Ft. Union and Ft. Lincoln. As a result of these contacts, indigenous groups became more dependent upon European and American made goods, especially the profitable glass trade bead industry (Davis 1973) and were simultaneously decimated by waves of non-indigenous diseases such as smallpox and whooping cough (Gregg 1985). The 1700s through 1800s represented a tremendous change in indigenous lifeways, eventually resulting in the loss of most of their lands and forced movement onto reservations.

With the introduction of the horse, population crashes, and the movement of Great Lakes tribes onto the Northern Plains, the Dakotas and Canadian Plains witnessed waves of nomadic peoples either crossing through the area or making particular areas their new homes. The indigenous Mandan, Hidatsa, and Arikara groups (see Parks 2001; Stewart 2001; Wood and Irwin 2001) continued to band together for survival as the Three Affiliated Tribes, especially after significant population decreases from diseases and relentless loss of territory as a result of U.S. government containment, resettlement, and reservation Indian policies of the mid-1800s through the mid-1900s (Schneider 2001). The Three Affiliated Tribes were settled onto the Fort Berthold Reservation at the confluence of the Missouri and Little Missouri rivers by 1870, although changing U.S. policy afterwards resulted in constant reservation boundary alterations, typically resulting in loss of land. In the 1950s, the construction of the Garrison Dam below the confluence resulted in the creation of Lake Sakakawea and the submerging of most of the reservation's farm lands along the river. The tribes were eventually monetarily compensated for the loss of their lands, but the loss of their traditional farming lifestyle caused societal changes that continue to the present.

Other Native American groups documented in western North Dakota during the Contact/Post-contact periods include the Assiniboine of the Canadian Plains and adjacent areas of the United States (DeMallie and Miller 2001), the Crow (Montana mountains and foothills) (Voget 2001), and the Cheyenne, some of whom settled along the Middle Missouri River between the Mandan and Arikara villages (Moore et al. 2001). The Teton Sioux (Lakota and Dakota) were also present (DeMallie 2001), although primarily in southwestern North Dakota and large portions of central and western South Dakota. The Three Affiliated Tribes of Fort Berthold Reservation is the closest Indian reservation to the current New Ramberg project area, although because no large streams or rivers are located near the project area, it is unlikely that habitation sites related to the Three Affiliated Tribes would be present, although resource procurement sites found in this area could be.

City of Tioga

In the early part of 1887, the Great Northern Railroad spur from Minot was extended into eastern Williams County. However, Tioga was not settled until homesteaders from Tioga County, New York, arrived in 1902, giving it the name of Tioga (http://www.tiogand.net/, accessed October 24, 2012). N. W. Simon and W. H. Dixon and others bought lots from Nick Comford who owned some of the town sites along the Great Northern Railroad; Comford may have purchased this land from U.S. soldiers who had received it for their services. The first store was built in 1902, by N. W. Simon, for general merchandise and groceries; it was also the first post office. At one time, Tioga was the largest primary grain market in the world, much of it from McKenzie County. On April 4, 1951, the Amerada Petroleum Corporation discovered oil on the Clarence Iverson farm; the oil came from the Nesson Anticline, a geological formation that is part of the Williston Basin. The discovery in 1951 set off an oil boom. The drilling peak was in 1966 with 27,000,000 barrels coming from 1,965 producing wells. Production decreased in the intervening years; however, a new oil boom is now occurring and Tioga and Williams County are again at the forefront of the state's oil industry. Tioga currently has a population of over 1,500.

Results of the Background Research Review

This section presents an inventory of cultural resource investigations undertaken to date within the one-mile review area buffer surrounding the New Ramberg Station project area, and lists the archaeological sites, historic structures, and site leads and isolated finds that have been recorded. Sources examined include site and project files at the SHSND/SHPO archives, online National Register of Historic Places, and historic GLO plats for the review area. Data from the SHSND and GLO maps were digitized and are shown on the previous projects map (Figure 2) and previously recorded sites map (Appendix A). ACS principal investigator, Robert J. Stokes, performed the records check at the SHSND on October 19, 2012.

The records check revealed 13 projects have occurred within the one-mile review area, none of which intersect the current project area, although the Red Sky Oil Pipeline corridor (Manuscript No. 11243) passes just off of the southern boundary of the current project (Figure 2; Table 1). The bulk of previous research occurs to the south of the project area and are primarily linear projects related to transmission corridors. Most were conducted within the past 10 years. The Tioga SW quadrangle indicates a pipeline crossing through the center of the parcel; however, no associated project is on file at the SHSND.

A total of 5 cultural resource sites have been recorded within the one-mile review area (Table 2; Appendix A); however, no known cultural resources occur within the current project area. The previously recorded resources in the review area represent prehistoric and historic sites, including four prehistoric/protohistoric stone circles/cairns, several of which have artifacts associated with them, including some Historic period material, and one historic cultural material scatter with a depression, suggested by the recorder to be a cellar. One prehistoric/protohistoric site, 32WI99, was not relocated by a later researcher and was subsequently determined to be not eligible to the National Register. The Historic period depression and artifact scatter was recommended as not eligible. The remaining sites have either unknown eligibility or were not evaluated. The number of known sites, site leads, and isolated finds increases greatly towards the southern end of the review area and beyond, and appears to correlate both with the greater survey coverage in this area and the presence of an incised drainage channel and tributary washes. The New Ramberg Station sits between two of these tributaries at the northern end of the drainage system.

A review of the online National Register database revealed no listed properties in the general Tioga/New Ramberg project area.

Examination of a historic GLO map (1897) for the review area indicates that one road crosses the northwestern portion of the review area, but does not cross into the project area. The GLO map also clearly shows the drainages in the project area that were noted in the paragraph above.

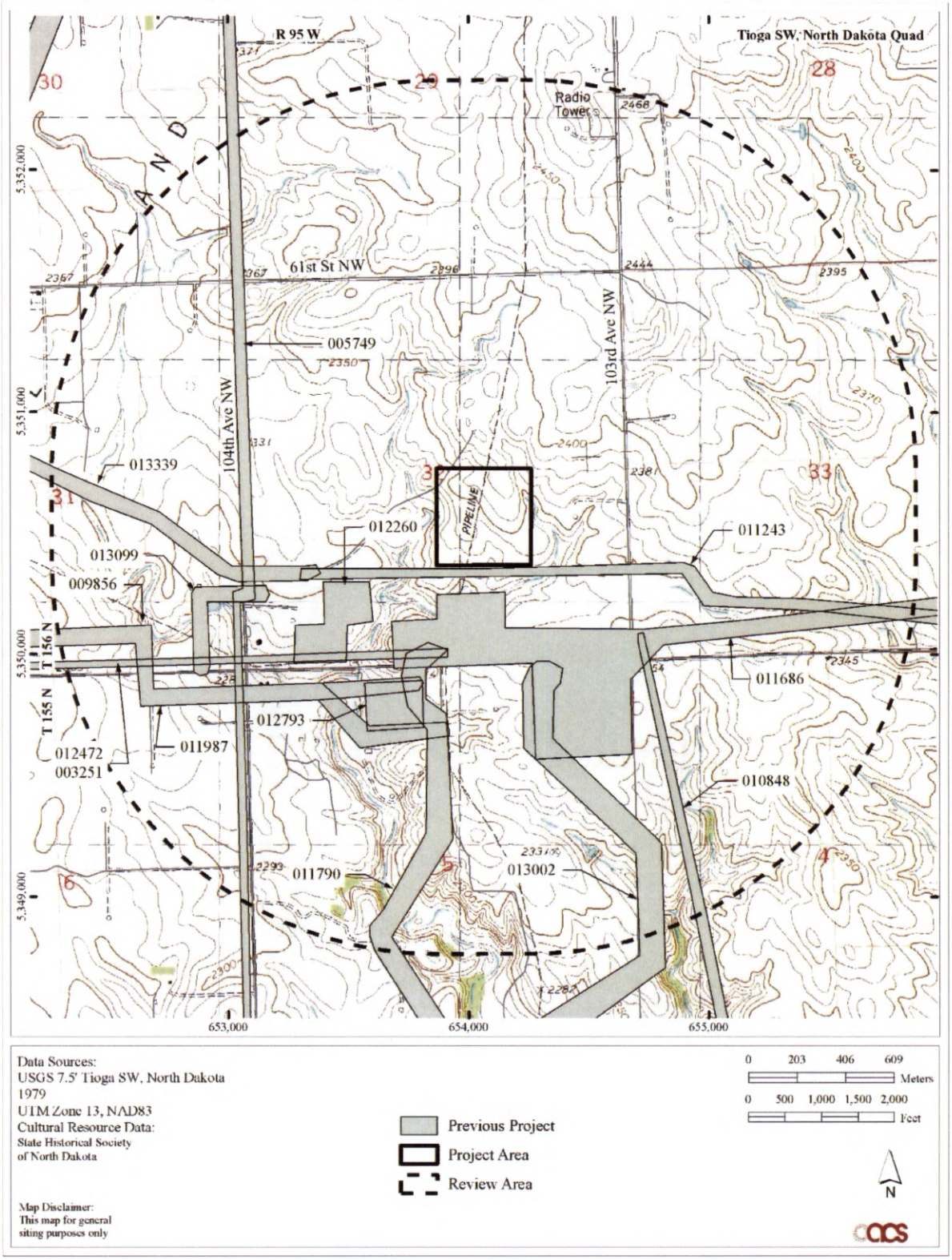

Figure 2. Portion of the USGS 7.5′ Tioga SW, North Dakota topographic quadrangle showing previous projects within the review area.

Table 1. Summary of Previous Research Within the One Mile Buffer Review Area.

Manuscript No.	Manuscript Title	Author(s)	Date	Section(s)
3251/12472	Archaeological Investigations along the Beaver Portal Lodge to Alexander Pipeline, Williams and McKenzie Counties, North Dakota	Kuehn and Borchert 1984	1984	31, 32
5749	Amerada Hess Corporation 10-inch Natural Gas Pipeline Project Cultural Resources Inventory, McKenzie and Williams Counties, North Dakota and Final Report	Olson 1992	1992	6, 31, 32
9856	Enbridge Pipelines (North Dakota) LLC North Dakota Pipeline Expansion Project: A Class II and III Cultural Resource Inventory and Evaluative Testing of Three Sites, Williams Co. North Dakota	Harty et al. 2006	2006	4, 5, 6, 31, 32
10848	Pleasant Valley – Belden 115kV Transmission Line (RUS#807) 2008 Class III Cultural Resource Inventory, Mountrail and Williams Counties, North Dakota	Jackson and Toom 2009	2009	4
11243	A Class I and Class III Cultural Resource Inventory of the Red Sky Oil Pipeline in Mountrail and Williams Counties, North Dakota	Markman et al. 2009	2009	31, 32
11686	Beaver Lodge to Berthold Pipeline: A Class III Cultural Resource Inventory, Mountrail, Ward, and Williams Counties, North Dakota	Klinner et al. 2010	2010	4, 5, 32
11790	SORTI and Dunn Pipeline Projects: A Class III Cultural Resource Inventory, Williams and McKenzie Counties, North Dakota	Harty et al. 2010	2010	5, 32
11987	A Class I and Class III Cultural Resource Inventory of the Rangeland Energy COLT Connector Pipeline, Williams County, North Dakota	Smith 2011	2011	5, 31
12260	A Class I and III Cultural Resource Inventory of the Hess Ramberg Crude Stabilization Facility, Williams County, North Dakota	Lechert and Herson 2011	2011	32
12793	Rangeland Energy Beaver Lodge Tank Location Project: A Class III Cultural Resources Inventory in Williams County, North Dakota	Burns 2011	2011	5
13002	Enbridge Sanish Pipeline Project: An Addendum for Reroutes Along the Sorti and Dunn Pipeline Project: A Class III Inventory in McKenzie and Williams Counties, North Dakota	Kinsey and Stine 2012	2012	4, 5
13009	BakkenLink Pipeline: A Class II and Class III Cultural Resource Inventory in Billings, Stark, McKenzie, and Williams Counties, North Dakota	Kulevsky and Stine 2012	2012	6
13339	A Class I and Class III Cultural Resources Inventory of the Hess RTF Tie-in Project, Williams County, North Dakota	Altizer and Reinhart 2012	2012	30, 31, 32

Table 2. Summary of Previously Recorded Cultural Resources in the One Mile Buffer Review Area (see Appendix A for map).

Site Number	Site Type	Cultural Affiliation	Township	Range	Section	Eligibility (Criterion)	Manuscript No.	In Project Area?
32WI99	Stone circle (1), rock cairn (1), not relocated in 2011	Archaeological	155	95	5	Not eligible (SHPO concurrence)	12793, 11790	No
32WI100	Stone circle (1), rock rings (9), cultural material scatter (CMS), dump, machinery	Archaeological, Historical	155	95	5	Unknown	Unknown	No
32WI138	Stone circle(5), CMS (5 flakes, 1 Flint River chert core)	Archaeological	155	95	5	Not evaluated	Unknown	No
32WI1141	Stone circle (1), rock cairn (1)	Archaeological	156	95	32	Not eligible (D); unknown eligibility (A)	12260	No
32WI1212	Depression (cellar?), CMS (bricks, concrete)	Historical	155	95	4	Not eligible	13002	No

Historic Contexts

To be eligible for inclusion in the National Register, cultural resources must be at least 50 years old and meet one or more of the criteria set forth in 36 CFR 60.4:

- Criterion A: applies to properties that are associated with events that have made a significant contribution to the broad patterns of our history; or
- Criterion B: applies to properties that are associated with the lives of persons significant in our past; or
- Criterion C: applies to properties that embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- Criterion D: applies to properties that have yielded, or may be likely to yield, information important in prehistory or history.

In addition to meeting one or more criteria, cultural resources must be significant within the context of prehistory or history. Significant cultural resources must also possess integrity, which is the composite of seven qualities: location, design, setting, materials, workmanship, feeling, and association. All of these qualities do not have to be present for a cultural resource to be eligible for the National Register. In fact, the integrity of archaeological sites is usually based on the degree to which the remaining evidence can provide *important* information about the prehistory or history of an area.

All archaeological sites have the potential to yield information, but assessment of the information's importance is a critical factor. To facilitate this process, the National Park Service developed the concept of historic context, which consists of a time (e.g., Plains Village period), a place (e.g., Middle Missouri River Valley), and a theme (e.g., introduction of earthlodges). To facilitate the process of evaluating the significance of North Dakota cultural resources, the NDSHPO and SHSND developed the NDHPP (2008) which contains a detailed overview of the state's prehistory and history, and specific study units based primarily on river basins. For each study unit (e.g., the GSU that includes the current project area), the NDHPP contains a series of research contexts and questions that researchers should engage as they perform cultural resource inventories and document sites, leads, isolates, and architectural units. For each study unit, the primary research themes include paleo-environmental modeling; settlement behavior; subsistence practices; technologies; artifact styles; regional interaction; and historic preservation goals, priorities, and strategies. For each theme under each cultural/time period, the NDHPP offers research questions, such as (focusing on the Plains Village period example from above):

- Was any part of the GSU permanently occupied by villagers during the early centuries of the Plains Village period?
- How were horticultural practices changed by the volatile cultural events spanning late prehistoric, protohistoric, and historic times?
- What sorts of archeological contexts must be sampled, and what sorts of recovery techniques must be employed to enable collecting data to answer such questions?
- Do Knife River phase ceramic vessel styles have a more limited distribution within the GSU than earlier Plains Village vessel styles?
- Were interactions between Plains Village groups and Pacific Coast peoples more intensive during late Plains Village times than during early and middle Plains Village times?

Based on the sites previously recorded within the current project's review area, the few prehistoric/protohistoric sites identified thus far (Class III survey coverage within the southern portion of

the review area is regarded as moderately intense by ACS) cannot be placed within a recognized cultural time period (e.g., Plains Village) or with any particular tribe or ethnic group (e.g., Three Affiliated Tribes, Assiniboine) without additional investigation of the sites. The general paucity of known prehistoric to historic Native American sites in the review area, especially the northern half, is somewhat misleading given the lack of survey coverage in the northern half and the greater density of sites present just to the south of the review area where more surveys have occurred and where the drainage system becomes wider and more entrenched. In short, although the number of sites is not high for the review area, the area does appear to have the potential for containing sites that can address some of the state's time/cultural periods and resource use contextual themes, including settlement, subsistence, technology, trade, and cultural affiliation. The Historic period resources appear to be few and largely insignificant.

Summary and Recommendations

ACS' background research review for Tesoro's proposed New Ramberg Station project demonstrates that a moderate number of projects, many recent, occur in the review area; however, the current project area has not been previously surveyed. The records search also demonstrates that a low number of cultural resources occur in the review area, although site occurrence greatly increases just to the south and which appears to correlate with increased survey coverage and the presence of an incised drainage system. No sites are currently listed on the National Register. However, the prehistoric/protohistoric sites indicate that Native American occupation and use of the general area is present, although none of these resources appear to be associated with habitation sites. The rock rings and cairns, and limited surface material cultural associated with them, suggests that they may be related to resource processing and perhaps temporary habitation, such as campsites, although larger sites appear to occur to the south along the drainage system. These sites would require further examination to understand their age, function, and role in the greater area's settlement and subsistence systems; however, they all occur outside of the current project area.

Examination of recent aerial imagery of the project area indicates that the parcel is undeveloped; that is, no standing structures or other constructions are present, although a buried pipeline passes through the parcel in a general northeast to southwest direction. The area has been plowed for farming, although intact cultural materials can be present beneath the plow zone and artifacts brought to the surface are often good indicators of subsurface cultural deposits despite vertical and lateral displacement (e.g., see Sullivan 1998). A conversation between the report author and Paul Picha, North Dakota Chief Archaeologist at the NDSHPO, on November 2 confirms the state's position that intact cultural resources may be present beneath plow zones and should be taken into consideration when recommending the need for additional cultural resources investigations. Given the proximity of the known Native American sites and the presence of an incised drainage system in the project area and just to the south, prehistoric and/or protohistoric sites could occur in the project area despite the effects of agricultural activities at the parcel.

As a result of this research, ACS recommends that the project area should be surveyed at the Class III level prior to any ground disturbing activities by Tesoro. The proximity of known sites and the presence of a drainage system that could be a source of water and food for the Native American groups in the area indicate that the potential for unrecorded sites in the project area is at least moderate. Additionally, the drainage system in the area may also have been conducive for habitation, although large habitation sites in the project area are likely not present.

Should construction work uncover previously unrecorded cultural resources in the northeastern portion of the project area, the SHSND/SHPO office should be contacted immediately (Paul Picha, Chief Archaeologist, 701-328-3574) for consultation and assessment of the finds.

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Appendix A: Map of Previously Recorded Cultural Resources in the Review Area

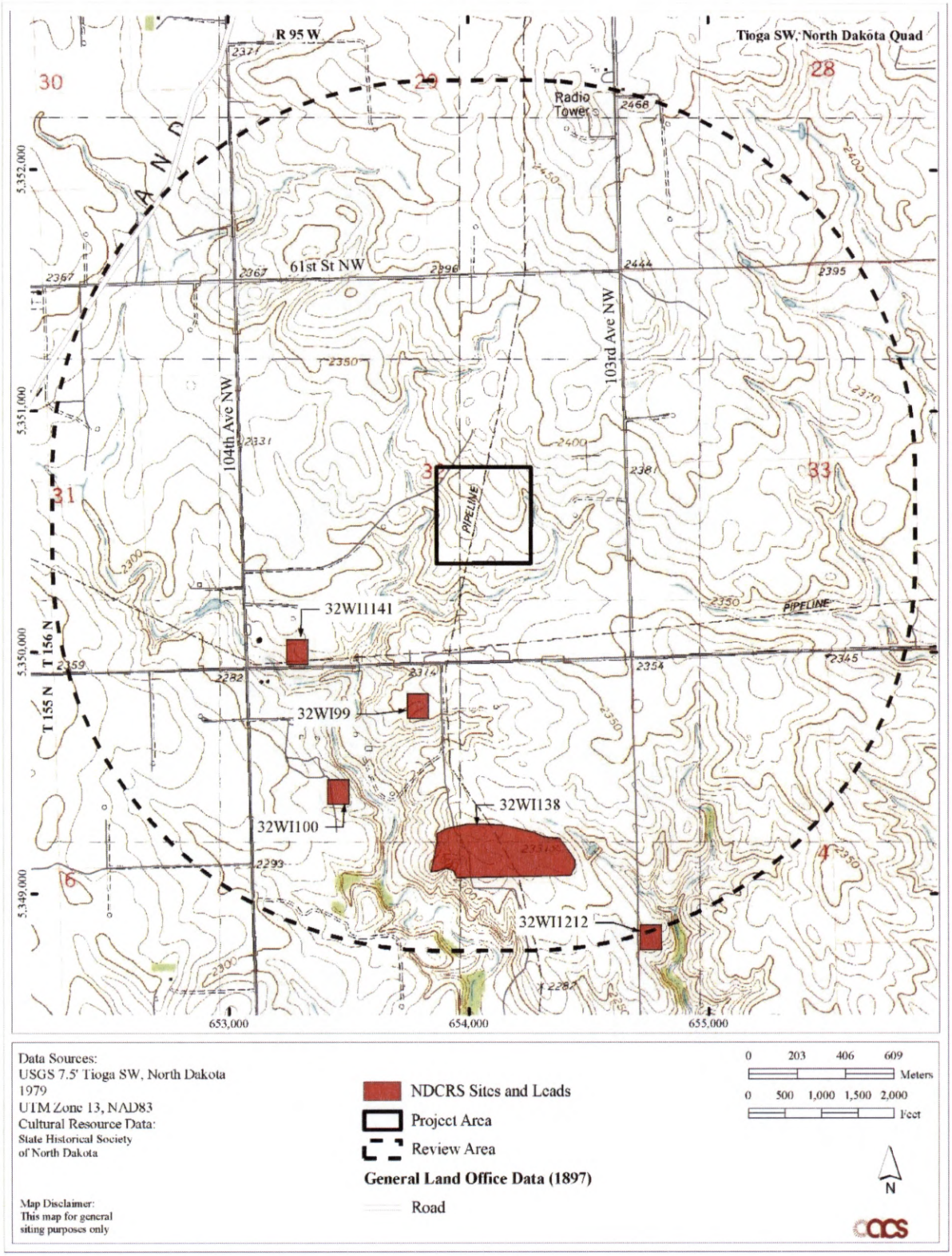

Figure A-1. Portion of the USGS 7.5′ Tioga, North Dakota topographic quadrangle depicting the project area, review buffer, previously recorded cultural resources, and GLO map data.