

ENVIRONMENTAL ASSESSMENT

Musselshell-Judith Rural Water System Phase 1 Well #3 Project

Judith Basin County, Montana

Prepared for:

U.S. Army Corps of Engineers

Northwest Division

Omaha District

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LIST OF ACRONYMS & ABBREVIATIONS

CFR	Code of Federal Regulations
EA	Environmental Assessment
EIS	Environmental Impact Statement
ER	Engineering Regulation
FONSI	Finding of No Significant Impact
gpm	gallons per minute
NWD-NWO	Northwest Division, Omaha District
USACE	U.S. Army Corps of Engineers
CMRWA	Central Montana Regional Water Authority
MJRWS	Musselshell-Judith Rural Water System

1.0 INTRODUCTION

This Environmental Assessment (EA) was prepared to evaluate the potential impacts of funding of a proposed project to drill a water supply well near Buffalo, Montana. This EA has been prepared in accordance with the National Environmental Policy Act of 1969 and the Council on Environmental Quality's Regulations (40 CFR 1500-1508), as reflected in the USACE Engineering Regulation ER 200-2-2. The EA provides sufficient information on the potential adverse and beneficial environmental effects to allow the District Commander, U.S. Army Corps of Engineers (USACE), Omaha District, to make an informed decision on the appropriateness of an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI). The finding of the EA determines whether an EIS is required. If the EA indicates that no significant impact is likely, then the agency can release a FONSI and carry on with the proposed action.

The Central Montana Regional Water Authority (CMRWA) is a public, non-profit organization consisting of a coalition of cities and towns in central Montana who have a long legacy of inadequate drinking water supplies. The CMRWA was legally created in 2003 as a public water authority in the state of Montana. The CMRWA proposed the Musselshell-Judith Rural Water System (MJRWS) with a goal of providing a reliable and adequate quantity of high quality drinking water for the member communities. Well #3, the proposed action analyzed in this EA, was not addressed specifically in the previous EA for the feasibility study. **Figure 1** shows the location.

1.1 AUTHORITY

The proposed action is authorized as part of Section 595 of the 1999 Water Resources Development Act, as amended. Section 595 allows for the USACE to provide design and construction assistance for water-related environmental infrastructure, resource protection and development projects. Projects may include wastewater treatment and related facilities, water supply and related facilities, environmental restoration and surface water protection and development. This assistance is available to non-federal interests in rural Montana, Idaho and Nevada. Design and construction assistance is provided only for projects that are owned by public entities and project costs are shared 75-percent federal contribution and 25-percent non-federal contribution.

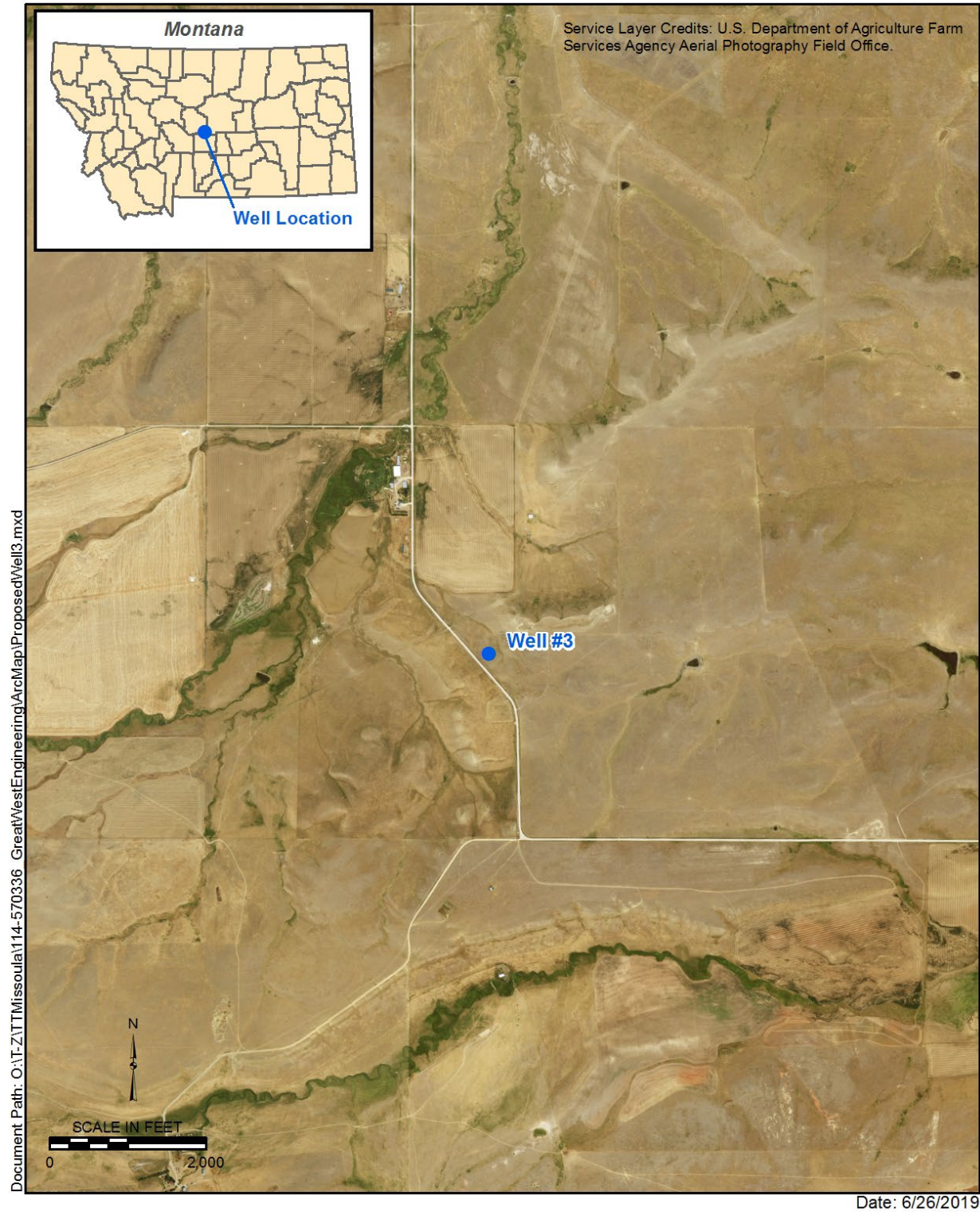
1.2 PROPOSED ACTION

The project is to construct a water supply well (Well #3) for the Musselshell-Judith Rural Water System. The 8.75-inch diameter well would be drilled approximately 2,800 feet deep into the Madison Aquifer. Drilling and testing is anticipated to occur between August 15 and October 15, 2019. The project includes development of the well and conducting pumping tests and acid fracture stimulation if necessary. A schematic drawing of the proposed well is shown in **Figure 2**. The well would be tested with a 72-hour pump test to determine how many gallons per minute (gpm) can be extracted.

To prepare for the well construction, approximately 1 acre would be cleared and topsoil removed and stockpiled on site. A drill rig would be stationed to begin drilling within the cleared area (well pad). Cuttings (soil and rocks) removed during the drilling would be spread out over the cleared area. No fill material would be discharged into waters of the United States.

Water pumped from the well (at the rate of up to 1,200 gpm for 72 hours for a maximum of 5.2 million gallons) would be discharged on the ground surface. Water would be discharged through a device to dissipate energy to eliminate the potential for erosion. The device is a large pipe with many smaller pipes extending approximately 50 feet to either side. Water would be dispersed over approximately 0.75 acres until it enters the ditch after approximately 500 feet. What does not infiltrate into the ground or evaporate, would run into an irrigation ditch, then into an unnamed stream and travel 3.26 miles (as the stream flows) to a stock pond (**Figure 3**). The stock pond is approximately 2 miles (measured directly) north of the well.

Figure 1. Project Location



Legend

- Well Location

Location Map

Well #3

Musselshell-Judith Rural Water System

Judith Basin County, Montana

Figure 2. Well Construction Illustration

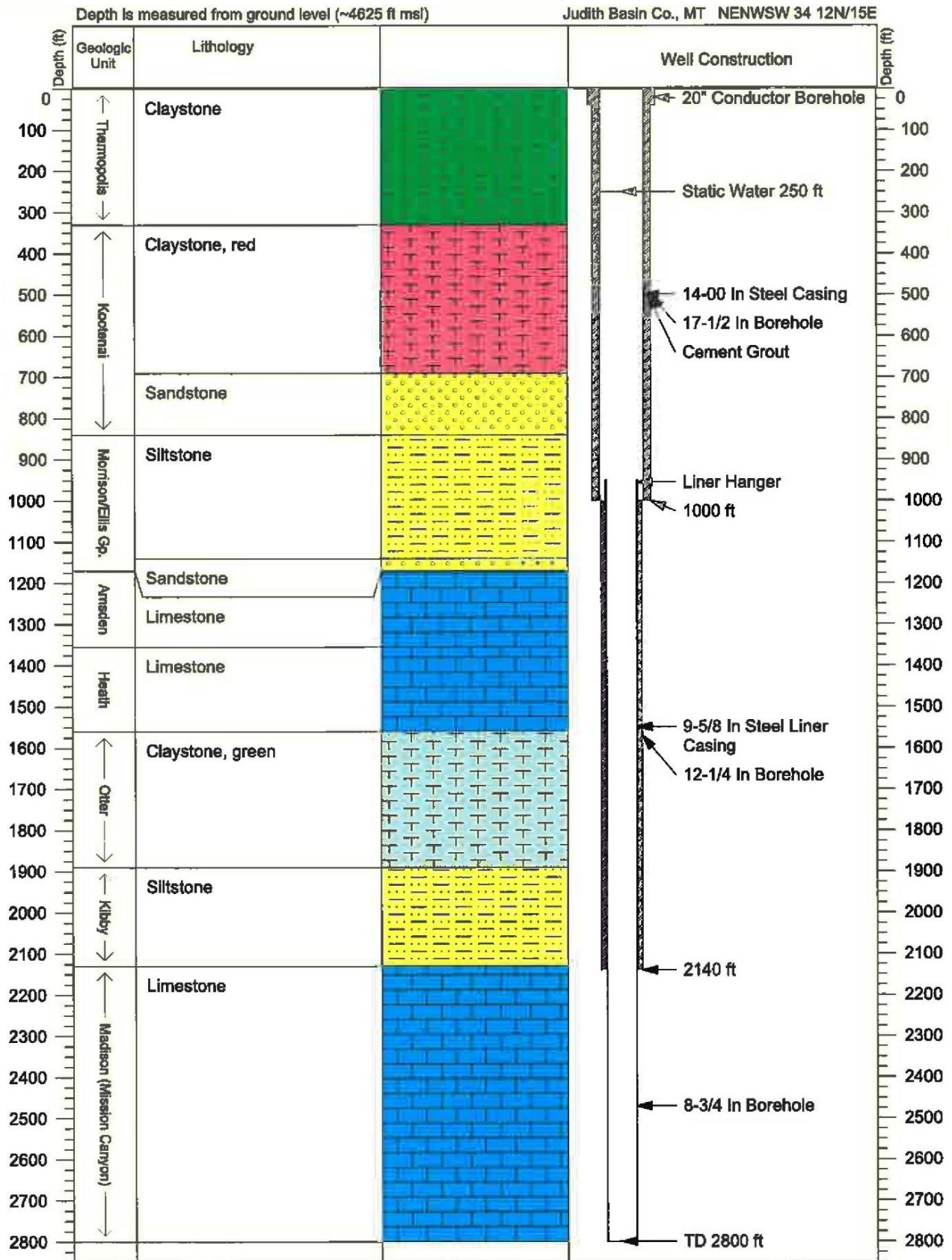
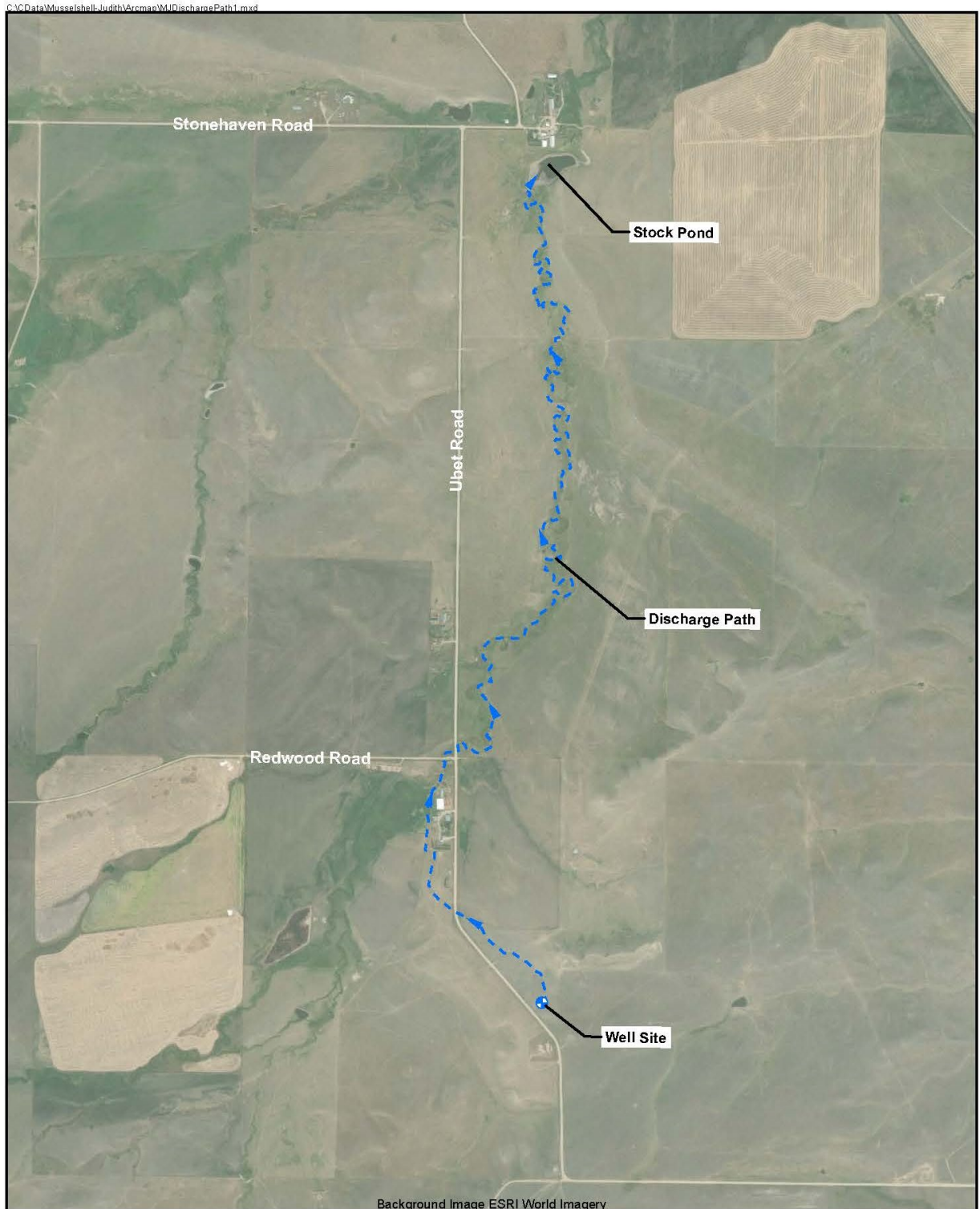
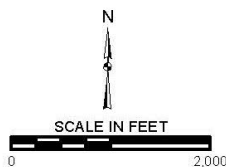


Figure 3. Well 3 Discharge Path



117-570336-17
6/3/2019



Well #3 Discharge Path
Musselshell-Judith Water System
Judith Basin County, Montana

If production of 1,200 gpm cannot be obtained, acid fracture techniques may be used to increase the flow. Acid fracture consists of inserting chemical (20 percent hydrochloric acid solution) into the well to dissolve materials in the rock, such as limestone, to increase the size of openings and allow more water to flow. If acid fracturing is used, well discharges would be collected and trucked to a permitted, off-site disposal area. Tanks used to capture discharge would have secondary containment systems to prevent discharge from entering the project area in the event of a leak or spill. The disposal facility is located near Sumatra, Montana in Rosebud County. Up to ten trucks would haul water for disposal. Acid fracture produced water and chemicals would not be disposed of on site.

Once the testing is completed, equipment would be removed from the site, cuttings would be graded, and the stockpiled topsoil would be placed on top of the cuttings, graded and seeded. The lease agreement with the landowner of the well sites requires monitoring and control of weeds. The well would remain in place to eventually be used as a water supply well for the MJRWS when the financing and construction of the pipeline is completed.

To accomplish the project, the following measures would be applied to minimize the potential for adverse environmental effects. These Environmental Protection Measures are summarized in the General Contractor's environmental responsibilities during construction:

1. Topsoil would be stripped from all work areas and stockpiled.
2. Drilling cuttings and drilling mud would be contained on-site using settling pits or other approved measures. Once drilling is completed this material would be spread on the site, graded, and topsoil would be replaced.
3. The disturbed area would be reseeded with native dryland grass seed mix.
4. Contractor would be required to have a Montana Water Well Contractor's License and comply with all Montana laws.
5. Contractor would be responsible for washing and inspecting all equipment before entering the site to control the spread of noxious weeds.
6. Bulk storage of fuel and other petroleum based products would not be allowed on site. The contractor would have spill kits available on site.
7. Construction would be monitored so that the Contractor does not release any contaminants on the site or adjacent lands.
8. The Contractor would be required to implement measures to control off site vehicle tracking.
9. All project waste and debris would be removed and properly disposed of by the end of the project.
10. Discharge of untreated groundwater during the pump test is allowed under Montana law. However, the drainage course would be monitored during testing at culverts, in the irrigation ditch, and for water getting onto the road to ensure there is no erosional damage from the pump test water or damage to roads/drainage structures. If any damage occurs the Contractor would be responsible for repairing it.
11. If acid stimulation of the well is required, the Contractor would be required to provide tanks to store the acid stimulated discharge water from the well. Chemical and discharge would be stored in a container that has a secondary containment to prevent a spill from entering the environment. A spill clean up kit would also be available onsite. Discharge water would be disposed of at an off-site permitted disposal area. No acid fracturing produced water or chemicals would be disposed of on-site.
12. In the event of an unanticipated discovery of cultural resources, work would be halted immediately, and a district archeologist would be notified. The work would not continue until the area is inspected by a staff archeologist. If he or she determines that the discovery requires further consultation, the appropriate State Historic Preservation Office would be notified.

The implementation schedule for drilling the well is anticipated to be in summer 2019, with site reclamation completed in fall 2019.

1.2.1 Project Location

The project is located in Judith Basin County approximately 3.5 miles west of Garneill, Montana (**Figure 1**). Assistance funds would partially fund the design and construction of a project consisting of drilling a water supply well, well pipe, pump and appurtenances. The well would eventually serve Harlowton and rural users under Phase 1 of the project and the remainder of the planning area users once the entire regional water project is constructed.

The proposed project is adjacent to the Ubet county road about 3.5 miles west of Garneill and 4.0 miles south of Buffalo, Montana in Judith Basin County in Township 12 North, Range 15 East, Section 34, principal meridian of Montana. The area is in the headwaters of the Judith River, although the river is more than 20 miles from the project. The land use in the area is rangeland with grassland cover.

1.3 PURPOSE AND NEED FOR THE PROPOSED ACTION

The purpose of the Musselshell-Judith Rural Water System project is to provide safe and reliable water to communities that choose to participate in the MJRWS project. The project is needed because these communities and rural areas have poor quality of water and deal with challenges in obtaining reliable, safe drinking water on an annual basis.

1.4 PRIOR REPORTS

The entire MJRWS was described and evaluated in a feasibility study¹ produced by the US Bureau of Reclamation (Bureau of Reclamation, 2015). The feasibility study included a programmatic EA and non-decisional FONSI addressing the impacts for the entire water pipeline project, which is herein incorporated by reference. Well #3 was not specifically included in that assessment, although much of the environmental conditions and analysis from the overall project are applicable.

An investigation of wetlands and waters of the US within the area to be disturbed by the water pipeline was completed to identify potentially jurisdictional waters. Findings were reported in an aquatics report (Tetra Tech, Inc., 2017). The report was submitted to the USACE, who determined that there were jurisdictional waters that may be affected and require a permit before any construction discharges materials into these waters (USACE, 2018a; USACE, 2018b). This report and preliminary jurisdictional determination, which is herein incorporated by reference, covers areas adjacent to the Well #3 site and so an addendum was added after a field investigation (see Section 3.3.3 of the EA).

A cultural resource survey was also conducted for Phase 1 of the project. A cultural resource report (Tetra Tech, Inc., 2017) was submitted to the Montana State Historic Preservation Officer, who concurred with the determination that no adverse effects would occur (Montana Historical Society, 2017). The cultural report and the concurrence are incorporated by reference into this EA. Part of the well pad is located outside of the survey area, therefore an additional survey was conducted on May 17, 2019. No cultural resources were found.

¹ The report is available at http://www.centralmontanawater.com/images/2014%20Feasibility%20Report/July31-2015_Musselshell-JudithRuralWaterSystem-ReclamationFeasibilityReviewReport_FINAL.pdf

1.5 NEPA SCOPING

A scoping letter describing the project and its purpose was sent to 19 local, state, and federal agencies and adjacent landowners on May 16, 2019. Contacts included:

- B & H Ranch Company, Buffalo MT
- Mark Baumler, State Historic Preservation Office, Helena MT
- Bob Church, Great West Engineering, Helena MT
- Commissioners, Judith Basin County Commissioners, Stanford MT
- Director, Montana Department of Environmental Quality, Helena MT
- Gaugler Land LLC , Garneill MT
- Lou Hanebury, US Fish and Wildlife Service, Billings MT
- Headquarters, Montana Fish, Wildlife, and Parks, Helena MT
- Scott Irvin, Montana Department of Natural Resources and Conservation, Water Resources, Lewistown Regional Office, Lewistown MT
- Jim Kalitowski, CMRWA
- Bob Mattson, Army Corps of Engineers
- Cody McDonald, Landowner, Buffalo MT
- Cari Ostberg, Natural Resource Conservation Service, Great Falls MT
- Region 4, Montana Fish, Wildlife, and Parks, Great Falls MT
- Roger and Laureen Saylor, Adjacent Landowner, Buffalo MT
- Monty Sealy, CMRWA, Roundup MT
- Teresa Wilhelm, Judith Basin Conservation District, Stanford MT
- Jodi Bush, Montana State Ecological Services Office, Helena MT
- Army Corps of Engineers, Helena MT

The Department of the Army, Corps of Engineers in Helena Montana returned comments with a notification that a permit may be necessary if placement of fill material in any jurisdiction area would occur. No such activity is anticipated.

Coordination with the Blackfeet Nation, Chippewa Cree Tribe, Crow Nation, Confederated Salish and Kootenai Tribes, Fort Belknap Assiniboine and Gros Venture Tribes, Northern Cheyenne Tribe, and Fort Peck Assiniboine and Sioux Tribes was conducted via letters dated May 22, 2019. No comments were received.

Resources and issues analyzed in the EA for the Well #3 project were derived from regulatory requirements and environmental conditions that may be affected.

2.0 ALTERNATIVES TO THE PROPOSED ACTION

No action alternatives to the proposed action were considered.

2.1 NO ACTION ALTERNATIVE

In the No Action alternative, the proposed well would not be drilled. Information on the water level and quality available from the well location would not be gathered.

2.2 ALTERNATIVES CONSIDERED BUT NOT STUDIED IN DETAIL

2.2.1 Well Location Alternatives

The CMRWA evaluated several alternatives for wellfield locations within the feasibility report for the project which was reviewed and approved by the Bureau of Reclamation. The areas evaluated included the Ubet site (preferred alternative), Utica (near Utica, MT), Lode (South of the Little Belt Mountains), New Liberty (between Utica and Ubet), and Red Hill (south of the Big Snowy Mountains). Ultimately the Ubet site was chosen on the basis of capital costs, annual operations and maintenance costs including electricity, water rights considerations, potential for quantity, and accessibility. Once the Ubet site was chosen, the CMRWA negotiated with several landowners before coming to an agreement on a lease with one landowner for the needed wellfield sites. The landowner provided locations on his property which were acceptable for the development of production wells. These well locations were represented to the State of Montana which were approved for the CMRWA during the water rights process. The CMRWA drilled one well at the Ubet site (CMRWA #2) which would be converted to a production well. The production wells are offset approximately 0.5 miles from each other to eliminate the potential for drawdown interference of the wells. The CMRWA #3 well proposed under this project is located approximately 0.5 miles due north of CMRWA #2 in a location approved by the landowner.

2.2.2 Alternative Drilling Methods

Alternative drilling methods were not studied in detail because the drilling methods specified for the project are a standard industry approach for deep, hard rock wells.

2.3 SUMMARY OF DIRECT AND INDIRECT EFFECTS

Table 1 represents a summary of the effects of implementing the alternatives. Chapter 3 discusses in detail the resources in the affected area and Chapter 4 discusses the impacts on each resource.

Table 1: Summary of Potential Effects by Alternative

Resource	Proposed Action	No Action
Air Quality	There would be emissions from vehicles and equipment operating for 45 days. Emissions would be <i>de minimus</i> . Impacts would be negligible and short-term.	No impact
Water and Aquatic Resources	Up to 5.2 million gallons of groundwater would be discharged into an unnamed stream and may eventually reach a stock pond. Impacts would be minor and short-term. There would be no adverse impacts on water quality.	No impact
Wetlands	Up to 5.2 million gallons of groundwater would be discharged to the fringe wetland, a minor, short-term effect.	No impact
Terrestrial Vegetation	Less than 1 acre of pasture would be disturbed, then revegetated. There would be a minor, long-term effect. There would be no impact on noxious weeds.	No impact
Wildlife	Less than one acre of grassland habitat disturbance that would be avoided by wildlife, a minor, long-term effect. No impact on	No impact

Resource	Proposed Action	No Action
	migratory birds as the disturbance activity would occur outside the nesting season.	
Threatened and Endangered Species	No effect on Canada lynx or North American wolverine. May affect, not likely to adversely affect grizzly bear.	No impact
Visual Quality	Area of disturbance and human activity would be visible from Ubet Road. The impacts would be minor and long-term.	No impact
Cultural Resources	No impact	No impact
Socio-economics	Up to 8 people would be employed for 45-60 days. The well would be Phase 1 in a long-term project that would potentially provide adequate and reliable drinking water to member communities in an area where, historically, the water supply was inadequate. The impacts would be long-term.	No impact. Long-term, the well would not be available for inclusion in the MJRWS project.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter presents an analysis of each resource topic that was identified as having a potential to be affected by implementation of the Proposed Action. Each section describes the environmental setting as it relates to that specific resource topic, the direct and indirect effects that could result from implementation of the Proposed Action, and mitigation measures that would avoid, reduce, or compensate for substantial adverse effects of the Proposed Action.

The relevant resources section of this chapter presents the adverse and beneficial environmental effects of the Proposed Action Alternative and the No Action Alternative. The section is organized by resource category and presents the existing conditions of the resource and effects of each of the alternatives on the resource. Impacts are quantified whenever possible. Qualitative descriptions of impacts are explained by accompanying text where used. Also see **Table 1** for a summary of impacts by alternative, by resource.

“Significance” has been analyzed in this document in terms of both context (sensitivity) and intensity (magnitude and duration):

- Magnitude
 - No effect – resource not measurably affected;
 - Negligible – resource impacts may be measurable but would not be noticeable. Resources are still functional;
 - Minor – noticeable impacts to the resource in the project area, but the resource is still mostly functional;
 - Moderate – the resource is impaired, so that it cannot function normally; or
 - Major – the resource is severely impaired so that it is no longer functional in the project area
- Duration

- short-term – temporary effects caused by the construction and/or implementation of a selected alternative, including reclamation.
- Long term – caused by an alternative after the action has been completed and/or after the action is in full and complete operation and reclamation, longer than approximately 1 year.

3.1 ENVIRONMENTAL SETTING

The project area consists of privately owned ranchland that is heavily grazed by sheep. **Figure 3** shows an aerial view of the site. Slopes are moderate and northeast facing. The site elevation is about 4620 feet above mean sea level. Surface water drains to the north and terminates in a large stock pond approximately 2 miles north near the junction of Ubet Road and Peterson Ranch Road.

The nearest town to the site is Buffalo, Montana with a population of approximately 20. Judith Basin County is rural with a sparse population of about 2,000 people in 2017.

3.2 SUBJECT HEADINGS ELIMINATED FROM ENVIRONMENTAL CONSEQUENCES ANALYSIS

Resources were considered that were found to not be affected by the proposed action. Where there were no potential effects identified, the resource itself has been eliminated from further evaluation and analysis. Rationale for which resources are analyzed in the EA is shown in **Table 2**.

Table 2: Rationale for Resource Evaluations in Chapter 3

Resource	Not Present	Present but Not Affected or Negligible Impacts	Could be Affected (section where discussed)
Air Quality			X Section 3.3.1
Water and Aquatic Resources			X Section 3.3.2
Wetlands			X Section 3.3.3
Terrestrial Resources			X Section 3.3.4
Wildlife	X Sage-grouse ²		X Section 3.3.5
Threatened and Endangered Species			X Section 3.3.6
Cultural Resources			X Section 3.3.8
Recreation Resources	X		
Farmland Resources	X The soil map unit is Maginnis-Absarokee channery clay loams, soil map unit is not prime farmland		

² <https://sagegrouse.mt.gov/ProgramMap>. The project is not in core, general, or connectivity habitats or BLM priority areas according to the Montana Sage Grouse Habitat Conservation Program. No greater sage-grouse have been observed in or near the project according to the Montana Natural Heritage Program.

Resource	Not Present	Present but Not Affected or Negligible Impacts	Could be Affected (section where discussed)
	(https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1338623.html).		
Floodplain Resources	X (per site visit, upland, high elevation)		
Aesthetics (Visual Quality)			X Section 3.3.7
Social and Economic Conditions			X Section 3.3.9
Environmental Justice	X (EPA, 2019)		
Hazardous, Toxic, and Radio Active Waste	X The site is undeveloped pasture with no apparent previous disturbance.		

3.3 RESOURCES

This section describes the current conditions of resources that could be affected and the direct and indirect impacts of the project. The resources described in this section are those recognized by laws, executive orders, regulations, and other standards of National, State, or regional agencies and organizations; technical or scientific agencies, groups, or individuals; and the general public.

3.3.1 Air Quality

3.3.1.1 Existing Conditions

The Clean Air Act (CAA) (42 U.S.C. § 7401 et seq.), enacted in 1970 tasked the EPA to establish National Ambient Air Quality Standards (NAAQS) to protect public health and welfare and to regulate emissions of hazardous pollutants. The Montana Department of Environmental Quality (MDEQ) monitors air quality throughout Montana. Ambient monitoring that is being conducted indicates that the proposed project area is meeting established NAAQS and considered in attainment. AIRNow.gov is a website launched by EPA in the Spring of 2005 and has national participation. This tool is used to relay real-time data to members of the public as well as predict conditions several hours into the future. The air quality near the project area is good (EPA, 2019). The area is not in a non-attainment area for air quality (i.e., air quality standards are being met). The wind direction is predominantly east or northeast. The closest class 1 airshed downwind is the UL Bend National Wildlife Refuge, 111 miles north east of the project. The closest Indian reservations (Rocky Boys and Fort Belknap Indian Reservations) located approximately 90 and 100 miles from the well site, respectively, are not designated a class 1 airsheds.

3.3.1.2 Proposed Action

With implementation of this alternative, emissions would be slightly increased as work vehicles, drill rigs, and heavy equipment work in the area. Equipment clearing the site would be operated for 2 days, and drilling operations would take approximately 45 days. Workers (6 to 8) would be transported to the site in either the clearing equipment mobilization vehicle, the drill rig, or up to 3 work truck. One inspector's vehicle would be used to transport the inspector. All equipment used and transport vehicles would meet emission control requirements. Up to 10 diesel trucks hauling acid fracturing discharge to a disposal area would emit exhaust on the approximately 150 miles to the disposal site. Emissions from this low level, short-term activity would be *de minimus* and would not create a noticeable or measurable increase in pollutants. Air quality impacts would be negligible and short-term.

3.3.1.3 Alternative 1 – No Action

Without implementation of the proposed action, there would be no emissions from equipment or vehicles and no impact on air quality.

3.3.2 Water and Aquatic Resources

3.3.2.1 Existing Conditions

In accordance with the Clean Water Act (CWA) (33 U.S.C. §1251), states, Tribes, or the EPA must develop standards for their jurisdiction. Pursuant to the CWA, water quality consists of three components: 1) designated and existing uses, 2) water quality criteria necessary to protect these uses, and 3) an anti-degradation policy (40 CFR Part 131.6). Surface and groundwater water quality standards have been set forth by the CWA to include parameters such as pollutants, temperature and dissolved oxygen levels.

There is no permanent surface water within 500 feet of Well #3, as confirmed by a site visit on May 13, 2019. An irrigation ditch drains into an ephemeral stream (an unnamed tributary to Mud Creek), then into a stock pond (**Figure 3**).

The water quality in the unnamed irrigation ditch and stream is unknown. The stock pond quality is likely similar to the water quality in the stream and irrigation ditch upstream from the pond. The unnamed tributary stream is not on the Montana Section 303(d) list (Montana DEQ, 2019), indicating its water quality is meeting beneficial uses. The 2015 Feasibility Study (Bureau of Reclamation, 2015) reported the surface water must be treated to meet drinking water standards and that groundwater quality meets primary and secondary drinking water standards. The testing was completed in 2012 on a well located approximately 0.5 miles north of the Well #3 location in the same aquifer.

A survey for aquatic life was not performed. The Montana Fish, Wildlife and Parks maintains information on stream surveys in Montana. The information for Mud Creek (found at <https://myfwp.mt.gov/fishMT/waterbody/50563>) indicates either no fish are found in this stream or there was no survey, and there is no information that the stream has fish stocked or planned to be. The stock pond does not contain fish (personal communication with Great West Engineering, June 2019). The intermittent wetland would likely be classified as a Great Plains Intermittent Stream, with the following possible life present (MNHP, 2006) :

- Amphibians: toad species (*Bufo* spp.) or northern leopard frog (*Rana pipiens*), including important amphibian breeding habitat.
- Macroinvertebrate community indicator species such as: crustaceans (*Hyalella* and *Gammarus*), damselfly genera (*Coenagrion/Enallagma* sp., *Enallagma civile*, and *Ishnura*), species of water boatman (*Corixidae*: *Sigara alternate*, *Sigara grosslineata*, *Trichocorixa*, *Trichocorixa nais*, and *Corisella*), snails (*Physella*, *Gyraulus*, and *Stagnicola*), mayflies (*Caenis* and *Callibaetis*), and beetles (*Oreodytes*, *Laccophilus*, *Hydropous*, and *Hygrotus*).

3.3.2.2 Proposed Action

Groundwater would be pumped to the surface and discharged during the pump test. The applicant has included Environmental Protection Measures to prevent these activities from causing impacts on water quality (see Section 1.1). The pump test would remove up to 5.2 million gallons of groundwater (about 16 acre-feet) from aquifer in the Madison Formation. The average annual recharge in the aquifer is 235,000 acre-feet per year (Bureau of Reclamation, 2015). The removal of the groundwater would be a minor, short-term effect on the aquifer quantity. There would be no impact on groundwater quality.

An irrigation ditch north of the well areas would receive the discharge water. The discharge would eventually reach a stock pond approximately 2 miles (3.26 miles as the stream flows) north of the well site (Figure 3). The 5.2 million gallons of water that would be discharged over 3 days would be approximately 2.6 cubic feet per second. A 2-year, 24-hour storm event in this area would be about 1.6 cubic feet per second. It is expected that approximately 20% of the water would infiltrate or evaporate.

Water quantity in the ditch, stream, and stock pond would be increased. The discharged water would change the physiochemical properties of the surface water in the ditch, stream, and stock pond (water temperature, clarity, potentially pH, and total dissolved solids). These impacts would be negligible and short-term. As the groundwater quality is good, the water quality in the stock pond would not be adversely affected.

The stock pond may become filled, and possibly overflow. The area downstream of the stock pond has riprap already in place to prevent erosion. The stock pond would retain the excess water within its capacity until the water evaporated and the level would return to normal levels, recharged by precipitation events. The watercourse downstream of the stock pond would see a short-term addition of water if the pond overflows. This would be a negligible, short-term effect. There would be no other effect on aquatic life.

Aquatic life in the ephemeral drainage is not likely to be effected by short-term flows.

Specific measures include monitoring the site for release of contaminants (#7), reclamation and reseeding (#3) and proper removal and disposal of waste (#9), monitoring for erosion (#10), and collection and off-site disposal of acid stimulated discharge (#11). Implementation of these measures and the appropriate licensure of the contractor (#4) would eliminate the potential for adverse effects on water quality. The overall impacts on hydrology and water quality would be negligible to minor and short-term.

3.3.2.3 No Action

Without implementation of the proposed action, surface disturbance would not occur, and groundwater would not be brought to the surface and discharged. There would be no effect on the quality or quantity of surface or groundwater, or aquatic life.

3.3.3 Wetlands

3.3.3.1 Existing Conditions

The Corps of Engineers and the EPA have defined wetlands as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions”(Federal Register 1982; 1980). The Corps of Engineer’s Regulatory Program regulates Section 404 of the CWA for permitting deposition or fill of waters of the United States and wetlands with a “significant nexus” to waters of the United States.

A field survey was conducted and identified wetlands. Approximately 100 feet outside of the disturbance area Palustrine Emergent Persistent Temporarily Flooded wetland vegetation (0.0005 acre) occurs (Tetra Tech, Inc., 2019)(**Appendix A** of the EA). The ditch enters an unnamed stream channel (a tributary to

Mud Creek) with riparian vegetation and may be considered fringe wetland vegetation. This fringe wetland is isolated from other surface water. The National Wetlands Inventory identifies vegetation in the discharge path to be freshwater emergent wetland and the stock pond (approximately 2 miles to the north) as freshwater pond (<http://www.fws.gov/wetlands/Data/Mapper.html>).

3.3.3.2 Proposed Action

For the purposes of this analysis, the downstream riparian vegetation that would receive the discharge is referred to as a fringe wetland.

With implementation of the proposed action, the fringe wetland noted in the field survey would be avoided during construction of the well pad and no fill material would be discharged to the fringe wetland. Water would be discharged into the unnamed stream channel that has fringe wetlands.

Discharging of groundwater would minimize impacts on fringe wetlands from erosion by dissipating the energy of the water discharged and monitoring the discharge to ensure no contaminants enter the riparian vegetation (Environmental Protection Measures #7 and #10). No fill material would be placed in fringe wetlands. The additional short-term flow would not affect the fringe wetland.

Groundwater would be discharged into the unnamed stream channel that has fringe wetlands. The discharge is not expected to adversely affect water quality in the fringe wetlands as the groundwater quality is good (see Section 3.3.2.1). Up to 5.2 million gallons of groundwater would be discharged into the fringe wetlands over a 72-hour period. This water would then flow into the freshwater stock pond. Groundwater quality identified in the feasibility study (Bureau of Reclamation, 2015) is higher quality (less total dissolved solids) than the surface water. Effects on the wetland from this short-term (3 days) discharge of higher quality water would have a negligible, short-term impact on the wetland.

3.3.3.3 No Action

Without implementation of the proposed action, water would not be discharged into the fringe wetlands or the stock pond. There would be no effect on the fringe wetlands.

3.3.4 Terrestrial Vegetation

3.3.4.1 Existing Conditions

The site is Great Plains mixed-grass prairie currently used for sheep grazing. Great Plains mixed-grass prairie is normally characterized by western wheatgrass (*Pascopyrum smithii*) as a dominant species with areas of mixed species composition of western wheatgrass and common shrub species such as silver sage (*Artemisia cana*), Wyoming big sagebrush (*Artemisia tridentata* var. *wyomingensis*), creeping juniper (*Juniperus horizontalis*), western snowberry (*Symphoricarpos occidentalis*), serviceberry (*Amelanchier alnifolia*), and shrubby cinquefoil (*Dasiphora fruticosa*) (Montana Natural Heritage Program, 2017). Areas that are used for grazing or farming often include non-native species such as Kentucky bluegrass (*Poa pratensis*) or crested wheatgrass (*Agropyron cristatum*) intermixed with western wheatgrass (Montana Natural Heritage Program, 2017). The county noxious weeds page for Judith Basin County lists one plant, yellow mignonette (*Reseda lutea*), as a noxious weed for this area (Montana Natural Heritage Program, 2019).

3.3.4.2 Proposed Action

With implementation of the proposed action, less than 1 acre of the current vegetation would be disturbed. Following activities, the topsoil would be regraded and seeded. The result would be established dryland grass, similar to the current species composition. By spring 2020, the site would be completely revegetated. Vehicles would be inspected for and cleaned of weed parts. The lease agreement requires the developer to clean vehicles before entering the site, and to monitor and treat (pull

3.3.4.3 No Action

Without implementation of the proposed action, the current grassland vegetation would not be disturbed. There would be no impact on weeds.

3.3.5 Wildlife

3.3.5.1 Existing Conditions

This area is classified as the Great Plains mixed-grass prairie ecosystem. Many species of mammals, birds (including migratory birds), reptiles, and amphibians are commonly associated with the mixed-grass prairie type and are listed in **Appendix B**.

According to the Montana Natural Information System, there have been no observations of bald eagles (*Haliaeetus leucocephalus*), golden eagles (*Aquila chrysaetos*), or greater sage-grouse (*Centrocercus urophasianus*) within 1 mile of the project area.

3.3.5.2 Proposed Action

With implementation of the proposed action, less than 1 acre of grassland habitat would be temporarily cleared and reclaimed, and human activity and noise would occur for approximately two months.

Clearing and drilling activities would occur outside of the migratory nesting season (January 1 through August 1), therefore, there would be no effects on migratory birds.

The area would be reclaimed to grassland vegetation. There would be temporary loss of less than 1 acre of grassland habitat and the wildlife that rely on grassland habitat from ground disturbance and disturbance from noise and human activity. Because the project area is adjacent to a county road, the impacts on wildlife from added noise and activity would be negligible.

Overall, the impacts on wildlife would be minor and long-term.

3.3.5.3 No Action

Without implementation of the proposed action, no ground disturbance would occur to temporarily remove habitat and no noise and human activity disturbances would occur that may cause wildlife to avoid the area. There would be no effect on wildlife under the No Action Alternative.

3.3.6 Threatened and Endangered Species

3.3.6.1 Existing Conditions

Section 7 of the Endangered Species Act (ESA) (7 U.S.C. § 136, 16 U.S.C. § 1531 et seq.) states that all federal departments and agencies shall, in consultation with the assistance of the Secretary of the Interior, ensure that any actions authorized, funded or carried out by them do not jeopardize the continued existence of any threatened or endangered species. An official species list was requested from the US Fish and Wildlife Service (USFWS, 2019b) (**Appendix C**). The Service lists three threatened, endangered, or candidate species:

- Canada lynx (*Lynx canadensis*),
- Grizzly bear (*Ursus arctos horribilis*), and
- North American wolverine (*Gulo gulo luscus*)

There are no crucial habitats within the project area (USFWS, 2019b).

Table 3: Federally-listed and Candidate Endangered and Threatened Species in the Well #3 Project Area, Judith Basin County, Montana.

Status	Common Name (Scientific Name)	Likelihood of Occurrence	Preferred Habitat
Threatened	Canada lynx (<i>Lynx canadensis</i>)	Not likely	Boreal forest into subalpine forest along the North Cascade and Rocky Mountain ranges. Lynx are most likely to persist in areas that receive deep snow and have high-density populations of snowshoe hares, the principal prey of lynx (USFWS, 2019).
Threatened	Grizzly bear (<i>Ursus arctos horribilis</i>)	Likely. Two grizzlies were observed together 32 miles away one time in 2017 (Montana FWP, 2019)	In Montana, grizzly bears primarily use meadows, seeps, riparian zones, mixed shrub fields, closed timber, open timber, sidehill parks, snow chutes, and alpine slabrock habitats (Montana FWP and MNHP, 2019).
Proposed Threatened	North American wolverine (<i>Gulo gulo luscus</i>)	Not likely	High-elevation alpine portions of Washington, Idaho, Montana, Wyoming, California, and Colorado. They prefer areas that are cold and receive enough winter precipitation to reliably maintain deep persistent snow late into the warm season. In the southern portion of the species' range where ambient temperatures are warmest, wolverine distribution is restricted to high elevations.

3.3.6.2 No Action

Without implementation of the proposed action, no ground disturbance or noise and human activity disturbance would occur that would affect threatened, endangered, or candidate species.

3.3.6.3 Proposed Action

A biological assessment was completed to determine the effects on listed and candidate species and submitted to USFWS on XX, 2019 (**Appendix C**). Because the preferred habitat for lynx and wolverine are not found near the project area and it is unlikely that lynx or wolverine use or pass through the project area, the proposed action would have **no effect** on Canada lynx and would be **not likely to jeopardize the continued existence** of North American Wolverine.

Construction and operations would cause short-term (2 months) surface disturbance of less than 1 acre of grassland habitat. Because two grizzly bears were observed 32 miles from the site and they are a wide ranging species, it is possible that grizzlies may traverse the area. Grizzly bears may avoid the area during construction activities due to the human disturbance. They may also avoid the area because the habitat is minimally important to support food sources during the Fall when grizzly bears enter hyperphagia and shift foraging towards nuts and berries found in forest habitats (Montana FWP and MNHP, 2019). The habitat characterizing the project area is composed of mixed-grass prairie and grazing land not likely to sustain an abundant population of plant species producing nuts and berries. The presence of human activity in the area and proximity to Ubet Road would also decrease the likelihood of grizzly bears using the area during the project. For these reasons, the project may affect but is not likely to adversely affect grizzly bears. To lessen the potential impact on grizzly bears, the Biological

Assessment in **Appendix C** lists conservation measures for work in bear habitat with requirements for minimizing bear attractants in the area and other measures to reduce the likelihood of human-bear interaction. Reclamation would return the area to its current condition.

Table 4 summarizes the threatened, endangered, and candidate species in the area, and the effect determinations.

Table 4: Threatened and Endangered Species Effect Determinations

Common Name (Scientific Name)	Effect Determination	Reason for Determination
Canada lynx (<i>Lynx canadensis</i>)	No effect	Because the preferred habitat for lynx are not found near the project area and it is unlikely that lynx or wolverine use or pass through the project area.
Grizzly bear (<i>Ursus arctos horribilis</i>)	May affect, not likely to adversely affect	2-month long project with less than 1 acre of disturbance in an area where grizzly bears are rare (one observation recorded 32 miles from the site).
North American wolverine (<i>Gulo gulo luscus</i>)	No effect	Because the preferred habitat for wolverine are not found near the project area and it is unlikely that lynx or wolverine use or pass through the project area.

3.3.7 Visual Quality

3.3.7.1 Existing Conditions

The project area is currently rural grazing land adjacent to a gravel road. No structures are visible from the site. Human activities are apparent in the area, including roads, homesteads, hay bales, and farm equipment. In the distance, tree covered hills are visible.

3.3.7.2 Proposed Action

With implementation of the proposed action, the clearing of less than 1 acre would remove the grassland vegetation and expose soil and a soil stockpile. This disturbance would be visible from the county road. During drilling, the drill rig and equipment would be seen. Once the drilling and testing are complete, during reclamation, the area would be graded and seeded with grassland seed mix. Until the grass is reestablished, the area would appear recently disturbed. Once grass is re-established, a viewer on the road would likely be able to tell that the site had been disturbed at one time. Over time as vegetation from surrounding areas mixes in with newly seeded areas, and grazing continues, the modification would become less apparent. Other than the well head, there would be no permanent structure on the site. The impact would be minor and long-term.

3.3.7.3 Alternative 1 - No Action

Without implementation of the proposed action, no disturbance would occur and there would be no impact on visual quality.

3.3.8 Cultural Resources

3.3.8.1 Existing Conditions

A field survey of the well site and pad area was conducted in May 2019 and found no cultural resources (Kuntz, 2019) (**Appendix D** of the EA).

3.3.8.2 Proposed Action

Under the proposed alternative, there would be no anticipated adverse effect on cultural resources. There is always a possibility that cultural resources could be discovered during clearing. In the event of an unanticipated discovery, work would immediately cease and the USACE archeologist would be contacted. Work would not continue until the District Archeologist has cleared the site.

3.3.8.3 No Action

There would be no effect on cultural resources.

3.3.9 Social and Economic Conditions

3.3.9.1 Existing Conditions

According to the feasibility report conducted for the water supply project (Bureau of Reclamation, 2015), rural residents must haul water or rely on inadequate groundwater for their drinking water. Groundwater from the shallower groundwater sources used must be treated. The surface water sources are limited, susceptible to drought conditions, and require costly treatment methods. There is also limited availability for water rights in the area. Due to climate change, the recharge rate of the current aquifer being used is expected to decrease, affecting the future quantity of water available to the community. The Town Harlowton and rural users rely on wells with low production and poor quality with poor quality water sources and sources that are susceptible to drought conditions.

3.3.9.2 Proposed Action

Up to 8 people would be employed for 45 to 60 days to drill and reclaim the area. Should the well provide favorable results, Well #3 would become a part of the MJRWS distribution system to serve the users and communities that choose to participate in the MJRWS. This system, to include Well #3, would provide a water source of improved quality for the serviced rural users and communities such as Harlowton.

3.3.9.3 No Action

Under the No Action Alternative, the rural population would not have potential access to an improved water source. The communities and rural users would continue to rely on surface water sources that are limited, susceptible to drought conditions, and require costly treatment methods. The communities would be forced to haul water from outside sources or treat inadequate groundwater in the area for their drinking water supply.

3.3.10 Cumulative Impacts

The Council on Environmental Quality's (CEQ) regulations (40 CFR 1500-1508) implementing the procedural provisions of the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), define cumulative effects as "the impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR 1508.7). Cumulative Effects can result from individually minor but collectively significant actions taking place over a period of time."

The cumulative effects analysis area is the proposed well location, irrigation channel, stream and stock pond. Other than the grazing that would resume following reclamation, the MJRWS pipeline is the only reasonably foreseeable action identified in the project area. While the construction and operation of the MJRWS pipeline is reasonably foreseeable, the timing and location are not certain.

The feasibility study (Bureau of Reclamation, 2015) described the MJRWS water pipeline project as:

“...a well field with a maximum daily demand of 1,750 gpm for the current population and 2,720 gpm for an estimated population in 2065. Further, four storage facilities and associated features are part of the distribution network; a 550,000 gallon tank northwest of Judith Gap, a 150,000 gallon tank southeast of Utica, a 550,000 gallon tank just west of Rothiemay, and a 100,000 gallon tank west of Broadview. Depending on the location and people to be served, approximately 230 miles of pipeline of diameters from 4 to 20 inches are proposed to be constructed.”

Ancillary facilities considered include staging areas, 1.5 miles of powerlines to the well fields and booster stations, wireless communications, and a pipeline disinfection system. Environmental protection measures cover construction, operations, reclamation, and monitoring to address farmlands, water resources and quality, vegetation (including invasive weeds), wetlands, fish and wildlife, listed species, cultural resources, paleontological resources, hazardous materials, and public safety.

The effects of the pipeline were analyzed in a programmatic environmental assessment completed as part of the feasibility report (Bureau of Reclamation, 2015), which is incorporated by reference. Most of the environmental consequences from the drilling and testing of Well #3 and the reclamation of the site would be over years before the pipeline construction would begin therefore the temporal scope of the Well #3 consequences does not overlap with the temporal scope of the pipeline.

Table 5 summarizes the direct and indirect effects of the water supply pipeline, along with the cumulative impacts when combined with the Well #3 project.

Table 5. Cumulative Effects of Water Pipeline and Well #3

Resource	Direct and Indirect Effects from the Pipeline Construction and Operation	Cumulative Effects when Direct and Indirect Effects of Well #3 Added
Geology and Soils	Soil disturbance was unquantified due to the programmatic nature of the analysis. Site reclamation would minimize long-term impacts. Future maintenance may disturb small amounts of soil.	Soil disturbance of less than 1 acre would have been reclaimed by the time additional disturbance for the water pipeline. Future disturbance would be analyzed in future NEPA documentation.
Water and Aquatic Resources	Small, short-term impact on quality minimized by environmental commitments. No impact on quantity. 993 acre-feet to 1,275 acre-feet per year of demand when the system is complete. Predicted head change of 0.2 feet at Big Spring no head change at Warm Spring. No impact on the groundwater system.	The impact on water quality from Well #3 would be over long before the pipeline construction. There would be no additional cumulative impacts. The 5.2 million gallons of groundwater removed would have been recharged by the time the water supply system removes additional water. There would be no cumulative impacts.

Resource	Direct and Indirect Effects from the Pipeline Construction and Operation	Cumulative Effects when Direct and Indirect Effects of Well #3 Added
Wetlands	Temporary disturbance of wetlands. Mitigation would ensure effects are short-term.	Effects on the water quality in the wetlands from Well #3 discharge would have been over before the impacts from pipeline construction would begin. There would be no cumulative impacts.
Terrestrial Vegetation	Soil disturbance leading to weed infestation minimized by reclamation and a weed treatment plan.	Weeds would have been monitored and treated by the time additional disturbance could affect the spread of weeds due to the pipeline construction and operation. There would be no cumulative impacts.
Wildlife	Temporary disturbance of wildlife in the area. Effects on avian species minimized by mitigation measures on the power lines. No long-term impacts on wildlife.	There would be no impacts on wildlife from Well #3, so there would be no cumulative effects.
Federally Listed Species	There would be no impacts to species of concern and federally listed species.	The impacts on federally listed species would be over before the pipeline construction would begin, therefore there would be no cumulative effects.
Visual Quality*	Minor disturbance, generally along roadsides during construction. Reclamation would reduce visual impacts; however, they would remain visible for the long-term.	The Well #3 development would have similar impacts. Cumulative minor, long-term effects.
Cultural Resources	No impact anticipated. Through proper pre-design cultural resource surveys, impacts should largely be avoided.	No direct or indirect effects on cultural resource from Well #3 so there would be no cumulative effects.
Social and Economic	Temporary employment and increase in economic activity associated with construction. Minimal long-term employment for system operation. Businesses that provided services related to water quality, bottled water or appliances may see decreased activity. No Environmental Justice impacts.	The long-term effect would be improved water quality. The employment created by the Well #3 construction would be over by the time the pipeline construction begins.

* Visual Quality was not an analysis issue in the programmatic environmental assessment.

4.0 COORDINATION

Preparation of this EA and draft Finding of No Significant Impact (FONSI) is being coordinated with appropriate Tribal, Congressional, Federal, State, and local interests, as well as environmental groups and other interested parties. List the federal and state agencies and Non-Government Organizations (NGO's) that were contacted during the evaluation or that will receive a copy of the EA for review are shown in Section 1.5.

5.0 MITIGATION

The duration of drilling activities and site disturbance through reclamation would be no more than 2 months. Once the site is reclaimed, only the well would remain and there would be no further impacts until the pipeline is constructed, which would be evaluated in a future NEPA document. The applicant has included standard procedures to minimize and eliminate impacts to the point where impacts would be negligible or there would be no impacts. No mitigation is required.

The site would be monitored to ensure noxious weed infestations do not occur or spread as a result of the project.

PREPARED BY

Cameo Flood, NEPA Specialist, prepared the EA with assistance from Caitlin Gill, Wildlife Biologist on the wildlife section (Tetra Tech, Inc.) with a review by Bob Church (Great West Engineering). The address of the preparers is: Tetra Tech, Inc, 2525 Palmer Street, Suite 2, Missoula, MT 59808.



June 28, 2019

Preparer
Cameo Flood
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Date

USACE Reviewer

Date

Christopher Weber
Environmental Resource Specialist

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7.0 ENVIRONMENTAL COMPLIANCE

Bald and Golden Eagle Protection Act, 16 U.S.C. Sec. 668, 668 note, 669a-668d,

In compliance. This Act prohibits the taking or possession of and commerce in bald and golden eagles, with limited exceptions for the scientific or exhibition purposes, for religious purposes of Indian tribes, or for the protection of wildlife, agriculture or preservation of the species. See Section 3.3.5, no bald or golden eagles use the area.

Clean Air Act, as amended, 42 U.S.C. 1857h-7, et seq.

In compliance. See Section 3.3.1 of the EA. The project area is not in a non-attainment area and not near a Class 1 airshed. Emissions would be limited to vehicle and heavy equipment used on site for a limited period. No air permit is needed to comply with the Montana Clean Air Act.

Clean Water Act, as amended, (Federal Water Pollution Control Act) 33 U.S.C. 1251, et seq.

In compliance. The objective of this Act is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters (33 U.S.C. 1251). See Section 3.3.2 of the EA. No dredge or fill material would be discharged. Groundwater discharged to surface water does not require a permit. If acid fracturing is necessary, any discharge would be stored in a tank and disposed of off-site at an approved disposal site. Tanks would have appropriate containment systems to prevent discharge from entering the project area in the event of a leak or spill.

Endangered Species Act, as amended, 16 U.S.C. 1531, et seq.

In compliance. In accordance with Section 7 of the Endangered Species Act of 1973, as amended, the USFWS was contacted on May 14 regarding Phase 1 Well #3 project. A biological assessment was submitted to USFWS on May XX, 2019 including determinations that there would be no effect on Canada lynx and North American Wolverine, and may affect, not likely to adversely affect grizzly bear. Information consultation was conducted and the USFWS concurred with the determinations on XX, 2019.

Environmental Justice (E.O. 12898).

In compliance. Federal agencies shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States. The project does not have disproportionately high and adverse impacts on minority or low-income populations because no minority or low-income populations occur.

Fish and Wildlife Coordination Act, as amended, 16 U.S.C. 661, et seq.

In compliance. In accordance with Section 7 of the Endangered Species Act of 1973, as amended, a Biological Assessment was completed and submitted to the US Fish and Wildlife Service who concurred with the effects determinations on June XX, 2019. The Montana Fish, Wildlife, and Parks was contacted by letter on May 16, 2019 with an opportunity to comment on the project.

Invasive Species E.O. 13112 and E. O. 13751

In compliance. Federal agencies are to expand and coordinate efforts to prevent the introduction and spread of invasive plant species and to minimize the economic, ecological, and human health impacts that invasive species may cause. Measures are included in the lease to monitor for and treat through mowing or pulling any weeds that occur on the disturbed are to the satisfaction of the landowner. The proposed action is in compliance with and meets the intent of the E.O.

Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712) as amended.

In compliance. The Migratory Bird Treaty Act (MBTA) of 1918 is the domestic law that affirms, or implements, the United States' commitment to four international conventions with Canada, Japan, Mexico, and Russia for the protection of shared migratory bird resources. The MBTA governs the taking, killing, possessing, transporting, and importing of migratory birds, their eggs, parts, and nests. The take of all migratory birds is governed by the MBTA's regulation of taking migratory birds for educational, scientific, and recreational purposes and requiring harvest to be limited to levels that prevent over-utilization. Executive Order 13186 (2001) directs executive agencies to take certain actions to implement the Act.

Ground disturbing activities would occur between August 15 and October 15, 2019, outside of the nesting period (January 1 through August 15) to avoid impacts on active nests.

National Environmental Policy Act, as amended, 42 U.S.C. 4321, et seq.

In compliance. In accordance with the National Environmental Policy Act and implementing regulations. This EA was prepared on **June 30, 2019** and letters were sent to stakeholders and tribes requesting comments. <https://www.nwo.usace.army.mil/Missions/Civil-Works/Planning/Project-Reports/>. A Finding of No Significant Impact (FONSI) has been prepared for the proposed action. An Environmental Impact Statement (EIS) is not required.

National Historic Preservation Act, as amended, 16 U.S.C. 470a, et seq.

In compliance. A cultural resources file search in 2017 } revealed {no/presence of recorded historic properties or cultural sites in the project area. In the event of an unanticipated discovery of cultural resources, work would be halted immediately and a district archeologist would be notified. The work would not continue until the area is inspected by a staff archeologist. If he or she determines that the discovery requires further consultation, the appropriate State Historic Preservation Office would be notified.

Noise Control Act of 1972, 42 U.S.C. Sec. 4901 to 4918.

In compliance. Noise emission levels at the project site would increase above current levels temporarily due to construction; however, appropriate measures would be taken to keep the noise level within compliance levels.

Protection of Wetlands (E.O. 11990).

In compliance. Federal agencies shall take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities. Each agency, to the extent permitted by law, shall avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds (1) that there is no practicable alternative to such construction, and (2) that the proposed action includes all practicable measures to minimize harm to wetlands, which may result from such use. In making this finding, the head of the agency may take into account economic, environmental and other pertinent factors. Each agency shall also provide opportunity for early public review of any plans or proposals for new construction in wetlands.

A field survey was conducted to identify wetlands (**Appendix A** of the EA). Wetlands would not be adversely affected by the project. Erosion would be minimized by dispersing the energy of discharged water and monitoring. The groundwater is high quality water and would not cause adverse water quality impacts.

APPENDIX A- WETLAND FIELD REVIEW

Wetland Summary

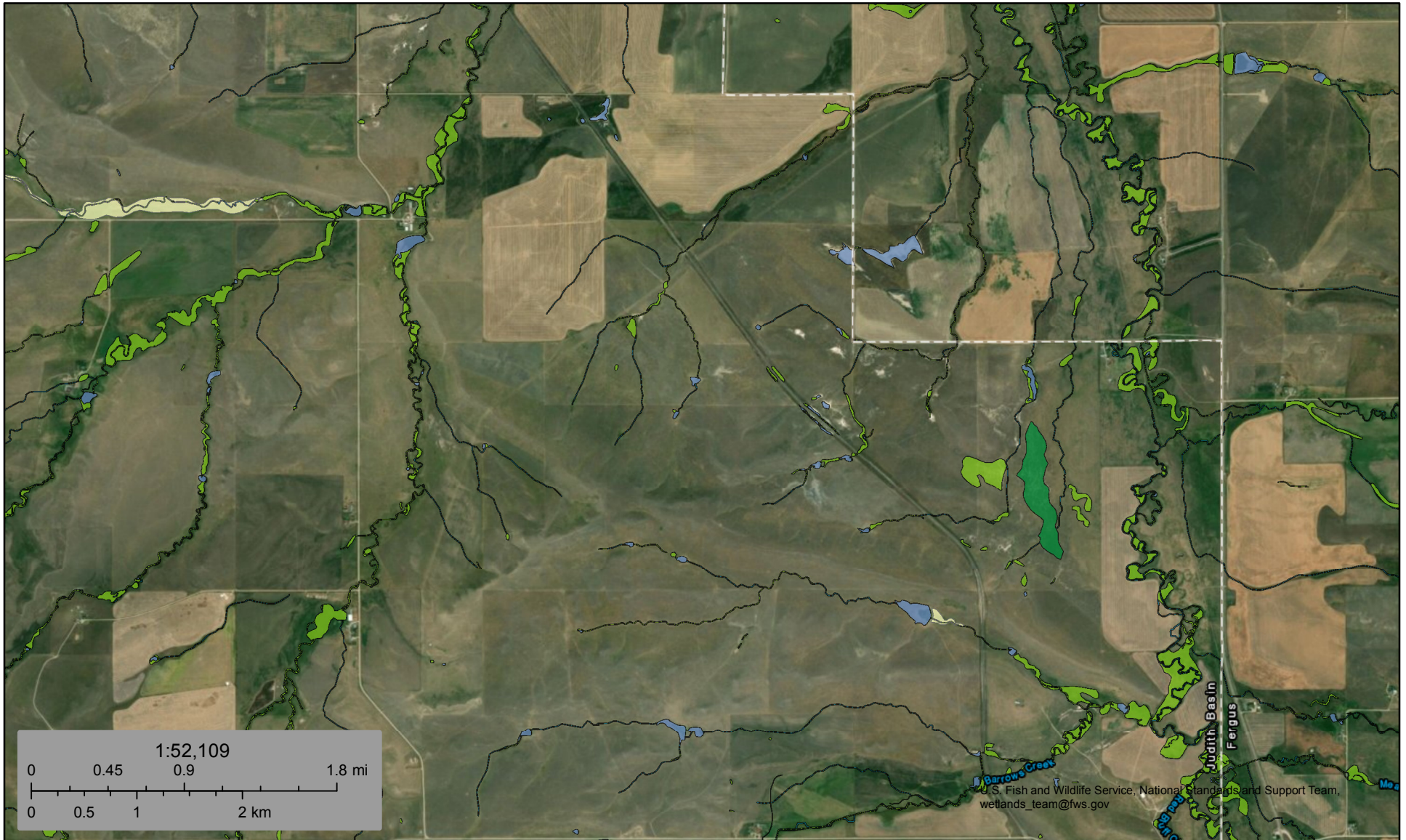
Tetra Tech personnel surveyed an area 3.4-acres in size on May 13, 2019 to evaluate the presence of wetlands and other waters of the U.S. The evaluation was conducted in accordance with methodology set forth in the USACE Wetland Delineation Manual (USACE, 1987) and the USACE Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (USACE, 2010). Attached to this document is a site map, completed wetland determination form, and photograph.

One wetland was identified in a small drainage feature per the hand excavation of two test plots, TP-1 (within the wetland), and TP-2 (adjacent upland). The wetland originates inside the survey boundary and flows to the north. This Palustrine Emergent Persistent Temporarily Flooded (PEM1A) wetland is approximately 51-feet long, 4-feet wide, and occupies 0.005-acres. Vegetation is dominated by Kellogg's sedge (*Carex kelloggii*) and Timothy (*Phleum pretense*). Soil textures are silty clay and clay. Soil exhibited low chroma (7.5YR 3/1) and redoximorphic concentrations (7.5YR 4/4 and 10YR 2/1) between 1.5 and 13.5-inches below ground surface. The hydric soil indicator was Redox Dark Surface (F6) and hydrology included the presence of Algal Mat or Crust (B4).

To determine the jurisdictional status of this wetland local hydrology would have to be evaluated further and a consultation with the USACE would be required.











View of wetland looking north



July 1, 2019

Wetlands

- | | | |
|--|---|--|
|  Estuarine and Marine Deepwater |  Freshwater Emergent Wetland |  Lake |
|  Estuarine and Marine Wetland |  Freshwater Forested/Shrub Wetland |  Other |
| |  Freshwater Pond |  Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

APPENDIX B WILDLIFE SPECIES ASSOCIATED WITH MIXED GRASS PRAIRIE HABITATS

Well #3 is classified as this ecological system according to the MNHP Map Viewer by Land Cover type.

Wildlife Species Associated with Great Plains Mixed-grass Prairie Ecosystems (Montana Natural Heritage Program, 2017) and their status (SOC-species of concern or PSOC-potential species of concern) include:

Mammals

- Preble's Shrew (*Sorex preblei*) SOC
- Dwarf Shrew (*Sorex nanus*) SOC
- Merriam's Shrew (*Sorex merriami*) SOC
- Little Brown Myotis (*Myotis lucifugus*) SOC
- Eastern Red Bat (*Lasiurus borealis*) SOC
- Hoary Bat (*Lasiurus cinereus*) SOC
- Spotted Bat (*Euderma maculatum*) SOC
- Pallid Bat (*Antrozous pallidus*) SOC
- Black-tailed Prairie Dog (*Cynomys ludovicianus*) SOC
- Swift Fox (*Vulpes velox*) SOC
- Black-footed Ferret (*Mustela nigripes*) SOC
- Hayden's Shrew (*Sorex haydeni*) PSOC
- Silver-haired Bat (*Lasionycteris noctivagans*) PSOC
- Hispid Pocket Mouse (*Chaetodipus hispidus*) PSOC
- White-footed Mouse (*Peromyscus leucopus*) PSOC
- Meadow Jumping Mouse (*Zapus hudsonius*) PSOC
- Porcupine (*Erethizon dorsatum*) PSOC
- Masked Shrew (*Sorex cinereus*)
- Vagrant Shrew (*Sorex vagrans*)
- Long-eared Myotis (*Myotis evotis*)
- Western Small-footed Myotis (*Myotis ciliolabrum*)
- Big Brown Bat (*Eptesicus fuscus*)
- Eastern Cottontail (*Sylvilagus floridanus*)
- Mountain Cottontail (*Sylvilagus nuttallii*)
- Desert Cottontail (*Sylvilagus audubonii*)
- White-tailed Jack Rabbit (*Lepus townsendii*)
- Least Chipmunk (*Tamias minimus*)
- Yellow-bellied Marmot (*Marmota flaviventris*)
- Richardson's Ground Squirrel (*Urocitellus richardsonii*)
- Thirteen-lined Ground Squirrel (*Ictidomys tridecemlineatus*)
- Northern Pocket Gopher (*Thomomys talpoides*)
- Olive-backed Pocket Mouse (*Perognathus fasciatus*)
- Ord's Kangaroo Rat (*Dipodomys ordii*)
- Western Harvest Mouse (*Reithrodontomys megalotis*)
- Deer Mouse (*Peromyscus maniculatus*)
- Northern Grasshopper Mouse (*Onychomys leucogaster*)
- Bushy-tailed Woodrat (*Neotoma cinerea*)
- Meadow Vole (*Microtus pennsylvanicus*)
- Montane Vole (*Microtus montanus*)
- Long-tailed Vole (*Microtus longicaudus*)
- Prairie Vole (*Microtus ochrogaster*)
- Sagebrush Vole (*Lemmiscus curtatus*)
- Western Jumping Mouse (*Zapus princeps*)
- Coyote (*Canis latrans*)
- Gray Wolf (*Canis lupus*)
- Red Fox (*Vulpes vulpes*)
- Raccoon (*Procyon lotor*)
- Least Weasel (*Mustela nivalis*)
- Long-tailed Weasel (*Mustela frenata*)
- Badger (*Taxidea taxus*)
- Striped Skunk (*Mephitis mephitis*)
- Bobcat (*Lynx rufus*)
- Mountain Lion (*Puma concolor*)
- Elk (*Cervus canadensis*)

- Mule Deer (*Odocoileus hemionus*)
- White-tailed Deer (*Odocoileus virginianus*)

Birds

- Ferruginous Hawk (*Buteo regalis*) SOC
- Golden Eagle (*Aquila chrysaetos*) SOC
- Greater Sage-Grouse (*Centrocercus urophasianus*) SOC
- Sharp-tailed Grouse (*Tympanuchus phasianellus*) SOC
- Mountain Plover (*Charadrius montanus*) SOC
- Long-billed Curlew (*Numenius americanus*) SOC
- Burrowing Owl (*Athene cunicularia*) SOC
- Sprague's Pipit (*Anthus spragueii*) SOC
- Loggerhead Shrike (*Lanius ludovicianus*) SOC
- Baird's Sparrow (*Centronyx bairdii*) SOC
- McCown's Longspur (*Rhynchophanes mccownii*) SOC
- Chestnut-collared Longspur (*Calcarius ornatus*) SOC
- Bobolink (*Dolichonyx oryzivorus*) SOC
- Short-eared Owl (*Asio flammeus*) PSOC
- Common Poorwill (*Phalaenoptilus nuttallii*) PSOC
- Cassin's Kingbird (*Tyrannus vociferans*) PSOC
- Eastern Bluebird (*Sialia sialis*) PSOC
- Dickcissel (*Spiza americana*) PSOC
- Northern Pintail (*Anas acuta*)
- Blue-winged Teal (*Spatula discors*)
- Cinnamon Teal (*Spatula cyanoptera*)
- Northern Shoveler (*Spatula clypeata*)
- Gadwall (*Mareca strepera*)
- Lesser Scaup (*Aythya affinis*)
- Turkey Vulture (*Cathartes aura*)
- Northern Harrier (*Circus hudsonius*)
- Swainson's Hawk (*Buteo swainsoni*)
- Red-tailed Hawk (*Buteo jamaicensis*)
- Rough-legged Hawk (*Buteo lagopus*)

- Pronghorn (*Antilocapra americana*)
- American Kestrel (*Falco sparverius*)
- Merlin (*Falco columbarius*)
- Gyrfalcon (*Falco rusticolus*)
- Prairie Falcon (*Falco mexicanus*)
- Black-bellied Plover (*Pluvialis squatarola*)
- Killdeer (*Charadrius vociferus*)
- Willet (*Tringa semipalmata*)
- Upland Sandpiper (*Bartramia longicauda*)
- Marbled Godwit (*Limosa fedoa*)
- Sanderling (*Calidris alba*)
- Baird's Sandpiper (*Calidris bairdii*)
- Stilt Sandpiper (*Calidris himantopus*)
- Wilson's Phalarope (*Phalaropus tricolor*)
- Mourning Dove (*Zenaidura macroura*)
- Great Horned Owl (*Bubo virginianus*)
- Snowy Owl (*Bubo scandiacus*)
- Long-eared Owl (*Asio otus*)
- Common Nighthawk (*Chordeiles minor*)
- Say's Phoebe (*Sayornis saya*)
- Western Kingbird (*Tyrannus verticalis*)
- Eastern Kingbird (*Tyrannus tyrannus*)
- Horned Lark (*Eremophila alpestris*)
- Purple Martin (*Progne subis*)
- Tree Swallow (*Tachycineta bicolor*)
- Violet-green Swallow (*Tachycineta thalassina*)
- Northern Rough-winged Swallow (*Stelgidopteryx serripennis*)
- Bank Swallow (*Riparia riparia*)
- Cliff Swallow (*Petrochelidon pyrrhonota*)
- Barn Swallow (*Hirundo rustica*)
- Black-billed Magpie (*Pica hudsonia*)
- American Crow (*Corvus brachyrhynchos*)
- Common Raven (*Corvus corax*)
- Rock Wren (*Salpinctes obsoletus*)
- House Wren (*Troglodytes aedon*)
- Mountain Bluebird (*Sialia currucoides*)

- European Starling (*Sturnus vulgaris*)
- American Tree Sparrow
(*Spizelloides arborea*)
- Clay-colored Sparrow (*Spizella pallida*)
- Field Sparrow (*Spizella pusilla*)
- Vesper Sparrow (*Pooecetes gramineus*)
- Lark Sparrow (*Chondestes grammacus*)
- Lark Bunting (*Calamospiza melanocorys*)
- Savannah Sparrow
(*Passerculus sandwichensis*)
- Grasshopper Sparrow
(*Ammodramus savannarum*)
- Lapland Longspur (*Calcarius lapponicus*)
- Snow Bunting (*Plectrophenax nivalis*)
- Western Meadowlark (*Sturnella neglecta*)
- Rusty Blackbird (*Euphagus carolinus*)
- Brewer's Blackbird
(*Euphagus cyanocephalus*)
- Common Grackle (*Quiscalus quiscula*)
- Brown-headed Cowbird (*Molothrus ater*)
- Hoary Redpoll (*Acanthis hornemanni*)
- Lesser Goldfinch (*Spinus psaltria*)
- American Goldfinch (*Spinus tristis*)

Reptiles

- Greater Short-horned Lizard
(*Phrynosoma hernandesi*) SOC
- Plains Hog-nosed Snake
(*Heterodon nasicus*) SOC
- Western Milksnake (*Lampropeltis gentilis*)
SOC
- Smooth Greensnake (*Opheodrys vernalis*)
SOC
- Common Sagebrush Lizard
(*Sceloporus graciosus*)
- North American Racer (*Coluber constrictor*)
- Gophersnake (*Pituophis catenifer*)
- Terrestrial Gartersnake
(*Thamnophis elegans*)
- Plains Gartersnake (*Thamnophis radix*)
- Common Gartersnake (*Thamnophis sirtalis*)
- Prairie Rattlesnake (*Crotalus viridis*)

Amphibians

- Great Plains Toad (*Anaxyrus cognatus*) SOC
- Western Tiger Salamander
(*Ambystoma mavortium*)
- Woodhouse's Toad (*Anaxyrus woodhousii*)
- Boreal Chorus Frog (*Pseudacris maculata*)
- Plains Spadefoot (*Spea bombifrons*)

**APPENDIX C - BIOLOGICAL ASSESSMENT FOR THREATENED,
ENDANGERED, AND CANDIDATE SPECIES**

Biological Assessment for the Musselshell-Judith Water Supply Project Phase 1 Well #3

June 26, 2019

PRESENTED TO

Army Corps of Engineers
Omaha District

PRESENTED BY

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Species	Listing Status	Effects Determinations on Species	Effects Determination on Critical Habitat
Canada Lynx (<i>Lynx canadensis</i>)	Threatened	No effect	No effect
Grizzly Bear (<i>Ursus arctos horribilis</i>)	Threatened	May affect, not likely to adversely affect	Not applicable
North American Wolverine (<i>Gulo gulo luscus</i>)	Proposed	Not likely to jeopardize the continued existence	Not applicable

Prepared by:



6/26/2019

Caitlin Gill - Wildlife Biologist

Date

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APPENDIX A IPAC SPECIES LIST

ACRONYMS/ABBREVIATIONS

Acronyms/Abbreviations	Definition
BA	Biological Assessment
EA	Environmental Assessment
IPaC	Information for Planning and Consultation
PAC	Primary Conservation Area
CMRWA	Central Montana Regional Water Authority
gpm	gallons per minute
MJRWS	Musselshell-Judith Rural Water System

1.0 PROPOSED ACTION

The proposed action is the Musselshell-Judith Water Supply Project Phase 1 Well #3 (Well #3). This project is located approximately 3.5 miles west of Garneill, Montana and 4.0 miles south of Buffalo, Montana in Judith Basin County in T12N, R15E, S34 (see **Figure 1**). The area is in the headwaters of the Judith River, although the river is more than 20 miles from the project. The land use in the area is rangeland with grassland cover. The overall Musselshell-Judith Water Supply Project would be implemented in 5 phases with the next phase (Phase 2) including initiation of construction for a water supply pipeline. A separate Biological Assessment (BA) would be prepared for the pipeline.

The proposed action consists of drilling a water supply well and conducting pumping tests.

Well #3 includes construction of a 8.75-inch diameter well that would be approximately 2,800 feet deep into the Madison Aquifer and would include development of the well and conducting pumping tests and acid fracture simulation if necessary. The Action Area shown in **Figure 2** is contained within a 1-mile radius around Well #3 and the discharge path of water flowing from the well during pump testing. A schematic drawing of the proposed well is shown in **Figure 3**. The implementation schedule for drilling the well is anticipated to be in summer 2019 with site reclamation completed in fall 2019.

To prepare for the well construction, slightly less than 1 acre would be cleared and topsoil removed and stockpiled on site. A drill rig would be stationed to begin drilling within the cleared area. Cuttings (soil and rocks) removed during the drilling would be spread out over the cleared area (pad). No fill material would be discharged into waters of the United States.

Water pumped from the well (at the rate of up to 1200 gpm for 72 hours for a maximum of 5.2 million gallons) would be discharged on the ground surface. Water would be discharged through an “energy dissipation device” to eliminate the potential for erosion. The device is a large pipe with many smaller pipes extending approximately 50 feet to either side. The water will be dispersed over approximately 0.75 acres until it enters the ditch after approximately 500 feet. What does not infiltrate into the ground at the project site would run into an irrigation ditch and eventually into an unnamed stream if it does not infiltrate or evaporate before the stream is reached (**Figure 2**). If production of 1200 gpm cannot be obtained, acid fracture techniques may be used to increase the flow. Acid fracture consists of inserting chemical (20 percent hydrochloric acid solution) into the well to dissolve materials in the rock, such as limestone, to increase the size of openings and allow more water to flow. If acid fracturing is used, well discharges would be collected and trucked to a permitted, off-site disposal area. Tanks used to capture discharge would have secondary containment systems to prevent discharge from entering the project area in the event of a leak or spill. The disposal facility is located near Sumatra, Montana in Rosebud County. Up to ten trucks would haul water for disposal. Acid fracture produced water and chemicals would not be disposed of on site.

Once the testing is completed, equipment would be removed from the site, cuttings would be graded, and the stockpiled topsoil would be placed on top of the cuttings, graded and seeded for reclamation. Reclamation would return the area to its current condition. The lease agreement with the landowner of the well site requires monitoring and control of weeds.

The well would remain in place to eventually be used as a water supply well for the MJRWS when the financing and construction of the pipeline is completed.

The Central Montana Regional Water Authority (CMRWA) is a public, non-profit organization consisting of a coalition of cities and towns in central Montana who have a long legacy of inadequate drinking water supplies. The CMRWA was legally created in 2003 as a public water authority in the state of Montana. The CMRWA proposed the Musselshell-Judith Rural Water System (MJRWS) with a goal to provide a reliable and adequate quantity of high-quality drinking water for the member communities.

1.1 PROPOSED PROJECT CONSERVATION/MITIGATION MEASURES

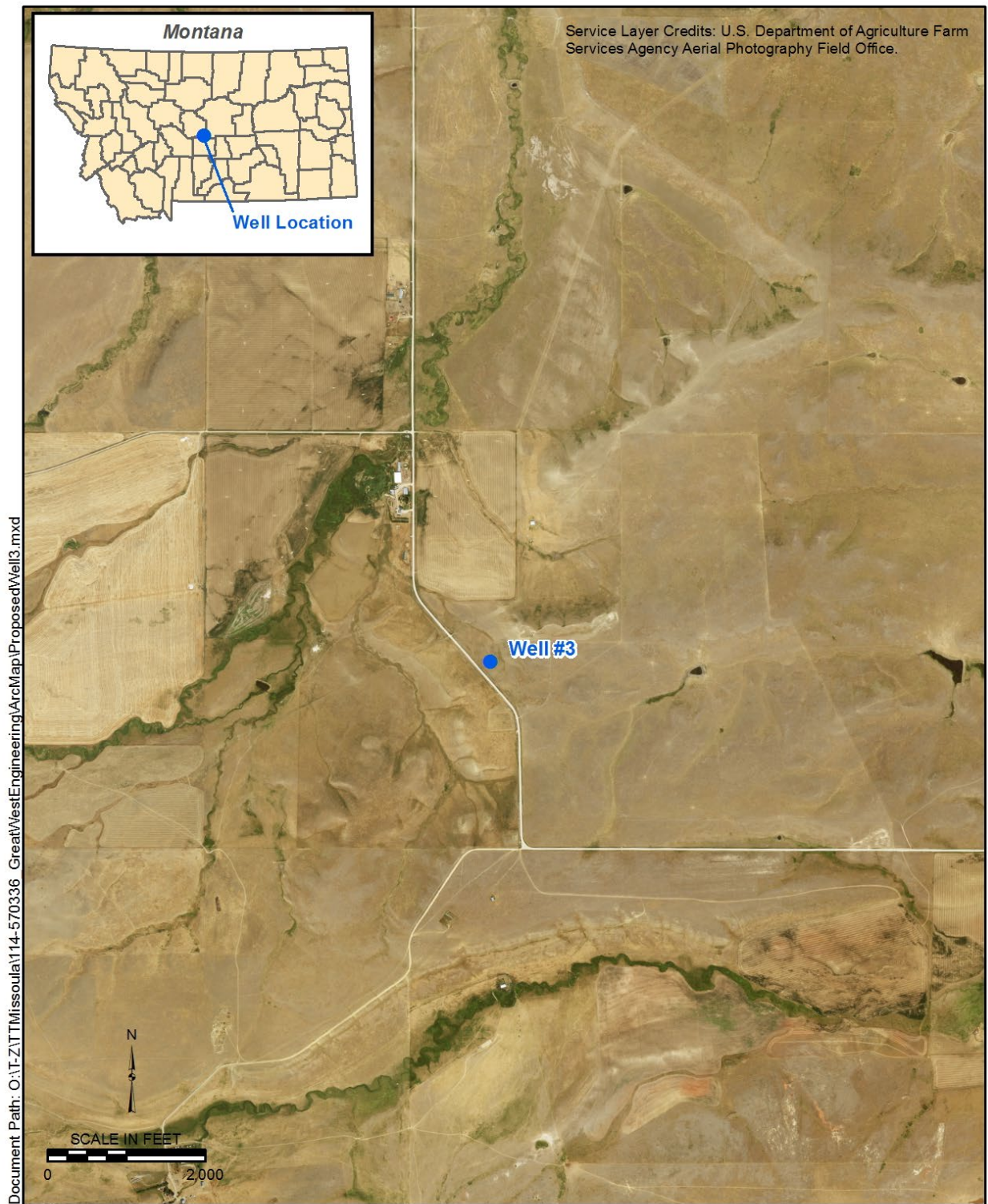
The duration of drilling activities and site disturbance through reclamation would be no more than 2 months. Vegetation from reclamation seeding is expected to be reestablished within 1 year. Once the site is reclaimed, only the well would remain and there would be no further impacts until the pipeline is constructed, which would be evaluated in a future NEPA document due to the need for federal funding. The applicant has included standard procedures to minimize and eliminate impacts to the point where impacts would be negligible or there would be no impacts. No mitigation is required.

The site would be monitored to ensure noxious weed infestations do not occur or spread as a result of the project.

The clearing, drilling, testing, and reclamation would occur between August 15 and October 15, 2019.

In the event that acid fracturing is needed, any discharge would be disposed of off-site in a permitted disposal area to minimize the impact of acid fracturing within the Action Area. Acid fracture produced water and chemical would not be disposed of on site and would instead be transported by truck to an authorized disposal facility located near Sumatra, Montana. Before disposal, discharge would be stored in a tank with a secondary containment system to prevent discharge from entering the project area in the event of a leak or spill. A spill clean-up kit would also be available onsite.

Figure 1. Project Location



Date: 6/26/2019

Legend

- Well Location

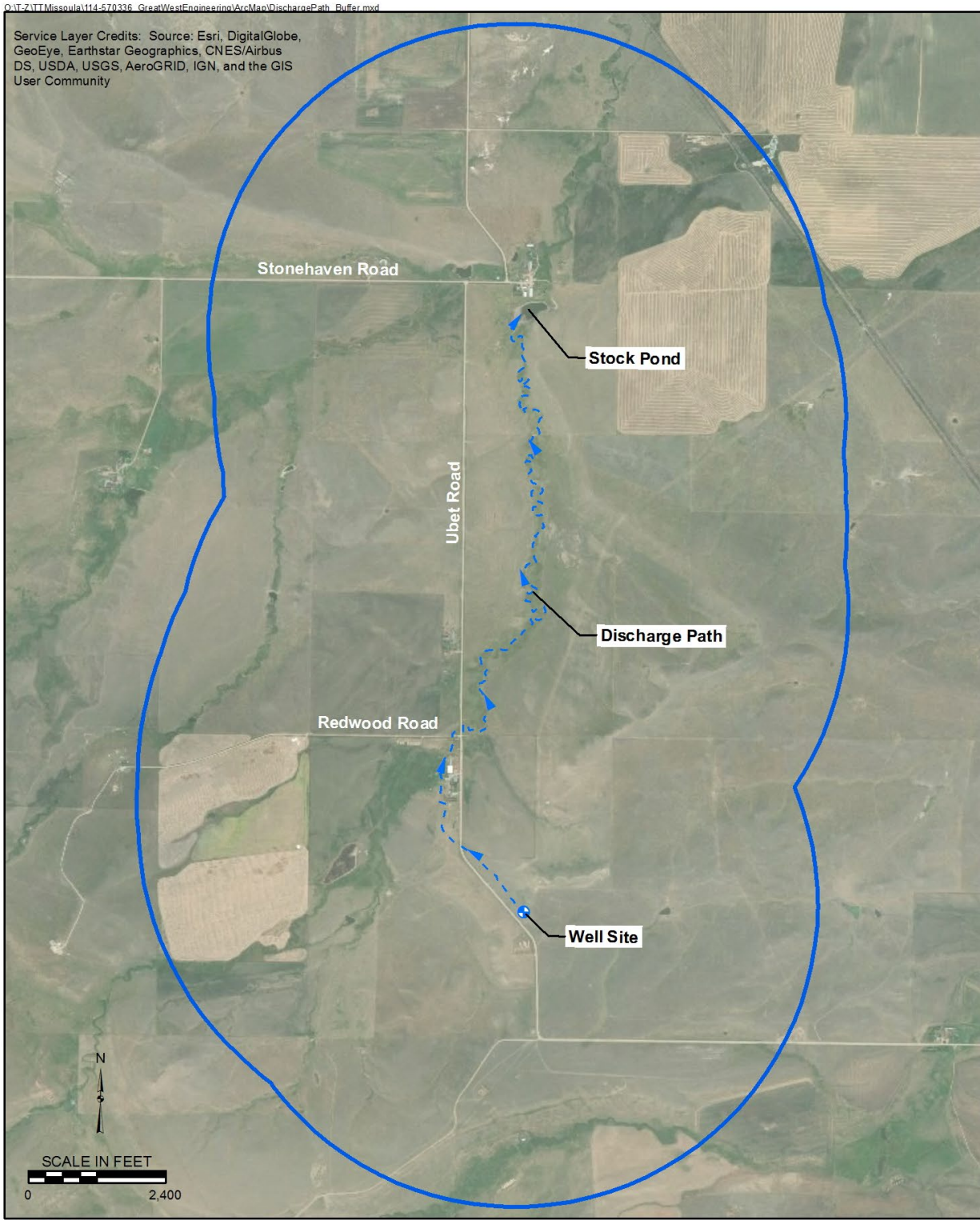
Location Map

Well #3

Musselshell-Judith Rural Water System

Judith Basin County, Montana

Figure 2. Action Area



O:\T-Z\IT\Missoula\114-570336_GreatWest\Engineering\ArcMap\DischargePath_Buffer.mxd

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

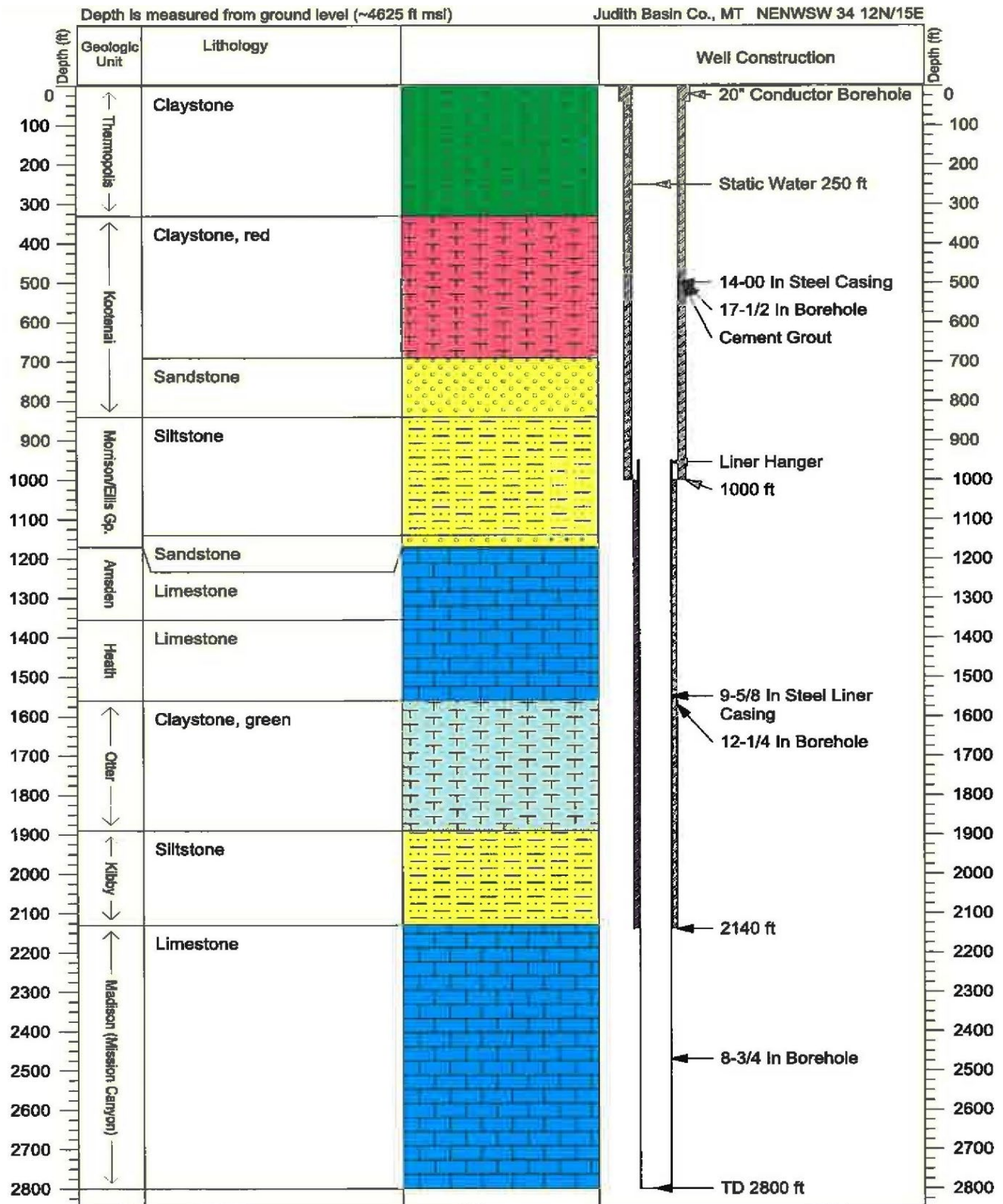
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6/26/2019

Date: 6/26/2019

- Legend**
- Well #3
 - Discharge Path
 - One Mile Buffer

Well #3 Discharge Path
Musselshell-Judith Water System
Judith Basin County, Montana

Figure 3. Well Construction Illustration



To accomplish the project, the following measures would be applied to minimize the potential for adverse environmental effects. These Environmental Protection Measures are summarized in the General Contractor's environmental responsibilities during construction:

- 1) Topsoil would be stripped from all work areas and stockpiled.
- 2) Drilling cuttings and drilling mud would be contained on-site utilizing settling pits or other approved measures. Once drilling is completed this material would be spread on the site, graded, and topsoil would be replaced.
- 3) The disturbed area would be reseeded with native dryland grass seed mix.
- 4) Contractor would be required to have a Montana Water Well Contractor's License and comply with all Montana laws
- 5) Contractor would be responsible for washing all equipment before entering the site to control the spread of noxious weeds.
- 6) Bulk storage of fuel and other petroleum-based products would not be allowed on site but the contractor would have spill kits available on site.
- 7) Construction would be monitored so that the Contractor does not release any contaminants on the site or adjacent lands.
- 8) The Contractor would be required to implement measures to control off site vehicle tracking.
- 9) All project waste and debris would be removed and properly disposed of by the end of the project.
- 10) Discharge of untreated groundwater during the pump test is allowed under Montana law. However, the drainage course would be monitored during testing to insure there is no erosional damage from the pump test water or damage to roads/drainage structures. If any damage occurs the Contractor would be responsible for repairing it.
- 11) If acid stimulation of the well is required, acid used for stimulation would be stored in a container that has a secondary containment to prevent spill from entering the environment. A spill clean-up kit would also be available onsite. The Contractor would be required to provide tanks to store the acid stimulated discharge water from the well. This water would be disposed of at an off-site permitted disposal area. No acid fracturing produced water or chemicals would be disposed of on-site.
- 12) In the event of an unanticipated discovery of cultural resources, work would be halted immediately and a district archeologist would be notified. The work would not continue until the area is inspected by a staff archeologist. If he or she determines that the discovery requires further consultation, the appropriate State Historic Preservation Office would be notified

CONSERVATION MEASURES FOR WORK IN BEAR HABITAT

A. Description. This project is located within bear habitat, adhere to the following requirements:

- 1) No guns or dogs are allowed on the project site during construction.
- 2) Stockpiles of topsoil must be contained on the one-acre Action Area and may not be stored offsite or on environmentally sensitive areas. Environmentally sensitive areas include cultural sites and wetlands.
- 3) Promptly clean up any project related spills, litter, garbage, debris, etc.
- 4) Camping is not allowed on the project site.
- 5) Store all food, food related items, petroleum products, antifreeze, garbage, and personal hygiene items inside a closed, hard-sided vehicle or commercially manufactured bear resistant container.
- 6) Remove garbage from the project site daily and dispose of it in accordance with all applicable regulations.

2.0 DESCRIPTION OF THE ACTION AREA

The water well is located along Ubet Road in Judith Basin County and located approximately 3.5 miles west of Garneill, Montana (see **Figure 2**). The Action Area is in Section 34, Township 12 North, Range 15 East. The Action Area is defined as the area potentially affected by construction and the operation of Well #3. The proposed action would result in noise and disturbance likely contained within a 1-mile radius around the well location and along the water discharge pathway shown in **Figure 2**. **Figure 2** also shows an aerial view of the well location and the discharge path of water flowing from the well location to the stock pond. Water discharged from pumping tests would run into an irrigation ditch and eventually into an unnamed stream if it does not infiltrate or evaporate before the stream is reached. The discharge path would terminate in a stock pond located on private property about 2 miles North from the location of Well #3.

3.0 CURRENT STATUS, HABITAT USE, AND BEHAVIOR OF THREATENED AND ENDANGERED SPECIES IN THE ACTION AREA

According to the official species list for the project obtained from the U.S. Fish and Wildlife Service (**Appendix A**), threatened and endangered species listed or proposed that may be found near the project or have designated critical habitat include the Canada lynx (*Lynx canadensis*, threatened), Grizzly Bear (*Ursus arctos horribilis*, threatened), and North American wolverine (*Gulo gulo luscus*, proposed) (US Fish and Wildlife Service, 2019).

3.1 HABITAT

The current habitat where well construction would occur is open grassland located on private property. The area is characterized by Rocky Mountain mixed-grass prairie and there are no forest habitat types surrounding the proposed location of Well # 3 within the Action Area (Montana Natural Heritage Program, 2019b).

The site covers approximately an acre of land surrounding the well pad and is located in close proximity to Ubet Road, a rural county road.

3.2 CANADA LYNX

3.2.1 Current Status

Canada lynx were listed as threatened in 2000. Critical habitat was revised in 2014. The Action Area does not include lynx critical habitat (US Fish and Wildlife Service, 2019).

3.2.2 Habitat Use and Behavior in the Action Area

Canada lynx occur in the coniferous forests of western Montana in areas of subalpine forests characterized by tree species such as lodgepole pine, western larch, and subalpine fir (Montana Natural Heritage Program, 2019a). Large, open grassland areas as shown in **Figure 2** are avoided by and unsuitable for lynx. Although lynx potentially use open areas to move between forested habitats, they generally tend to avoid large openings or open spaces and prefer areas of dense cover for movement and foraging (Ruediger, 2000). In the absence of areas of preferred lynx habitat or riparian areas that could be used for dispersal or as a connectivity corridor, regular use of the Action Area is not expected.

3.3 GRIZZLY BEAR

3.3.1 Current Status

Grizzly bear was listed as threatened in 1975. A supplemental habitat-based recovery plan was published in May 24, 2018 (US Fish and Wildlife Service, 2017).

3.3.2 Habitat Use and Behavior in the Action Area

Grizzly bears use a variety of habitats in Montana, including meadows, seeps, riparian zones, shrublands, forests, and alpine scree (Montana Natural Heritage Program, 2019a). Habitat use varies depending on season and associated food resources. Grizzly bears are omnivores and opportunistic in their feeding and hunting strategies and their diet consists of a wide range of mammals, plants, fish, and insects (Montana Natural Heritage Program, 2019a).

The Fish and Wildlife Service created a map of Grizzly Bear Recovery Zones, Distributions, and Distinct Population Segments (US Fish and Wildlife Service, 2018) which shows the Action Area is outside of the regular distribution of large population segments. Although the Action Area is outside of normal distribution, the Action Area is within the range and habitat of grizzly bears with one observation of two bears recorded in the Judith Basin area over 30 miles away from the project site (Montana Natural Heritage Program, 2019b). The observation from Montana Fish, Wildlife, and Parks notes that the sighting was of two male siblings moving east that were later euthanized due to livestock depredation (Montana Natural Heritage Program, 2019b). Regular use of the Action Area is not expected however due to the small size of the Action Area, presence of human activity, low number of sightings, and proximity to Ubet Road.

3.4 NORTH AMERICAN WOLVERINE

3.4.1 Current Status

The North American wolverine occurring in the contiguous United States was proposed for listing as threatened, under the Endangered Species Act of 1973, as amended (Act) on February 4, 2013. The District Court for the District of Montana vacated the rule on August 13, 2014. The US Fish and Wildlife Service withdrew the proposed rule, which effectively returns the process to the stage of the proposed listing rule published in 2013. A new status review of the North American wolverine was initiated to determine whether this distinct population segment meets the definition of an endangered or threatened species under the Act (US Fish and Wildlife Service, 2016).

3.4.2 Habitat Use and Behavior in the Action Area

North American wolverines reside in remote, rugged areas of alpine tundra and coniferous forest that are free from human disturbance. However, dispersing individuals may wander far from these habitats (Montana Natural Heritage Program, 2019a). Prime wolverine habitat is located in other parts of Western Montana, but the Action Area does not contain prime habitat. If wolverines occur in the area, they would be transients traveling between areas of suitable habitat.

4.0 DISCUSSION OF THE METHODS USED TO DETERMINE THE INFORMATION IN SECTION 3.0

Citations for material discussed are included in the discussion and cited in **Section 10.0**.

5.0 ANALYSIS OF THE EFFECTS OF THE ACTION ON LISTED SPECIES AND PROPOSED SPECIES AND THEIR HABITATS

The impacts below are a summary based on the current literature for each species and on the project description in **Section 1.0**. Based on the Action Area specified for Well #3, the only reasonably foreseeable state or private action that would occur is grazing after the reclamation.

5.1 CANADA LYNX

5.1.1 Direct Effects

While a lynx may pass through during dispersal or exploratory movements, this would be a rare event given the lack of contiguous forest in the area. In addition, the presence of the road and human activities likely discourage their use. Because Canada lynx would not likely occur in the Action Area, the project would have no effect on this species.

5.1.2 Indirect Effects

There are no effects on lynx that would occur in the future or at a distance from the proposed action, so there would be no indirect effects. There are no indirect effects anticipated from interrelated or interdependent actions.

5.2 GRIZZLY BEAR

5.2.1 Direct Effects

No direct loss of shrubland, forest, or riparian communities, or other important grizzly bear foraging or denning habitat would occur. No security habitat (cover) would be lost because the project would remove only grassland-type vegetation. There may be a temporary disruption of movement patterns in the Action Area as bears would avoid the action area during operations due to noise and other human disturbance. No bears are expected to be adversely impacted by the construction or reclamation due to the daytime hours of operations and implementation of the conservation measures identified in **Section 1.1**. These measures would also minimize bear attractants in the Action Area and reduce the likelihood of human-bear interaction.

5.2.2 Indirect Effects

The project would not have effects on grizzly that would occur in the future or at a distance from the proposed action. There would be no indirect effects on grizzly bear. There are no indirect effects anticipated from interrelated or interdependent actions.

5.3 NORTH AMERICAN WOLVERINE

5.3.1 Direct Effect

Wolverines are not expected to use the area where Well #3 would be located which is in open grassland. There would be no loss of adjacent riparian habitat that could serve as movement corridors. There is no other wolverine habitat in the Action Area and the presence of the road and human activities would discourage their use.

5.3.2 Indirect Effects

There are no effects on wolverine that would occur in the future or at a distance from the proposed action, so there would be no indirect effects. There are no indirect effects anticipated from interrelated or interdependent actions.

5.4 CUMULATIVE EFFECTS

Cumulative effects under the Endangered Species Act are defined as "...those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation" (50 CFR 402.02). There would be no direct or indirect effects on lynx or wolverine, therefore there would be no cumulative effects on either of these species.

Grazing of sheep would resume following reclamation of the disturbed area. The grazing activity is anticipated to be the same as current grazing activities. The resumption of grazing activities would not contribute cumulative impacts on grizzly bears. No other local or state activities were identified in the Action Area that would cause cumulative impacts on grizzly bears.

5.5 INTERRELATED/INTERDEPENDENT ACTIONS

The MJRWS also includes plans for a proposed pipeline separate from the proposed action. The pipeline would start northwest of Judith Gap and run approximately 230 miles east adjacent to state or county roads for most of its length. Only preliminary plans for this pipeline currently exist. Well #3 would depend on this pipeline for its functionality as a water supply well, but the construction of the pipeline is not dependent on the proposed action and development of Well #3. Because planning for the pipeline is only preliminary and not occurring concurrently with the proposed action, there would be no direct or indirect effects on listed and proposed species or their habitat. The pipeline is also anticipated to run adjacent to state or county roads through which habitat for lynx or wolverine would be unsuitable for these species (Montana Natural Heritage Program, 2019a). Construction for the pipeline would potentially occur in grizzly bear habitat but potential effects could be addressed by the mitigation measures found in Section 7.2.

6.0 COORDINATION/MITIGATION MEASURES THAT WOULD REDUCE/ELIMINATE ADVERSE IMPACTS

6.1 CANADA LYNX

Because there would be no effects on lynx, additional mitigation measures are not needed to reduce or eliminate adverse impacts.

6.2 GRIZZLY BEAR

Conservation measures to reduce or eliminate the impacts on grizzly bear. Conservation measures for grizzly bear are listed above in Section 1.1 or found below:

Description. This project is located within bear habitat, adhere to the following requirements:

- 1) No guns or dogs are allowed on the project site during construction.
- 2) Stockpiles of topsoil must be contained on the one-acre Action Area and may not be stored offsite or on environmentally sensitive areas. Environmentally sensitive areas include cultural sites and wetlands.
- 3) Promptly clean up any project related spills, litter, garbage, debris, etc.
- 4) Camping is not allowed on the project site.
- 5) Store all food, food related items, petroleum products, antifreeze, garbage, and personal hygiene items inside a closed, hard-sided vehicle or commercially manufactured bear resistant container.
- 6) Remove garbage from the project site daily and dispose of it in accordance with all applicable regulations.

6.3 NORTH AMERICAN WOLVERINE

Because there would be no effects on wolverine, additional mitigation measures are not needed to reduce or eliminate adverse impacts.

7.0 EXPECTED STATUS OF T&E SPECIES IN THE FUTURE (SHORT AND LONG TERM)

Listing status of Canada lynx or its critical habitat is not likely to change during the construction phase or before reclamation is complete.

Grizzly bear has been petitioned for delisting. During the life of the project (through Fall 2019), it is unlikely that the listing status of grizzly bear would change.

The status of wolverine is under review. It is not likely that the status would change before the project is complete (Fall 2019). There is a high degree of uncertainty with the future listing status of this species. If the wolverine becomes listed before this action is completed, the effects determination would be “no effect” on wolverine.

8.0 DETERMINATION OF EFFECTS ON LISTED SPECIES

8.1 CANADA LYNX

Based on the analysis in Section 5.1, the project would have **no effect** to Canada lynx and **no effect** on Canada lynx critical habitat.

8.2 GRIZZLY BEAR

For the reasons stated in Section 5.2, including the conservation measures, the project **may affect, not likely to adversely affect** grizzly bears.

9.0 DETERMINATION OF EFFECTS ON PROPOSED SPECIES

9.1 NORTH AMERICAN WOLVERINE

Based on the impacts analysis in Section 5.3, the construction and reclamation of Well #3 are **not likely to jeopardize the continued existence** of North American wolverine.

10.0 LITERATURE CITED

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US Fish and Wildlife Service, 2019. *IPAC Information for Planning and Consultation*. [Online]

Available at: <https://ecos.fws.gov/>

APPENDIX A IPAC SPECIES LIST**United States Department of the Interior**

FISH AND WILDLIFE SERVICE
Montana Ecological Services Field Office
585 Shephard Way, Suite 1
Helena, MT 59601-6287
Phone: (406) 449-5225 Fax: (406) 449-5339



In Reply Refer To:

June 25, 2019

Consultation Code: 06E11000-2019-SLI-0539

Event Code: 06E11000-2019-E-00847

Project Name: Musselshell-Judith Water Supply Project Phase 1 Well #3

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

To Whom It May Concern:

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

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

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

06/25/2019

Event Code: 06E11000-2019-E-00847

2

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

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

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

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

Attachment(s):

- Official Species List

06/25/2019

Event Code: 06E11000-2019-E-00847

1

Official Species List

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

This species list is provided by:

Montana Ecological Services Field Office

585 Shephard Way, Suite 1

Helena, MT 59601-6287

(406) 449-5225

06/25/2019

Event Code: 06E11000-2019-E-00847

2

Project Summary

Consultation Code: 06E11000-2019-SLI-0539

Event Code: 06E11000-2019-E-00847

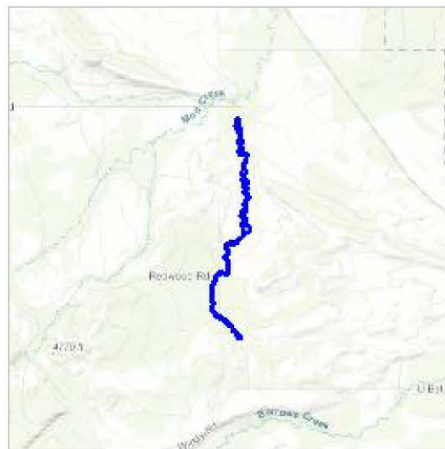
Project Name: Musselshell-Judith Water Supply Project Phase 1 Well #3

Project Type: WATER SUPPLY / DELIVERY

Project Description: The proposed action is the Musselshell-Judith Water Supply Project Phase 1 Well #3 (Well #3). This project is located approximately 3.5 miles west of Garneill, Montana and 4.0 miles south of Buffalo, Montana in Judith Basin County in T12N, R15E, S34 (see Figure 1). The area is in the headwaters of the Judith River, although the river is more than 20 miles from the project. The land use in the area is rangeland with grassland cover. The overall Musselshell-Judith Water Supply Project will be implemented in 5 phases with the next phase (Phase 2) including initiation of construction for a water supply pipeline. A separate Biological Assessment (BA) will be prepared for the pipeline. The proposed action consists of drilling a water supply well and conducting pumping tests.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/46.7718489302711N109.82445771754459W>



Counties: Judith Basin, MT

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

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

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

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

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

Mammals

NAME	STATUS
<p>Canada Lynx <i>Lynx canadensis</i></p> <p>Population: Wherever Found in Contiguous U.S.</p> <p>There is final critical habitat for this species. Your location is outside the critical habitat.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/3652</p>	Threatened
<p>Grizzly Bear <i>Ursus arctos horribilis</i></p> <p>Population: U.S.A., conterminous (lower 48) States, except where listed as an experimental population</p> <p>There is proposed critical habitat for this species. The location of the critical habitat is not available.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/7642</p>	Threatened
<p>North American Wolverine <i>Gulo gulo luscus</i></p> <p>No critical habitat has been designated for this species.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/5123</p>	Proposed Threatened

Critical habitats

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

APPENDIX D - CULTURAL RESOURCES INVENTORY REPORT

Well 3 Cultural
Resource Inventory Addendum
Report for the
Musselshell-Judith Rural Water System,
Judith Basin County, Montana.

Project Number TT-WW-19

Report

Prepared by:

Patrick Kuntz



Kuntz Field Research Archaeology
229 Alderson Avenue
Billings, Montana 59101

Prepared for:

Tetra Tech
825 W. Custer Ave
Helena, Montana 59602

May 20, 2019

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INTRODUCTION

The goal of the Musselshell-Judith Rural Water System (MJRWS) is to provide a reliable and adequate quantity of high quality drinking water for the member communities. The proposed project consists of developing groundwater wells within the Madison Aquifer to supply water to each of the current seven member communities that include Hobson, Judith Gap, Harlowton, Lavina, Broadview, Roundup, and Melstone. Additional smaller communities and local users along the pipeline route would also benefit from the proposed project (Peterson 2017a; Peterson 2017b).

The proposed water project includes the development of a well field located approximately 6 miles northwest of Judith Gap that would draw water from the Madison Aquifer. The proposed water pipeline extends approximately 230 miles, beginning at the well field location northwest of Judith Gap and extending north to Utica, Hobson and possibly Moore. The pipeline also trends south from the well field to Judith Gap and Harlowton, and east to serve Lavina, Broadview, Roundup and Melstone. The proposed project would provide municipal water for an estimated 4,750 people initially and eventually serve approximately 7,300 people.

The primary funding for MJRWS design and construction would come from the federal government, state of Montana and loans repaid by the CMRWA through the charges assessed system users. In order to obtain federal and state funding, the project must be federally authorized and be appropriated federal funds. The US Department of the Interior, Bureau of Reclamation involvement requires compliance with Section 106 (36 CFR Part 800) of the National Historic Preservation Act of 1966, which requires federal agencies to take into account the effects of their undertakings on historic properties.

To comply with Section 106, Tetra Tech contracted Kuntz Field Research Archaeology to conduct a cultural resource inventory of a previously uninventoried area surrounding proposed water well locations near the U Bet Road (county road) west of the community of Garneill in T12N, R15E, Section 34. The inventory area consists of approximately 15 acres parallel and 250 feet from the centerline of the county road, and 150 feet on either side of the well locations and the areas in between (Figure 1).

Kuntz Field Research Archaeology performed the Class III cultural resource inventory fieldwork on May 17, 2019. This report details the results of the inventory.

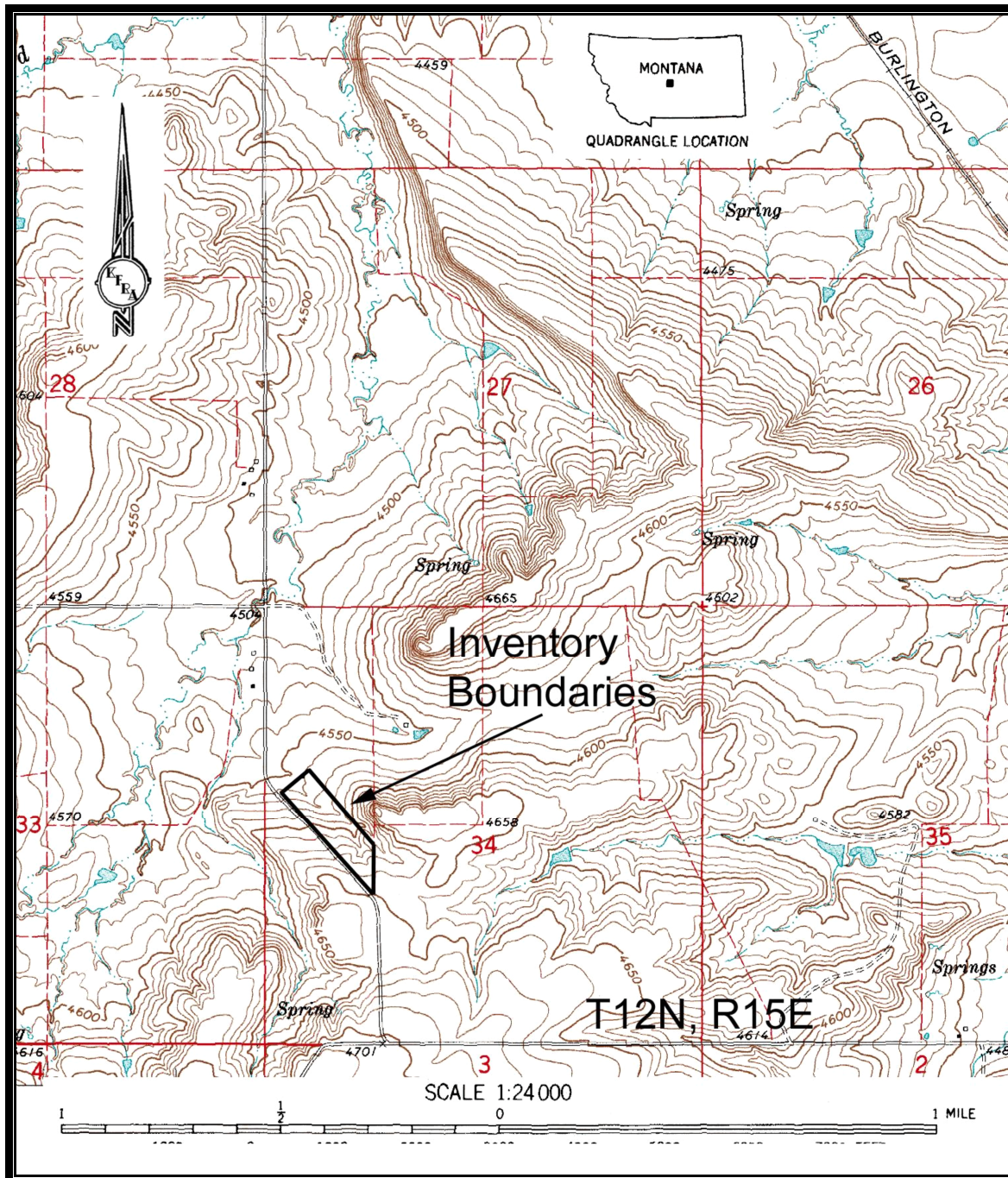


Figure 1: Inventory Area Shown on USGS 1:24K Buffalo Mont (1970) Quadrangle .

METHODS

The SHPO file search was conducted by Tetra Tech (Peterson 2017a). No cultural resources were recorded within the inventory area. Kuntz Field Research Archaeology archaeologists conducted pedestrian survey on May 17 in accordance with accepted professional standards. Patrick Kuntz, and Jenny Kuntz composed the field crew, walking transects spaced no more than 30 meters apart. In all cases, survey coverage was adequate to locate all cultural

resources visible on the land surface. The field crew used a hand-held Garmin Rino HCx global positioning system (GPS) unit loaded with Garmin HuntView software with 1:24k topo maps, land ownership, and aerial photo capability. It has WAAS-enabled accuracy within 2 to 3 meters, and is uploaded to AllTopos Pro V7 (which exchanges data with most GIS products that use shapefiles, including ESRI Arc products) for importing/exporting waypoints and shapefiles.

Montana SHPO criteria for minimum site definition were employed during field activities: an archaeological or historical site consisted of any feature alone or in association with other features (cairns or stone rings), or five or more artifacts situated in a discrete location within 50 feet of each other, and/or artifacts or features located more than 100 meters from each other but in obvious association. Locations containing fewer than five artifacts are regarded as isolated finds.

Digital photographs were taken to illustrate various views of the general survey area. The field crew compiled a photographic record containing a description and orientation for all inventory photographs.

Ground surface visibility at the time of survey ranged from 10 to 20 percent. Areas of exceptional ground surface visibility (i.e. roads cuts, rodent borrows, and animal trails) were thoroughly investigated. Field conditions were overcast and cool.

ENVIRONMENTAL SETTING

Predominantly characterized as the Judith Basin grasslands, the native vegetation community consists of blue grama, western wheatgrass, and needle-and-thread species (Payne 1973). Much of the land has been broken for grain production and other parcels are used as rangeland for cattle and sheep. Juniper and pine are seen near the Little Belt Mountains and prickly pear cactus was near Harlowton (Peterson 2017a). The project area has hosted agriculture for over 100 years and disturbance is common.

The specific inventory area is located on undulating prairie between the East Fork of Mud Creek about one mile to the northwest and Barrows Creek about one mile to the southeast (Figures 2-5). The Little Belt Mountains are located about four miles southwest and the Big Snowy Mountains are located approximately 12 miles to the east of the inventory area.



Figure 2: *Overview of Inventory Area, View to the South.*



Figure 3: *Overview of Inventory Area, View to the North.*



Figure 4: *Overview of Inventory Area, View to the Southwest.*



Figure 5: *Overview of Inventory Area, View to the North.*

INVENTORY RESULTS

Ground surface visibility was good, between 10 and 15% was clear of vegetation, and no snow cover. No cultural resources were encountered.

SUMMARY AND RECOMMENDATIONS

No further archaeological work is recommended. We recommend a finding of no effect. Cultural Resource clearance is recommended for this project.

REFERENCES CITED

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2017 *An Addendum to a Cultural Resource Inventory for the Musselshell-Judith Rural Water System, Phase I, in Wheatland, Judith Basin, and Fergus Counties, Montana*. Tetra Tech for Central Montana Regional Water Authority, Roundup, Montana.

2017 *A Cultural Resource Inventory for the Musselshell-Judith Rural Water System, Phase I, in Wheatland, Judith Basin, and Fergus Counties, Montana*. Tetra Tech for Central Montana Regional Water Authority, Roundup, Montana.