

12-01161



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01/06/2012 02:19 PM

To FOIA Officer/MD/APHIS/USDA  
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Subject JANUARY 6 2012 FREEDOM OF INFORMATION ACT  
REQUEST

1 attachment



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FOIA Request # 12-01161  
Date Rec'd 1/6/2012  
Date Due 1/6/2012  
Assigned to Robbie  
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January 6, 2012

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**RE: FEDERAL FREEDOM OF INFORMATION ACT REQUEST**

Ms. Woods:

Pursuant to the federal Freedom of Information Act (5 U.S.C. 552 et. seq.), Buffalo Field Campaign is filing this request for information.

Buffalo Field Campaign is a 501(c) (3) non-profit, public interest, grassroots media-based organization, which provides news reports directly to thousands of supporters which include concerned American citizens, and people from around the globe, as well as to regional, national and international media.

We would prefer an electronic copy of this information on CD but we would be happy to get a paper copy of anything that is not available electronically.

We request the following documentation from USDA APHIS:

1. Brucella Genotyping Reports (final, preliminary, draft) generated by APHIS during calendar years 2010 and 2011 for incidents or suspected incidents of *brucella abortus* infection in elk, bison and cattle in Montana, Idaho, and Wyoming.

As you know, the Freedom of Information Act (FOIA) provides that if portions of a document are exempt from release, the remainder must be segregated and disclosed. We expect to receive all non-exempt portions of the documents that we have requested, and ask that you justify any deletions by reference to specific exemptions allowed under the FOI Act. The Buffalo Field Campaign reserves the right to appeal a decision to withhold any materials.

We hereby request a fee waiver for all search and duplication fees under the FOIA regulations [5 U.S.C. Sec. 552 (a) (4) (A) and 36 CFR 2.19(c) (1)]. The information requested will benefit the citizens of the United States and is for the purpose of public education and to encourage public debate on important policy issues. The requested information will be made available to the public through Buffalo Field Campaign's central office and/or our website.

Information available through the office and website is used in press conferences and releases, television and radio interviews, and regional and national publications, and reaches a significant number of individuals nationwide, including through the following news sources: New York Times, Los Angeles Times, Washington Post, CNN, CBS, ABC, NBC, Headline News, London Times, UK Guardian, Japanese and German TV, National Geographic, PBS, Associated Press (nationally syndicated), Reuters (internationally syndicated), Planet Green Discovery Channel, Examiner, Indian Country Today, News from Indian Country, Bozeman Daily Chronicle, Helena Independent Record, Billings Gazette, Missoulian, Great Falls Tribune, West Yellowstone News, Livingston Enterprise, Montana Pioneer, Montana Standard, Flathead Beacon, Missoula Independent, Big Sky Weekly, Montana Public Radio, Pacifica Radio Stations, WBAI First Voices Indigenous Radio, KBZK-TV Bozeman, KXLF-TV Butte, ABC Montana, NBC Montana, CBS Montana, KGNU Colorado, Fox News Channel 8 Cleveland, Montana News Casper Star Tribune, Planet Jackson Hole, Jackson Hole News & Guide, Jackson Hole Weekly, Island Park News, Salt Lake Tribune, Powell Tribune, Ag Information Network, Idaho Statesman, Huffington Post, Word Press, New West, Yahoo! News, AlterNet, Mother Jones, Prairie Star, The Republic, Environmental News Service, Earth First! Journal, Mother Nature Network, CounterPunch, Animal People, Independent Media, multiple blogs and online news resources.

The language of the FOIA clearly indicates that Congress intended fees not to be a barrier to private individuals or public



interest organizations seeking access to government records. In addition, the legislative history of the FOIA fee waiver language indicates that Congress intended a liberal interpretation of the phrase "primarily benefiting the public." This suggests that all fees are to be waived whenever the release of information contributes to public debate on important policy issues. This has been affirmed by the US Court of Appeals for the District of Columbia, in *Better Government Association v. Department of State*, 780 F. 2d 86 (D.C. Cir. 1986). In that case, the court found that under the FOIA, Congress had explicitly recognized the need for non-profit organizations to have free access to government documents and those government agencies cannot impair this free access by charging duplication or search for FOIA information requests. *Id.* at 89.

I appreciate your help and prompt response. Thank you for your time.

Sincerely,

/s/  
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# **Evaluation of GonaCon™, an Immunocontraceptive Vaccine, as a Means of Decreasing Transmission of *Brucella abortus* in Bison in the Greater Yellowstone Area**

**Environmental Assessment,  
January 2012**

# Evaluation of GonaCon™, an Immunocontraceptive Vaccine, as a Means of Decreasing Transmission of *Brucella* *abortus* in Bison in the Greater Yellowstone Area

## Environmental Assessment, January 2012

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# I. Introduction

## A. Background

In Yellowstone National Park (YNP), wild and free-ranging bison (*Bison bison*) are critical parts of a fully-functioning ecosystem as well as being important to the identity of the park. The bison are a part of the esthetic, cultural, and natural environment of the YNP. YNP bison are chronically infected with brucellosis, a contagious disease that the United States Department of Agriculture, Animal and Plant Health Inspection Service, Veterinary Services (USDA/APHIS/VS) is striving to eliminate.

Brucellosis is a serious disease of livestock and wildlife that has significant animal and public health and international trade consequences. The disease is caused by bacteria of the genus *Brucella*. Brucellosis occurs primarily in cattle, bison, and swine; however, cervids, goats, sheep, and horses are also susceptible. In cattle and bison, the specific disease organism of concern is *Brucella abortus* (*B. abortus*).

In its principal animal hosts, brucellosis causes loss of young through spontaneous abortion or birth of weak offspring, reduced milk production, and infertility. In cattle and bison, the disease localizes in certain lymph nodes, reproductive organs and/or the udder, causing spontaneous abortions in females and systemic effects in both male and female animals. Weight loss and lameness may also be associated with brucellosis infection.

The shedding<sup>1</sup> of *B. abortus* through the reproductive tract during an abortion or calving event may contribute to the transmission of infection to other animals that come in contact with the expelled bacteria now in the environment. Studies have shown that *Brucella* can persist on fetal tissues, vegetation and soil in YNP for as long as 81 days depending on environmental conditions (Aune et al., 2011). Spread of the disease occurs when the cattle and bison, which are social animals, sniff and lick a newborn calf, the afterbirth, and even an aborted fetus. This behavior provides an avenue for the disease to spread if *B. abortus* organisms are present. Additionally, *B. abortus* is present in the milk from infected females and can be transmitted to calves through suckling. There is no effective means of treating brucellosis in livestock or wildlife.

Studies investigating the prevalence of brucellosis in YNP bison have estimated that between 40% and 60% of YNP bison have been exposed to

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<sup>1</sup> For purposes of the proposed study, “shedding” is to expel *B. abortus* from the body through the reproductive tract.

the disease. Further testing of animals that are seropositive<sup>2</sup> demonstrates that more than 40% of the seropositive animals are culture-positive, confirming actual infection with *B. abortus* (Meyer and Meagher, 1995; Cheville et al., 1998). In the areas outside the borders of YNP where livestock such as cattle are often raised, there is a concern that infected bison may transmit the disease to livestock if infected bison abort or calve.

Multiple Federal and state agencies<sup>3</sup> have participated in efforts to control the potential spread of brucellosis and conserve bison through the 2000 Interagency Bison Management Plan (IBMP) (MDoL and MFWP, 2000). In 1934, a federal brucellosis program was established as part of an effort to safeguard domestic livestock (See [http://www.aphis.usda.gov/animal\\_health/animal\\_diseases/brucellosis/](http://www.aphis.usda.gov/animal_health/animal_diseases/brucellosis/) for additional information regarding USDA APHIS' brucellosis program).

Safeguarding measures, such as preventing, detecting, and eliminating animal diseases, help to maintain the U.S. cattle industry's national and international trade interests, ensure food safety, and protect public health. The efforts of the national brucellosis program have nearly eradicated brucellosis from domestic cattle and bison populations. As of July 2009, all 50 States had attained Class-Free (disease-free) status for brucellosis in domestic cattle and bison (USDA APHIS, 2010a). Currently, the last known reservoir of bovine brucellosis is in the wild bison and elk population in the Greater Yellowstone Area (GYA). Prevention of the spread of brucellosis between infected wildlife and livestock continues to be an issue of concern. The proposed study discussed in this environmental assessment (EA) is designed to investigate the feasibility of using an immunocontraceptive vaccine, GonaCon™, as a non-lethal management option to decrease the potential risk of disease transmission by brucellosis-infected bison.

In humans, Brucellosis is often referred to as undulant fever because it persists for several weeks or months and may get progressively worse if untreated. Humans are most commonly infected by consumption of unpasteurized dairy products produced from milk of infected animals, or they may become infected through direct contact with infected animal tissues such as aborted fetuses or reproductive materials. In humans, brucellosis initially causes flu-like symptoms that are treated with a rigorous course of antibiotics. In some isolated cases, the disease may develop into a variety of chronic conditions, including arthritis. Potential

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<sup>2</sup> Bison that test positive on blood tests for brucellosis are referred to as being seropositive, and bison that do not test positive are referred to as being seronegative.

<sup>3</sup> U.S. Department of Interior National Park Service (NPS); U.S. Department of Agriculture Animal and Plant Health Inspection Service (APHIS); U.S. Department of Agriculture Forest Service (FS); Montana Department of Livestock (MDoL); and Montana Fish, Wildlife and Parks (MFWP).

effects of the proposed study on humans will be discussed in the potential environmental impacts section.

### **GonaCon™ Immunocontraceptive Vaccine**

GonaCon™ is a contraceptive vaccine that stimulates an immune response in a vaccinated animal by producing antibodies that bind to a gonadotropin-releasing hormone (GnRH). GnRH is a naturally occurring hormone that signals production of sex hormones such as estrogen, progesterone, and testosterone. The anti-GnRH antibodies interfere with the ability of GnRH to signal production of sex hormones, resulting in temporary infertility. As long as adequate levels of anti-GnRH antibodies are present in the vaccinated animal, sexual activity, breeding, and reproduction are extremely unlikely.

GonaCon™ is currently approved under the United States Environmental Protection Agency's (EPA's) Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) for use in female white-tailed deer as one tool to aid in reducing deer overpopulation (EPA Registration Number 56228-40). The immune response that causes temporary infertility in deer is accomplished with a single-shot vaccine. The length of time that a vaccinated female deer remains infertile depends on the individual animal, but some pen studies have shown that 4 out of 5 female deer remain infertile for 5 years (Miller et al., 2008a). Field studies have demonstrated lower rates of infertility ranging from 88% and 47% the first and second year after vaccination, respectively (Gionfriddo et al., 2009) to 67% and 43% the first and second year after vaccination, respectively (Gionfriddo et al., 2011a).

GonaCon™ is not currently registered for use in bison. However, USDA conducted a small pilot study of penned bison and found that none of the 6 females vaccinated with GonaCon™ became pregnant the first year after treatment (Miller et al., 2004). In 2011, APHIS received approval from EPA to use GonaCon™ in female bison in the confined experimental use scenario discussed in this EA. Should the proposed study discussed in this EA proceed, the data obtained from it could potentially be used to add to the required data set needed for EPA to register the GonaCon™ vaccine for use in bison. However, the purpose for registering GonaCon™ in bison would not be for reducing overpopulation. The intended purpose of using GonaCon™ in female bison would be to manage reproduction in bison known to be infected with brucellosis by inducing temporary infertility, thereby decreasing the potential for transmission of brucellosis through abortion and calving events.

## **B. Purpose of and Need for the Proposed Action**

The purpose of the proposed action is to conduct a study to evaluate whether GonaCon™, an immunocontraceptive vaccine, would be effective as a non-lethal method of decreasing the prevalence of brucellosis in the YNP bison population by preventing pregnancy, calving, and abortion, thereby preventing transmission of *B. abortus*. The major objectives of the proposed study are:

- To evaluate the efficacy of GonaCon™ as an immunocontraceptive vaccine in *B. abortus*-infected female bison;
- To evaluate the effect on shedding by *B. abortus*-infected female bison that are rendered temporarily infertile by GonaCon™; and
- To evaluate the effect the infertility produced by GonaCon™ has on the long-term survivability of *B. abortus* in infected female bison.

Use of an effective immunocontraceptive such as GonaCon™ to prevent pregnancy and eliminate the potential for abortions by infected bison would break the cycle of transmission of brucellosis. If female bison known to be infected with *B. abortus* do not become pregnant, they would not abort. Exposure of non-infected animals to the infected tissues and fluids from aborted fetuses would therefore be reduced.

The need for the proposed study is to provide information that would be used to evaluate the use of GonaCon™ as a nonlethal method of decreasing or controlling the risk of transmission of *B. abortus* in the YNP bison population. Brucellosis is spread within the animal population primarily through contact with infected birthing tissues or aborted fetuses and through the milk of infected cows. If GonaCon™ can effectively render brucellosis-infected female bison temporarily infertile, the primary routes of disease transmission would be blocked. In combination with other appropriate disease mitigation activities, the use of GonaCon™ may be an effective tool to assist in eliminating brucellosis from the YNP bison herd over time.

USDA APHIS has determined that under the provisions of the National Environmental Policy Act (NEPA) (see 42 U.S.C. 4321 et seq.) and APHIS' National Environmental Policy Act (NEPA) implementing procedures (see 7 CFR Part 372), an EA should be prepared for these proposed actions. The availability of this EA and a 30-day comment period will be announced by publishing a notice on the APHIS brucellosis program website, the IBMP website and/or local newspapers. APHIS' decision maker for the actions described in this EA will take appropriate action after reviewing the EA, its associated analyses, public comments received, and other relevant responses and recommendations.



## **II. Proposed Action and Alternatives**

### **A. No Action (the Current Situation)**

The no action alternative would result in not conducting the proposed study. If the proposed study is not conducted, the utility of GonaCon™ as a non-lethal reproductive control option in bison cannot be determined. Additionally, if the use of GonaCon™ in bison is not investigated, information would not be known on whether temporary infertility induced by GonaCon™ is effective in decreasing the shedding of *B. abortus* and ultimately the transmission of brucellosis. Without the proposed study, use of the immunocontraception approach as a viable disease management tool for bison would not be evaluated, and could not be considered as a potential management tool.

### **B. Proposed Action**

The proposed action is to conduct a multi-year study to evaluate the potential for use of GonaCon™, an immunocontraceptive vaccine, as a non-lethal method of decreasing the prevalence of brucellosis in bison by preventing pregnancy, thereby preventing abortions and risk of transmission of brucellosis to uninfected animals from contact with infected tissues and fluids from aborted fetuses.

The proposed study would include the following activities that are discussed in further detail below:

- Capturing bison in the late winter/spring of 2011, 2012, 2013, and possibly 2014;
- Transporting the captured bison by stock trailer to APHIS' bison facilities in Gardiner, Montana;
- Collecting and evaluating blood samples to determine brucellosis infection status at the beginning of the study and monitoring infection status at regular intervals throughout the study;
- Housing, caring for, and tagging (for identification purposes) animals in Gardiner, Montana facilities;
- Injecting one group of seropositive female bison with GonaCon™ beginning in the spring of 2012;
- Commingling uninfected bulls with females during breeding season, documenting breeding behavior, and testing for pregnancy for five calving seasons;
- Monitoring pregnant bison with transmitters and daily observing them for abortions, labor, and births;
- Collecting and testing blood, milk, and vaginal swabs from female bison that give birth to test for brucellosis infection status;

- Monitoring exposure to aborted fetuses by other bison and evaluating fetuses collected during the study; and
- Evaluating data collected from the study to determine whether GonaCon™ decreases the shedding of *B. abortus* in bison.

Bison for the proposed study would be acquired during the winter when they naturally exit YNP. The capture of bison would be conducted using methods currently in use for capturing bison according to the details of the IBMP operating procedures (IBMPOP, 2009). These procedures include hazing and/or using weed-free hay to move them to a capture facility. Approximately 104 adult bison would be used in the proposed study: 24 female bison that are seronegative for brucellosis; 72 female bison that test seropositive for brucellosis; and 8 male bison (bulls) that test seronegative for brucellosis. Female bison would be yearlings, two-, and three-years of age. If temporary chemical immobilization of any animal is needed, opioid narcotics and alpha-2-adrenergics would be used by study personnel qualified in the administration of such drugs. All bison used in the study would be identified with uniquely numbered ear tags and microchip identification.

The proposed study would take place on several double-fenced pastures at facilities in the Gardiner, Montana area: the Brogan Bison Facility in Corwin Springs (60 acres), the Slip 'n Slide pasture (25 acres), and the Rigler pasture (32 acres), all of which are located north of Gardiner, Montana. All sites are within the GYA and along Highway 89. The Brogan Bison Facility, Rigler pasture, and Slip 'n Slide pastures are currently leased by APHIS VS and Montana Fish, Wildlife and Parks and are used by APHIS VS for the bison quarantine feasibility study (MFWP, 2005). These facilities were specifically designed and erected to hold bison in a quarantine environment with hay and water as needed for an extended period of time.

The study design is as follows: In spring 2012, animals would be randomly selected to go into groups of 16 to 18 seropositive cows, four to six seronegative cows, and two bulls. Two replicate test pastures would be established in 2013 and possibly 2014 if not enough animals are captured in 2013. After three to four weeks of acclimation in the test pastures, *B. abortus*-infected female bison in one of the pastures would receive GonaCon™ vaccine (containing 3,000 micrograms in 3 milliliters of an adjuvant) delivered into the muscle on each side of the neck. The sites of injection would be tattooed and observed for any injection reaction. Bison in the remaining pasture would not be vaccinated.

Bulls would be separated from the cows outside of the breeding season from October to July. Prior to exposure to bulls, cows would have

breeding tags<sup>4</sup> attached to them to document if bulls have mounted them to breed. Following first exposure of cows to bulls in 2012, five calving seasons would be observed (2013-2017). In February of each year, cows would be pregnancy-tested and fitted with vaginal transmitters to alert investigators to abortion or calving events.

During the abortion/calving seasons (from February until August of each year), daily observation for abortions, labor, and calving events would be conducted by study investigators. Within five days of abortion or calving, the cow would be immobilized and blood, milk, and vaginal swabs would be collected for testing. If possible, the calf would also be captured and eye swabs and blood would be collected for testing.

Following an abortion, the fetus would be left at the abortion site for 24 hours to monitor exposure to other bison. The fetus would then be collected, tested, and incinerated at the Montana Veterinary Diagnostic Laboratory (MVDL) in Bozeman, Montana.

Blood testing of cows, bulls, and calves would be conducted three times a year: in February, calving time, and in the fall. Blood would be analyzed at the MVDL and/ or the National Veterinary Service Laboratories in Ames, Iowa throughout the study to determine *B. abortus* infection status of each animal.

Handling and physical restraint of bison for tagging or blood collection would take place in alleyways leading to standard bison manual squeeze chutes. Injection of the study animals with GonaCon™ would be done by study personnel experienced in administering intramuscular vaccines. Blood samples from study animals would be collected using established techniques for collection of blood from bison and would be performed by study personnel experienced with these techniques. An attending veterinarian would be available to address concerns about animal care and use for the study.

When the study is completed, all seropositive animals would be humanely euthanized following American Veterinary Medical Association-approved guidelines, and specimens would be collected from each animal for laboratory analysis. In addition, eggs and semen would be collected from these animals and frozen for genetic conservation. Per the conditions of the approval from EPA to use GonaCon™ in bison in this confined experimental use study, animals treated with GonaCon™ cannot be consumed by humans. These animals would be disposed of by incineration or landfill burial. Seropositive animals from the study that have not received GonaCon™ injections would be distributed to Montana food

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<sup>4</sup> Breeding tags are devices that are temporarily adhered to the base of the cow's tail that indicate by a color change that the cow has been mounted.

banks as is routinely done with other YNP seropositive bison. Further discussion on the safety of consuming bison infected with *B. abortus* is discussed in the human health and safety section of this document. All animals that test negative for brucellosis for the duration of the study and satisfy existing bison quarantine release requirements outlined in the APHIS Uniform Methods and Rules (USDA APHIS, 2003) would be used for bison conservation purposes.

### **C. Other Alternatives Considered but Dismissed from Further Consideration**

Because the most common route of transmission of *B. abortus* is contact with infected birthing fluids, aborted fetuses, and placental tissues, different methods of impacting the fertility of bison through the use of immunocontraceptive vaccines were considered as alternatives to the proposed action. If pregnancy could be prevented in *B. abortus*-infected female bison, transmission of *B. abortus* by this route could be eliminated or decreased.

APHIS considered the use of Porcine zona pellucida (PZP), another type of immunocontraceptive vaccine that has been used in animal species such as dogs, coyotes, burros, wild horses, and deer (USDA APHIS, 2010b). PZP has also been demonstrated to effectively induce temporary infertility in captive bison (Frank et al., 2005). However, research has shown that the use of PZP can increase the period of time in which the treated animals exhibit breeding season behavior.

The PZP vaccine results in temporary infertility while still allowing female animals to have multiple estrous cycles in which they engage in prebreeding behavior and breed. This behavior can cause animals to use energy at times of the year, such as late fall and early winter, when they would otherwise be conserving energy. Miller et al. (2004) concluded that "...Prolonging the breeding season of bison in the GYA may be deleterious to the winter survival of dominant bulls and PZP vaccinated cows because of increased sexual activity during fall and early winter." Therefore, this alternative was dismissed from further consideration because investigating the use of a PZP vaccine would not be useful in brucellosis management strategies in bison since it is associated with increased mating and reproductive activity (Killian et al., 2007).

APHIS also considered the alternative of physical sterilization as a means of decreasing the transmission of *B. abortus* within bison populations and between bison and cattle in the GYA. Physical sterilization such as spaying<sup>5</sup> or castration<sup>6</sup> has been recognized as a disease management

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<sup>5</sup>Surgical removal of the ovaries from female bison.

strategy that could be used to reduce the potential transmission of brucellosis in infected wildlife populations. However, this type of sterilization is permanent. APHIS would not subject the bison in the study to physical sterilization. For this reason, this alternative was dismissed from further consideration.

### **III. Potential Environmental Impacts**

The NEPA implementing regulations provide criteria that Federal agencies should evaluate, if applicable, in environmental documents for proposed actions. This section of the EA addresses the applicable criteria related to potential impacts from the no action alternative and from the proposed action. NEPA criteria that are applicable for consideration in this section of the document include animal impacts, human health and safety, and the physical environment.

#### **A. No Action**

Without the proposed action, efforts to gather scientific information to better understand the potential application of immunocontraceptive vaccines such as GonaCon™ as a nonlethal strategy for reducing the transmission of *B. abortus* and decreasing the prevalence of brucellosis in the wild bison population in YNP would be lost. Without the proposed action to assist in developing nonlethal strategies to effectively control and eliminate brucellosis, the disease may continue to spread within the wild, free-ranging bison population in the GYA.

#### **B. Proposed Action**

##### **1. Impact of Proposed Action on Animals**

##### **a. Bison**

The proposed study would not increase the risk of brucellosis being transmitted within the bison population. Therefore, this section focuses on the potential effects of the administration of GonaCon™ in bison.

In this proposed study, the desired effect of administering GonaCon™ is the temporary suspension of reproductive activity in the vaccinated female bison. Miller et al. (2004) report that “The gonadotropin-releasing hormone (GnRH) vaccine is generally considered to provide temporary sterilization, because the reproductive activity of the target animal returns as the GnRH antibody titer drops below a protective level.” If the effect of this immunocontraceptive vaccine successfully places the vaccinated

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<sup>6</sup> Surgical removal of the testes of male bison.

bison cows in a temporary nonreproductive state, the transmission of brucellosis by the female bison via shedding of *B. abortus* during calving or abortion may be eliminated.

A small study conducted at the Idaho Fish and Game Wildlife Health Laboratory in Caldwell, Idaho in 2002-2003 demonstrated “that a single injection of GnRH vaccine is effective in preventing conception in female bison for at least 1 yr” (Miller et al., 2004). In that study, three of the six GnRH-treated bison cows and five of the untreated bison cows were in the last month of pregnancy at the time of vaccination. They delivered normal calves in the first year, suggesting that the GnRH vaccine did not interfere with the pregnancy and could be administered safely during the last third of the pregnancy. Additionally, none of the six treated bison became pregnant during the first breeding season (Miller et al., 2004).

Undesired health effects have been minimal in the species of wildlife in which GonaCon™ has been used. Injection site reactions caused by the “water-in-oil (W/O) emulsion needed in the GonaCon™ formulation for development of a long-term immune response” have been observed (Miller et al., 2008b). These reactions were most commonly manifested as inflammation or swelling at the injection site, or the presence of granulomas (thickened tissue filled with fluid). This observation is not uncommon in other livestock vaccines (USDA APHIS, 2010b).

As part of the GonaCon™ EPA registration process for use in deer, the health effects to the vaccinated deer were evaluated. Vaccinated animals showed no external evidence of inflammation at known injection sites; however, when muscle tissue at the injections site was sectioned, the injection sites appeared to be comprised of whiteish scar tissue, some containing vesicles of sterile fluid. All blood chemistry analyses were similar between treated and untreated deer. (Killian et al., 2006). Other types of injected products that alter animal hormones are currently used in livestock in the United States (USDA APHIS, 2010b).

Ensuring humane handling and treatment of all bison during the proposed study activities would be a priority. Application of animal identification tags, administration of GonaCon™ vaccine, and evaluation of pregnancy status, calving, or abortion activities would be conducted at appropriate times during the proposed study. These activities would be overseen by the study’s attending veterinarian and would not be expected to cause more than momentary or slight pain or discomfort. All temporary restraining and handling or temporary immobilization and handling activities would be conducted as quickly and efficiently as possible and in a manner that would prevent undue stress, trauma, injury, or any unnecessary discomfort to the animal. If temporary immobilization is necessary, bison cows would be immobilized in locations within the

facilities that are safe for the animals and the proposed study personnel. Veterinary oversight for animal care and handling, restraint, and sample collection would be provided during the proposed study activities. Wildlife biologists trained and experienced in the handling of bison would also be participating in the proposed study activities.

If necessary, study personnel would use the Federal Drug Administration (FDA)-approved anaesthetic and pain-killing (analgesic) drug combinations to immobilize the animals in order to prevent any potential negative impacts to the bison during the collection of study samples. The immobilization drugs would be used according to standard animal administration techniques, and it is expected that the bison would be immobilized for no more than 20 minutes. Vital signs of the immobilized bison would be monitored by qualified study staff throughout the sampling procedures and the initial recovery phase. To further ensure humane handling of the bison, every precaution would be taken by study staff to prevent immobilization- or handling-related trauma, injury, or death to the bison. The standard chemical immobilization protocol that would be used in this proposed study is widely used in bison and other wild ungulates without long-term effects (Kreeger et al., 2002).

In the GonaCon™ EPA registration process for use in deer, concerns were initially raised by some States that GonaCon™ would eliminate the need to use hunting as a tool to control deer overpopulation. Contraception alone would not reduce overabundant deer populations to healthy levels (USDA APHIS, 2010b). In deer, GonaCon™ is meant to be used in combination with other wildlife management tools to control populations. Assuming the use of GonaCon™ is eventually registered by EPA for bison, it is equally implausible to conclude that use of the contraceptive vaccine in bison would result in any significant population decreases in bison in the absence of other management tools (USDA APHIS, 2010b).

## **b. Non-Target Species**

The proposed study would not increase the risk of brucellosis being transmitted to non-target species. Therefore, this section focuses on the risk of non-target species being exposed to GonaCon™.

In the proposed study, it is unlikely that non-target species would be exposed to GonaCon™. The proposed study protocol includes both risk mitigation measures that prevent direct exposure of non-target species to GonaCon™ and measures that limit the potential for secondary exposure of non-target species to GonaCon™.

To prevent direct exposure to non-target species, GonaCon™ would be administered directly to the study bison by hand-injection with a syringe.

By using this direct-injection method, there would be no potential for accidental injection of non-target species with GonaCon™.

To prevent the risk of secondary exposure, the study plan includes measures to restrict access to treated animals by predators or other non-target species. To prevent access by larger wild animals, the bison in the proposed study would be maintained in double-fenced pastures, not on open range, thereby physically limiting potential contact between treated bison and wild animals such as elk, bears, and coyotes.

Abortions or calving events by GonaCon™-treated bison should be very minimal since the expected effect of treatment with GonaCon™ is to prevent pregnancy. The proposed study protocol includes actions to detect abortion or calving events, and the fencing would also physically limit some wild animals from accessing infected bison tissues from the GonaCon™-treated bison. The study protocol also includes standard operating procedures for proper removal and disposal of *B. abortus*-infected animal tissues from GonaCon™-treated bison from the study area to further limit potential exposure.

As discussed above, some larger animal species can be physically prevented from accessing the study area. However, some species such as birds of prey, smaller rodents, or insects cannot be prevented from accessing the study area. In the event that a non-target species were to consume GonaCon™-treated infected bison carcasses or GonaCon™-treated *B. abortus*-infected animal tissues, there would be no anticipated adverse effects from the GonaCon™ vaccine. Because GonaCon™ is made of proteins, it is broken down into smaller amino acids through digestion when it is consumed and has no contraceptive effect on non-target species (Fagerstone et al., 2008; Fagestone et al., 2010).

As part of the registration process for the use of GonaCon™ in deer, EPA concluded that there is no known danger associated with eating deer that have been vaccinated with GonaCon™ (USEPA, 2007). Similar injectable hormone-altering products are used routinely in livestock applications (USDA APHIS, 2010b).

## **2. Human Health and Safety**

### **a. General Public**

The proposed study discussed in this EA would be conducted on double-fenced, private facilities where access by the general public to bison and potentially infected animal tissues such as aborted fetuses or reproductive materials would be prohibited. The protocol for the study contains standard operating procedures for handling and safely disposing of any potentially brucellosis-infected materials generated from the animals in the study. The general public would have no risk of being exposed to either



GonaCon™ -treated or untreated animals from the study or any potentially infected materials generated from the study.

There is no danger of transmission of the infection to humans from consuming cooked meat from *B. abortus*-infected bison. The *B. abortus* bacteria that causes brucellosis is typically not found in muscle tissue, and normal cooking temperatures kill any existing bacteria (USDA APHIS, 2011). Additionally, EPA and FDA concluded that there are no known human food safety concerns associated with eating deer that have been vaccinated with GonaCon™ (USEPA, 2007 and FDA, 2005).

#### **b. Worker Safety**

Personnel who would be involved in the proposed study are qualified and have the expertise and experience needed to carry out the study activities. These activities include wildlife chemical immobilization, proficiency in administration of animal vaccines, veterinary care, animal restraint, tagging and marking animals, sample collection, and field evaluation of reproductive behaviors and activities.

Standard operating procedures would be in place to protect personnel involved in carrying out the proposed study activities. The standard operating procedures would include measures for safe and humane handling of bison to prevent injury to study personnel and to bison; safe handling and administration of GonaCon™; safe and humane collection of study samples for analysis; and safe handling procedures for study samples, including the safe handling and proper disposition of potentially infected animal tissues. In addition to the standard operating procedures and safety measures, at least one cell phone would be available at all times to facilitate contact in emergencies, and first aid kits would be available at all times in the event of injury to study personnel.

The GonaCon™ immunocontraceptive vaccine would be provided for the study in pre-mixed syringes and stored in locked containers except when actively being used to inject study animals. Personnel handling the vaccine would take appropriate precautions to prevent accidental self-injection. Pregnant women would not be involved in the handling or injecting of GonaCon™ at any time during the proposed study to avoid any potential risks associated with accidental exposure to the immunocontraceptive vaccine. Immobilization drugs and associated reversal drugs would be available for use if needed in the study. These drugs would be properly stored in locked containers to prevent improper access.

### **3. Physical Environment**

As previously mentioned, proposed study activities would occur in several pastures at the Brogan Bison Facility, just north of Corwin Springs

(60 acres), and the Slip ‘n Slide pasture (25 acres) and/or Rigler pasture (32 acres), located north of Gardiner, Montana.

The Brogan Bison Facility is used by APHIS VS for bison research. Forage at the pastures includes a mix of cultivated and native grasses. The upper pasture is on a steep slope along the west side of the property with several grass benchlands<sup>7</sup> and steep, rocky drainages. The vegetation is composed of thinly forested slopes, interspersed with native bunchgrass rangelands (MFWP, 2005). Bassett Creek runs through the property and flows into the Yellowstone River.

The Slip ‘n Slide and Rigler pastures are located in close proximity to each other, just south of Yankee Jim Canyon. The pastures are double-fenced. The landscape is gently sloping and consists mostly of native grassland, except for the mixed alfalfa- and grass-cultivated hay meadows. Slip ‘n Slide Creek runs through the Slip ‘n Slide property and flows into the Yellowstone River. There are no brooks or creeks running through the Rigler pastures. The pastures are primarily surrounded by Gallatin National Forest and State of Montana land. Montana Fish, Wildlife and Parks historically leases the pastures on the ranch for bison to graze on (MFWP, 2011).

The potential environmental impacts of the proposed study on the physical environment would primarily be due to bison grazing in confined areas. The main issues of concern regarding confined grazing are effects on soil, vegetation, and water quality. These aspects are discussed below.

#### **a. Soil and Vegetation**

Livestock grazing in confined pastures can negatively affect soil quality by compacting the soil or causing soil erosion due to loss of vegetation cover. With a loss of vegetation, invasive species also threaten pastures. Most studies and discussions on the impacts of grazing focus on cattle because 70% of the western United States is grazed by livestock, which is primarily composed of cattle (Fleischner, 1994). Cattle are similar to bison in that they are large generalists and ungulate herbivores that can disturb terrestrial communities; however, differences in the two animals, such as forage selection and social organization (Hartnett et al., 1997; Steuter and Hidinger, 1999), may influence their impacts on soil and vegetation.

Bison have a stronger preference for perennial grasses than cattle. Cattle consume a higher percentage of forbs<sup>8</sup> in their diet than bison, and they

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<sup>7</sup> Steps or shelves in the mountainside that are the remains of former riverbanks or lakeshores.

<sup>8</sup> Herbaceous flowering plants other than grass.

use wooded areas and riparian zones more intensively than bison (Steuter and Hidinger, 1999). Due to the lower diversity of plants consumed by bison and the bison's preference for herbaceous vegetation, there may be a reduction in the abundance of dominant grasses, an increase in the survival of subordinate species, and an increase in species diversity, when compared to land grazed by cattle (Hartnett et al., 1997). Additionally, physical disturbances that bison exhibit during non-grazing activities, such as wallowing<sup>9</sup> may assist in ecodiversity (Hartnett et al., 1997).

The proposed action would not alter historic land use (for information regarding historic or cultural sites, see section below in the section on other environmental review requirements) at the pastures; therefore, overall effects to soil and vegetation would not be increased.

Approximately 100 bison would be placed on 120 irrigated acres of land, averaging about one acre of land per bison. This density is expected to have only minimal impacts on the land. In addition, landowners at each ranch or facility implement management practices to minimize effects to soil and vegetation. Pasture rotation is practiced at or between facilities as necessary, so that each pasture is periodically rested and the land is not overused. Lastly, the bison at all facilities would be supplemented with hay, further limiting pasture grazing.

#### **b. Water**

GonaCon™ is a protein that is broken down within the treated bison; its metabolites would not be anticipated to be any greater than what would naturally occur. Therefore, this section focuses on other potential environmental impacts of bison grazing near water.

Potential environmental impacts from bison grazing in pastures could include a degradation of nearby water quality by manure, urine, and sediment being deposited into local waters. While bison that have access to a water body may directly deposit manure and urine into the water, wastes excreted onto land may also be transported to water bodies via leaching and surface runoff.

Grazing management practices can lessen the environmental impacts of streamside pastures. While many studies describe the impact of cattle grazing on water bodies, few studies have concentrated on the effects of native ungulates on stream health. Russell et al. (2009) states that the proximity of cattle to the stream, the amount of time they spend by or in the stream, and the intensity and length of cattle grazing can all influence

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<sup>9</sup> When bison roll in shallow depressions in the soil, covering themselves with dirt or mud.

the water quality of nearby streams. One can assume the same behaviors in bison would also impact water quality.

Bison spend less time in streams or riparian habitats than cattle (Fleischner, 1994). Fleischner describes a study conducted in Utah regarding the feeding ecology of cattle and bison. The study noted that “cattle distribution was limited to gentle slopes near water, regardless of forage, while bison roamed widely, seemingly unaffected by slope or proximity to water.” As previously mentioned, cattle forage on a higher percentage of forbs and woody vegetation and maintain a larger breadth of diet niche than bison. Fritz et al. (1999) takes this one step further and states that a higher percentage of forbs and woody vegetation occurs in the riparian zone, so cattle are more likely to impact stream riparian zones than bison.

Fritz et al. (1999) studied the distribution and diversity of macroinvertebrates (e.g., insects, worms, snails and crayfish) in relation to bison crossings in prairie streams. The study suggests that impacts of bison on communities at the bottom of the streams was spatially limited, and that the bison may have less impact on stream communities than other studies of the impact of cattle. While comparison to cattle provides a noteworthy point of reference, it is important to point out that it is difficult to compare environmental responses with cattle versus bison due to confounding effects of site, weather, and management.

The pastures that would be utilized in the proposed study have historically been used for bison research or as livestock pastures, so deposits of manure, urine, and sediment due to the proposed study are not expected to increase the historic amount of contaminants entering the Yellowstone River. While the Brogan Bison Facility does have a creek running through it, bison do not have access to the creek. Only bison at the Slip ‘n Slide ranch would have direct, but limited, access to a creek. The access site to this creek was historically used for livestock and is at a point on the creek where the bank is shallow and covered with rocks. A shallow crossing means that bison would not have to climb up and down the bank, which would eventually cause the banks to erode. In addition, water would be provided to the bison, limiting the time that bison would visit the creek. Lastly, because only a portion of the total number of bison tested would be present on this pasture and those bison would spend limited time in streamside environments, the impact to water bodies is expected to be minimal.

## IV. Other Environmental Review Requirements

### A. Endangered or Threatened Species

Section 7 of the Endangered Species Act (ESA) and its implementing regulations require Federal agencies to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of critical habitat. Proposed study activities would occur in pastures in southern Park County in Montana.

There are two federally listed mammals in Park County: the Canada lynx (*Lynx canadensis*) and the grizzly bear (*Ursos arctos horribilis*). Critical habitat has been designated for the Canada lynx in Park County.

Canada lynx: Areas designated as critical habitat for the Canada lynx include boreal forest landscapes that provide one or more of the following primary constituent elements for the lynx: snowshoe hares for prey; abundant, large, woody debris piles that are used as dens; and winter snow conditions that are generally deep and fluffy for extended periods of time (USDOI FWS, 2009).

Grizzly bear: 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. Habitat use is highly variable between areas, seasons, local populations, and individuals. Grizzly recovery zones (areas identified where grizzly bear distribution is primarily within), including the Yellowstone area in northwest Wyoming, eastern Idaho, and southwest Montana (9,200 square miles), are estimated at more than 580 bears (FWS, 2011).

At all three locations, the pastures are double-fenced with an 8-foot woven wire fence and an electric high tensile fence to contain the study bison. These fences would also prevent Canada lynx and grizzly bears from entering the pastures. If Canada lynx or grizzly bears were to enter the pastures and consume GonaCon™-treated bison, there would be no effect on these species. The vaccine is made of proteins, and when consumed, is broken down into amino acids in the gastrointestinal tract, thereby having no contraceptive effect (Fagerstone et al., 2008; Fagerstone et al., 2010).

Federally-listed species and other non-target wildlife would not be directly exposed to GonaCon™ because the vaccine would be injected directly into the test bison and not administered orally in bait form. No wildlife habitat would be altered or disrupted by proposed study activities. No

helicopters would be used as part of this proposed study; therefore, no disturbance to wildlife in the surrounding area is expected. Although the study pastures occur within the designated critical habitat of the Canada lynx, the proposed study would have no effect on the primary constituent elements of that habitat and would not adversely modify it. Therefore, APHIS has determined that the proposed action would have no effect on the grizzly bear or Canada lynx.

## **B. Bald and Golden Eagle Protection Act**

The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c) prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

There are no known bald eagle nests around the facilities; nesting areas are further down river (Jeremy Zimmer, USDA, Forest Service, Gardiner, MT, pers. comm.). However, golden eagle nests could be in the vicinity of the facilities, although specific nests are not known. Therefore, the proposed study is not expected to have any impact on nesting bald or golden eagles. In addition, activities occurring during the proposed study would not differ significantly from activities normally occurring at these pastures. "Eagles are unlikely to be disturbed by routine use of roads, homes, and other facilities where such use pre-dates the eagles' successful nesting activity in a given area. Therefore, in most cases ongoing existing uses may proceed with the same intensity with little risk of disturbing bald eagles" (FWS, 2007). If study personnel discover the presence of any bald or golden eagle nests in the area, this information would be reported to the Wildlife Program Manager at Gallatin National Forest.

Golden eagles have been observed flying over the Brogan Bison Facility (Jeremy Zimmer, USDA, Forest Service, Gardiner, MT, pers. comm.) and bald eagles could be flying in the area as well. The activities that would occur during the proposed study would not differ significantly from activities that normally occur in these pastures. Therefore, no disturbance of eagles would occur as a result of the proposed study; eagles in the area would be accustomed to these activities.

Although program personnel would remove daily any aborted calves or treated or non-treated bison that could die during the study, bald and golden eagles in the area could potentially consume these items. However, "[i]mmunocontraception vaccines provide few risks for

consumptive use of dosed wildlife; the antibodies that prevent reproduction are only one of millions of other antibodies present in animals, all of which are harmless to the organism that digests them, like any other proteinaceous food consisting of amino acids” (Fagerstone et al., 2010). Therefore, no eagles would be harmed if consumption of these items occurred.

## **C. Historic and Cultural Resources**

In accordance with Section 106 of the National Historic Preservation Act of 1966 and its implementing regulations<sup>10</sup>, APHIS prepared a summary of the proposed project and submitted it to the Montana State Historic Preservation Office (SHPO) for consideration of potential impacts to historic resources. On November 28, 2011, APHIS received a letter of concurrence from the Montana SHPO agreeing that there were no findings of potential impacts to historic resources for the proposed study.

## **D. Tribal Consultation and Coordination**

In accordance with Executive Order 13175: Consultation and Coordination with Indian Tribal Governments<sup>11</sup>, APHIS has prepared a summary of the proposed project and provided it to 26 tribes who may have interests in YNP. In addition to the 26 identified tribes, APHIS also provided a summary of the project to all tribes located near YNP and in States adjacent to Montana who might potentially have interest in the project.

On December 19, 2011, APHIS held a conference by telephone with tribes to provide an opportunity to discuss the proposed project in more detail and discuss potential concerns that the tribes may have. Tribes that participated in the call showed an interest in the details of the project, and several requested additional information on the history of the GonaCon™ immunocontraceptive vaccine. APHIS agreed to provide background information to tribes. No tribes voiced any major concerns about the project.

APHIS will continue to conduct outreach to interested tribes and keep them updated on the activities associated with the project.

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<sup>10</sup> National Historic Preservation Act of 1966 (16 U.S.C. 470f) and implementing regulations (36 CFR §800).

<sup>11</sup> Executive Order 13175: Consultation and Coordination with Indian Tribal Governments (65 FR 67249, November 9, 2000).

## V. Cumulative Impacts

This EA examines the activities associated with a proposed study to evaluate whether GonaCon™, an immunocontraceptive vaccine, would be effective as a non-lethal method of decreasing the prevalence of brucellosis in the YNP bison population by effecting temporary infertility in bison cows and thereby preventing transmission of *B. abortus*. Activities associated with the proposed study are not expected to result in adverse cumulative effects.

In order to conduct the proposed study, approximately 96 female and 8 male bison that naturally exit YNP over the period of as many as three years would be housed at pasture locations in the Gardiner, Montana area. Some of the female animals in the study would be injected with GonaCon™, which would reduce the likelihood of pregnancy and delivery of offspring in the treated animals. Untreated females may give birth to offspring, which would increase the total number of animals associated with the study.

In August 2011, the National Park Service conducted an annual bison population estimate (NPS, 2011). According to the 2011 survey, the total bison population in YNP was estimated to be approximately 3,700 bison. This total was approximately 200 lower than the survey from the previous summer, but the decrease was “within the natural range of expectation for wild bison.”

Assuming the proposed study would result in approximately 104 bison being removed from the larger bison population of YNP, the effect of removing this number of bison over multiple years is well within the natural range of expectation for bison. This decrease in the numbers of bison in YNP is not anticipated to cause any cumulative negative effects to the overall bison population.

One of the goals of the IBMP is to manage temporal and spatial separation of bison and cattle to mitigate potential transmission of brucellosis. Currently, this is accomplished through hazing, capture, test and slaughter of seropositive animals, and vaccination of seronegative animals and a limited hunt in Montana. The proposed study may provide important information that would allow for re-evaluation and re-consideration of some of the current IBMP activities. This may result in impacts to future decision-making regarding protocols for bison habitat management, bison vaccination strategies, and bison hunt activities. IBMP activities that could be impacted include strategies to maintain appropriate bison population and distribution, should bison habitat be expanded.



## VI. Agencies or Persons Contacted

U.S. Forest Service, Gallatin National Forest

Montana Fish, Wildlife and Parks

Montana State Historic Preservation Office, Montana Historical Society

USDA, Animal and Plant Health Inspection Service, Veterinary Services

USDA, Animal and Plant Health Inspection Service, Policy and Program Development, Environmental and Risk Analysis Services

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# **Evaluation of GonaCon™, an Immunocontraceptive Vaccine, as a Means of Decreasing Transmission of *Brucella abortus* in Bison in the Greater Yellowstone Area**

**Environmental Assessment,  
January 2012**

# Evaluation of GonaCon™, an Immunocontraceptive Vaccine, as a Means of Decreasing Transmission of *Brucella* *abortus* in Bison in the Greater Yellowstone Area

## Environmental Assessment, January 2012

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# I. Introduction

## A. Background

In Yellowstone National Park (YNP), wild and free-ranging bison (*Bison bison*) are critical parts of a fully-functioning ecosystem as well as being important to the identity of the park. The bison are a part of the esthetic, cultural, and natural environment of the YNP. YNP bison are chronically infected with brucellosis, a contagious disease that the United States Department of Agriculture, Animal and Plant Health Inspection Service, Veterinary Services (USDA/APHIS/VS) is striving to eliminate.

Brucellosis is a serious disease of livestock and wildlife that has significant animal and public health and international trade consequences. The disease is caused by bacteria of the genus *Brucella*. Brucellosis occurs primarily in cattle, bison, and swine; however, cervids, goats, sheep, and horses are also susceptible. In cattle and bison, the specific disease organism of concern is *Brucella abortus* (*B. abortus*).

In its principal animal hosts, brucellosis causes loss of young through spontaneous abortion or birth of weak offspring, reduced milk production, and infertility. In cattle and bison, the disease localizes in certain lymph nodes, reproductive organs and/or the udder, causing spontaneous abortions in females and systemic effects in both male and female animals. Weight loss and lameness may also be associated with brucellosis infection.

The shedding<sup>1</sup> of *B. abortus* through the reproductive tract during an abortion or calving event may contribute to the transmission of infection to other animals that come in contact with the expelled bacteria now in the environment. Studies have shown that *Brucella* can persist on fetal tissues, vegetation and soil in YNP for as long as 81 days depending on environmental conditions (Aune et al., 2011). Spread of the disease occurs when the cattle and bison, which are social animals, sniff and lick a newborn calf, the afterbirth, and even an aborted fetus. This behavior provides an avenue for the disease to spread if *B. abortus* organisms are present. Additionally, *B. abortus* is present in the milk from infected females and can be transmitted to calves through suckling. There is no effective means of treating brucellosis in livestock or wildlife.

Studies investigating the prevalence of brucellosis in YNP bison have estimated that between 40% and 60% of YNP bison have been exposed to

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<sup>1</sup> For purposes of the proposed study, “shedding” is to expel *B. abortus* from the body through the reproductive tract.

the disease. Further testing of animals that are seropositive<sup>2</sup> demonstrates that more than 40% of the seropositive animals are culture-positive, confirming actual infection with *B. abortus* (Meyer and Meagher, 1995; Cheville et al., 1998). In the areas outside the borders of YNP where livestock such as cattle are often raised, there is a concern that infected bison may transmit the disease to livestock if infected bison abort or calve.

Multiple Federal and state agencies<sup>3</sup> have participated in efforts to control the potential spread of brucellosis and conserve bison through the 2000 Interagency Bison Management Plan (IBMP) (MDoL and MFWP, 2000). In 1934, a federal brucellosis program was established as part of an effort to safeguard domestic livestock (See [http://www.aphis.usda.gov/animal\\_health/animal\\_diseases/brucellosis/](http://www.aphis.usda.gov/animal_health/animal_diseases/brucellosis/) for additional information regarding USDA APHIS' brucellosis program).

Safeguarding measures, such as preventing, detecting, and eliminating animal diseases, help to maintain the U.S. cattle industry's national and international trade interests, ensure food safety, and protect public health. The efforts of the national brucellosis program have nearly eradicated brucellosis from domestic cattle and bison populations. As of July 2009, all 50 States had attained Class-Free (disease-free) status for brucellosis in domestic cattle and bison (USDA APHIS, 2010a). Currently, the last known reservoir of bovine brucellosis is in the wild bison and elk population in the Greater Yellowstone Area (GYA). Prevention of the spread of brucellosis between infected wildlife and livestock continues to be an issue of concern. The proposed study discussed in this environmental assessment (EA) is designed to investigate the feasibility of using an immunocontraceptive vaccine, GonaCon™, as a non-lethal management option to decrease the potential risk of disease transmission by brucellosis-infected bison.

In humans, Brucellosis is often referred to as undulant fever because it persists for several weeks or months and may get progressively worse if untreated. Humans are most commonly infected by consumption of unpasteurized dairy products produced from milk of infected animals, or they may become infected through direct contact with infected animal tissues such as aborted fetuses or reproductive materials. In humans, brucellosis initially causes flu-like symptoms that are treated with a rigorous course of antibiotics. In some isolated cases, the disease may develop into a variety of chronic conditions, including arthritis. Potential

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<sup>2</sup> Bison that test positive on blood tests for brucellosis are referred to as being seropositive, and bison that do not test positive are referred to as being seronegative.

<sup>3</sup> U.S. Department of Interior National Park Service (NPS); U.S. Department of Agriculture Animal and Plant Health Inspection Service (APHIS); U.S. Department of Agriculture Forest Service (FS); Montana Department of Livestock (MDoL); and Montana Fish, Wildlife and Parks (MFWP).

effects of the proposed study on humans will be discussed in the potential environmental impacts section.

### **GonaCon™ Immunocontraceptive Vaccine**

GonaCon™ is a contraceptive vaccine that stimulates an immune response in a vaccinated animal by producing antibodies that bind to a gonadotropin-releasing hormone (GnRH). GnRH is a naturally occurring hormone that signals production of sex hormones such as estrogen, progesterone, and testosterone. The anti-GnRH antibodies interfere with the ability of GnRH to signal production of sex hormones, resulting in temporary infertility. As long as adequate levels of anti-GnRH antibodies are present in the vaccinated animal, sexual activity, breeding, and reproduction are extremely unlikely.

GonaCon™ is currently approved under the United States Environmental Protection Agency's (EPA's) Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) for use in female white-tailed deer as one tool to aid in reducing deer overpopulation (EPA Registration Number 56228-40). The immune response that causes temporary infertility in deer is accomplished with a single-shot vaccine. The length of time that a vaccinated female deer remains infertile depends on the individual animal, but some pen studies have shown that 4 out of 5 female deer remain infertile for 5 years (Miller et al., 2008a). Field studies have demonstrated lower rates of infertility ranging from 88% and 47% the first and second year after vaccination, respectively (Gionfriddo et al., 2009) to 67% and 43% the first and second year after vaccination, respectively (Gionfriddo et al., 2011a).

GonaCon™ is not currently registered for use in bison. However, USDA conducted a small pilot study of penned bison and found that none of the 6 females vaccinated with GonaCon™ became pregnant the first year after treatment (Miller et al., 2004). In 2011, APHIS received approval from EPA to use GonaCon™ in female bison in the confined experimental use scenario discussed in this EA. Should the proposed study discussed in this EA proceed, the data obtained from it could potentially be used to add to the required data set needed for EPA to register the GonaCon™ vaccine for use in bison. However, the purpose for registering GonaCon™ in bison would not be for reducing overpopulation. The intended purpose of using GonaCon™ in female bison would be to manage reproduction in bison known to be infected with brucellosis by inducing temporary infertility, thereby decreasing the potential for transmission of brucellosis through abortion and calving events.

## **B. Purpose of and Need for the Proposed Action**

The purpose of the proposed action is to conduct a study to evaluate whether GonaCon™, an immunocontraceptive vaccine, would be effective as a non-lethal method of decreasing the prevalence of brucellosis in the YNP bison population by preventing pregnancy, calving, and abortion, thereby preventing transmission of *B. abortus*. The major objectives of the proposed study are:

- To evaluate the efficacy of GonaCon™ as an immunocontraceptive vaccine in *B. abortus*-infected female bison;
- To evaluate the effect on shedding by *B. abortus*-infected female bison that are rendered temporarily infertile by GonaCon™; and
- To evaluate the effect the infertility produced by GonaCon™ has on the long-term survivability of *B. abortus* in infected female bison.

Use of an effective immunocontraceptive such as GonaCon™ to prevent pregnancy and eliminate the potential for abortions by infected bison would break the cycle of transmission of brucellosis. If female bison known to be infected with *B. abortus* do not become pregnant, they would not abort. Exposure of non-infected animals to the infected tissues and fluids from aborted fetuses would therefore be reduced.

The need for the proposed study is to provide information that would be used to evaluate the use of GonaCon™ as a nonlethal method of decreasing or controlling the risk of transmission of *B. abortus* in the YNP bison population. Brucellosis is spread within the animal population primarily through contact with infected birthing tissues or aborted fetuses and through the milk of infected cows. If GonaCon™ can effectively render brucellosis-infected female bison temporarily infertile, the primary routes of disease transmission would be blocked. In combination with other appropriate disease mitigation activities, the use of GonaCon™ may be an effective tool to assist in eliminating brucellosis from the YNP bison herd over time.

USDA APHIS has determined that under the provisions of the National Environmental Policy Act (NEPA) (see 42 U.S.C. 4321 et seq.) and APHIS' National Environmental Policy Act (NEPA) implementing procedures (see 7 CFR Part 372), an EA should be prepared for these proposed actions. The availability of this EA and a 30-day comment period will be announced by publishing a notice on the APHIS brucellosis program website, the IBMP website and/or local newspapers. APHIS' decision maker for the actions described in this EA will take appropriate action after reviewing the EA, its associated analyses, public comments received, and other relevant responses and recommendations.

## **II. Proposed Action and Alternatives**

### **A. No Action (the Current Situation)**

The no action alternative would result in not conducting the proposed study. If the proposed study is not conducted, the utility of GonaCon™ as a non-lethal reproductive control option in bison cannot be determined. Additionally, if the use of GonaCon™ in bison is not investigated, information would not be known on whether temporary infertility induced by GonaCon™ is effective in decreasing the shedding of *B. abortus* and ultimately the transmission of brucellosis. Without the proposed study, use of the immunocontraception approach as a viable disease management tool for bison would not be evaluated, and could not be considered as a potential management tool.

### **B. Proposed Action**

The proposed action is to conduct a multi-year study to evaluate the potential for use of GonaCon™, an immunocontraceptive vaccine, as a non-lethal method of decreasing the prevalence of brucellosis in bison by preventing pregnancy, thereby preventing abortions and risk of transmission of brucellosis to uninfected animals from contact with infected tissues and fluids from aborted fetuses.

The proposed study would include the following activities that are discussed in further detail below:

- Capturing bison in the late winter/spring of 2011, 2012, 2013, and possibly 2014;
- Transporting the captured bison by stock trailer to APHIS' bison facilities in Gardiner, Montana;
- Collecting and evaluating blood samples to determine brucellosis infection status at the beginning of the study and monitoring infection status at regular intervals throughout the study;
- Housing, caring for, and tagging (for identification purposes) animals in Gardiner, Montana facilities;
- Injecting one group of seropositive female bison with GonaCon™ beginning in the spring of 2012;
- Commingling uninfected bulls with females during breeding season, documenting breeding behavior, and testing for pregnancy for five calving seasons;
- Monitoring pregnant bison with transmitters and daily observing them for abortions, labor, and births;
- Collecting and testing blood, milk, and vaginal swabs from female bison that give birth to test for brucellosis infection status;

- Monitoring exposure to aborted fetuses by other bison and evaluating fetuses collected during the study; and
- Evaluating data collected from the study to determine whether GonaCon™ decreases the shedding of *B. abortus* in bison.

Bison for the proposed study would be acquired during the winter when they naturally exit YNP. The capture of bison would be conducted using methods currently in use for capturing bison according to the details of the IBMP operating procedures (IBMPOP, 2009). These procedures include hazing and/or using weed-free hay to move them to a capture facility. Approximately 104 adult bison would be used in the proposed study: 24 female bison that are seronegative for brucellosis; 72 female bison that test seropositive for brucellosis; and 8 male bison (bulls) that test seronegative for brucellosis. Female bison would be yearlings, two-, and three-years of age. If temporary chemical immobilization of any animal is needed, opioid narcotics and alpha-2-adrenergics would be used by study personnel qualified in the administration of such drugs. All bison used in the study would be identified with uniquely numbered ear tags and microchip identification.

The proposed study would take place on several double-fenced pastures at facilities in the Gardiner, Montana area: the Brogan Bison Facility in Corwin Springs (60 acres), the Slip 'n Slide pasture (25 acres), and the Rigler pasture (32 acres), all of which are located north of Gardiner, Montana. All sites are within the GYA and along Highway 89. The Brogan Bison Facility, Rigler pasture, and Slip 'n Slide pastures are currently leased by APHIS VS and Montana Fish, Wildlife and Parks and are used by APHIS VS for the bison quarantine feasibility study (MFWP, 2005). These facilities were specifically designed and erected to hold bison in a quarantine environment with hay and water as needed for an extended period of time.

The study design is as follows: In spring 2012, animals would be randomly selected to go into groups of 16 to 18 seropositive cows, four to six seronegative cows, and two bulls. Two replicate test pastures would be established in 2013 and possibly 2014 if not enough animals are captured in 2013. After three to four weeks of acclimation in the test pastures, *B. abortus*-infected female bison in one of the pastures would receive GonaCon™ vaccine (containing 3,000 micrograms in 3 milliliters of an adjuvant) delivered into the muscle on each side of the neck. The sites of injection would be tattooed and observed for any injection reaction. Bison in the remaining pasture would not be vaccinated.

Bulls would be separated from the cows outside of the breeding season from October to July. Prior to exposure to bulls, cows would have

breeding tags<sup>4</sup> attached to them to document if bulls have mounted them to breed. Following first exposure of cows to bulls in 2012, five calving seasons would be observed (2013-2017). In February of each year, cows would be pregnancy-tested and fitted with vaginal transmitters to alert investigators to abortion or calving events.

During the abortion/calving seasons (from February until August of each year), daily observation for abortions, labor, and calving events would be conducted by study investigators. Within five days of abortion or calving, the cow would be immobilized and blood, milk, and vaginal swabs would be collected for testing. If possible, the calf would also be captured and eye swabs and blood would be collected for testing.

Following an abortion, the fetus would be left at the abortion site for 24 hours to monitor exposure to other bison. The fetus would then be collected, tested, and incinerated at the Montana Veterinary Diagnostic Laboratory (MVDL) in Bozeman, Montana.

Blood testing of cows, bulls, and calves would be conducted three times a year: in February, calving time, and in the fall. Blood would be analyzed at the MVDL and/ or the National Veterinary Service Laboratories in Ames, Iowa throughout the study to determine *B. abortus* infection status of each animal.

Handling and physical restraint of bison for tagging or blood collection would take place in alleyways leading to standard bison manual squeeze chutes. Injection of the study animals with GonaCon™ would be done by study personnel experienced in administering intramuscular vaccines. Blood samples from study animals would be collected using established techniques for collection of blood from bison and would be performed by study personnel experienced with these techniques. An attending veterinarian would be available to address concerns about animal care and use for the study.

When the study is completed, all seropositive animals would be humanely euthanized following American Veterinary Medical Association-approved guidelines, and specimens would be collected from each animal for laboratory analysis. In addition, eggs and semen would be collected from these animals and frozen for genetic conservation. Per the conditions of the approval from EPA to use GonaCon™ in bison in this confined experimental use study, animals treated with GonaCon™ cannot be consumed by humans. These animals would be disposed of by incineration or landfill burial. Seropositive animals from the study that have not received GonaCon™ injections would be distributed to Montana food

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<sup>4</sup> Breeding tags are devices that are temporarily adhered to the base of the cow's tail that indicate by a color change that the cow has been mounted.

banks as is routinely done with other YNP seropositive bison. Further discussion on the safety of consuming bison infected with *B. abortus* is discussed in the human health and safety section of this document. All animals that test negative for brucellosis for the duration of the study and satisfy existing bison quarantine release requirements outlined in the APHIS Uniform Methods and Rules (USDA APHIS, 2003) would be used for bison conservation purposes.

### **C. Other Alternatives Considered but Dismissed from Further Consideration**

Because the most common route of transmission of *B. abortus* is contact with infected birthing fluids, aborted fetuses, and placental tissues, different methods of impacting the fertility of bison through the use of immunocontraceptive vaccines were considered as alternatives to the proposed action. If pregnancy could be prevented in *B. abortus*-infected female bison, transmission of *B. abortus* by this route could be eliminated or decreased.

APHIS considered the use of Porcine zona pellucida (PZP), another type of immunocontraceptive vaccine that has been used in animal species such as dogs, coyotes, burros, wild horses, and deer (USDA APHIS, 2010b). PZP has also been demonstrated to effectively induce temporary infertility in captive bison (Frank et al., 2005). However, research has shown that the use of PZP can increase the period of time in which the treated animals exhibit breeding season behavior.

The PZP vaccine results in temporary infertility while still allowing female animals to have multiple estrous cycles in which they engage in prebreeding behavior and breed. This behavior can cause animals to use energy at times of the year, such as late fall and early winter, when they would otherwise be conserving energy. Miller et al. (2004) concluded that "...Prolonging the breeding season of bison in the GYA may be deleterious to the winter survival of dominant bulls and PZP vaccinated cows because of increased sexual activity during fall and early winter." Therefore, this alternative was dismissed from further consideration because investigating the use of a PZP vaccine would not be useful in brucellosis management strategies in bison since it is associated with increased mating and reproductive activity (Killian et al., 2007).

APHIS also considered the alternative of physical sterilization as a means of decreasing the transmission of *B. abortus* within bison populations and between bison and cattle in the GYA. Physical sterilization such as spaying<sup>5</sup> or castration<sup>6</sup> has been recognized as a disease management

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<sup>5</sup>Surgical removal of the ovaries from female bison.



strategy that could be used to reduce the potential transmission of brucellosis in infected wildlife populations. However, this type of sterilization is permanent. APHIS would not subject the bison in the study to physical sterilization. For this reason, this alternative was dismissed from further consideration.

### **III. Potential Environmental Impacts**

The NEPA implementing regulations provide criteria that Federal agencies should evaluate, if applicable, in environmental documents for proposed actions. This section of the EA addresses the applicable criteria related to potential impacts from the no action alternative and from the proposed action. NEPA criteria that are applicable for consideration in this section of the document include animal impacts, human health and safety, and the physical environment.

#### **A. No Action**

Without the proposed action, efforts to gather scientific information to better understand the potential application of immunocontraceptive vaccines such as GonaCon™ as a nonlethal strategy for reducing the transmission of *B. abortus* and decreasing the prevalence of brucellosis in the wild bison population in YNP would be lost. Without the proposed action to assist in developing nonlethal strategies to effectively control and eliminate brucellosis, the disease may continue to spread within the wild, free-ranging bison population in the GYA.

#### **B. Proposed Action**

##### **1. Impact of Proposed Action on Animals**

##### **a. Bison**

The proposed study would not increase the risk of brucellosis being transmitted within the bison population. Therefore, this section focuses on the potential effects of the administration of GonaCon™ in bison.

In this proposed study, the desired effect of administering GonaCon™ is the temporary suspension of reproductive activity in the vaccinated female bison. Miller et al. (2004) report that “The gonadotropin-releasing hormone (GnRH) vaccine is generally considered to provide temporary sterilization, because the reproductive activity of the target animal returns as the GnRH antibody titer drops below a protective level.” If the effect of this immunocontraceptive vaccine successfully places the vaccinated

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<sup>6</sup> Surgical removal of the testes of male bison.

bison cows in a temporary nonreproductive state, the transmission of brucellosis by the female bison via shedding of *B. abortus* during calving or abortion may be eliminated.

A small study conducted at the Idaho Fish and Game Wildlife Health Laboratory in Caldwell, Idaho in 2002-2003 demonstrated “that a single injection of GnRH vaccine is effective in preventing conception in female bison for at least 1 yr” (Miller et al., 2004). In that study, three of the six GnRH-treated bison cows and five of the untreated bison cows were in the last month of pregnancy at the time of vaccination. They delivered normal calves in the first year, suggesting that the GnRH vaccine did not interfere with the pregnancy and could be administered safely during the last third of the pregnancy. Additionally, none of the six treated bison became pregnant during the first breeding season (Miller et al., 2004).

Undesired health effects have been minimal in the species of wildlife in which GonaCon™ has been used. Injection site reactions caused by the “water-in-oil (W/O) emulsion needed in the GonaCon™ formulation for development of a long-term immune response” have been observed (Miller et al., 2008b). These reactions were most commonly manifested as inflammation or swelling at the injection site, or the presence of granulomas (thickened tissue filled with fluid). This observation is not uncommon in other livestock vaccines (USDA APHIS, 2010b).

As part of the GonaCon™ EPA registration process for use in deer, the health effects to the vaccinated deer were evaluated. Vaccinated animals showed no external evidence of inflammation at known injection sites; however, when muscle tissue at the injections site was sectioned, the injection sites appeared to be comprised of whiteish scar tissue, some containing vesicles of sterile fluid. All blood chemistry analyses were similar between treated and untreated deer. (Killian et al., 2006). Other types of injected products that alter animal hormones are currently used in livestock in the United States (USDA APHIS, 2010b).

Ensuring humane handling and treatment of all bison during the proposed study activities would be a priority. Application of animal identification tags, administration of GonaCon™ vaccine, and evaluation of pregnancy status, calving, or abortion activities would be conducted at appropriate times during the proposed study. These activities would be overseen by the study’s attending veterinarian and would not be expected to cause more than momentary or slight pain or discomfort. All temporary restraining and handling or temporary immobilization and handling activities would be conducted as quickly and efficiently as possible and in a manner that would prevent undue stress, trauma, injury, or any unnecessary discomfort to the animal. If temporary immobilization is necessary, bison cows would be immobilized in locations within the

facilities that are safe for the animals and the proposed study personnel. Veterinary oversight for animal care and handling, restraint, and sample collection would be provided during the proposed study activities. Wildlife biologists trained and experienced in the handling of bison would also be participating in the proposed study activities.

If necessary, study personnel would use the Federal Drug Administration (FDA)-approved anaesthetic and pain-killing (analgesic) drug combinations to immobilize the animals in order to prevent any potential negative impacts to the bison during the collection of study samples. The immobilization drugs would be used according to standard animal administration techniques, and it is expected that the bison would be immobilized for no more than 20 minutes. Vital signs of the immobilized bison would be monitored by qualified study staff throughout the sampling procedures and the initial recovery phase. To further ensure humane handling of the bison, every precaution would be taken by study staff to prevent immobilization- or handling-related trauma, injury, or death to the bison. The standard chemical immobilization protocol that would be used in this proposed study is widely used in bison and other wild ungulates without long-term effects (Kreeger et al., 2002).

In the GonaCon™ EPA registration process for use in deer, concerns were initially raised by some States that GonaCon™ would eliminate the need to use hunting as a tool to control deer overpopulation. Contraception alone would not reduce overabundant deer populations to healthy levels (USDA APHIS, 2010b). In deer, GonaCon™ is meant to be used in combination with other wildlife management tools to control populations. Assuming the use of GonaCon™ is eventually registered by EPA for bison, it is equally implausible to conclude that use of the contraceptive vaccine in bison would result in any significant population decreases in bison in the absence of other management tools (USDA APHIS, 2010b).

## **b. Non-Target Species**

The proposed study would not increase the risk of brucellosis being transmitted to non-target species. Therefore, this section focuses on the risk of non-target species being exposed to GonaCon™.

In the proposed study, it is unlikely that non-target species would be exposed to GonaCon™. The proposed study protocol includes both risk mitigation measures that prevent direct exposure of non-target species to GonaCon™ and measures that limit the potential for secondary exposure of non-target species to GonaCon™.

To prevent direct exposure to non-target species, GonaCon™ would be administered directly to the study bison by hand-injection with a syringe.

By using this direct-injection method, there would be no potential for accidental injection of non-target species with GonaCon™.

To prevent the risk of secondary exposure, the study plan includes measures to restrict access to treated animals by predators or other non-target species. To prevent access by larger wild animals, the bison in the proposed study would be maintained in double-fenced pastures, not on open range, thereby physically limiting potential contact between treated bison and wild animals such as elk, bears, and coyotes.

Abortions or calving events by GonaCon™-treated bison should be very minimal since the expected effect of treatment with GonaCon™ is to prevent pregnancy. The proposed study protocol includes actions to detect abortion or calving events, and the fencing would also physically limit some wild animals from accessing infected bison tissues from the GonaCon™-treated bison. The study protocol also includes standard operating procedures for proper removal and disposal of *B. abortus*-infected animal tissues from GonaCon™-treated bison from the study area to further limit potential exposure.

As discussed above, some larger animal species can be physically prevented from accessing the study area. However, some species such as birds of prey, smaller rodents, or insects cannot be prevented from accessing the study area. In the event that a non-target species were to consume GonaCon™-treated infected bison carcasses or GonaCon™-treated *B. abortus*-infected animal tissues, there would be no anticipated adverse effects from the GonaCon™ vaccine. Because GonaCon™ is made of proteins, it is broken down into smaller amino acids through digestion when it is consumed and has no contraceptive effect on non-target species (Fagerstone et al., 2008; Fagestone et al., 2010).

As part of the registration process for the use of GonaCon™ in deer, EPA concluded that there is no known danger associated with eating deer that have been vaccinated with GonaCon™ (USEPA, 2007). Similar injectable hormone-altering products are used routinely in livestock applications (USDA APHIS, 2010b).

## **2. Human Health and Safety**

### **a. General Public**

The proposed study discussed in this EA would be conducted on double-fenced, private facilities where access by the general public to bison and potentially infected animal tissues such as aborted fetuses or reproductive materials would be prohibited. The protocol for the study contains standard operating procedures for handling and safely disposing of any potentially brucellosis-infected materials generated from the animals in the study. The general public would have no risk of being exposed to either

GonaCon™ -treated or untreated animals from the study or any potentially infected materials generated from the study.

There is no danger of transmission of the infection to humans from consuming cooked meat from *B. abortus*-infected bison. The *B. abortus* bacteria that causes brucellosis is typically not found in muscle tissue, and normal cooking temperatures kill any existing bacteria (USDA APHIS, 2011). Additionally, EPA and FDA concluded that there are no known human food safety concerns associated with eating deer that have been vaccinated with GonaCon™ (USEPA, 2007 and FDA, 2005).

#### **b. Worker Safety**

Personnel who would be involved in the proposed study are qualified and have the expertise and experience needed to carry out the study activities. These activities include wildlife chemical immobilization, proficiency in administration of animal vaccines, veterinary care, animal restraint, tagging and marking animals, sample collection, and field evaluation of reproductive behaviors and activities.

Standard operating procedures would be in place to protect personnel involved in carrying out the proposed study activities. The standard operating procedures would include measures for safe and humane handling of bison to prevent injury to study personnel and to bison; safe handling and administration of GonaCon™; safe and humane collection of study samples for analysis; and safe handling procedures for study samples, including the safe handling and proper disposition of potentially infected animal tissues. In addition to the standard operating procedures and safety measures, at least one cell phone would be available at all times to facilitate contact in emergencies, and first aid kits would be available at all times in the event of injury to study personnel.

The GonaCon™ immunocontraceptive vaccine would be provided for the study in pre-mixed syringes and stored in locked containers except when actively being used to inject study animals. Personnel handling the vaccine would take appropriate precautions to prevent accidental self-injection. Pregnant women would not be involved in the handling or injecting of GonaCon™ at any time during the proposed study to avoid any potential risks associated with accidental exposure to the immunocontraceptive vaccine. Immobilization drugs and associated reversal drugs would be available for use if needed in the study. These drugs would be properly stored in locked containers to prevent improper access.

### **3. Physical Environment**

As previously mentioned, proposed study activities would occur in several pastures at the Brogan Bison Facility, just north of Corwin Springs

(60 acres), and the Slip ‘n Slide pasture (25 acres) and/or Rigler pasture (32 acres), located north of Gardiner, Montana.

The Brogan Bison Facility is used by APHIS VS for bison research. Forage at the pastures includes a mix of cultivated and native grasses. The upper pasture is on a steep slope along the west side of the property with several grass benchlands<sup>7</sup> and steep, rocky drainages. The vegetation is composed of thinly forested slopes, interspersed with native bunchgrass rangelands (MFWP, 2005). Bassett Creek runs through the property and flows into the Yellowstone River.

The Slip ‘n Slide and Rigler pastures are located in close proximity to each other, just south of Yankee Jim Canyon. The pastures are double-fenced. The landscape is gently sloping and consists mostly of native grassland, except for the mixed alfalfa- and grass-cultivated hay meadows. Slip ‘n Slide Creek runs through the Slip ‘n Slide property and flows into the Yellowstone River. There are no brooks or creeks running through the Rigler pastures. The pastures are primarily surrounded by Gallatin National Forest and State of Montana land. Montana Fish, Wildlife and Parks historically leases the pastures on the ranch for bison to graze on (MFWP, 2011).

The potential environmental impacts of the proposed study on the physical environment would primarily be due to bison grazing in confined areas. The main issues of concern regarding confined grazing are effects on soil, vegetation, and water quality. These aspects are discussed below.

#### **a. Soil and Vegetation**

Livestock grazing in confined pastures can negatively affect soil quality by compacting the soil or causing soil erosion due to loss of vegetation cover. With a loss of vegetation, invasive species also threaten pastures. Most studies and discussions on the impacts of grazing focus on cattle because 70% of the western United States is grazed by livestock, which is primarily composed of cattle (Fleischner, 1994). Cattle are similar to bison in that they are large generalists and ungulate herbivores that can disturb terrestrial communities; however, differences in the two animals, such as forage selection and social organization (Hartnett et al., 1997; Steuter and Hidinger, 1999), may influence their impacts on soil and vegetation.

Bison have a stronger preference for perennial grasses than cattle. Cattle consume a higher percentage of forbs<sup>8</sup> in their diet than bison, and they

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<sup>7</sup> Steps or shelves in the mountainside that are the remains of former riverbanks or lakeshores.

<sup>8</sup> Herbaceous flowering plants other than grass.

use wooded areas and riparian zones more intensively than bison (Steuter and Hidinger, 1999). Due to the lower diversity of plants consumed by bison and the bison's preference for herbaceous vegetation, there may be a reduction in the abundance of dominant grasses, an increase in the survival of subordinate species, and an increase in species diversity, when compared to land grazed by cattle (Hartnett et al., 1997). Additionally, physical disturbances that bison exhibit during non-grazing activities, such as wallowing<sup>9</sup> may assist in ecodiversity (Hartnett et al., 1997).

The proposed action would not alter historic land use (for information regarding historic or cultural sites, see section below in the section on other environmental review requirements) at the pastures; therefore, overall effects to soil and vegetation would not be increased.

Approximately 100 bison would be placed on 120 irrigated acres of land, averaging about one acre of land per bison. This density is expected to have only minimal impacts on the land. In addition, landowners at each ranch or facility implement management practices to minimize effects to soil and vegetation. Pasture rotation is practiced at or between facilities as necessary, so that each pasture is periodically rested and the land is not overused. Lastly, the bison at all facilities would be supplemented with hay, further limiting pasture grazing.

#### **b. Water**

GonaCon™ is a protein that is broken down within the treated bison; its metabolites would not be anticipated to be any greater than what would naturally occur. Therefore, this section focuses on other potential environmental impacts of bison grazing near water.

Potential environmental impacts from bison grazing in pastures could include a degradation of nearby water quality by manure, urine, and sediment being deposited into local waters. While bison that have access to a water body may directly deposit manure and urine into the water, wastes excreted onto land may also be transported to water bodies via leaching and surface runoff.

Grazing management practices can lessen the environmental impacts of streamside pastures. While many studies describe the impact of cattle grazing on water bodies, few studies have concentrated on the effects of native ungulates on stream health. Russell et al. (2009) states that the proximity of cattle to the stream, the amount of time they spend by or in the stream, and the intensity and length of cattle grazing can all influence

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<sup>9</sup> When bison roll in shallow depressions in the soil, covering themselves with dirt or mud.

the water quality of nearby streams. One can assume the same behaviors in bison would also impact water quality.

Bison spend less time in streams or riparian habitats than cattle (Fleischner, 1994). Fleischner describes a study conducted in Utah regarding the feeding ecology of cattle and bison. The study noted that “cattle distribution was limited to gentle slopes near water, regardless of forage, while bison roamed widely, seemingly unaffected by slope or proximity to water.” As previously mentioned, cattle forage on a higher percentage of forbs and woody vegetation and maintain a larger breadth of diet niche than bison. Fritz et al. (1999) takes this one step further and states that a higher percentage of forbs and woody vegetation occurs in the riparian zone, so cattle are more likely to impact stream riparian zones than bison.

Fritz et al. (1999) studied the distribution and diversity of macroinvertebrates (e.g., insects, worms, snails and crayfish) in relation to bison crossings in prairie streams. The study suggests that impacts of bison on communities at the bottom of the streams was spatially limited, and that the bison may have less impact on stream communities than other studies of the impact of cattle. While comparison to cattle provides a noteworthy point of reference, it is important to point out that it is difficult to compare environmental responses with cattle versus bison due to confounding effects of site, weather, and management.

The pastures that would be utilized in the proposed study have historically been used for bison research or as livestock pastures, so deposits of manure, urine, and sediment due to the proposed study are not expected to increase the historic amount of contaminants entering the Yellowstone River. While the Brogan Bison Facility does have a creek running through it, bison do not have access to the creek. Only bison at the Slip ‘n Slide ranch would have direct, but limited, access to a creek. The access site to this creek was historically used for livestock and is at a point on the creek where the bank is shallow and covered with rocks. A shallow crossing means that bison would not have to climb up and down the bank, which would eventually cause the banks to erode. In addition, water would be provided to the bison, limiting the time that bison would visit the creek. Lastly, because only a portion of the total number of bison tested would be present on this pasture and those bison would spend limited time in streamside environments, the impact to water bodies is expected to be minimal.



## IV. Other Environmental Review Requirements

### A. Endangered or Threatened Species

Section 7 of the Endangered Species Act (ESA) and its implementing regulations require Federal agencies to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of critical habitat. Proposed study activities would occur in pastures in southern Park County in Montana.

There are two federally listed mammals in Park County: the Canada lynx (*Lynx canadensis*) and the grizzly bear (*Ursos arctos horribilis*). Critical habitat has been designated for the Canada lynx in Park County.

Canada lynx: Areas designated as critical habitat for the Canada lynx include boreal forest landscapes that provide one or more of the following primary constituent elements for the lynx: snowshoe hares for prey; abundant, large, woody debris piles that are used as dens; and winter snow conditions that are generally deep and fluffy for extended periods of time (USDOI FWS, 2009).

Grizzly bear: 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. Habitat use is highly variable between areas, seasons, local populations, and individuals. Grizzly recovery zones (areas identified where grizzly bear distribution is primarily within), including the Yellowstone area in northwest Wyoming, eastern Idaho, and southwest Montana (9,200 square miles), are estimated at more than 580 bears (FWS, 2011).

At all three locations, the pastures are double-fenced with an 8-foot woven wire fence and an electric high tensile fence to contain the study bison. These fences would also prevent Canada lynx and grizzly bears from entering the pastures. If Canada lynx or grizzly bears were to enter the pastures and consume GonaCon™-treated bison, there would be no effect on these species. The vaccine is made of proteins, and when consumed, is broken down into amino acids in the gastrointestinal tract, thereby having no contraceptive effect (Fagerstone et al., 2008; Fagerstone et al., 2010).

Federally-listed species and other non-target wildlife would not be directly exposed to GonaCon™ because the vaccine would be injected directly into the test bison and not administered orally in bait form. No wildlife habitat would be altered or disrupted by proposed study activities. No

helicopters would be used as part of this proposed study; therefore, no disturbance to wildlife in the surrounding area is expected. Although the study pastures occur within the designated critical habitat of the Canada lynx, the proposed study would have no effect on the primary constituent elements of that habitat and would not adversely modify it. Therefore, APHIS has determined that the proposed action would have no effect on the grizzly bear or Canada lynx.

## **B. Bald and Golden Eagle Protection Act**

The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c) prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

There are no known bald eagle nests around the facilities; nesting areas are further down river (Jeremy Zimmer, USDA, Forest Service, Gardiner, MT, pers. comm.). However, golden eagle nests could be in the vicinity of the facilities, although specific nests are not known. Therefore, the proposed study is not expected to have any impact on nesting bald or golden eagles. In addition, activities occurring during the proposed study would not differ significantly from activities normally occurring at these pastures. "Eagles are unlikely to be disturbed by routine use of roads, homes, and other facilities where such use pre-dates the eagles' successful nesting activity in a given area. Therefore, in most cases ongoing existing uses may proceed with the same intensity with little risk of disturbing bald eagles" (FWS, 2007). If study personnel discover the presence of any bald or golden eagle nests in the area, this information would be reported to the Wildlife Program Manager at Gallatin National Forest.

Golden eagles have been observed flying over the Brogan Bison Facility (Jeremy Zimmer, USDA, Forest Service, Gardiner, MT, pers. comm.) and bald eagles could be flying in the area as well. The activities that would occur during the proposed study would not differ significantly from activities that normally occur in these pastures. Therefore, no disturbance of eagles would occur as a result of the proposed study; eagles in the area would be accustomed to these activities.

Although program personnel would remove daily any aborted calves or treated or non-treated bison that could die during the study, bald and golden eagles in the area could potentially consume these items. However, "[i]mmunocontraception vaccines provide few risks for

consumptive use of dosed wildlife; the antibodies that prevent reproduction are only one of millions of other antibodies present in animals, all of which are harmless to the organism that digests them, like any other proteinaceous food consisting of amino acids” (Fagerstone et al., 2010). Therefore, no eagles would be harmed if consumption of these items occurred.

## **C. Historic and Cultural Resources**

In accordance with Section 106 of the National Historic Preservation Act of 1966 and its implementing regulations<sup>10</sup>, APHIS prepared a summary of the proposed project and submitted it to the Montana State Historic Preservation Office (SHPO) for consideration of potential impacts to historic resources. On November 28, 2011, APHIS received a letter of concurrence from the Montana SHPO agreeing that there were no findings of potential impacts to historic resources for the proposed study.

## **D. Tribal Consultation and Coordination**

In accordance with Executive Order 13175: Consultation and Coordination with Indian Tribal Governments<sup>11</sup>, APHIS has prepared a summary of the proposed project and provided it to 26 tribes who may have interests in YNP. In addition to the 26 identified tribes, APHIS also provided a summary of the project to all tribes located near YNP and in States adjacent to Montana who might potentially have interest in the project.

On December 19, 2011, APHIS held a conference by telephone with tribes to provide an opportunity to discuss the proposed project in more detail and discuss potential concerns that the tribes may have. Tribes that participated in the call showed an interest in the details of the project, and several requested additional information on the history of the GonaCon™ immunocontraceptive vaccine. APHIS agreed to provide background information to tribes. No tribes voiced any major concerns about the project.

APHIS will continue to conduct outreach to interested tribes and keep them updated on the activities associated with the project.

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<sup>10</sup> National Historic Preservation Act of 1966 (16 U.S.C. 470f) and implementing regulations (36 CFR §800).

<sup>11</sup> Executive Order 13175: Consultation and Coordination with Indian Tribal Governments (65 FR 67249, November 9, 2000).

## V. Cumulative Impacts

This EA examines the activities associated with a proposed study to evaluate whether GonaCon™, an immunocontraceptive vaccine, would be effective as a non-lethal method of decreasing the prevalence of brucellosis in the YNP bison population by effecting temporary infertility in bison cows and thereby preventing transmission of *B. abortus*. Activities associated with the proposed study are not expected to result in adverse cumulative effects.

In order to conduct the proposed study, approximately 96 female and 8 male bison that naturally exit YNP over the period of as many as three years would be housed at pasture locations in the Gardiner, Montana area. Some of the female animals in the study would be injected with GonaCon™, which would reduce the likelihood of pregnancy and delivery of offspring in the treated animals. Untreated females may give birth to offspring, which would increase the total number of animals associated with the study.

In August 2011, the National Park Service conducted an annual bison population estimate (NPS, 2011). According to the 2011 survey, the total bison population in YNP was estimated to be approximately 3,700 bison. This total was approximately 200 lower than the survey from the previous summer, but the decrease was “within the natural range of expectation for wild bison.”

Assuming the proposed study would result in approximately 104 bison being removed from the larger bison population of YNP, the effect of removing this number of bison over multiple years is well within the natural range of expectation for bison. This decrease in the numbers of bison in YNP is not anticipated to cause any cumulative negative effects to the overall bison population.

One of the goals of the IBMP is to manage temporal and spatial separation of bison and cattle to mitigate potential transmission of brucellosis. Currently, this is accomplished through hazing, capture, test and slaughter of seropositive animals, and vaccination of seronegative animals and a limited hunt in Montana. The proposed study may provide important information that would allow for re-evaluation and re-consideration of some of the current IBMP activities. This may result in impacts to future decision-making regarding protocols for bison habitat management, bison vaccination strategies, and bison hunt activities. IBMP activities that could be impacted include strategies to maintain appropriate bison population and distribution, should bison habitat be expanded.

## VI. Agencies or Persons Contacted

U.S. Forest Service, Gallatin National Forest

Montana Fish, Wildlife and Parks

Montana State Historic Preservation Office, Montana Historical Society

USDA, Animal and Plant Health Inspection Service, Veterinary Services

USDA, Animal and Plant Health Inspection Service, Policy and Program Development, Environmental and Risk Analysis Services

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# **Evaluation of GonaCon™, an Immunocontraceptive Vaccine, as a Means of Decreasing Transmission of *Brucella abortus* in Bison in the Greater Yellowstone Area**

**Environmental Assessment,  
January 2012**

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## Environmental Assessment, January 2012

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# I. Introduction

## A. Background

In Yellowstone National Park (YNP), wild and free-ranging bison (*Bison bison*) are critical parts of a fully-functioning ecosystem as well as being important to the identity of the park. The bison are a part of the esthetic, cultural, and natural environment of the YNP. YNP bison are chronically infected with brucellosis, a contagious disease that the United States Department of Agriculture, Animal and Plant Health Inspection Service, Veterinary Services (USDA/APHIS/VS) is striving to eliminate.

Brucellosis is a serious disease of livestock and wildlife that has significant animal and public health and international trade consequences. The disease is caused by bacteria of the genus *Brucella*. Brucellosis occurs primarily in cattle, bison, and swine; however, cervids, goats, sheep, and horses are also susceptible. In cattle and bison, the specific disease organism of concern is *Brucella abortus* (*B. abortus*).

In its principal animal hosts, brucellosis causes loss of young through spontaneous abortion or birth of weak offspring, reduced milk production, and infertility. In cattle and bison, the disease localizes in certain lymph nodes, reproductive organs and/or the udder, causing spontaneous abortions in females and systemic effects in both male and female animals. Weight loss and lameness may also be associated with brucellosis infection.

The shedding<sup>1</sup> of *B. abortus* through the reproductive tract during an abortion or calving event may contribute to the transmission of infection to other animals that come in contact with the expelled bacteria now in the environment. Studies have shown that *Brucella* can persist on fetal tissues, vegetation and soil in YNP for as long as 81 days depending on environmental conditions (Aune et al., 2011). Spread of the disease occurs when the cattle and bison, which are social animals, sniff and lick a newborn calf, the afterbirth, and even an aborted fetus. This behavior provides an avenue for the disease to spread if *B. abortus* organisms are present. Additionally, *B. abortus* is present in the milk from infected females and can be transmitted to calves through suckling. There is no effective means of treating brucellosis in livestock or wildlife.

Studies investigating the prevalence of brucellosis in YNP bison have estimated that between 40% and 60% of YNP bison have been exposed to

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<sup>1</sup> For purposes of the proposed study, “shedding” is to expel *B. abortus* from the body through the reproductive tract.

the disease. Further testing of animals that are seropositive<sup>2</sup> demonstrates that more than 40% of the seropositive animals are culture-positive, confirming actual infection with *B. abortus* (Meyer and Meagher, 1995; Cheville et al., 1998). In the areas outside the borders of YNP where livestock such as cattle are often raised, there is a concern that infected bison may transmit the disease to livestock if infected bison abort or calve.

Multiple Federal and state agencies<sup>3</sup> have participated in efforts to control the potential spread of brucellosis and conserve bison through the 2000 Interagency Bison Management Plan (IBMP) (MDoL and MFWP, 2000). In 1934, a federal brucellosis program was established as part of an effort to safeguard domestic livestock (See [http://www.aphis.usda.gov/animal\\_health/animal\\_diseases/brucellosis/](http://www.aphis.usda.gov/animal_health/animal_diseases/brucellosis/) for additional information regarding USDA APHIS' brucellosis program).

Safeguarding measures, such as preventing, detecting, and eliminating animal diseases, help to maintain the U.S. cattle industry's national and international trade interests, ensure food safety, and protect public health. The efforts of the national brucellosis program have nearly eradicated brucellosis from domestic cattle and bison populations. As of July 2009, all 50 States had attained Class-Free (disease-free) status for brucellosis in domestic cattle and bison (USDA APHIS, 2010a). Currently, the last known reservoir of bovine brucellosis is in the wild bison and elk population in the Greater Yellowstone Area (GYA). Prevention of the spread of brucellosis between infected wildlife and livestock continues to be an issue of concern. The proposed study discussed in this environmental assessment (EA) is designed to investigate the feasibility of using an immunocontraceptive vaccine, GonaCon™, as a non-lethal management option to decrease the potential risk of disease transmission by brucellosis-infected bison.

In humans, brucellosis is often referred to as undulant fever because it persists for several weeks or months and may get progressively worse if untreated. Humans are most commonly infected by consumption of unpasteurized dairy products produced from milk of infected animals, or they may become infected through direct contact with infected animal tissues such as aborted fetuses or reproductive materials. In humans, brucellosis initially causes flu-like symptoms that are treated with a rigorous course of antibiotics. In some isolated cases, the disease may develop into a variety of chronic conditions, including arthritis. Potential

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<sup>2</sup> Bison that test positive on blood tests for brucellosis are referred to as being seropositive, and bison that do not test positive are referred to as being seronegative.

<sup>3</sup> U.S. Department of Interior National Park Service (NPS); U.S. Department of Agriculture Animal and Plant Health Inspection Service (APHIS); U.S. Department of Agriculture Forest Service (FS); Montana Department of Livestock (MDoL); and Montana Fish, Wildlife and Parks (MFWP).

effects of the proposed study on humans will be discussed in the potential environmental impacts section.

### **GonaCon™ Immunocontraceptive Vaccine**

GonaCon™ is a contraceptive vaccine that stimulates an immune response in a vaccinated animal by producing antibodies that bind to a gonadotropin-releasing hormone (GnRH). GnRH is a naturally occurring hormone that signals production of sex hormones such as estrogen, progesterone, and testosterone. The anti-GnRH antibodies interfere with the ability of GnRH to signal production of sex hormones, resulting in temporary infertility. As long as adequate levels of anti-GnRH antibodies are present in the vaccinated animal, sexual activity, breeding, and reproduction are extremely unlikely.

GonaCon™ is currently approved under the United States Environmental Protection Agency's (EPA's) Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) for use in female white-tailed deer as one tool to aid in reducing deer overpopulation (EPA Registration Number 56228-40). The immune response that causes temporary infertility in deer is accomplished with a single-shot vaccine. The length of time that a vaccinated female deer remains infertile depends on the individual animal, but some pen studies have shown that 4 out of 5 female deer remain infertile for 5 years (Miller et al., 2008a). Field studies have demonstrated lower rates of infertility ranging from 88% and 47% the first and second year after vaccination, respectively (Gionfriddo et al., 2009) to 67% and 43% the first and second year after vaccination, respectively (Gionfriddo et al., 2011a).

GonaCon™ is not currently registered for use in bison. However, USDA conducted a small pilot study of penned bison and found that none of the 6 females vaccinated with GonaCon™ became pregnant the first year after treatment (Miller et al., 2004). In 2011, APHIS received approval from EPA to use GonaCon™ in female bison in the confined experimental use scenario discussed in this EA. Should the proposed study discussed in this EA proceed, the data obtained from it could potentially be used to add to the required data set needed for EPA to register the GonaCon™ vaccine for use in bison. However, the purpose for registering GonaCon™ in bison would not be for reducing overpopulation. The intended purpose of using GonaCon™ in female bison would be to manage reproduction in bison known to be infected with brucellosis by inducing temporary infertility, thereby decreasing the potential for transmission of brucellosis through abortion and calving events.

## **B. Purpose of and Need for the Proposed Action**

The purpose of the proposed action is to conduct a study to evaluate whether GonaCon™, an immunocontraceptive vaccine, would be effective as a non-lethal method of decreasing the prevalence of brucellosis in the YNP bison population by preventing pregnancy, calving, and abortion, thereby preventing transmission of *B. abortus*. The major objectives of the proposed study are:

- To evaluate the efficacy of GonaCon™ as an immunocontraceptive vaccine in *B. abortus*-infected female bison;
- To evaluate the effect on shedding by *B. abortus*-infected female bison that are rendered temporarily infertile by GonaCon™; and
- To evaluate the effect the infertility produced by GonaCon™ has on the long-term survivability of *B. abortus* in infected female bison.

Use of an effective immunocontraceptive such as GonaCon™ to prevent pregnancy and eliminate the potential for abortions by infected bison would break the cycle of transmission of brucellosis. If female bison known to be infected with *B. abortus* do not become pregnant, they would not abort. Exposure of non-infected animals to the infected tissues and fluids from aborted fetuses would therefore be reduced.

The need for the proposed study is to provide information that would be used to evaluate the use of GonaCon™ as a nonlethal method of decreasing or controlling the risk of transmission of *B. abortus* in the YNP bison population. Brucellosis is spread within the animal population primarily through contact with infected birthing tissues or aborted fetuses and through the milk of infected cows. If GonaCon™ can effectively render brucellosis-infected female bison temporarily infertile, the primary routes of disease transmission would be blocked. In combination with other appropriate disease mitigation activities, the use of GonaCon™ may be an effective tool to assist in eliminating brucellosis from the YNP bison herd over time.

USDA APHIS has determined that under the provisions of the National Environmental Policy Act (NEPA) (see 42 U.S.C. 4321 et seq.) and APHIS' National Environmental Policy Act (NEPA) implementing procedures (see 7 CFR Part 372), an EA should be prepared for these proposed actions. The availability of this EA and a 30-day comment period will be announced by publishing a notice on the APHIS brucellosis program website, the IBMP website and/or local newspapers. APHIS' decision maker for the actions described in this EA will take appropriate action after reviewing the EA, its associated analyses, public comments received, and other relevant responses and recommendations.



## **II. Proposed Action and Alternatives**

### **A. No Action (the Current Situation)**

The no action alternative would result in not conducting the proposed study. If the proposed study is not conducted, the utility of GonaCon™ as a non-lethal reproductive control option in bison cannot be determined. Additionally, if the use of GonaCon™ in bison is not investigated, information would not be known on whether temporary infertility induced by GonaCon™ is effective in decreasing the shedding of *B. abortus* and ultimately the transmission of brucellosis. Without the proposed study, use of the immunocontraception approach as a viable disease management tool for bison would not be evaluated, and could not be considered as a potential management tool.

### **B. Proposed Action**

The proposed action is to conduct a multi-year study to evaluate the potential for use of GonaCon™, an immunocontraceptive vaccine, as a non-lethal method of decreasing the prevalence of brucellosis in bison by preventing pregnancy, thereby preventing abortions and risk of transmission of brucellosis to uninfected animals from contact with infected tissues and fluids from aborted fetuses.

The proposed study would include the following activities that are discussed in further detail below:

- Capturing bison in the late winter/spring of 2011, 2012, 2013, and possibly 2014;
- Transporting the captured bison by stock trailer to APHIS' bison facilities in Gardiner, Montana;
- Collecting and evaluating blood samples to determine brucellosis infection status at the beginning of the study and monitoring infection status at regular intervals throughout the study;
- Housing, caring for, and tagging (for identification purposes) animals in Gardiner, Montana facilities;
- Injecting one group of seropositive female bison with GonaCon™ beginning in the spring of 2012;
- Commingling uninfected bulls with females during breeding season, documenting breeding behavior, and testing for pregnancy for five calving seasons;
- Monitoring pregnant bison with transmitters and daily observing them for abortions, labor, and births;
- Collecting and testing blood, milk, and vaginal swabs from female bison that give birth to test for brucellosis infection status;

- Monitoring exposure to aborted fetuses by other bison and evaluating fetuses collected during the study; and
- Evaluating data collected from the study to determine whether GonaCon™ decreases the shedding of *B. abortus* in bison.

Bison for the proposed study would be acquired during the winter when they naturally exit YNP. The capture of bison would be conducted using methods currently in use for capturing bison according to the details of the IBMP operating procedures (IBMPOP, 2009). These procedures include hazing and/or using weed-free hay to move them to a capture facility. Approximately 104 adult bison would be used in the proposed study: 24 female bison that are seronegative for brucellosis; 72 female bison that test seropositive for brucellosis; and 8 male bison (bulls) that test seronegative for brucellosis. Female bison would be yearlings, two-, and three-years of age. If temporary chemical immobilization of any animal is needed, opioid narcotics and alpha-2-adrenergics would be used by study personnel qualified in the administration of such drugs. All bison used in the study would be identified with uniquely numbered ear tags and microchip identification.

The proposed study would take place on several double-fenced pastures at facilities in the Gardiner, Montana area: the Brogan Bison Facility in Corwin Springs (60 acres), the Slip 'n Slide pasture (25 acres), and the Rigler pasture (32 acres), all of which are located north of Gardiner, Montana. All sites are within the GYA and along Highway 89. The Brogan Bison Facility, Rigler pasture, and Slip 'n Slide pastures are currently leased by APHIS VS and Montana Fish, Wildlife and Parks and are used by APHIS VS for the bison quarantine feasibility study (MFWP, 2005). These facilities were specifically designed and erected to hold bison in a quarantine environment with hay and water as needed for an extended period of time.

The study design is as follows: In spring 2012, animals would be randomly selected to go into groups of 16 to 18 seropositive cows, four to six seronegative cows, and two bulls. Two replicate test pastures would be established in 2013 and possibly 2014 if not enough animals are captured in 2013. After three to four weeks of acclimation in the test pastures, *B. abortus*-infected female bison in one of the pastures would receive GonaCon™ vaccine (containing 3,000 micrograms in 3 milliliters of an adjuvant) delivered into the muscle on each side of the neck or hip. The sites of injection would be tattooed, or otherwise marked and observed for any injection reaction. Bison in the remaining pasture would not be vaccinated.

Bulls would be separated from the cows outside of the breeding season from October to July. Prior to exposure to bulls, cows would have

breeding tags<sup>4</sup> attached to them to document if bulls have mounted them to breed. Following first exposure of cows to bulls in 2012, five calving seasons would be observed (2013-2017). In February of each year, cows would be pregnancy-tested and fitted with vaginal transmitters to alert investigators to abortion or calving events.

During the abortion/calving seasons (from February until August of each year), daily observation for abortions, labor, and calving events would be conducted by study investigators. Within five days of abortion or calving, the cow would be immobilized and blood, milk, and vaginal swabs would be collected for testing. If possible, the calf would also be captured and eye swabs and blood would be collected for testing.

Following an abortion, the fetus would be left at the abortion site for 24 hours to monitor exposure to other bison. The fetus would then be collected, tested, and incinerated at the Montana Veterinary Diagnostic Laboratory (MVDL) in Bozeman, Montana.

Blood testing of cows, bulls, and calves would be conducted three times a year: in February, calving time, and in the fall. Blood would be analyzed at the MVDL and/or the National Veterinary Service Laboratories in Ames, Iowa throughout the study to determine *B. abortus* infection status of each animal.

Handling and physical restraint of bison for tagging or blood collection would take place in alleyways leading to standard bison manual squeeze chutes. Injection of the study animals with GonaCon™ would be done by study personnel experienced in administering intramuscular vaccines. Blood samples from study animals would be collected using established techniques for collection of blood from bison and would be performed by study personnel experienced with these techniques. An attending veterinarian would be available to address concerns about animal care and use for the study.

When the study is completed, all seropositive animals would be humanely euthanized following American Veterinary Medical Association-approved guidelines, and specimens would be collected from each animal for laboratory analysis. In addition, eggs and semen would be collected from these animals and frozen for genetic conservation. Per the conditions of the approval from EPA to use GonaCon™ in bison in this confined experimental use study, animals treated with GonaCon™ cannot be consumed by humans. These animals would be disposed of by incineration or landfill burial. Seropositive animals from the study that have not received GonaCon™ injections would be distributed to Montana food

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<sup>4</sup> Breeding tags are devices that are temporarily adhered to the base of the cow's tail that indicate by a color change that the cow has been mounted.

banks as is routinely done with other YNP seropositive bison. Further discussion on the safety of consuming bison infected with *B. abortus* is discussed in the human health and safety section of this document. All animals that test negative for brucellosis for the duration of the study and satisfy existing bison quarantine release requirements outlined in the APHIS Uniform Methods and Rules (USDA APHIS, 2003) would be used for bison conservation purposes.

### **C. Other Alternatives Considered but Dismissed from Further Consideration**

Because the most common route of transmission of *B. abortus* is contact with infected birthing fluids, aborted fetuses, and placental tissues, different methods of impacting the fertility of bison through the use of immunocontraceptive vaccines were considered as alternatives to the proposed action. If pregnancy could be prevented in *B. abortus*-infected female bison, transmission of *B. abortus* by this route could be eliminated or decreased.

APHIS considered the use of porcine zona pellucida (PZP), another type of immunocontraceptive vaccine that has been used in animal species such as dogs, coyotes, burros, wild horses, and deer (USDA APHIS, 2010b). PZP has also been demonstrated to effectively induce temporary infertility in captive bison (Frank et al., 2005). However, research has shown that the use of PZP can increase the period of time in which the treated animals exhibit breeding season behavior.

The PZP vaccine results in temporary infertility while still allowing female animals to have multiple estrous cycles in which they engage in prebreeding behavior and breed. This behavior can cause animals to use energy at times of the year, such as late fall and early winter, when they would otherwise be conserving energy. Miller et al. (2004) concluded that "...Prolonging the breeding season of bison in the GYA may be deleterious to the winter survival of dominant bulls and PZP vaccinated cows because of increased sexual activity during fall and early winter." Therefore, this alternative was dismissed from further consideration because investigating the use of a PZP vaccine would not be useful in brucellosis management strategies in bison since it is associated with increased mating and reproductive activity (Killian et al., 2007).

APHIS also considered the alternative of physical sterilization as a means of decreasing the transmission of *B. abortus* within bison populations and between bison and cattle in the GYA. Physical sterilization such as spaying<sup>5</sup> or castration<sup>6</sup> has been recognized as a disease management

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<sup>5</sup>Surgical removal of the ovaries from female bison.

strategy that could be used to reduce the potential transmission of brucellosis in infected wildlife populations. However, this type of sterilization is permanent. APHIS would not subject the bison in the study to physical sterilization. For this reason, this alternative was dismissed from further consideration.

### **III. Potential Environmental Impacts**

The NEPA implementing regulations provide criteria that Federal agencies should evaluate, if applicable, in environmental documents for proposed actions. This section of the EA addresses the applicable criteria related to potential impacts from the no action alternative and from the proposed action. NEPA criteria that are applicable for consideration in this section of the document include animal impacts, human health and safety, and the physical environment.

#### **A. No Action**

Without the proposed action, efforts to gather scientific information to better understand the potential application of immunocontraceptive vaccines such as GonaCon™ as a nonlethal strategy for reducing the transmission of *B. abortus* and decreasing the prevalence of brucellosis in the wild bison population in YNP would be lost. Without the proposed action to assist in developing nonlethal strategies to effectively control and eliminate brucellosis, the disease may continue to spread within the wild, free-ranging bison population in the GYA.

#### **B. Proposed Action**

##### **1. Impact of Proposed Action on Animals**

##### **a. Bison**

The proposed study would not increase the risk of brucellosis being transmitted within the bison population. Therefore, this section focuses on the potential effects of the administration of GonaCon™ in bison.

In this proposed study, the desired effect of administering GonaCon™ is the temporary suspension of reproductive activity in the vaccinated female bison. Miller et al. (2004) report that “The gonadotropin-releasing hormone (GnRH) vaccine is generally considered to provide temporary sterilization, because the reproductive activity of the target animal returns as the GnRH antibody titer drops below a protective level.” If the effect of this immunocontraceptive vaccine successfully places the vaccinated

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<sup>6</sup> Surgical removal of the testes of male bison.

bison cows in a temporary nonreproductive state, the transmission of brucellosis by the female bison via shedding of *B. abortus* during calving or abortion may be eliminated.

A small study conducted at the Idaho Fish and Game Wildlife Health Laboratory in Caldwell, Idaho in 2002-2003 demonstrated “that a single injection of GnRH vaccine is effective in preventing conception in female bison for at least 1 yr” (Miller et al., 2004). In that study, three of the six GnRH-treated bison cows and five of the untreated bison cows were in the last month of pregnancy at the time of vaccination. They delivered normal calves in the first year, suggesting that the GnRH vaccine did not interfere with the pregnancy and could be administered safely during the last third of the pregnancy. Additionally, none of the six treated bison became pregnant during the first breeding season (Miller et al., 2004).

Undesired health effects have been minimal in the species of wildlife in which GonaCon™ has been used. Injection site reactions caused by the “water-in-oil (W/O) emulsion needed in the GonaCon™ formulation for development of a long-term immune response” have been observed (Miller et al., 2008b). These reactions were most commonly manifested as inflammation or swelling at the injection site, or the presence of granulomas (thickened tissue filled with fluid). This observation is not uncommon in other livestock vaccines (USDA APHIS, 2010b).

As part of the GonaCon™ EPA registration process for use in deer, the health effects to the vaccinated deer were evaluated. Vaccinated animals showed no external evidence of inflammation at known injection sites; however, when muscle tissue at the injections site was sectioned, the injection sites appeared to be comprised of whiteish scar tissue, some containing vesicles of sterile fluid. All blood chemistry analyses were similar between treated and untreated deer. (Killian et al., 2006). Other types of injected products that alter animal hormones are currently used in livestock in the United States (USDA APHIS, 2010b).

Ensuring humane handling and treatment of all bison during the proposed study activities would be a priority. Application of animal identification tags, administration of GonaCon™ vaccine, and evaluation of pregnancy status, calving, or abortion activities would be conducted at appropriate times during the proposed study. These activities would be overseen by the study’s attending veterinarian and would not be expected to cause more than momentary or slight pain or discomfort. All temporary restraining and handling or temporary immobilization and handling activities would be conducted as quickly and efficiently as possible and in a manner that would prevent undue stress, trauma, injury, or any unnecessary discomfort to the animal. If temporary immobilization is necessary, bison cows would be immobilized in locations within the

facilities that are safe for the animals and the proposed study personnel. Veterinary oversight for animal care and handling, restraint, and sample collection would be provided during the proposed study activities. Wildlife biologists trained and experienced in the handling of bison would also be participating in the proposed study activities.

If necessary, study personnel would use the Federal Drug Administration (FDA)-approved anaesthetic and pain-killing (analgesic) drug combinations to immobilize the animals in order to prevent any potential negative impacts to the bison during the collection of study samples. The immobilization drugs would be used according to standard animal administration techniques, and it is expected that the bison would be immobilized for no more than 20 minutes. Vital signs of the immobilized bison would be monitored by qualified study staff throughout the sampling procedures and the initial recovery phase. To further ensure humane handling of the bison, every precaution would be taken by study staff to prevent immobilization- or handling-related trauma, injury, or death to the bison. The standard chemical immobilization protocol that would be used in this proposed study is widely used in bison and other wild ungulates without long-term effects (Kreeger et al., 2002).

In the GonaCon™ EPA registration process for use in deer, concerns were initially raised by some States that GonaCon™ would eliminate the need to use hunting as a tool to control deer overpopulation. Contraception alone would not reduce overabundant deer populations to healthy levels (USDA APHIS, 2010b). In deer, GonaCon™ is meant to be used in combination with other wildlife management tools to control populations. Assuming the use of GonaCon™ is eventually registered by EPA for bison, it is equally implausible to conclude that use of the contraceptive vaccine in bison would result in any significant population decreases in bison in the absence of other management tools (USDA APHIS, 2010b).

## **b. Non-Target Species**

The proposed study would not increase the risk of brucellosis being transmitted to non-target species. Therefore, this section focuses on the risk of non-target species being exposed to GonaCon™.

In the proposed study, it is unlikely that non-target species would be exposed to GonaCon™. The proposed study protocol includes both risk mitigation measures that prevent direct exposure of non-target species to GonaCon™ and measures that limit the potential for secondary exposure of non-target species to GonaCon™.

To prevent direct exposure to non-target species, GonaCon™ would be administered directly to the study bison by hand-injection with a syringe.

By using this direct-injection method, there would be no potential for accidental injection of non-target species with GonaCon™.

To prevent the risk of secondary exposure, the study plan includes measures to restrict access to treated animals by predators or other non-target species. To prevent access by larger wild animals, the bison in the proposed study would be maintained in double-fenced pastures, not on open range, thereby physically limiting potential contact between treated bison and wild animals such as elk, bears, and coyotes.

Abortions or calving events by GonaCon™-treated bison should be very minimal since the expected effect of treatment with GonaCon™ is to prevent pregnancy. The proposed study protocol includes actions to detect abortion or calving events, and the fencing would also physically limit some wild animals from accessing infected bison tissues from the GonaCon™-treated bison. The study protocol also includes standard operating procedures for proper removal and disposal of *B. abortus*-infected animal tissues from GonaCon™-treated bison from the study area to further limit potential exposure.

As discussed above, some larger animal species can be physically prevented from accessing the study area. However, some species such as birds of prey, smaller rodents, or insects cannot be prevented from accessing the study area. In the event that a non-target species were to consume GonaCon™-treated infected bison carcasses or GonaCon™-treated *B. abortus*-infected animal tissues, there would be no anticipated adverse effects from the GonaCon™ vaccine. Because GonaCon™ is made of proteins, it is broken down into smaller amino acids through digestion when it is consumed and has no contraceptive effect on non-target species (Fagerstone et al., 2008; Fagestone et al., 2010).

As part of the registration process for the use of GonaCon™ in deer, EPA concluded that there is no known danger associated with eating deer that have been vaccinated with GonaCon™ (USEPA, 2007). Similar injectable hormone-altering products are used routinely in livestock applications (USDA APHIS, 2010b).

## **2. Human Health and Safety**

### **a. General Public**

The proposed study discussed in this EA would be conducted on double-fenced, private facilities where access by the general public to bison and potentially infected animal tissues such as aborted fetuses or reproductive materials would be prohibited. The protocol for the study contains standard operating procedures for handling and safely disposing of any potentially brucellosis-infected materials generated from the animals in the study. The general public would have no risk of being exposed to either



GonaCon™ -treated or untreated animals from the study or any potentially infected materials generated from the study.

There is no danger of transmission of the infection to humans from consuming cooked meat from *B. abortus*-infected bison. The *B. abortus* bacteria that causes brucellosis is typically not found in muscle tissue, and normal cooking temperatures kill any existing bacteria (USDA APHIS, 2011). Additionally, EPA and FDA concluded that there are no known human food safety concerns associated with eating deer that have been vaccinated with GonaCon™ (USEPA, 2007 and FDA, 2005).

#### **b. Worker Safety**

Personnel who would be involved in the proposed study are qualified and have the expertise and experience needed to carry out the study activities. These activities include wildlife chemical immobilization, proficiency in administration of animal vaccines, veterinary care, animal restraint, tagging and marking animals, sample collection, and field evaluation of reproductive behaviors and activities.

Standard operating procedures would be in place to protect personnel involved in carrying out the proposed study activities. The standard operating procedures would include measures for safe and humane handling of bison to prevent injury to study personnel and to bison; safe handling and administration of GonaCon™; safe and humane collection of study samples for analysis; and safe handling procedures for study samples, including the safe handling and proper disposition of potentially infected animal tissues. In addition to the standard operating procedures and safety measures, at least one cell phone would be available at all times to facilitate contact in emergencies, and first aid kits would be available at all times in the event of injury to study personnel.

The GonaCon™ immunocontraceptive vaccine would be provided for the study in pre-mixed syringes and stored in locked containers except when actively being used to inject study animals. Personnel handling the vaccine would take appropriate precautions to prevent accidental self-injection. Pregnant women would not be involved in the handling or injecting of GonaCon™ at any time during the proposed study to avoid any potential risks associated with accidental exposure to the immunocontraceptive vaccine. Immobilization drugs and associated reversal drugs would be available for use if needed in the study. These drugs would be properly stored in locked containers to prevent improper access.

### **3. Physical Environment**

As previously mentioned, proposed study activities would occur in several pastures at the Brogan Bison Facility, just north of Corwin Springs (60

acres), and the Slip ‘n Slide pasture (25 acres) and/or Rigler pasture (32 acres), located north of Gardiner, Montana.

The Brogan Bison Facility is used by APHIS VS for bison research. Forage at the pastures includes a mix of cultivated and native grasses. The upper pasture is on a steep slope along the west side of the property with several grass benchlands<sup>7</sup> and steep, rocky drainages. The vegetation is composed of thinly forested slopes, interspersed with native bunchgrass rangelands (MFWP, 2005). Bassett Creek runs through the property and flows into the Yellowstone River.

The Slip ‘n Slide and Rigler pastures are located in close proximity to each other, just south of Yankee Jim Canyon. The pastures are double-fenced. The landscape is gently sloping and consists mostly of native grassland, except for the mixed alfalfa- and grass-cultivated hay meadows. Slip ‘n Slide Creek runs through the Slip ‘n Slide property and flows into the Yellowstone River. There are no brooks or creeks running through the Rigler pastures. The pastures are primarily surrounded by Gallatin National Forest and State of Montana land. Montana Fish, Wildlife and Parks historically leases the pastures on the ranch for bison to graze on (MFWP, 2011).

The potential environmental impacts of the proposed study on the physical environment would primarily be due to bison grazing in confined areas. The main issues of concern regarding confined grazing are effects on soil, vegetation, and water quality. These aspects are discussed below.

#### **a. Soil and Vegetation**

Livestock grazing in confined pastures can negatively affect soil quality by compacting the soil or causing soil erosion due to loss of vegetation cover. With a loss of vegetation, invasive species also threaten pastures. Most studies and discussions on the impacts of grazing focus on cattle because 70% of the western United States is grazed by livestock, which is primarily composed of cattle (Fleischner, 1994). Cattle are similar to bison in that they are large generalists and ungulate herbivores that can disturb terrestrial communities; however, differences in the two animals, such as forage selection and social organization (Hartnett et al., 1997; Steuter and Hidinger, 1999), may influence their impacts on soil and vegetation.

Bison have a stronger preference for perennial grasses than cattle. Cattle consume a higher percentage of forbs<sup>8</sup> in their diet than bison, and they

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<sup>7</sup> Steps or shelves in the mountainside that are the remains of former riverbanks or lakeshores.

<sup>8</sup> Herbaceous flowering plants other than grass.

use wooded areas and riparian zones more intensively than bison (Steuter and Hidinger, 1999). Due to the lower diversity of plants consumed by bison and the bison's preference for herbaceous vegetation, there may be a reduction in the abundance of dominant grasses, an increase in the survival of subordinate species, and an increase in species diversity, when compared to land grazed by cattle (Hartnett et al., 1997). Additionally, physical disturbances that bison exhibit during non-grazing activities, such as wallowing<sup>9</sup> may assist in ecodiversity (Hartnett et al., 1997).

The proposed action would not alter historic land use (for information regarding historic or cultural sites, see section below in the section on other environmental review requirements) at the pastures; therefore, overall effects to soil and vegetation would not be increased.

Approximately 100 bison would be placed on 120 irrigated acres of land, averaging about one acre of land per bison. This density is expected to have only minimal impacts on the land. In addition, landowners at each ranch or facility implement management practices to minimize effects to soil and vegetation. Pasture rotation is practiced at or between facilities as necessary, so that each pasture is periodically rested and the land is not overused. Lastly, the bison at all facilities would be supplemented with hay, further limiting pasture grazing.

#### **b. Water**

GonaCon™ is a protein that is broken down within the treated bison; its metabolites would not be anticipated to be any greater than what would naturally occur. Therefore, this section focuses on other potential environmental impacts of bison grazing near water.

Potential environmental impacts from bison grazing in pastures could include a degradation of nearby water quality by manure, urine, and sediment being deposited into local waters. While bison that have access to a water body may directly deposit manure and urine into the water, wastes excreted onto land may also be transported to water bodies via leaching and surface runoff.

Grazing management practices can lessen the environmental impacts of streamside pastures. While many studies describe the impact of cattle grazing on water bodies, few studies have concentrated on the effects of native ungulates on stream health. Russell et al. (2009) states that the proximity of cattle to the stream, the amount of time they spend by or in the stream, and the intensity and length of cattle grazing can all influence

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<sup>9</sup> When bison roll in shallow depressions in the soil, covering themselves with dirt or mud.

the water quality of nearby streams. One can assume the same behaviors in bison would also impact water quality.

Bison spend less time in streams or riparian habitats than cattle (Fleischner, 1994). Fleischner describes a study conducted in Utah regarding the feeding ecology of cattle and bison. The study noted that “cattle distribution was limited to gentle slopes near water, regardless of forage, while bison roamed widely, seemingly unaffected by slope or proximity to water.” As previously mentioned, cattle forage on a higher percentage of forbs and woody vegetation and maintain a larger breadth of diet niche than bison. Fritz et al. (1999) take this one step further and state that a higher percentage of forbs and woody vegetation occurs in the riparian zone, so cattle are more likely to impact stream riparian zones than bison.

Fritz et al. (1999) studied the distribution and diversity of macroinvertebrates (e.g., insects, worms, snails and crayfish) in relation to bison crossings in prairie streams. The study suggests that impacts of bison on communities at the bottom of the streams was spatially limited, and that the bison may have less impact on stream communities than other studies of the impact of cattle. While comparison to cattle provides a noteworthy point of reference, it is important to point out that it is difficult to compare environmental responses with cattle versus bison due to confounding effects of site, weather, and management.

The pastures that would be utilized in the proposed study have historically been used for bison research or as livestock pastures, so deposits of manure, urine, and sediment due to the proposed study are not expected to increase the historic amount of contaminants entering the Yellowstone River. While the Brogan Bison Facility does have a creek running through it, bison do not have access to the creek. Only bison at the Slip ‘n Slide ranch would have direct, but limited, access to a creek. The access site to this creek was historically used for livestock and is at a point on the creek where the bank is shallow and covered with rocks. A shallow crossing means that bison would not have to climb up and down the bank, which would eventually cause the banks to erode. In addition, water would be provided to the bison, limiting the time that bison would visit the creek. Lastly, because only a portion of the total number of bison tested would be present on this pasture and those bison would spend limited time in streamside environments, the impact to water bodies is expected to be minimal.

## IV. Other Environmental Review Requirements

### A. Endangered or Threatened Species

Section 7 of the Endangered Species Act (ESA) and its implementing regulations require Federal agencies to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of critical habitat. Proposed study activities would occur in pastures in southern Park County in Montana.

There are two federally listed mammals in Park County: the Canada lynx (*Lynx canadensis*) and the grizzly bear (*Ursos arctos horribilis*). Critical habitat has been designated for the Canada lynx in Park County.

Canada lynx: Areas designated as critical habitat for the Canada lynx include boreal forest landscapes that provide one or more of the following primary constituent elements for the lynx: snowshoe hares for prey; abundant, large, woody debris piles that are used as dens; and winter snow conditions that are generally deep and fluffy for extended periods of time (USDOI FWS, 2009).

Grizzly bear: 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. Habitat use is highly variable between areas, seasons, local populations, and individuals. Grizzly recovery zones (areas identified where grizzly bear distribution is primarily within), including the Yellowstone area in northwest Wyoming, eastern Idaho, and southwest Montana (9,200 square miles), are estimated at more than 580 bears (FWS, 2011).

At all three locations, the pastures are double-fenced with an 8-foot woven wire fence and an electric high tensile fence to contain the study bison. These fences would also prevent Canada lynx and grizzly bears from entering the pastures. If Canada lynx or grizzly bears were to enter the pastures and consume GonaCon™-treated bison, there would be no effect on these species. The vaccine is made of proteins, and when consumed, is broken down into amino acids in the gastrointestinal tract, thereby having no contraceptive effect (Fagerstone et al., 2008; Fagerstone et al., 2010).

Federally-listed species and other non-target wildlife would not be directly exposed to GonaCon™ because the vaccine would be injected directly into the test bison and not administered orally in bait form. No wildlife habitat would be altered or disrupted by proposed study activities. No

helicopters would be used as part of this proposed study; therefore, no disturbance to wildlife in the surrounding area is expected. Although the study pastures occur within the designated critical habitat of the Canada lynx, the proposed study would have no effect on the primary constituent elements of that habitat and would not adversely modify it. Therefore, APHIS has determined that the proposed action would have no effect on the grizzly bear or Canada lynx.

## **B. Bald and Golden Eagle Protection Act**

The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c) prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

There are no known bald eagle nests around the facilities; nesting areas are further down river (Jeremy Zimmer, USDA, Forest Service, Gardiner, MT, pers. comm.). However, golden eagle nests could be in the vicinity of the facilities, although specific nests are not known. Therefore, the proposed study is not expected to have any impact on nesting bald or golden eagles. In addition, activities occurring during the proposed study would not differ significantly from activities normally occurring at these pastures. "Eagles are unlikely to be disturbed by routine use of roads, homes, and other facilities where such use pre-dates the eagles' successful nesting activity in a given area. Therefore, in most cases ongoing existing uses may proceed with the same intensity with little risk of disturbing bald eagles" (FWS, 2007). If study personnel discover the presence of any bald or golden eagle nests in the area, this information would be reported to the Wildlife Program Manager at Gallatin National Forest.

Golden eagles have been observed flying over the Brogan Bison Facility (Jeremy Zimmer, USDA, Forest Service, Gardiner, MT, pers. comm.) and bald eagles could be flying in the area as well. The activities that would occur during the proposed study would not differ significantly from activities that normally occur in these pastures. Therefore, no disturbance of eagles would occur as a result of the proposed study; eagles in the area would be accustomed to these activities.

Although program personnel would remove daily any aborted calves or treated or non-treated bison that could die during the study, bald and golden eagles in the area could potentially consume these items. However, "[i]mmunocontraception vaccines provide few risks for

consumptive use of dosed wildlife; the antibodies that prevent reproduction are only one of millions of other antibodies present in animals, all of which are harmless to the organism that digests them, like any other proteinaceous food consisting of amino acids” (Fagerstone et al., 2010). Therefore, no eagles would be harmed if consumption of these items occurred.

## **C. Historic and Cultural Resources**

In accordance with Section 106 of the National Historic Preservation Act of 1966 and its implementing regulations<sup>10</sup>, APHIS prepared a summary of the proposed project and submitted it to the Montana State Historic Preservation Office (SHPO) for consideration of potential impacts to historic resources. On November 28, 2011, APHIS received a letter of concurrence from the Montana SHPO agreeing that there were no findings of potential impacts to historic resources for the proposed study.

## **D. Tribal Consultation and Coordination**

In accordance with Executive Order 13175: Consultation and Coordination with Indian Tribal Governments<sup>11</sup>, APHIS has prepared a summary of the proposed project and provided it to 26 tribes who may have interests in YNP. In addition to the 26 identified tribes, APHIS also provided a summary of the project to all tribes located near YNP and in States adjacent to Montana who might potentially have interest in the project.

On December 19, 2011, APHIS held a conference by telephone with tribes to provide an opportunity to discuss the proposed project in more detail and discuss potential concerns that the tribes may have. Tribes that participated in the call showed an interest in the details of the project, and several requested additional information on the history of the GonaCon™ immunocontraceptive vaccine. APHIS agreed to provide background information to tribes. No tribes voiced any major concerns about the project.

APHIS will continue to conduct outreach to interested tribes and keep them updated on the activities associated with the project.

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<sup>10</sup> National Historic Preservation Act of 1966 (16 U.S.C. 470f) and implementing regulations (36 CFR §800).

<sup>11</sup> Executive Order 13175: Consultation and Coordination with Indian Tribal Governments (65 FR 67249, November 9, 2000).

## V. Cumulative Impacts

This EA examines the activities associated with a proposed study to evaluate whether GonaCon™, an immunocontraceptive vaccine, would be effective as a non-lethal method of decreasing the prevalence of brucellosis in the YNP bison population by effecting temporary infertility in bison cows and thereby preventing transmission of *B. abortus*. Activities associated with the proposed study are not expected to result in adverse cumulative effects.

In order to conduct the proposed study, approximately 96 female and 8 male bison that naturally exit YNP over the period of as many as three years would be housed at pasture locations in the Gardiner, Montana area. Some of the female animals in the study would be injected with GonaCon™, which would reduce the likelihood of pregnancy and delivery of offspring in the treated animals. Untreated females may give birth to offspring, which would increase the total number of animals associated with the study.

In August 2011, the National Park Service conducted an annual bison population estimate (NPS, 2011). According to the 2011 survey, the total bison population in YNP was estimated to be approximately 3,700 bison. This total was approximately 200 lower than the survey from the previous summer, but the decrease was “within the natural range of expectation for wild bison.”

Assuming the proposed study would result in approximately 104 bison being removed from the larger bison population of YNP, the effect of removing this number of bison over multiple years is well within the natural range of expectation for bison. This decrease in the numbers of bison in YNP is not anticipated to cause any cumulative negative effects to the overall bison population.

One of the goals of the IBMP is to manage temporal and spatial separation of bison and cattle to mitigate potential transmission of brucellosis. Currently, this is accomplished through hazing, capture, test and slaughter of seropositive animals, and vaccination of seronegative animals and a limited hunt in Montana. The proposed study may provide important information that would allow for re-evaluation and re-consideration of some of the current IBMP activities. This may result in impacts to future decision-making regarding protocols for bison habitat management, bison vaccination strategies, and bison hunt activities. IBMP activities that could be impacted include strategies to maintain appropriate bison population and distribution, should bison habitat be expanded.



## VI. Agencies or Persons Contacted

U.S. Forest Service, Gallatin National Forest

Montana Fish, Wildlife and Parks

Montana State Historic Preservation Office, Montana Historical Society

USDA, Animal and Plant Health Inspection Service, Veterinary Services

USDA, Animal and Plant Health Inspection Service, Policy and Program Development, Environmental and Risk Analysis Services

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# MVDL

## MONTANA VETERINARY DIAGNOSTIC LABORATORY

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Website: [www.liv.mt.gov/lab](http://www.liv.mt.gov/lab)

Phone: (406) 994-4885  
Fax: (406) 994-6344  
Email: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)

Accession # 8-324-14  
Owner: USDA, APHIS, VS

Species: WILD - BISON  
Breed: BISON  
Name/No. 4 GREEN 14  
Age: FETUS Sex:

Date Sent: 03/10/2014  
Date Received: 02/24/2014

Submitter: PATRICK RYAN CLARKE D.V.M.

(b) (6)

### Final Report

Case Coordinator: AWL

### CASE SUMMARY

REASON FOR SUBMISSION: Brucella seropositive cow, abortion

#### LABORATORY DIAGNOSIS:

Bronchopneumonia: Etiology - Brucella abortus biovar 1

A. W. Layton, DVM, DACVP\cto

Date In 02/27/2014

### PATHOLOGY

Date Out: 03/10/2014 Released by: AWL

GROSS: The carcass of a bison fetus that is hairless with approximately 40 cm crown/rump length. The fetus is fair post mortem and nutritional state. The sex was not determined. Lungs are atelectatic. Scant amount of tan fluid occurs in the forestomachs and abomasum. No other significant changes were present.

HISTOPATHOLOGY: Tissue sections of liver, spleen, lung, thymus, abomasum, adrenal gland, lymph node, heart, kidney, skeletal muscle, small intestine and brain are examined. There is a bronchopneumonia, and many large airways contain columnar and squamous epithelial cells. Inflammatory cell component is moderate in number and occurs within alveolar spaces. The infiltrate consists of alveolar macrophages and fewer neutrophils. Fibrin exudation is present in some areas.

#### MORPHOLOGIC DIAGNOSIS:

Bronchopneumonia, with meconium and squamous inhalation

Date In 02/25/2014

### BACTERIOLOGY

Date Out: 03/07/2014 Released by: MH

Isolate sent to NVSL for full identification 2/28/14; results received 3/7/14; identified as Brucella abortus biovar 1.

#### CULTURES

| ID/Site | Specimen    | Culture Type  | Isolate                        | Antimicrobial |         |
|---------|-------------|---------------|--------------------------------|---------------|---------|
|         |             |               |                                | Growth        | Profile |
|         | fetal liver | Brucella      | Brucella abortus               | 1+ P          | NA      |
|         | fetal lung  | Campylobacter | Negative for Campylobacter sp. |               | NA      |
|         | fetal lung  | Aerobic       | Brucella abortus               | 2+ P          | NA      |
|         | fetal lung  | Brucella      | Brucella abortus               | 2+ P          | NA      |

1+ to 4+ = rare colony to confluent growth

P = pure culture, M = mixed or partially contaminated culture



Date In: 02/24/14

## SEROLOGY

Date Out: 03/03/14

Released by: AF

| Testname           | # of tests | # Negative | Test Summary |           | # A | C | # Undetermined | # Insufficient | Tech |
|--------------------|------------|------------|--------------|-----------|-----|---|----------------|----------------|------|
| B. ABORTUS RIVANOL | 1          | 0          | # Positive   | # Suspect | 0   |   | 0              | 0              | AF   |
| B. ABORTUS FP      | 1          | 0          | 1            | 0         | 0   |   | 0              | 0              | AF   |
| B. ABORTUS CF      | 1          | 0          | 1            | 0         | 0   |   | 0              | 0              | AF   |
| B. ABORTUS CARD    | 1          | 0          | 1            | 0         | 0   |   | 0              | 0              | AF   |
| B. ABORTUS BAPA    | 1          | 0          | 1            | 0         | 0   |   | 0              | 0              | AF   |

### List of Significant result

| Animal Id  | Testname           | Result | Titer  |
|------------|--------------------|--------|--------|
| 4 GREEN 14 | B. ABORTUS CARD    | POS    |        |
| 4 GREEN 14 | B. ABORTUS CF      | POS    | 4+ 640 |
| 4 GREEN 14 | B. ABORTUS RIVANOL | POS    | +200   |
| 4 GREEN 14 | B. ABORTUS FP      | POS    | 202.3  |

### Final Classification

| Animal Id  | Classification | Comment |
|------------|----------------|---------|
| 4 GREEN 14 | REACTOR        |         |

Date In: 02/28/2014

## REFERRAL/OTHER

Date Out: 03/07/2014

Released by: AVL

| Animal ID  | Specimen   | Test             | Result                    | Rfri Inst. |
|------------|------------|------------------|---------------------------|------------|
| 4 Green 14 | Slant Tube | Brucella Culture | Brucella abortus biovar 1 | NVSL       |

Please see attached report for complete results.





# National Veterinary Services Laboratories

FINAL REPORT

PO Box 844

Ames, Iowa 50010

Phone: 515-337-7514 Fax: 515-337-7938

FEDERAL RELAY SERVICE (Voice/TTY/ASCII/Spanish) 1-800-877-8339

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## Laboratory Test Report

\*\*\*\*\* This is a confidential report intended for official use only. \*\*\*\*\*

**Owner**  
USDA, APHIS, VS  
Corwin Springs, MT

**Animal Location**  
Park County MT

**Submitter - 2047**  
MT Department of Livestock  
Diagnostic Laboratory Division  
1911 W Lincoln St  
PO Box 997  
Bozeman, MT 59718  
FAX #: 406-994-6344  
Phone #: 406-994-4885

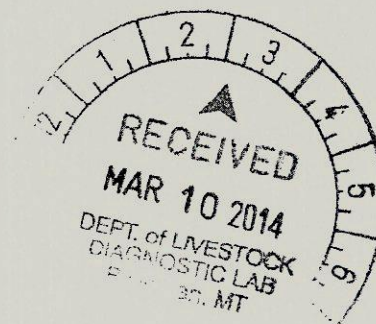
**Accession Number:** 14-006821  
**Date Collected:** 02/22/2014  
**Date Received:** 03/03/2014  
**Date Completed:** 03/10/2014  
**Collected By:** P. Ryan Clarke  
**Purpose:** General Diagnostic  
**Referral Number:** 8-324-14  
**This is not a billable case.**

**NOTE:** Condition of the sample(s) was adequate unless otherwise noted.

Sample: 8-324-14 Animal ID: 4 Green 14 / Bison Brucella Case Number: B14-0102 Specimen Type: Culture Species: Bison

Brucella Final Identification

Brucella abortus biovar 1



**Results authorized by:**

Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

*Scanned 3/10/14 / JH*



**Fees**

|                                |                 |
|--------------------------------|-----------------|
| <b>Bacteriology Fee</b>        | <b>\$ 0.00</b>  |
| <b>Pathology/Histology Fee</b> | <b>\$ 70.00</b> |
| <b>Referral Fee</b>            | <b>\$ 18.25</b> |
| <b>Serology Fee</b>            | <b>\$ 9.50</b>  |
| <b>Accession Total Fee</b>     | <b>\$ 97.75</b> |

(This is not a bill. Do not make payment from this report.)

**FEE INCREASE:**

Please, note that laboratory fees will increase on October 15, 2013. The Fee Schedule is available on the Laboratory webpage:  
<http://www.liv.mt.gov/lab/default.mcp>

If you have any questions, laboratory personnel may be contacted at 406-994-4885 or LIVDiagnosticLab@mt.gov



GonaCon Study Case# 8-324-14

Green#14 Adult Female Bison

This animal is classified a reactor based on positive serological reactions

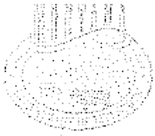
*L.H. Hinkle DVM*

Designated Brucellosis Epidemiologist



MT DEPT. OF LIVESTOCK  
DIAG. LAB P.O. BOX 997  
BOZEMAN, MT 59771-0997  
406-994-4885

030514



# MVDL

## MONTANA VETERINARY DIAGNOSTIC LABORATORY

PO Box 997 Bozeman, MT 59771  
1911 West Lincoln Street Bozeman, MT 59718  
Website: [www.liv.mt.gov/lab](http://www.liv.mt.gov/lab)

Phone: (406) 994-4885  
Fax: (406) 994-6344  
Email: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)

Accession # 8-336-15

Owner: GONA CON STUDY

Species: WILD - BISON

Breed: NA

Name/No. 5G14

Age: FETUS Sex:

Date Sent: 04/08/2015

Date Received: 03/20/2015

Submitter: PATRICK RYAN CLARKE D.V.M.

(b) (6)

### Final Report

Case Coordinator: JM

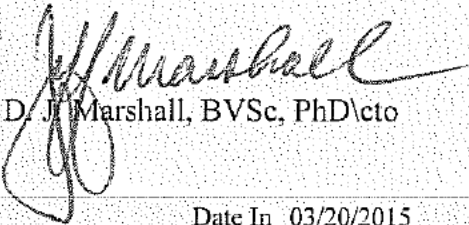
### CASE SUMMARY

REASON FOR SUBMISSION: Bison abortion

#### LABORATORY DIAGNOSIS:

Bison abortion; Placentitis; Brucella abortus culture positive

COMMENT: Brucella abortus was cultured from abomasal contents and placenta. This isolate was forwarded to NVSL and confirmed as being B abortus (see attached report).

  
D. J. Marshall, BVSc, PhD\cto

Date In 03/20/2015

### PATHOLOGY

Date Out: 04/08/2015

Released by: JM

**GROSS PATHOLOGY:** A bison fetus and piece of placenta were submitted for necropsy and subsequent laboratory evaluation. Necropsy was performed at 12.00 pm on Friday 20th March 2015. Female fetus had a crown rump measurement of 64 cm and was in a good state of post mortem preservation. No significant gross abnormalities are detected.

**HISTOPATHOLOGY:** Sections of placenta, brain, liver, kidney, heart, lung, spleen abomasum, small intestine and skeletal muscle are examined. Placenta is multifocally inflamed and necrotic. Lung is not aerated and small quantities of squamous epithelial debris and macrophages are present in alveoli. No significant histological abnormalities are present in the remaining tissues.

#### MORPHOLOGIC DIAGNOSIS:

Placenta: Necrotizing placentitis, multifocal

Lung: Non-aeration; Alveolitis with intra-alveolar squamous epithelial debris

Date In 03/20/2015

### BACTERIOLOGY

Date Out: 04/01/2015

Released by: mh

Isolate sent to NVSL 3/25/15 for species ID and genotyping.

#### CULTURES

| ID/Site | Specimen          | Culture Type  | Isolate                        | Antimicrobial |         |
|---------|-------------------|---------------|--------------------------------|---------------|---------|
|         |                   |               |                                | Growth        | Profile |
|         | abomasal contents | Aerobic       | Brucella abortus               | 4+ P          | NA      |
|         | abomasal contents | Brucella      | Brucella abortus               | 4+ P          | NA      |
|         | abomasal contents | Campylobacter | Negative for Campylobacter sp. |               | NA      |
|         | placenta          | Aerobic       | Brucella abortus               | 4+ M          | NA      |
|         | placenta          | Brucella      | Brucella abortus               | 4+ M          | NA      |

MVDL Accession #  
B-336-15

Submitter:  
PATRICK RYAN CLARKE D.V.M.

Owner:  
GONA CON STUDY

Date In 03/20/2015

Date Out: 04/01/2015 Released by: mh

placenta Campylobacter Negative for Campylobacter sp.

NA

1+ to 4+ = rare colony to confluent growth

P = pure culture, M = mixed or partially contaminated culture

Date In: 03/25/2015

## REFERRAL/OTHER

Date Out: 04/01/2015

Released by: JM

| <u>Animal ID</u> | <u>Specimen</u> | <u>Test</u>      | <u>Result</u>     | <u>Rfrl Inst.</u> |
|------------------|-----------------|------------------|-------------------|-------------------|
| 5G14             | Slant tube      | Brucella Culture | Brucella abortus. | NVSL              |

Please see attached report for complete results.



# National Veterinary Services Laboratories

FINAL REPORT

PO Box 844

Ames, Iowa 50010

Phone: 515-337-7514 Fax: 515-337-7938

FEDERAL RELAY SERVICE (Voice/TTY/ASCII/Spanish) 1-800-877-8339

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## Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

**Owner**

Gona Con Study

Corwin Springs, MT

**Animal Location**

Park County MT

**Submitter - 2046**

MT Department of Livestock

Diagnostic Laboratory Division

1911 W Lincoln St

PO Box 997

Bozeman, MT 59718

FAX #: 406-994-6344

Phone #: 406-994-4885

**Accession Number:**

15-009841

**Date Collected:**

03/20/2015

**Date Received:**

03/26/2015

**Date Completed:**

04/01/2015

**Collected By:**

Dr. P. Ryan Clarke

**Purpose:**

General Diagnostic

**Referral Number:**

8-336-15

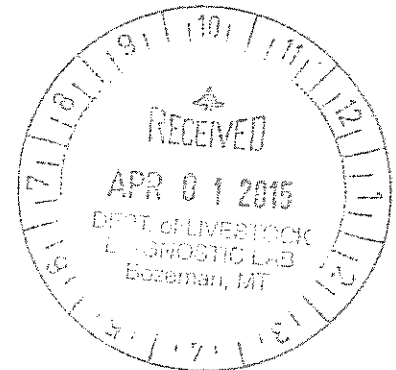
This is not a billable case.

**NOTE:** Condition of the sample(s) was adequate unless otherwise noted.

Sample: 8-336-15 Animal ID: 5G14 Brucella Case Number: B15-0106 Specimen Type: Culture Species: Bison

Brucella Final Identification

Brucella abortus


**Results authorized by:**

Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section

NVSL MB General Phone: 515-337-7388

Scanned 4-1-15/jm  
cc: Bact- 4-1-15/jm

MVDL Accession #  
8-336-15

Submitter:  
PATRICK RYAN CLARKE D.V.M.

Owner:  
GONA CON STUDY

Fees

|                         |          |
|-------------------------|----------|
| Bacteriology Fee        | \$ 0.00  |
| Pathology/Histology Fee | \$ 73.50 |
| Referral Fee            | \$ 19.10 |
| Accession Total Fee     | \$ 92.60 |

(This is not a bill. Do not make payment from this report.)



# **Evaluation of GonaCon™, an Immunocontraceptive Vaccine, as a Means of Decreasing Transmission of *Brucella abortus* in Bison in the Greater Yellowstone Area**

**Environmental Assessment,  
May 2012**



# Evaluation of GonaCon™, an Immunocontraceptive Vaccine, as a Means of Decreasing Transmission of *Brucella* *abortus* in Bison in the Greater Yellowstone Area

**Environmental Assessment,  
May 2012**

**Agency Contact:**

Dr. Donald E. Herriott  
Associate Regional Director – Western Region  
Veterinary Services  
Animal and Plant Health Inspection Service  
U.S. Department of Agriculture  
2150 Centre Avenue, Bldg B, Mailstop 3E13  
Fort Collins, CO 80526-8117

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This publication reports research involving pesticides. All uses of pesticides must be registered by appropriate State and/or Federal agencies before they can be recommended.

---

**CAUTION:** Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or other wildlife—if they are not handled or applied properly. Use all pesticides selectively and carefully. Follow recommended practices for the disposal of surplus pesticides and pesticide containers.

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# I. Introduction

## A. Background

In Yellowstone National Park (YNP), wild and free-ranging bison (*Bison bison*) are critical parts of a fully-functioning ecosystem as well as being important to the identity of the park. The bison are a part of the esthetic, cultural, and natural environment of the YNP. YNP bison are chronically infected with brucellosis, a contagious disease that the United States Department of Agriculture, Animal and Plant Health Inspection Service, Veterinary Services (USDA/APHIS/VS) is striving to eliminate.

Brucellosis is a serious disease of livestock and wildlife that has significant animal and public health and international trade consequences. The disease is caused by bacteria of the genus *Brucella*. Brucellosis occurs primarily in cattle, bison, and swine; however, cervids, goats, sheep, and horses are also susceptible. In cattle and bison, the specific disease organism of concern is *Brucella abortus* (*B. abortus*).

In its principal animal hosts, brucellosis causes loss of young through spontaneous abortion or birth of weak offspring, reduced milk production, and infertility. In cattle and bison, the disease localizes in certain lymph nodes, reproductive organs and/or the udder, causing spontaneous abortions in females and systemic effects in both male and female animals. Weight loss and lameness may also be associated with brucellosis infection.

The shedding<sup>1</sup> of *B. abortus* through the reproductive tract during an abortion or calving event may contribute to the transmission of infection to other animals that come in contact with the expelled bacteria now in the environment. Studies have shown that *Brucella* can persist on fetal tissues, vegetation and soil in YNP for as long as 81 days depending on environmental conditions (Aune et al., 2011). Spread of the disease occurs when the cattle and bison, which are social animals, sniff and lick a newborn calf, the afterbirth, and even an aborted fetus. This behavior provides an avenue for the disease to spread if *B. abortus* organisms are present. Additionally, *B. abortus* is present in the milk from infected females and can be transmitted to calves through suckling. There is no effective means of treating brucellosis in livestock or wildlife.

Studies investigating the prevalence of brucellosis in YNP bison have estimated that between 40% and 60% of YNP bison have been exposed to

---

<sup>1</sup> For purposes of the proposed study, “shedding” is to expel *B. abortus* from the body through the reproductive tract.

the disease. Further testing of animals that are seropositive<sup>2</sup> demonstrates that more than 40% of the seropositive animals are culture-positive, confirming actual infection with *B. abortus* (Meyer and Meagher, 1995; Cheville et al., 1998). In the areas outside the borders of YNP where livestock such as cattle are often raised, there is a concern that infected bison may transmit the disease to livestock if infected bison abort or calve.

Multiple Federal and state agencies<sup>3</sup> have participated in efforts to control the potential spread of brucellosis and conserve bison through the 2000 Interagency Bison Management Plan (IBMP) (MDoL and MFWP, 2000). In 1934, a federal brucellosis program was established as part of an effort to safeguard domestic livestock (See [http://www.aphis.usda.gov/animal\\_health/animal\\_diseases/brucellosis/](http://www.aphis.usda.gov/animal_health/animal_diseases/brucellosis/) for additional information regarding USDA APHIS' brucellosis program).

Safeguarding measures, such as preventing, detecting, and eliminating animal diseases, help to maintain the U.S. cattle industry's national and international trade interests, ensure food safety, and protect public health. The efforts of the national brucellosis program have nearly eradicated brucellosis from domestic cattle and bison populations. As of July 2009, all 50 States had attained Class-Free (disease-free) status for brucellosis in domestic cattle and bison (USDA APHIS, 2010a). Currently, the last known reservoir of bovine brucellosis is in the wild bison and elk population in the Greater Yellowstone Area (GYA). Prevention of the spread of brucellosis between infected wildlife and livestock continues to be an issue of concern. The proposed study discussed in this environmental assessment (EA) is designed to investigate the feasibility of using an immunocontraceptive vaccine, GonaCon™, as a non-lethal management option to decrease the potential risk of disease transmission by brucellosis-infected bison.

In humans, brucellosis is often referred to as undulant fever because it persists for several weeks or months and may get progressively worse if untreated. Humans are most commonly infected by consumption of unpasteurized dairy products produced from milk of infected animals, or they may become infected through direct contact with infected animal tissues such as aborted fetuses or reproductive materials. In humans, brucellosis initially causes flu-like symptoms that are treated with a rigorous course of antibiotics. In some isolated cases, the disease may develop into a variety of chronic conditions, including arthritis. Potential

---

<sup>2</sup> Bison that test positive on blood tests for brucellosis are referred to as being seropositive, and bison that do not test positive are referred to as being seronegative.

<sup>3</sup> U.S. Department of Interior National Park Service (NPS); U.S. Department of Agriculture Animal and Plant Health Inspection Service (APHIS); U.S. Department of Agriculture Forest Service (FS); Montana Department of Livestock (MDoL); and Montana Fish, Wildlife and Parks (MFWP).

effects of the proposed study on humans will be discussed in the potential environmental impacts section.

### **GonaCon™ Immunocontraceptive Vaccine**

GonaCon™ is a contraceptive vaccine that stimulates an immune response in a vaccinated animal by producing antibodies that bind to a gonadotropin-releasing hormone (GnRH). GnRH is a naturally occurring hormone that signals production of sex hormones such as estrogen, progesterone, and testosterone. The anti-GnRH antibodies interfere with the ability of GnRH to signal production of sex hormones, resulting in temporary infertility. As long as adequate levels of anti-GnRH antibodies are present in the vaccinated animal, sexual activity, breeding, and reproduction are extremely unlikely.

GonaCon™ is currently approved under the United States Environmental Protection Agency's (EPA's) Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) for use in female white-tailed deer as one tool to aid in reducing deer overpopulation (EPA Registration Number 56228-40). The immune response that causes temporary infertility in deer is accomplished with a single-shot vaccine. The length of time that a vaccinated female deer remains infertile depends on the individual animal, but some pen studies have shown that 4 out of 5 female deer remain infertile for 5 years (Miller et al., 2008a). Field studies have demonstrated lower rates of infertility ranging from 88% and 47% the first and second year after vaccination, respectively (Gionfriddo et al., 2009) to 67% and 43% the first and second year after vaccination, respectively (Gionfriddo et al., 2011).

GonaCon™ is not currently registered for use in bison. However, USDA conducted a small pilot study of penned bison and found that none of the 6 females vaccinated with GonaCon™ became pregnant the first year after treatment (Miller et al., 2004). In 2011, APHIS received approval from EPA to use GonaCon™ in female bison in the confined experimental use scenario discussed in this EA. Should the proposed study discussed in this EA proceed, the data obtained from it could potentially be used to add to the required data set needed for EPA to register the GonaCon™ vaccine for use in bison. However, the purpose for registering GonaCon™ in bison would not be for reducing overpopulation. The intended purpose of using GonaCon™ in female bison would be to manage reproduction in bison known to be infected with brucellosis by inducing temporary infertility, thereby decreasing the potential for transmission of brucellosis through abortion and calving events.

## B. Purpose of and Need for the Proposed Action

The purpose of the proposed action is to conduct a study to evaluate whether GonaCon™, an immunocontraceptive vaccine, would be effective as a non-lethal method of decreasing the prevalence of brucellosis in the YNP bison population by preventing pregnancy, calving, and abortion, thereby preventing transmission of *B. abortus*. The major objectives of the proposed study are:

- To evaluate the efficacy of GonaCon™ as an immunocontraceptive vaccine in *B. abortus*-infected female bison;
- To evaluate the effect on shedding by *B. abortus*-infected female bison that are rendered temporarily infertile by GonaCon™; and
- To evaluate the effect the infertility produced by GonaCon™ has on the long-term survivability of *B. abortus* in infected female bison.

Use of an effective immunocontraceptive such as GonaCon™ to prevent pregnancy and eliminate the potential for abortions by infected bison would break the cycle of transmission of brucellosis. If female bison known to be infected with *B. abortus* do not become pregnant, they would not abort. Exposure of non-infected animals to the infected tissues and fluids from aborted fetuses would therefore be reduced.

The need for the proposed study is to provide information that would be used to evaluate the use of GonaCon™ as a nonlethal method of decreasing or controlling the risk of transmission of *B. abortus* in the YNP bison population. Brucellosis is spread within the animal population primarily through contact with infected birthing tissues or aborted fetuses and through the milk of infected cows. If GonaCon™ can effectively render brucellosis-infected female bison temporarily infertile, the primary routes of disease transmission would be blocked. In combination with other appropriate disease mitigation activities, the use of GonaCon™ may be an effective tool to assist in eliminating brucellosis from the YNP bison herd over time.

USDA APHIS has determined that under the provisions of the National Environmental Policy Act (NEPA) (see 42 U.S.C. 4321 et seq.) and APHIS' National Environmental Policy Act (NEPA) implementing procedures (see 7 CFR Part 372), an EA should be prepared for these proposed actions. The availability of this EA and a 30-day comment period will be announced by publishing a notice on the APHIS brucellosis program website, the IBMP website and/or local newspapers. APHIS' decision maker for the actions described in this EA will take appropriate action after reviewing the EA, its associated analyses, public comments received, and other relevant responses and recommendations.

## **II. Proposed Action and Alternatives**

### **A. No Action (the Current Situation)**

The no action alternative would result in not conducting the proposed study. If the proposed study is not conducted, the utility of GonaCon™ as a non-lethal reproductive control option in bison cannot be determined. Additionally, if the use of GonaCon™ in bison is not investigated, information would not be known on whether temporary infertility induced by GonaCon™ is effective in decreasing the shedding of *B. abortus* and ultimately the transmission of brucellosis. Without the proposed study, use of the immunocontraception approach as a viable disease management tool for bison would not be evaluated, and could not be considered as a potential management tool.

### **B. Proposed Action**

The proposed action is to conduct a multi-year study to evaluate the potential for use of GonaCon™, an immunocontraceptive vaccine, as a non-lethal method of decreasing the prevalence of brucellosis in bison by preventing pregnancy, thereby preventing abortions and risk of transmission of brucellosis to uninfected animals from contact with infected tissues and fluids from aborted fetuses.

The proposed study would include the following activities that are discussed in further detail below:

- Capturing bison in the late winter/spring of 2011, 2012, 2013, and possibly 2014;
- Transporting the captured bison by stock trailer to APHIS' bison facilities in Gardiner, Montana;
- Collecting and evaluating blood samples to determine brucellosis infection status at the beginning of the study and monitoring infection status at regular intervals throughout the study;
- Housing, caring for, and tagging (for identification purposes) animals in Gardiner, Montana facilities;
- Injecting one group of seropositive female bison with GonaCon™ beginning in the spring of 2012;
- Commingling uninfected bulls with females during breeding season, documenting breeding behavior, and testing for pregnancy for five calving seasons;
- Monitoring pregnant bison with transmitters and daily observing them for abortions, labor, and births;

- Collecting and testing blood, milk, and vaginal swabs from female bison that give birth to test for brucellosis infection status;
- Monitoring exposure to aborted fetuses by other bison and evaluating fetuses collected during the study; and
- Evaluating data collected from the study to determine whether GonaCon™ decreases the shedding of *B. abortus* in bison.

Bison for the proposed study would be acquired during the winter when they naturally exit YNP. The capture of bison would be conducted using methods currently in use for capturing bison according to the details of the IBMP operating procedures (IBMPOP, 2009). These procedures include hazing and/or using weed-free hay to move them to a capture facility. Approximately 104 adult bison would be used in the proposed study: 24 female bison that are seronegative for brucellosis; 72 female bison that test seropositive for brucellosis; and 8 male bison (bulls) that test seronegative for brucellosis. Female bison would be yearlings, two-, and three-years of age. If temporary chemical immobilization of any animal is needed, opioid narcotics and alpha-2-adrenergics would be used by study personnel qualified in the administration of such drugs. All bison used in the study would be identified with uniquely numbered ear tags and microchip identification.

The proposed study would take place on several double-fenced pastures at facilities in the Gardiner, Montana area: the Brogan Bison Facility in Corwin Springs (60 acres), the Slip 'n Slide pasture (25 acres), and the Rigler pasture (32 acres), all of which are located north of Gardiner, Montana. All sites are within the GYA and along Highway 89. The Brogan Bison Facility, Rigler pasture, and Slip 'n Slide pastures are currently leased by APHIS VS and Montana Fish, Wildlife and Parks and are used by APHIS VS for the bison quarantine feasibility study (MFWP, 2005). These facilities were specifically designed and erected to hold bison in a quarantine environment with hay and water as needed for an extended period of time.

The study design is as follows: In spring 2012, animals would be randomly selected to go into groups of 16 to 18 seropositive cows, four to six seronegative cows, and two bulls. Two replicate test pastures would be established in 2013 and possibly 2014 if not enough animals are captured in 2013. After three to four weeks of acclimation in the test pastures, *B. abortus*-infected female bison in one of the pastures would receive GonaCon™ vaccine (containing 3,000 micrograms in 3 milliliters of an adjuvant) delivered into the muscle on each side of the neck or hip. The sites of injection would be tattooed or otherwise marked and observed for any injection reaction. Bison in the remaining pasture would not be vaccinated.



Bulls would be separated from the cows outside of the breeding season from October to July. Prior to exposure to bulls, cows would have breeding tags<sup>4</sup> attached to them to document if bulls have mounted them to breed. Following first exposure of cows to bulls in 2012, five calving seasons would be observed (2013-2017). In February of each year, cows would be pregnancy-tested and fitted with vaginal transmitters to alert investigators to abortion or calving events.

During the abortion/calving seasons (from February until August of each year), daily observation for abortions, labor, and calving events would be conducted by study investigators. Within five days of abortion or calving, the cow would be immobilized and blood, milk, and vaginal swabs would be collected for testing. If possible, the calf would also be captured and eye swabs and blood would be collected for testing.

Following an abortion, the fetus would be left at the abortion site for 24 hours to monitor exposure to other bison. The fetus would then be collected, tested, and incinerated at the Montana Veterinary Diagnostic Laboratory (MVDL) in Bozeman, Montana.

Blood testing of cows, bulls, and calves would be conducted three times a year: in February, calving time, and in the fall. Blood would be analyzed at the MVDL and/ or the National Veterinary Service Laboratories in Ames, Iowa throughout the study to determine *B. abortus* infection status of each animal.

Handling and physical restraint of bison for tagging or blood collection would take place in alleyways leading to standard bison manual squeeze chutes. Injection of the study animals with GonaCon™ would be done by study personnel experienced in administering intramuscular vaccines. Blood samples from study animals would be collected using established techniques for collection of blood from bison and would be performed by study personnel experienced with these techniques. An attending veterinarian would be available to address concerns about animal care and use for the study.

When the study is completed, all seropositive animals would be humanely euthanized following American Veterinary Medical Association-approved guidelines, and specimens would be collected from each animal for laboratory analysis. In addition, eggs and semen would be collected from these animals, including vaccinated animals, and frozen for genetic conservation. Per the conditions of the approval from EPA to use GonaCon™ in bison in this confined experimental use study, animals treated with GonaCon™ cannot be consumed by humans. These animals

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<sup>4</sup> Breeding tags are devices that are temporarily adhered to the base of the cow's tail that indicate by a color change that the cow has been mounted.

would be disposed of by incineration or landfill burial. Seropositive animals from the study that have not received GonaCon™ injections would be distributed to Montana food banks as is routinely done with other YNP seropositive bison. Further discussion on the safety of consuming bison infected with *B. abortus* is discussed in the human health and safety section of this document. All animals that test negative for brucellosis for the duration of the study and satisfy existing bison quarantine release requirements outlined in the APHIS Uniform Methods and Rules (USDA APHIS, 2003) would be used for bison conservation purposes.

### **C. Other Alternatives Considered but Dismissed from Further Consideration**

Because the most common route of transmission of *B. abortus* is contact with infected birthing fluids, aborted fetuses, and placental tissues, different methods of impacting the fertility of bison through the use of immunocontraceptive vaccines were considered as alternatives to the proposed action. If pregnancy could be prevented in *B. abortus*-infected female bison, transmission of *B. abortus* by this route could be eliminated or decreased.

APHIS considered the use of porcine zona pellucida (PZP), another type of immunocontraceptive vaccine that has been used in animal species such as dogs, coyotes, burros, wild horses, and deer (USDA APHIS, 2010b). PZP has also been demonstrated to effectively induce temporary infertility in captive bison (Frank et al., 2005). However, research has shown that the use of PZP can increase the period of time in which the treated animals exhibit breeding season behavior.

The PZP vaccine results in temporary infertility while still allowing female animals to have multiple estrous cycles in which they engage in prebreeding behavior and breed. This behavior can cause animals to use energy at times of the year, such as late fall and early winter, when they would otherwise be conserving energy. Miller et al. (2004) concluded that "...Prolonging the breeding season of bison in the GYA may be deleterious to the winter survival of dominant bulls and PZP vaccinated cows because of increased sexual activity during fall and early winter." Therefore, this alternative was dismissed from further consideration because investigating the use of a PZP vaccine would not be useful in brucellosis management strategies in bison since it is associated with increased mating and reproductive activity (Killian et al., 2007).

APHIS also considered the alternative of physical sterilization as a means of decreasing the transmission of *B. abortus* within bison populations and between bison and cattle in the GYA. Physical sterilization such as

spaying<sup>5</sup> or castration<sup>6</sup> has been recognized as a disease management strategy that could be used to reduce the potential transmission of brucellosis in infected wildlife populations. However, this type of sterilization is permanent. APHIS would not subject the bison in the study to physical sterilization. For this reason, this alternative was dismissed from further consideration.

### **III. Potential Environmental Impacts**

The NEPA implementing regulations provide criteria that Federal agencies should evaluate, if applicable, in environmental documents for proposed actions. This section of the EA addresses the applicable criteria related to potential impacts from the no action alternative and from the proposed action. NEPA criteria that are applicable for consideration in this section of the document include animal impacts, human health and safety, and the physical environment.

#### **A. No Action**

Without the proposed action, efforts to gather scientific information to better understand the potential application of immunocontraceptive vaccines such as GonaCon™ as a nonlethal strategy for reducing the transmission of *B. abortus* and decreasing the prevalence of brucellosis in the wild bison population in YNP would be lost. Without the proposed action to assist in developing nonlethal strategies to effectively control and eliminate brucellosis, the disease may continue to spread within the wild, free-ranging bison population in the GYA.

#### **B. Proposed Action**

##### **1. Impact of Proposed Action on Animals**

##### **a. Bison**

The proposed study would not increase the risk of brucellosis being transmitted within the bison population. Therefore, this section focuses on the potential effects of the administration of GonaCon™ in bison.

In this proposed study, the desired effect of administering GonaCon™ is the temporary suspension of reproductive activity in the vaccinated female bison. Miller et al. (2004) report that “The gonadotropin-releasing hormone (GnRH) vaccine is generally considered to provide temporary

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<sup>5</sup>Surgical removal of the ovaries from female bison.

<sup>6</sup> Surgical removal of the testes of male bison.

sterilization, because the reproductive activity of the target animal returns as the GnRH antibody titer drops below a protective level.” If the effect of this immunocontraceptive vaccine successfully places the vaccinated bison cows in a temporary nonreproductive state, the transmission of brucellosis by the female bison via shedding of *B. abortus* during calving or abortion may be eliminated.

A small study conducted at the Idaho Fish and Game Wildlife Health Laboratory in Caldwell, Idaho in 2002-2003 demonstrated “that a single injection of GnRH vaccine is effective in preventing conception in female bison for at least 1 yr” (Miller et al., 2004). In that study, three of the six GnRH-treated bison cows and five of the untreated bison cows were in the last month of pregnancy at the time of vaccination. They delivered normal calves in the first year, suggesting that the GnRH vaccine did not interfere with the pregnancy and could be administered safely during the last third of the pregnancy. Additionally, none of the six treated bison became pregnant during the first breeding season (Miller et al., 2004).

Undesired health effects have been minimal in the species of wildlife in which GonaCon™ has been used. Injection site reactions caused by the “water-in-oil (W/O) emulsion needed in the GonaCon™ formulation for development of a long-term immune response” have been observed (Miller et al., 2008b). These reactions were most commonly manifested as inflammation or swelling at the injection site, or the presence of granulomas (thickened tissue filled with fluid). This observation is not uncommon in other livestock vaccines (USDA APHIS, 2010b).

As part of the GonaCon™ EPA registration process for use in deer, the health effects to the vaccinated deer were evaluated. Vaccinated animals showed no external evidence of inflammation at known injection sites; however, when muscle tissue at the injections site was sectioned, the injection sites appeared to be comprised of whiteish scar tissue, some containing vesicles of sterile fluid. All blood chemistry analyses were similar between treated and untreated deer. (Killian et al., 2006). Other types of injected products that alter animal hormones are currently used in livestock in the United States (USDA APHIS, 2010b).

Ensuring humane handling and treatment of all bison during the proposed study activities would be a priority. Application of animal identification tags, administration of GonaCon™ vaccine, and evaluation of pregnancy status, calving, or abortion activities would be conducted at appropriate times during the proposed study. These activities would be overseen by the study’s attending veterinarian and would not be expected to cause more than momentary or slight pain or discomfort. All temporary restraining and handling or temporary immobilization and handling activities would be conducted as quickly and efficiently as possible and in

a manner that would prevent undue stress, trauma, injury, or any unnecessary discomfort to the animal. If temporary immobilization is necessary, bison cows would be immobilized in locations within the facilities that are safe for the animals and the proposed study personnel. Veterinary oversight for animal care and handling, restraint, and sample collection would be provided during the proposed study activities. Wildlife biologists trained and experienced in the handling of bison would also be participating in the proposed study activities.

If necessary, study personnel would use the Federal Drug Administration (FDA)-approved anaesthetic and pain-killing (analgesic) drug combinations to immobilize the animals in order to prevent any potential negative impacts to the bison during the collection of study samples. The immobilization drugs would be used according to standard animal administration techniques, and it is expected that the bison would be immobilized for no more than 20 minutes. Vital signs of the immobilized bison would be monitored by qualified study staff throughout the sampling procedures and the initial recovery phase. To further ensure humane handling of the bison, every precaution would be taken by study staff to prevent immobilization- or handling-related trauma, injury, or death to the bison. The standard chemical immobilization protocol that would be used in this proposed study is widely used in bison and other wild ungulates without long-term effects (Kreeger and Arnemo, 2007).

In the GonaCon™ EPA registration process for use in deer, concerns were initially raised by some States that GonaCon™ would eliminate the need to use hunting as a tool to control deer overpopulation. Contraception alone would not reduce overabundant deer populations to healthy levels (USDA APHIS, 2010b). In deer, GonaCon™ is meant to be used in combination with other wildlife management tools to control populations. Assuming the use of GonaCon™ is eventually registered by EPA for bison, it is equally implausible to conclude that use of the contraceptive vaccine in bison would result in any significant population decreases in bison in the absence of other management tools (USDA APHIS, 2010b).

## **b. Non-Target Species**

The proposed study would not increase the risk of brucellosis being transmitted to non-target species. Therefore, this section focuses on the risk of non-target species being exposed to GonaCon™.

In the proposed study, it is unlikely that non-target species would be exposed to GonaCon™. The proposed study protocol includes both risk mitigation measures that prevent direct exposure of non-target species to GonaCon™ and measures that limit the potential for secondary exposure of non-target species to GonaCon™.

To prevent direct exposure to non-target species, GonaCon™ would be administered directly to the study bison by hand-injection with a syringe. By using this direct-injection method, there would be no potential for accidental injection of non-target species with GonaCon™.

To prevent the risk of secondary exposure, the study plan includes measures to restrict access to treated animals by predators or other non-target species. To prevent access by larger wild animals, the bison in the proposed study would be maintained in double-fenced pastures, not on open range, thereby physically limiting potential contact between treated bison and wild animals such as elk, bears, and coyotes.

Abortions or calving events by GonaCon™-treated bison should be very minimal since the expected effect of treatment with GonaCon™ is to prevent pregnancy. The proposed study protocol includes actions to detect abortion or calving events, and the fencing would also physically limit some wild animals from accessing infected bison tissues from the GonaCon™-treated bison. The study protocol also includes standard operating procedures for proper removal and disposal of *B. abortus*-infected animal tissues from GonaCon™-treated bison from the study area to further limit potential exposure.

As discussed above, some larger animal species can be physically prevented from accessing the study area. However, some species such as birds of prey, smaller rodents, or insects cannot be prevented from accessing the study area. In the event that a non-target species were to consume GonaCon™-treated infected bison carcasses or GonaCon™-treated *B. abortus*-infected animal tissues, there would be no anticipated adverse effects from the GonaCon™ vaccine. Because GonaCon™ is made of proteins, it is broken down into smaller amino acids through digestion when it is consumed and has no contraceptive effect on non-target species (Fagerstone et al., 2008; Fagestone et al., 2010).

As part of the registration process for the use of GonaCon™ in deer, EPA concluded that there is no known danger associated with eating deer that have been vaccinated with GonaCon™ (USEPA, 2007). Similar injectable hormone-altering products are used routinely in livestock applications (USDA APHIS, 2010b).

## **2. Human Health and Safety**

### **a. General Public**

The proposed study discussed in this EA would be conducted on double-fenced, private facilities where access by the general public to bison and potentially infected animal tissues such as aborted fetuses or reproductive materials would be prohibited. The protocol for the study contains

standard operating procedures for handling and safely disposing of any potentially brucellosis-infected materials generated from the animals in the study. The general public would have no risk of being exposed to either GonaCon™ -treated or untreated animals from the study or any potentially infected materials generated from the study.

There is no danger of transmission of the infection to humans from consuming cooked meat from *B. abortus*-infected bison. The *B. abortus* bacteria that causes brucellosis is typically not found in muscle tissue, and normal cooking temperatures kill any existing bacteria (USDA APHIS, 2011). Additionally, EPA and FDA concluded that there are no known human food safety concerns associated with eating deer that have been vaccinated with GonaCon™ (USEPA, 2007 and FDA, 2005).

## **b. Worker Safety**

Personnel who would be involved in the proposed study are qualified and have the expertise and experience needed to carry out the study activities. These activities include wildlife chemical immobilization, proficiency in administration of animal vaccines, veterinary care, animal restraint, tagging and marking animals, sample collection, and field evaluation of reproductive behaviors and activities.

Standard operating procedures would be in place to protect personnel involved in carrying out the proposed study activities. The standard operating procedures would include measures for safe and humane handling of bison to prevent injury to study personnel and to bison; safe handling and administration of GonaCon™; safe and humane collection of study samples for analysis; and safe handling procedures for study samples, including the safe handling and proper disposition of potentially infected animal tissues. In addition to the standard operating procedures and safety measures, at least one cell phone would be available at all times to facilitate contact in emergencies, and first aid kits would be available at all times in the event of injury to study personnel.

The GonaCon™ immunocontraceptive vaccine would be provided for the study in pre-mixed syringes and stored in locked containers except when actively being used to inject study animals. Personnel handling the vaccine would take appropriate precautions to prevent accidental self-injection. Pregnant women would not be involved in the handling or injecting of GonaCon™ at any time during the proposed study to avoid any potential risks associated with accidental exposure to the immunocontraceptive vaccine. Immobilization drugs and associated reversal drugs would be available for use if needed in the study. These drugs would be properly stored in locked containers to prevent improper access.

### **3. Physical Environment**

As previously mentioned, proposed study activities would occur in several pastures at the Brogan Bison Facility, just north of Corwin Springs (60 acres), and the Slip ‘n Slide pasture (25 acres) and/or Rigler pasture (32 acres), located north of Gardiner, Montana.

The Brogan Bison Facility is used by APHIS VS for bison research. Forage at the pastures includes a mix of cultivated and native grasses. The upper pasture is on a steep slope along the west side of the property with several grass benchlands<sup>7</sup> and steep, rocky drainages. The vegetation is composed of thinly forested slopes, interspersed with native bunchgrass rangelands (MFWP, 2005). Bassett Creek runs through the property and flows into the Yellowstone River.

The Slip ‘n Slide and Rigler pastures are located in close proximity to each other, just south of Yankee Jim Canyon. The pastures are double-fenced. The landscape is gently sloping and consists mostly of native grassland, except for the mixed alfalfa- and grass-cultivated hay meadows. Slip ‘n Slide Creek runs through the Slip ‘n Slide property and flows into the Yellowstone River. There are no brooks or creeks running through the Rigler pastures. The pastures are primarily surrounded by Gallatin National Forest and State of Montana land. Montana Fish, Wildlife and Parks historically leases the pastures on the ranch for bison to graze on (MFWP, 2011).

The potential environmental impacts of the proposed study on the physical environment would primarily be due to bison grazing in confined areas. The main issues of concern regarding confined grazing are effects on soil, vegetation, and water quality. These aspects are discussed below.

#### **a. Soil and Vegetation**

Livestock grazing in confined pastures can negatively affect soil quality by compacting the soil or causing soil erosion due to loss of vegetation cover. With a loss of vegetation, invasive species also threaten pastures. Most studies and discussions on the impacts of grazing focus on cattle because 70% of the western United States is grazed by livestock, which is primarily composed of cattle (Fleischner, 1994). Cattle are similar to bison in that they are large generalists and ungulate herbivores that can disturb terrestrial communities; however, differences in the two animals, such as forage selection and social organization (Hartnett et al., 1997; Steuter and Hidinger, 1999), may influence their impacts on soil and vegetation.

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<sup>7</sup> Steps or shelves in the mountainside that are the remains of former riverbanks or lakeshores.



Bison have a stronger preference for perennial grasses than cattle. Cattle consume a higher percentage of forbs<sup>8</sup> in their diet than bison, and they use wooded areas and riparian zones more intensively than bison (Steuter and Hidinger, 1999). Due to the lower diversity of plants consumed by bison and the bison's preference for herbaceous vegetation, there may be a reduction in the abundance of dominant grasses, an increase in the survival of subordinate species, and an increase in species diversity, when compared to land grazed by cattle (Hartnett et al., 1997). Additionally, physical disturbances that bison exhibit during non-grazing activities, such as wallowing<sup>9</sup> may assist in ecodiversity (Hartnett et al., 1997).

The proposed action would not alter historic land use (for information regarding historic or cultural sites, see section below in the section on other environmental review requirements) at the pastures; therefore, overall effects to soil and vegetation would not be increased.

Approximately 100 bison would be placed on 120 irrigated acres of land, averaging about one acre of land per bison. This density is expected to have only minimal impacts on the land. In addition, landowners at each ranch or facility implement management practices to minimize effects to soil and vegetation. Pasture rotation is practiced at or between facilities as necessary, so that each pasture is periodically rested and the land is not overused. Lastly, the bison at all facilities would be supplemented with hay, further limiting pasture grazing.

## **b. Water**

GonaCon™ is a protein that is broken down within the treated bison; its metabolites would not be anticipated to be any greater than what would naturally occur. Therefore, this section focuses on other potential environmental impacts of bison grazing near water.

Potential environmental impacts from bison grazing in pastures could include a degradation of nearby water quality by manure, urine, and sediment being deposited into local waters. While bison that have access to a water body may directly deposit manure and urine into the water, wastes excreted onto land may also be transported to water bodies via leaching and surface runoff.

Grazing management practices can lessen the environmental impacts of streamside pastures. While many studies describe the impact of cattle

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<sup>8</sup> Herbaceous flowering plants other than grass.

<sup>9</sup> When bison roll in shallow depressions in the soil, covering themselves with dirt or mud.

grazing on water bodies, few studies have concentrated on the effects of native ungulates on stream health. Russell et al. (2009) states that the proximity of cattle to the stream, the amount of time they spend by or in the stream, and the intensity and length of cattle grazing can all influence the water quality of nearby streams. One can assume the same behaviors in bison would also impact water quality.

Bison spend less time in streams or riparian habitats than cattle (Fleischner, 1994). Fleischner describes a study conducted in Utah regarding the feeding ecology of cattle and bison. The study noted that “cattle distribution was limited to gentle slopes near water, regardless of forage, while bison roamed widely, seemingly unaffected by slope or proximity to water.” As previously mentioned, cattle forage on a higher percentage of forbs and woody vegetation and maintain a larger breadth of diet niche than bison. Fritz et al. (1999) take this one step further and state that a higher percentage of forbs and woody vegetation occurs in the riparian zone, so cattle are more likely to impact stream riparian zones than bison.

Fritz et al. (1999) studied the distribution and diversity of macroinvertebrates (e.g., insects, worms, snails and crayfish) in relation to bison crossings in prairie streams. The study suggests that impacts of bison on communities at the bottom of the streams was spatially limited, and that the bison may have less impact on stream communities than other studies of the impact of cattle. While comparison to cattle provides a noteworthy point of reference, it is important to point out that it is difficult to compare environmental responses with cattle versus bison due to confounding effects of site, weather, and management.

The pastures that would be utilized in the proposed study have historically been used for bison research or as livestock pastures, so deposits of manure, urine, and sediment due to the proposed study are not expected to increase the historic amount of contaminants entering the Yellowstone River. While the Brogan Bison Facility does have a creek running through it, bison do not have access to the creek. Only bison at the Slip ‘n Slide ranch would have direct, but limited, access to a creek. The access site to this creek was historically used for livestock and is at a point on the creek where the bank is shallow and covered with rocks. A shallow crossing means that bison would not have to climb up and down the bank, which would eventually cause the banks to erode. In addition, water would be provided to the bison, limiting the time that bison would visit the creek. Lastly, because only a portion of the total number of bison tested would be present on this pasture and those bison would spend limited time in streamside environments, the impact to water bodies is expected to be minimal.

## IV. Other Environmental Review Requirements

### A. Endangered or Threatened Species

Section 7 of the Endangered Species Act (ESA) and its implementing regulations require Federal agencies to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of critical habitat. Proposed study activities would occur in pastures in southern Park County in Montana.

There are two federally listed mammals in Park County: the Canada lynx (*Lynx canadensis*) and the grizzly bear (*Ursos arctos horribilis*). Critical habitat has been designated for the Canada lynx in Park County.

Canada lynx: Areas designated as critical habitat for the Canada lynx include boreal forest landscapes that provide one or more of the following primary constituent elements for the lynx: snowshoe hares for prey; abundant, large, woody debris piles that are used as dens; and winter snow conditions that are generally deep and fluffy for extended periods of time (USDOI FWS, 2009).

Grizzly bear: 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. Habitat use is highly variable between areas, seasons, local populations, and individuals. Grizzly recovery zones (areas identified where grizzly bear distribution is primarily within), including the Yellowstone area in northwest Wyoming, eastern Idaho, and southwest Montana (9,200 square miles), are estimated at more than 580 bears (FWS, 2011).

At all three locations, the pastures are double-fenced with an 8-foot woven wire fence and an electric high tensile fence to contain the study bison. These fences would also prevent Canada lynx and grizzly bears from entering the pastures. If Canada lynx or grizzly bears were to enter the pastures and consume GonaCon™-treated bison, there would be no effect on these species. The vaccine is made of proteins, and when consumed, is broken down into amino acids in the gastrointestinal tract, thereby having no contraceptive effect (Fagerstone et al., 2008; Fagerstone et al., 2010).

Federally-listed species and other non-target wildlife would not be directly exposed to GonaCon™ because the vaccine would be injected directly into the test bison and not administered orally in bait form. No wildlife habitat would be altered or disrupted by proposed study activities. No

helicopters would be used as part of this proposed study; therefore, no disturbance to wildlife in the surrounding area is expected. Although the study pastures occur within the designated critical habitat of the Canada lynx, the proposed study would have no effect on the primary constituent elements of that habitat and would not adversely modify it. Therefore, APHIS has determined that the proposed action would have no effect on the grizzly bear or Canada lynx.

## **B. Bald and Golden Eagle Protection Act**

The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c) prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

There are no known bald eagle nests around the facilities; nesting areas are further down river (Jeremy Zimmer, USDA, Forest Service, Gardiner, MT, pers. comm.). However, golden eagle nests could be in the vicinity of the facilities, although specific nests are not known. Therefore, the proposed study is not expected to have any impact on nesting bald or golden eagles. In addition, activities occurring during the proposed study would not differ significantly from activities normally occurring at these pastures. "Eagles are unlikely to be disturbed by routine use of roads, homes, and other facilities where such use pre-dates the eagles' successful nesting activity in a given area. Therefore, in most cases ongoing existing uses may proceed with the same intensity with little risk of disturbing bald eagles" (FWS, 2007). If study personnel discover the presence of any bald or golden eagle nests in the area, this information would be reported to the Wildlife Program Manager at Gallatin National Forest.

Golden eagles have been observed flying over the Brogan Bison Facility (Jeremy Zimmer, USDA, Forest Service, Gardiner, MT, pers. comm.) and bald eagles could be flying in the area as well. The activities that would occur during the proposed study would not differ significantly from activities that normally occur in these pastures. Therefore, no disturbance of eagles would occur as a result of the proposed study; eagles in the area would be accustomed to these activities.

Although program personnel would remove daily any aborted calves or treated or non-treated bison that could die during the study, bald and golden eagles in the area could potentially consume these items. However, "[i]mmunocontraception vaccines provide few risks for

consumptive use of dosed wildlife; the antibodies that prevent reproduction are only one of millions of other antibodies present in animals, all of which are harmless to the organism that digests them, like any other proteinaceous food consisting of amino acids” (Fagerstone et al., 2010). Therefore, no eagles would be harmed if consumption of these items occurred.

## **C. Historic and Cultural Resources**

In accordance with Section 106 of the National Historic Preservation Act of 1966 and its implementing regulations<sup>10</sup>, APHIS prepared a summary of the proposed project and submitted it to the Montana State Historic Preservation Office (SHPO) for consideration of potential impacts to historic resources. On November 28, 2011, APHIS received a letter of concurrence from the Montana SHPO agreeing that there were no findings of potential impacts to historic resources for the proposed study.

## **D. Tribal Consultation and Coordination**

In accordance with Executive Order 13175: Consultation and Coordination with Indian Tribal Governments<sup>11</sup>, APHIS has prepared a summary of the proposed project and provided it to 26 tribes who may have interests in YNP. In addition to the 26 identified tribes, APHIS also provided a summary of the project to all tribes located near YNP and in States adjacent to Montana who might potentially have interest in the project.

On December 19, 2011, APHIS held a conference by telephone with tribes to provide an opportunity to discuss the proposed project in more detail and discuss potential concerns that the tribes may have. Tribes that participated in the call showed an interest in the details of the project, and several requested additional information on the history of the GonaCon™ immunocontraceptive vaccine. APHIS agreed to provide background information to tribes. No tribes voiced any major concerns about the project.

APHIS will continue to conduct outreach to interested tribes and keep them updated on the activities associated with the project.

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<sup>10</sup> National Historic Preservation Act of 1966 (16 U.S.C. 470f) and implementing regulations (36 CFR §800).

<sup>11</sup> Executive Order 13175: Consultation and Coordination with Indian Tribal Governments (65 FR 67249, November 9, 2000).

## V. Cumulative Impacts

This EA examines the activities associated with a proposed study to evaluate whether GonaCon™, an immunocontraceptive vaccine, would be effective as a non-lethal method of decreasing the prevalence of brucellosis in the YNP bison population by effecting temporary infertility in bison cows and thereby preventing transmission of *B. abortus*. Activities associated with the proposed study are not expected to result in adverse cumulative effects.

In order to conduct the proposed study, approximately 96 female and 8 male bison that naturally exit YNP over the period of as many as three years would be housed at pasture locations in the Gardiner, Montana area. Some of the female animals in the study would be injected with GonaCon™, which would reduce the likelihood of pregnancy and delivery of offspring in the treated animals. Untreated females may give birth to offspring, which would increase the total number of animals associated with the study.

In August 2011, the National Park Service conducted an annual bison population estimate (NPS, 2011). According to the 2011 survey, the total bison population in YNP was estimated to be approximately 3,700 bison. This total was approximately 200 lower than the survey from the previous summer, but the decrease was “within the natural range of expectation for wild bison.”

Assuming the proposed study would result in approximately 104 bison being removed from the larger bison population of YNP, the effect of removing this number of bison over multiple years is well within the natural range of expectation for bison. This decrease in the numbers of bison in YNP is not anticipated to cause any cumulative negative effects to the overall bison population.

One of the goals of the IBMP is to manage temporal and spatial separation of bison and cattle to mitigate potential transmission of brucellosis. Currently, this is accomplished through hazing, capture, test and slaughter of seropositive animals, and vaccination of seronegative animals and a limited hunt in Montana. The proposed study may provide important information that would allow for re-evaluation and re-consideration of some of the current IBMP activities. This may result in impacts to future decision-making regarding protocols for bison habitat management, bison vaccination strategies, and bison hunt activities. IBMP activities that could be impacted include strategies to maintain appropriate bison population and distribution, should bison habitat be expanded.

## VI. Agencies or Persons Contacted

U.S. Forest Service, Gallatin National Forest

Montana Fish, Wildlife and Parks

Montana State Historic Preservation Office, Montana Historical Society

USDA, Animal and Plant Health Inspection Service, Veterinary Services

USDA, Animal and Plant Health Inspection Service, Policy and Program Development, Environmental and Risk Analysis Services

## VII. References

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## **APPENDIX A**

### **Summary of and Responses to Comments Received on the Environmental Assessment: Evaluation of GonaCon™, an Immunocontraceptive Vaccine, as a Means of Decreasing Transmission of Brucella abortus in Bison in the Greater Yellowstone Area**

#### **Background and Introduction**

In January 2012, APHIS announced the availability of an Environmental Assessment (EA) describing and analyzing the impacts of a proposed study of the use of GonaCon™, an immunocontraceptive vaccine, as a disease management tool for brucellosis in bison. APHIS received more than 1,500 comments on the EA. APHIS carefully reviewed the comments received on the EA for the proposed study and then grouped comments under similar issues. Summaries of each issue that APHIS identified as relevant to the EA, as well as responses to each issue, are discussed in detail below. Some commenters raised issues that were outside of the scope of the EA. Although APHIS is not required to address issues that are not relevant to the EA, APHIS believes it is important to acknowledge and discuss the concerns of the public and has attempted to respond to some of these more prevalent issues in the introductory paragraphs of this document.

As described in the EA, the proposed study is a preliminary investigation of a potential disease management tool under field conditions. The proposed study would take place on private land outside of Yellowstone National Park (YNP). The locations where the study would be conducted are described in detail in the EA document. Some commenters questioned why APHIS did not analyze the impacts of the study on visitors to YNP, but because the study is not being conducted in YNP, these potential impacts are outside of the scope of the required analysis under National Environmental Policy Act (NEPA) requirements.

The proposed study is not a study testing the large-scale, population-wide use of the GonaCon™ immunocontraceptive vaccine. The results from the proposed study will need to be obtained and analyzed before any additional larger-scale work with GonaCon™ in bison is conducted. If, in the future, additional studies are proposed or plans are made to use GonaCon™ on a larger scale, appropriate analyses under NEPA would be required. These future NEPA analyses would consider issues such as impacts to hunters, impacts to population dynamics of bison, and any other relevant broader issues. However, because the study proposed in the current EA is initial field research that would be conducted on a very small scale on private land in a confined area, these broader issues were not considered to be within the scope of the required analysis.

The use of GonaCon™ as described in the proposed study is not a permanent sterilization option for bison. As the EA states, "The intended purpose of using GonaCon™ in female bison would be to manage reproduction in bison known to be infected with brucellosis by inducing temporary infertility, thereby decreasing the potential for transmission of brucellosis through abortion and calving events." Contraception was a proposed option in past plans to manage bison, including the Record of Decision (ROD) for a final Environmental Impact Statement (EIS) for the Bison Management Plan (BMP) in Montana and YNP in December

2000 that was dismissed at that time. GonaCon™ was not an available contraception option during past analyses. At that time, the available contraception options were different from GonaCon™ because they caused repeated and prolonged breeding activity, difficulties with administering them to bison, and questions about potential impacts to the immune system that could make bison more susceptible to disease.

As discussed in the EA, GonaCon™ is currently registered with the U.S. Environmental Protection Agency (EPA) as an immunocontraceptive for use in deer. The use of GonaCon™ in deer under the existing, publicly-available, EPA-approved label is limited to wildlife management situations specific to deer. Conclusions regarding statements on the label that apply to deer cannot necessarily be directly applied to the use of GonaCon™ in bison.

General project-related issues, as well as some of the specific issues commenters raised regarding the use of GonaCon™ in bison are discussed in more detail in the Issues and Responses below.

### **Issues and Responses**

**Issue: The public was not adequately notified of the availability of the EA and the length of the public comment period was too short.**

Response: As required under NEPA regulations, APHIS prepared and published a legal notice announcing the comment period on the EA for the proposed GonaCon™ study in bison. The legal notice was published in two Montana newspapers on January 26, 2012. At the same time, the legal notice and associated EA document were posted on the Interagency Bison Management Plan (IBMP) website located at [www.ibmp.info](http://www.ibmp.info) in the News section. The EA document was also posted on APHIS' website at [http://www.aphis.usda.gov/animal\\_health/animal\\_diseases/brucellosis/](http://www.aphis.usda.gov/animal_health/animal_diseases/brucellosis/). The initial 30-day comment period for the EA ended on February 25, 2012. In response to requests from several parties, the comment period was subsequently extended until March 13, 2012, and a legal notice announcing the extension of the comment period was posted on the IBMP website at the address above. Comments could be sent either in writing to APHIS at a Montana Veterinary Services office, or submitted electronically via a unique, EA-specific, e-mail address. As of the close of the extended comment period, APHIS received more than 1,500 comments on the EA. Some late comments were received and were noted as received after the close of the comment period, but no new issues were raised in the late comments.

In addition to the publication information discussed above, APHIS representatives made a brief statement during a public Interagency Bison Management Plan meeting in December 2011 about plans to issue an EA for the proposed study. APHIS told the meeting attendees that the EA would be issued in early 2012.

**Issue: The EA for the proposed study should have been available before the bison were obtained for the study.**

Response: APHIS, along with other partners in the Yellowstone area, signed a ROD for a final EIS for the BMP in Montana and YNP in December 2000. Under the BMP approach, as adopted by the associated ROD, it is permissible to capture bison for

research purposes. Because some time was needed to obtain enough bison for the proposed GonaCon™ study, the animals needed for the proposed research were obtained under the conditions of the existing BMP and ROD. Therefore, no additional NEPA for collection of bison was necessary and, as required by NEPA, APHIS prepared an EA for the proposed GonaCon™ study.

**Issue: Several commenters indicated that the purpose and need for the study is too narrow and that all methods to reduce seroprevalence or infection rates should be considered in this EA. Also, there was a failure to provide information as to why the study is needed.**

Response: As described in the EA, the need for the proposed study is to provide information that would be used to evaluate the use of GonaCon™ as a nonlethal method of decreasing or controlling the risk of transmission of *Brucella abortus* (*B. abortus*) in the YNP bison population. Brucellosis is spread within the animal population primarily through contact with infected birthing tissues or aborted fetuses and through the milk of infected cows. If GonaCon™ can effectively render brucellosis-infected female bison temporarily infertile, the primary routes of disease transmission would be blocked. In combination with other appropriate disease mitigation activities, the use of GonaCon™ may be an effective tool to assist in eliminating brucellosis from the YNP bison herd over time. Evaluating all of the methods to reduce seroprevalence or infection rates in YNP bison is beyond the scope of the proposed study and EA. However, if the use of GonaCon™ were to be considered for use as a tool to reduce seroprevalence in YNP bison, then the appropriate NEPA document would be prepared that would likely include discussion of other alternatives or methods to reduce the prevalence of brucellosis in YNP bison.

The proposed study is an opportunity to acquire needed information to determine if GonaCon™ might be an effective tool to assist in eliminating brucellosis from the YNP bison herd over time. In addition, the data collected in this study is part of the data set that would be required by EPA to register the GonaCon™ vaccine for use in bison if a decision to pursue such a registration is made.

**Issue: Many commenters indicated that the use of GonaCon™ would be harmful to the genetics of YNP bison and that APHIS needs to disclose how its program would impact bison genetics, including the recently-described, genetically-distinct subpopulations of YNP bison. Some commenters were concerned that the use of GonaCon™ would eliminate natural resistance to brucellosis by preventing bison that have recovered from brucellosis from producing young.**

Response: These comments are beyond the scope of this EA. This EA analyzed the potential environmental effects of the proposed study, which would test approximately 104 bison. If this study does not take place, those bison would not be part of the YNP bison population, as per the Interagency Bison Management Plan (IBMP). The IBMP states that a limited number of untested bison may be allowed in certain areas outside of YNP. However, if bison numbers exceed the tolerated limits, they are to be hazed back into the park. If they cannot be hazed back into the park, they are to be captured and tested for evidence of brucellosis. Seropositive bison are to be slaughtered or used for



research. Seronegative bison are to be held at the capture facility, used in research, sent to slaughter, or sent to a quarantine facility if one is available.

If GonaCon™ is found to be a viable tool for decreasing the transmission of *Brucella abortus* in bison, and if agencies at any point consider using GonaCon™ in YNP bison, the potential impacts that the use of GonaCon™ could have on bison genetics, including potential effects to any natural resistance that bison may have to brucellosis, would be evaluated.

**Issue: APHIS has exaggerated the human health risk and human health impacts of brucellosis in the EA.**

Response: APHIS has no incentive to exaggerate human health risks or impacts of brucellosis in the EA. APHIS provided information regarding the human health risks and impacts of brucellosis in the EA as part of an overall description of the disease. Brucellosis infections can occur in both animals and humans, with different symptoms and outcomes. The proposed GonaCon™ study would investigate the feasibility of a potential method for decreasing transmission of brucellosis among bison. The focus of the study is not on decreasing transmission risk from bison to humans.

**Issue: APHIS inflated numbers as to the prevalence of brucellosis in wild bison. The EA cites a study by Meyer and Meagher to support statements that 40% of bison test positive for brucellosis, but actually it says rate is 28% for males and 20% for females, and the rate is possibly as low as 10% herd wide.**

Response: APHIS appreciates and recognizes that many studies reporting varying prevalence rates have been conducted over the years. APHIS also appreciates and recognizes that various study protocols are used for conducting prevalence studies. APHIS' intent in citing the Meyer and Meagher study was only to indicate that there is evidence supporting the presence of brucellosis in the YNP bison population. It was not APHIS' intent to indicate a true prevalence in the YNP bison population.

**Issue: APHIS should provide documentation from EPA that GonaCon™ is approved for use in bison and discuss the human health impacts of consuming GonaCon™-treated bison.**

Response: The results from the proposed study could be used as part of the data set that would be required for EPA registration of GonaCon™ in bison at a future date. However, the data required for EPA registration would consist of more studies than just the one proposed in the EA. As detailed in the EA, APHIS shared the proposed study details with EPA for the GonaCon™ bison study and obtained agreement from EPA that the proposed study could be conducted under existing guidelines for small-scale research to develop data that would be necessary for future registration. APHIS agreed that any bison treated with GonaCon™ in the proposed study will not be consumed by humans and disposition of the treated animals from the study is discussed in the EA. If, in the future, the use of GonaCon™ in a larger-scale application is proposed, the issues associated with potential human consumption of bison treated with GonaCon™ would be examined in required NEPA analyses.

**Issue: APHIS did not provide enough background information to Tribes about the project prior to the December 2011 conference call.**

Response: In December 2011, prior to issuance of the EA for public comment, APHIS invited 26 Tribes to participate in a conference call to discuss the proposed study. In the letter inviting Tribes to participate in the conference call on December 19, 2011, information on the study was provided. The information provided to the Tribes was current at the time of the conference call, and remains consistent with the study design today as described in the EA. During that conference call, APHIS shared its plans with Tribal representatives to prepare and issue the EA for comments and also offered to provide additional information regarding the study to Tribes upon request.

**Issue: The EA is not in compliance with Section 106 of the National Historic Preservation Act because there was no involvement by Tribal Historic Preservation programs from tribes that may have historical resources impacted by the proposed action.**

Response: The EA includes information on the actions APHIS took to comply with Section 106 requirements. In addition to the Montana Historic Preservation Office, APHIS provided information on the study to Tribal Nations with a vested interest in YNP and bison issues, Tribal Bison Managers, and Tribal Historic Preservation Offices. APHIS is not aware of any issues that were raised by any of the representatives contacted regarding the proposed study.

**Issue: The EA uses the words exposure and infection interchangeably and this is incorrect. Also, the EA interchangeably uses infected and seropositive as terms.**

Response: APHIS has been careful and specific in the use of the terms employed to describe brucellosis status and believes the wording in the EA is correct as written.

**Issue: The permit to acquire bison expired 12/31/2011. Is there a new permit?**

Response: APHIS has an existing Research Permit (Permit #5892) to acquire bison for the proposed study. The current permit expires December 31, 2012.

**Issue: IBMP partners have not reviewed and approved this study. Which IBMP partners are involved in the research?**

Response: There is no statement in the ROD binding the IBMP partners to obtain consensus on research conducted on bison or brucellosis. IBMP partners do not have to approve research by individual agencies, even if the results may inform bison management. Individual agencies can continue to do the work that their respective missions require; APHIS is an animal health agency working towards answers to an animal health problem in the case of the proposed study. It will also inform the IBMP for future management decisions, at which time they can decide to use or reject the information. For the proposed study, both YNP and Montana Department of Livestock would assist APHIS in conducting the work.

**Issue:** The proposed study is for population control of bison. The EA should evaluate and disclose how APHIS bison population control program is in conflict with a stated purpose of the IBMP of maintaining a wild, free-ranging bison population in the ecosystem and describe how it is NOT population control.

Response: The proposed study is not designed to control the bison population. The study is designed to investigate the use of an immunocontraceptive vaccine (GonaCon™), a non-lethal technique, to reduce the shedding and transmission of *Brucella abortus*. While GonaCon™ will temporarily induce infertility, it would only be used on a small number of *Brucella*-positive animals to investigate whether it is a feasible option under field conditions. If agencies consider using GonaCon™ in YNP bison, the potential impacts that the use of GonaCon™ could have on bison population numbers would be evaluated.

**Issue:** How can brucellosis be eliminated from the Greater Yellowstone Area (GYA) by using GonaCon™ when nothing is being done about elk or other wildlife? Transmission from elk to cattle is documented, but transmission from bison to cattle is not. There is no evidence that brucellosis can be eliminated from wild populations, and this creates false hope for cattle producers.

Response: Transmission of brucellosis from bison to cattle is documented in studies (see Flagg, D.E. 1983. A case history of a brucellosis outbreak in a brucellosis free state which originated in bison. Proceedings of the U.S. Animal Health Association. 87:171–172; Davis et al., 1990. *Brucella abortus* in captive bison. I. Serology, bacteriology, pathogenesis, and transmission to cattle. Journal of Wildlife Disease, 26:360–361.) Brucellosis has successfully been eradicated from wild bison in the Henry Mountains herd, the Wind Cave herd, and others.

Effectively reducing the prevalence of brucellosis in the GYA, with a goal of eventual eradication of the disease from affected wildlife, requires a multi-pronged, integrated, disease-reduction strategy. Such a strategy is predicated on coordinated activities to reduce the prevalence of disease in elk and bison, increase herd immunity in cattle, and mitigate transmission of disease between wildlife and cattle. The proposed study investigates only one aspect of the strategy, that being reducing the prevalence of disease in bison. The results of the proposed study would be used to inform future decisions on longer-term management strategies.

**Issue: Transmission of brucellosis from GYA bison is documented to be low by June 1 and extremely low by June 15, which conflicts with information on the transmission risk in the EA. APHIS should explain why the proposed study is necessary given this information.**

Response: The time of year at which transmission occurs is irrelevant to the proposed study. As discussed in the EA, transmission of brucellosis occurs via abortion or parturition (i.e., the birth process). The birthing process in GYA bison is complete, except for a few animals, by June 15<sup>th</sup>; hence the greatest risk of transmission of brucellosis occurs before that date. Prevention of pregnancy and abortion or parturition in infected bison by the non-lethal technique of contraception in the proposed study may have the potential of halting transmission in bison. The proposed study would investigate whether or not contraception would reduce shedding of *Brucella* organisms.

**Issue: APHIS should consider other methods of controlling brucellosis to prevent transmission, such as vaccinating cattle, removing livestock from public areas where wildlife is thriving, using dogs, using fencing to reduce wildlife-livestock interactions, shutting down government wildlife feedlots, addressing habitat issues where there is a conflict between bison and cattle, and using better cattle management practices (grazing systems, classes of livestock, fences, timing of use, etc.).**

Response: Effectively controlling brucellosis and preventing transmission of disease between wildlife and cattle requires a multi-pronged, integrated disease-reduction strategy. The proposed study investigates only one aspect of the strategy, and the results of the proposed study would be used to inform future decisions on longer-term management strategies. Discussion of other options for brucellosis control or prevention of transmission is outside the scope of the EA for the proposed study.

APHIS recognizes the need to address the livestock-wildlife interface and to mitigate disease transmission between livestock and wildlife. Recent amendments to the federal brucellosis program regulations now require that any State in which it has been determined that wildlife are infected with *B. abortus* must develop and implement a brucellosis management plan. The brucellosis management plan must, among other things, describe epidemiologic assessment and surveillance activities to identify occurrence of *B. abortus* in domestic livestock and wildlife and potential risks for spread of disease, and describe mitigation activities to prevent the spread of *B. abortus* from domestic livestock and/or wildlife, as applicable, within or from the brucellosis management area.

**Issue: Expanding bison habitat available to herds is becoming increasingly recognized by IBMP partners and public. There are significant areas of bison-friendly private land as well as public lands that are currently unoccupied by bison (examples include Dome Mountain Ranch, Dome Mountain Wildlife Management Area and the Gallatin National Forest lands, Madison Valley, and Elk Meadows Ranch). Translocation/restoration and conservation of bison to historic habitat within the Upper Gallatin watershed is an alternative to bison slaughter or sterilization.**

Response: Although these alternatives are outside the scope of the proposed study, APHIS notes that expanding bison habitat without also addressing issues relating to

disease reduction at the same time merely expands the disease on the landscape. Bison from the proposed study and their offspring that remain negative for brucellosis in both serology and culture tests for the duration of the study that satisfy existing bison quarantine requirements may be used for bison conservation purposes. The decisions on conservation would take place closer to the end of the study.

**Issue: What authority does APHIS have to control wild bison? APHIS lacks congressionally delegated jurisdictional authority over bison.**

Response: APHIS has the authority to take measures in order to ensure that livestock that move in interstate commerce do not introduce or disseminate diseases of livestock within the United States. Accordingly, if wildlife could serve as a means of introducing diseases of livestock into livestock that will move in interstate commerce, APHIS can take measures to evaluate and mitigate the risk of disease introduction. APHIS is authorized under the Animal Health Protection Act (AHPA, 7 U.S.C. 8301 et. seq.) to take these measures.

**Issue: Frequently, APHIS proposes studies on bison and then fails to release agency findings or subject them to peer review and publication in independent journals. How will the results of this study be made available?**

Response: When the proposed study is complete, the results will be published in a peer-reviewed scientific journal. At this time, it is not possible to identify the specific journal in which the results would be published.

**Issue: In the 2000 final EIS, BMP and associated ROD, agencies rejected population control as an alternative because the impacts of it were thought to be too significant. Also, those documents stated that contraception may make bison more susceptible to disease, significant behavioral changes could occur, social bonds between animals could be disrupted, or breeding or birthing seasons could be altered or extended.**

Response: Although the previous documents did discuss contraception as a proposed option that was dismissed at the time, when the EIS and ROD were finalized, no specific information on the potential use of GonaCon™ as a non-lethal immunocontraceptive option for brucellosis management existed. At the time the EIS and ROD were finalized, the available contraception options were different from GonaCon™ because they caused repeated and prolonged breeding activity, difficulties with administering them to bison, and questions about potential impacts to the immune system that could make bison more susceptible to disease.

The proposed study would evaluate GonaCon™ as a non-lethal technique for safety and efficacy under field conditions and the information from this initial study would be used to inform later, larger-scale brucellosis management options. The ROD and the BMP advocate the concept of adaptive management, which allows for changes in bison management options as newer information becomes available. Previous studies of the immunocontraceptive GonaCon™ in bison under non-field conditions have not showed any of the problems listed (disease susceptibility, behavioral changes, etc.) but the bison

in the proposed study would be monitored for any adverse or unexpected effects and appropriate decisions concerning the larger-scale use of GonaCon™ in the future would take this information in to account.

**Issue: Serology tests would not give APHIS adequate proof of whether or not bison used for the study have an active infection of brucellosis that would make disruption of their breeding and reproductive cycles effective in preventing transmission. The proposed serology testing described in the EA would not reveal recovered animals or animals with active infections. APHIS needs to evaluate how the inaccuracies in finding active infections with serology testing would impact useable and meaningful data gathered from this study and disclose these findings to the public.**

Response: The use of repeated serologic tests and culture as described in the EA document are the best tools available to determine the infection status of living bison. Conducting repeated serologic tests during the proposed study allows for the most accurate characterization of the test animals' brucellosis status.

**Issue: APHIS should use a domestic source of bison to conduct the study so as not to destroy GYA bison.**

Response: This suggestion is not a viable option because there is no longer any source of naturally-infected bison in the United States other than GYA bison. Additionally, research using study animals other than GYA bison has been criticized as not being applicable to the GYA due to potential genetic differences in the herds.

**Issue: APHIS should include a discussion of the current science on the male-to-female transmission potential to address the question of whether bison or elk bulls can transmit brucellosis to females during breeding. There is no evidence that this cannot happen and bulls have transmitted *B. abortus* in their semen at low levels. How would transmission of *B. abortus* by male bison to female bison affect this study?**

Response: If bull-to-cow sexual transmission commonly occurs, then disease reduction by the use of immunocontraception would not be efficacious. It has long been assumed that sexual transmission does not occur to any significant degree in bison, as is the case in cattle. A single, limited study (Robison et al., 1998. Conservation of germplasm from bison infected with *Brucella abortus*. Journal of Wildlife Disease, 34:582–589.) failed to demonstrate bull-to-cow sexual transmission. APHIS is currently conducting a series of studies to confirm the conclusion that the sexual route is not a significant means of transmission of brucellosis in bison.

**Issue:** There are findings that the shedding of *B. abortus* decreases with age, so APHIS should include in the proposed study whether the advancing age of seropositive female bison injected with GonaCon™ results in some immunity or at least lack of shedding *B. abortus* at subsequent births after the GonaCon™ is no longer effective. If this is proven to be correct, it could be a good tool for decreasing bison herd seroprevalence if GonaCon™ was aggressively applied to young females.

Response: The proposed study should, in part, address this hypothesis. GonaCon™-treated bison will be monitored for shedding in calvings after the period of reversible infertility produced by the contraceptive and compared to the untreated bison. All bison in the proposed study will begin the study as young females, so tracking the shedding over time as the bison age will be possible during the period of time that the proposed study is being conducted.

**Issue:** APHIS cites a Miller et al. 2004 study (Miller, L.A., J.C. Rhyan, and M. Drew. 2004. Contraception of bison by GnRH vaccine: a possible means of decreasing transmission of brucellosis in bison. *Journal of Wildlife Diseases*. 40(4):725-730) in the EA but only cites information that supports the proposed study. The Miller et al. 2004 study reports the possibility of abortion when GonaCon™ is given early to mid-pregnancy. This side-effect was not disclosed to the public.

Response: The GYA bison used in the proposed study would be injected with GonaCon™ in the spring as young, non-pregnant animals, so there is no concern about the potential for abortion from injection of GonaCon™ to bison that are already pregnant in the proposed study. APHIS is currently conducting ongoing research in another bison herd to investigate whether or not the vaccine induces abortions when administered in early pregnancy, and this information would be used to inform future decisions on the utility of GonaCon™ as a disease management tool.

**Issue:** APHIS has not provided the public with necessary information concerning the placement of bison at the conclusion of the proposed study. The EA states that all animals that test negative will be used for conservation purposes, and the acquisition permit says seronegative bison should be consigned to a quarantine location for further diagnostics, to a managed public trust conservation program to supplement genetic diversity of bison populations, or to private not-for-profit bison conservation programs. If none of these options are possible, the bison should be given to any private not-for-profit bison conservation program. APHIS should disclose the possible locations where the study bison will be placed, disclose the process for how these locations are selected, and how it will be decided where they will go.

Response: The EA describes how animals treated with GonaCon™ will be handled at the conclusion of the study. Animals from the study that were not treated with GonaCon™ that satisfy existing bison quarantine requirements will be used for bison conservation. It is impossible to anticipate at this time the demand and options for bison genetics conservation that will be available at the conclusion of the study. APHIS' intention is that these animals will be used for bison conservation through one or more channels. These potential channels include translocation to tribal or public premises to form or augment a bison herd with pure bison genetics; formation or augmentation of a foundation herd by a conservation non-governmental organization; or formation or



augmentation of a herd through embryo transfer. The disposition of animals or genetic materials from the study will be made after consultation with bison experts at YNP and conservation organizations such as the American Bison Society, the International Union for Conservation of Nature, or other applicable organizations.

**Issue:** APHIS has outlined plans in the EA that will lead to unsafe study conditions for bison and humans, as well as creating inhumane conditions for the bison during the proposed study. Capture, captivity, slaughter, constant testing, poking, prodding, immobilization drugs, and reversal agents are not humane treatment. Repercussions to bison from repeated use of immobilization narcotics and reversal agents can produce effects that are dangerous to unconfined bison and seemingly disastrous in an area confined with other bison. The EA should evaluate the risks associated with immobilization and reversal and contingency plans for the likelihood that there will be behavioral side effects to ensure safety of staff and animals.

Response: As discussed in the EA, restraint or chemical immobilization would only be used as needed. Restraint for the infrequent required testing of bison in the proposed study will usually be accomplished by means of a bison chute. Only after calving is it anticipated that animals will be chemically immobilized with a narcotic. This is to protect the calf from injury that might occur if the cow were restrained in the chute. APHIS' experience with restraint and chemical immobilization in numerous field studies and the quarantine feasibility study has been that periodic restraint in a chute or chemical immobilization have not routinely resulted in untoward behavioral effects that put animals or study personnel at increased risk. APHIS acknowledges that whenever bison congregate, in nature during the rut or migrations, or due to human intervention, there is increased risk of injury. APHIS' procedures and methods of handling bison are based on years of experience and are designed to minimize the risk of injury to animals and study personnel.



# MVDL

## MONTANA VETERINARY DIAGNOSTIC LABORATORY

PO Box 997 Bozeman, MT 59771  
1911 West Lincoln Street Bozeman, MT 59718  
Website: [www.liv.mt.gov/lab](http://www.liv.mt.gov/lab)

Phone: (406) 994-4883  
Fax: (406) 994-6344  
Email: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)

Accession # 8-373-15

Owner: USDA APHIS VS

Species: WILD - BISON

Breed: BISON

Name/No. 5R06

Age: 1 DAY Sex:

Date Sent: 04/28/2015

Date Received: 04/13/2015

Submitter: PATRICK RYAN CLARKE D.V.M.

(b) (6)

### Final Report

Case Coordinator: SKS

### CASE SUMMARY

4/28/15

ADDITIONAL INFORMATION: Bacterial cultures have been completed, and these results are attached to this final report. A specific cause of abortion for this animal was not identified. No significant infectious agents are present, and there was no morphologic evidence of pathologic processes.

  
Stephen K. Smith, DVM, Diplomate, ACVP/cto

4/16/15

REASON FOR SUBMISSION: Abortion

#### LABORATORY DIAGNOSIS:

Abortion: Undetermined cause

COMMENT: Histologic evaluation of the submitted specimens does not reveal an obvious cause of abortion for this animal. There is evidence of hepatocellular canaliculi bile stasis but a specific cause for this change is not histologically apparent. There is no evidence of any specific infectious processes but bacterial cultures may provide additional diagnostic information and are currently pending. These results will be posted when available.

Stephen K. Smith, DVM, Diplomate, ACVP\mmm

Date In: 04/15/2015

### PATHOLOGY

Date Out: 04/16/2015

Released by: SKS

GROSS DESCRIPTION: This is the carcass of a near term, female, bison calf in good body condition with mild to moderate autolysis. A portion of the placenta is also submitted.

No significant gross changes are noted.

#### HISTOPATHOLOGY:

Liver: Many bile plugs are present with hepatocellular canaliculi throughout the examined sections (canaliculi bile stasis).

Sections of heart, kidney, thymus, lung, spleen, diaphragm, placenta and small intestine are examined histologically and contain no significant microscopic changes.

#### MORPHOLOGIC DIAGNOSIS:

Liver: Moderate canaliculi bile stasis

Date In 04/13/2015

# BACTERIOLOGY

Date Out: 04/20/2015 Released by: mh

Brucella culture negative to date; plates will be held 10 days; report will be amended if culture is positive after 10 days.

Placenta Campylobacter culture overgrown with fungus; results inconclusive.

## CULTURES

| Site | Specimen | Culture Type  | Isolate                                    | Growth | Antimicrobial Profile |
|------|----------|---------------|--|--------|-----------------------|
|      | lung     | Aerobic       | A mixed culture of non-pathogenic bacteria | 3+     | NA                    |
|      | lung     | Brucella      | Negative for Brucella sp.                  |        | NA                    |
|      | lung     | Campylobacter | Negative for Campylobacter sp.             |        | NA                    |
|      | spleen   | Aerobic       | A mixed culture of non-pathogenic bacteria | 1+     | NA                    |
|      | spleen   | Brucella      | Negative for Brucella sp.                  |        | NA                    |
|      | spleen   | Campylobacter | Negative for Campylobacter sp.             |        | NA                    |
|      | heart    | Campylobacter | Negative for Campylobacter sp.             |        | NA                    |
|      | heart    | Aerobic       | A mixed culture of non-pathogenic bacteria | 3+     | NA                    |
|      | heart    | Brucella      | Negative for Brucella sp.                  |        | NA                    |
|      | thymus   | Aerobic       | A mixed culture of non-pathogenic bacteria | 3+     | NA                    |
|      | thymus   | Brucella      | Negative for Brucella sp.                  |        | NA                    |
|      | thymus   | Campylobacter | Negative for Campylobacter sp.             |        | NA                    |
|      | placenta | Brucella      | Negative for Brucella sp.                  |        | NA                    |
|      | placenta | Aerobic       | A mixed culture of non-pathogenic bacteria | 4+     | NA                    |
|      | placenta | Campylobacter | Fungal overgrowth                          |        | NA                    |
|      | liver    | Aerobic       | A mixed culture of non-pathogenic bacteria | 2+     | NA                    |
|      | liver    | Campylobacter | Negative for Campylobacter sp.             |        | NA                    |
|      | liver    | Brucella      | Negative for Brucella sp.                  |        | NA                    |
|      | kidney   | Brucella      | Negative for Brucella sp.                  |        | NA                    |
|      | kidney   | Aerobic       | A mixed culture of non-pathogenic bacteria | 3+     | NA                    |
|      | kidney   | Campylobacter | Negative for Campylobacter sp.             |        | NA                    |

1+ to 4+ = rare colony to confluent growth

P = pure culture, M = mixed or partially contaminated culture

MVDL Accession #  
8-373-15

Submitter:  
PATRICK RYAN CLARKE D.V.M.

Owner:  
USDA APHIS VS

## Fees

|                         |                 |
|-------------------------|-----------------|
| Bacteriology Fee        | \$ 0.00         |
| Pathology/Histology Fee | \$ 73.50        |
| Accession Total Fee     | <u>\$ 73.50</u> |

(This is not a bill. Do not make payment from this report.)



U.S. DEPARTMENT OF AGRICULTURE  
ANIMAL AND PLANT HEALTH INSPECTION SERVICE  
VETERINARY SERVICES

PERMIT FOR MOVEMENT OF RESTRICTED ANIMALS

USE A SEPARATE FORM FOR EACH SPECIES

1. NAME AND ADDRESS OF SHIPPER OR CONSIGNOR (Include Zip Code)

APHIS Bison Quarantine Facility - Genoa  
772 Hwy 89S  
Corwin Spring MT

2. CONSIGNEE (Destination Name and Address, include Zip Code)

USDA APHIS VS Research Pens  
4101 LaForte Ave.  
Fort Collins CO

3. MOVED FROM (Name and Location of Premise if other than item 1 above)

4. NAME AND ADDRESS OF OWNER AT TIME CONDITION DIAGNOSED

AS #1

FORM APPROVED  
OMB NO. 0579-0051

No. F101899

5. STATE WHERE ISSUED

MT

6. MOVEMENT TO BE

☒ INTERSTATE ☐ INTRASTATE

7. MOVEMENT FOR

☒ QUARANTINE ☐ SLAUGHTER

8. DISEASE

Brucellosis

9. STATUS OF ANIMALS

No. Reactor 1 No. Exposed 6 No. Other (Specify)

10. STATUS OF HERD OF ORIGIN

Infected

11. STATUS OF AREA OF ORIGIN

DSA

12. NO. ANIMALS IN THIS SHIPMENT

7

13. SPECIES (One only)

Bison

14. TRANSPORTATION VEHICLE LICENSE NO. OR OTHER IDENTIFICATION NO.

A312957

15. SEAL NO.

3785250  
3785251

16. VEHICLE REQUIRED TO BE CLEANED AND DISINFECTED AT DESTINATION

☐ YES ☒ NO

(If Yes, Items 32, 33, and 34 are Applicable)

VALID ONLY FOR ABOVE DESTINATION

17. ANIMALS TO BE MOVED

| COMPLETE EAR TAG NO. | BREED | SEX | DISEASE BRAND | OTHER IDENTIFICATION (Complete No.) | COMPLETE EAR TAG NO. | BREED | SEX | DISEASE BRAND | OTHER IDENTIFICATION (Complete No.) |
|----------------------|-------|-----|---------------|-------------------------------------|----------------------|-------|-----|---------------|-------------------------------------|
| 81ASW3757            | Bis   | M   | N/A           | Red 69                              |                      |       |     |               |                                     |
| 81ASW3760            |       |     |               | Red 65                              |                      |       |     |               |                                     |
| 81ASW3774            |       |     |               | Red 61                              |                      |       |     |               |                                     |
| YNP930781            |       |     |               | Red 63                              |                      |       |     |               |                                     |
| YNP930786            |       |     |               | Red 66                              |                      |       |     |               |                                     |
| YNP930791            |       |     |               | Red 59                              |                      |       |     |               |                                     |
| YNP930798            |       |     |               | Red 62                              |                      |       |     |               |                                     |

I certify that I have inspected the animals described on this permit and find them eligible to move in accordance with the requirements of State and Federal regulations.

18. SIGNATURE OF INSPECTOR

[Signature]

19. DATE ISSUED

Aug 22, 14

20. TIME ISSUED

7:00 AM

VOID AFTER

21. DATE

Aug 23, 2014

22. TIME

7:00 AM

WARNING TO OWNER, SHIPPER AND TRUCKER - LIVESTOCK MUST BE DELIVERED TO CONSIGNEE WITHOUT DIVERSION

I understand that it is a violation of Federal law to move the animals identified herein interstate except in accordance with the provisions of applicable Federal Regulations. I also understand that such animals must comply with existing state laws and regulations governing movement of livestock and poultry. I have arranged or will arrange for a copy of this permit to accompany the interstate shipment and be delivered with the above described animals.

23. SIGNATURE OF OWNER OF SHIPPER

[Signature]

24. TITLE

☒ OWNER ☐ SHIPPER

25. DATE SIGNED

22 Aug 2014

I certify that the animals described on this permit were received and slaughtered/quarantined in accordance with the requirements of the State and Federal regulations on the date indicated in item 29.

26. PLACE ANIMALS RECEIVED

VS Bison Pens

27. DATE ANIMALS ARRIVED

8/22/14

28. NO. ANIMALS RECEIVED

7

29. DATE SLAUGHTERED/QUARANTINED

30. DATE AND TIME SEALS BROKE

8/22/14 18:10

31. AUTHORIZED SIGNATURE

[Signature]

32. DATE CLEANED AND DISINFECTED (if required)

33. SIGNATURE OF INSPECTOR

34. DATE SIGNED

VS FORM 1-27  
(JUN 89)

Previous edition may be used

PART 1 - ACCOMPANY SHIPMENT



Species: Bison  
County: Park

# MONTANA VETERINARY DIAGNOSTIC LABORATORY

Box 997 - Bozeman, MT 59771

Phone (406) 994 - 4885 Fax (406) 994 - 6344

Email: livdiagnosticlab@mt.gov

Collection Date: 10/30/14  
Page 1 of 1

## SEROLOGY REPORT (SV2A) - Complete Light Shaded Areas Only (SEE EXAMPLE and KEY on back Page 4)

OWNER: USDA, APHIS, VS  
ADDRESS:  
CITY/STATE/ZIP: COTWIN SPRINGS, MT  
REASON FOR TEST - MANDATORY INFORMATION (See Key)  
BQ FS - Gona Con - Cattle Health

SUBMITTER'S SIGNATURE: [Signature]  
SUBMITTER'S NAME (PRINT): P. Ryan Clarke  
ADDRESS: (b) (6)  
CITY/STATE/ZIP:  
RESULT REPORTING OPTIONS: PHONE / FAX / EMAIL  
NUMBER OR EMAIL ADDRESS: J. Rhymer, B. Frey, R. Clarke

| CIRCLE DISEASE TEST REQUIRED: If needed, indicate specific test and/or dilution. Example on back. |                       |     |     |       |               | BRU            | BT           | ANA           | EHD         | PTB           | IBR | BVD         | BLV | LEPTOSPIROSIS | OTHER |
|---|-----------------------|-----|-----|-------|---------------|----------------|--------------|---------------|-------------|---------------|-----|-------------|-----|---------------|-------|
| TUBE NO.  | ANIMAL IDENTIFICATION | AGE | SEX | BREED | OFFICIAL VAC. | Final classif. | Brucella FPA | Brucella BAPA | Brucella CF | Brucella Card |     | ap 11/10/14 |     | 8 - SEROVAR   |       |
| 1   | B1 AJW 3758           | Ad  | Fe  | Bison |               | Neg            | Neg          | N             | Neg         | N             |     |             |     |               |       |
| 2   | Gr 20                 |     |     |       |               |                | Neg          |               | Neg         |               |     |             |     |               |       |
| 3   | Gr 22                 |     |     |       |               |                | Neg          |               | Neg         |               |     |             |     |               |       |
| 4   | Gr 23                 |     |     |       |               |                | Neg          |               | Neg         |               |     |             |     |               |       |
| 5   | Gr 26                 |     |     |       |               |                | Neg          |               | Neg         |               |     |             |     |               |       |
| 6   | Gr 27                 |     |     |       |               |                | Neg          |               | Neg         |               |     |             |     |               |       |
| 7   | Gr 30                 |     |     |       |               |                | Neg          |               | Neg         |               |     |             |     |               |       |
| Laboratory Comments:  |                       |     |     |       |               | Samples        | 7            | 7             | 7           | 7             | 7   |             |     |               |       |
| Please do FPA, CF   |                       |     |     |       |               | Seropositive   |              |               |             |               |     |             |     |               |       |
| BAPA, Card, <del>CF</del>   |                       |     |     |       |               | Suspect        |              |               |             |               |     |             |     |               |       |
|   |                       |     |     |       |               | Seronegative   | 7            |               |             |               |     |             |     |               |       |
|   |                       |     |     |       |               | Undetermined   |              |               | CF (1:10)   |               |     |             |     |               |       |
|   |                       |     |     |       |               | Tested By      | 11-10-14     |               | ap 11/10/14 |               |     |             |     |               |       |

Released ap 11-10-14

FEE:

DATE RECEIVED: 10-31-14

CASE # 8-239-15

The MVDL is an accredited AAVLD laboratory and a member of the USDA National Animal Health Laboratory Network. Completing and submitting any submission form or any other means of requesting services creates a contractual agreement for services requested and the specimens submitted become the property of the MVDL. In addition, at no additional expense to our clients, specimens submitted to the MVDL may be subjected to additional testing upon the order of the state or federal animal health officials, or whenever a Foreign Animal Disease is suspected, or in support of surveillance for other animal disease. Serology SV-2A (Rev. 11/09)



# National Veterinary Services Laboratories

PO Box 844

Ames, Iowa 50010

Phone: 515-337-7514 Fax: 515-337-7938

FEDERAL RELAY SERVICE (Voice/TTY/ASCII/Spanish) 1-800-877-8339

The USDA is an equal opportunity provider and employer.

FINAL REPORT

## Laboratory Test Report

\*\*\*\*\* This is a confidential report intended for official use only. \*\*\*\*\*

### Owner

USDA, APHIS, VS  
Corwin Springs, MT

### Animal Location

Park County MT

### Submitter - 2649

Jack Rhyan  
USDA, APHIS, VS  
National Wildlife Research Center  
4101 La Porte Ave.  
Fort Collins, CO 80521  
FAX# 970-266-6138  
PH# 970-266-6140

### Accession Number:

**11-031650**

### Date Collected:

### Date Received:

06/29/2011

### Date Completed:

07/18/2011

### Collected By:

### Purpose:

Development / Research

### Referral Number:

### Country Origin/Destination:

United States /

**This is not a billable case.**

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

| Sample: Specimen Type: Serum Animal ID: 9300625 Animal Status: Species: Bison      |                     |  |
|--|---------------------|--|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative            |  |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative@1:10       |  |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | Negative 6 Delta mP |  |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25       |  |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Negative@1:25       |  |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     | Positive@1:25       |  |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative            |  |
| Sample: Specimen Type: Serum Animal ID: 9300626 Animal Status: Species: Bison      |                     |  |
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative            |  |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative@1:10       |  |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | Negative 2 Delta mP |  |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25       |  |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Negative@1:25       |  |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     | Positive@1:25       |  |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative            |  |
| Sample: Specimen Type: Serum Animal ID: 9300627 Animal Status: Species: Bison      |                     |  |
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative            |  |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative@1:10       |  |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | Negative 7 Delta mP |  |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25       |  |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Negative@1:25       |  |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     | Negative@1:25       |  |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative            |  |



| Sample: Specimen Type: Serum Animal ID: 9300631 Animal Status: Species: Bison      |                                |  |
|--|--------------------------------|--|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative                       |  |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative@1:10                  |  |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | Negative 6 Delta mP            |  |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25                  |  |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Negative@1:25                  |  |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     | Negative@1:25                  |  |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                       |  |
| Sample: Specimen Type: Serum Animal ID: 9300634 Animal Status: Species: Bison      |                                |  |
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative                       |  |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative@1:10                  |  |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | Negative 6 Delta mP            |  |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25                  |  |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Negative@1:25                  |  |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     | <b>Positive@1:25</b>           |  |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                       |  |
| Sample: Specimen Type: Serum Animal ID: 9300638 Animal Status: Species: Bison      |                                |  |
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative                       |  |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative@1:10                  |  |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | Negative 8 Delta mP            |  |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25                  |  |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Negative@1:25                  |  |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     | <b>Positive@1:25</b>           |  |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                       |  |
| Sample: Specimen Type: Serum Animal ID: 9300648 Animal Status: Species: Bison      |                                |  |
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative                       |  |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative@1:10                  |  |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | Negative 8 Delta mP            |  |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25                  |  |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Negative@1:25                  |  |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     | <b>Positive@1:25</b>           |  |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                       |  |
| Sample: Specimen Type: Serum Animal ID: 9300667 Animal Status: Species: Bison      |                                |  |
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative                       |  |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative@1:10                  |  |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | Negative 2 Delta mP            |  |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25                  |  |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Incomplete Agglutination@1:50  |  |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     | <b>Positive@1:25</b>           |  |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                       |  |
| Sample: Specimen Type: Serum Animal ID: 9300673 Animal Status: Species: Bison      |                                |  |
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | <b>Positive</b>                |  |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | <b>Positive@1:80</b>           |  |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | <b>Positive 107.5 Delta mP</b> |  |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | <b>Positive@1:100</b>          |  |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | <b>Positive@1:100</b>          |  |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     | <b>Positive@1:200</b>          |  |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | <b>Positive</b>                |  |

| Sample: Specimen Type: Serum Animal ID: 9300675 Animal Status: Species: Bison      |                               |  |
|--|-------------------------------|--|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative                      |  |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative@1:10                 |  |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | Negative 9 Delta mP           |  |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25                 |  |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Incomplete Agglutination@1:25 |  |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     | Positive@1:25                 |  |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                      |  |
| Sample: Specimen Type: Serum Animal ID: 9300678 Animal Status: Species: Bison      |                               |  |
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Positive                      |  |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Positive@1:20                 |  |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | Positive 64.5 Delta mP        |  |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25                 |  |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Positive@1:50                 |  |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     | Positive@1:50                 |  |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                      |  |
| Sample: Specimen Type: Serum Animal ID: 9300684 Animal Status: Species: Bison      |                               |  |
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Positive                      |  |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Positive@1:20                 |  |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | Positive 32 Delta mP          |  |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25                 |  |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Positive@1:100                |  |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     | Positive@1:50                 |  |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                      |  |
| Sample: Specimen Type: Serum Animal ID: 9300689 Animal Status: Species: Bison      |                               |  |
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Positive                      |  |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Positive@1:20                 |  |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | Positive 25 Delta mP          |  |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25                 |  |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Positive@1:50                 |  |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     | Positive@1:50                 |  |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                      |  |
| Sample: Specimen Type: Serum Animal ID: 9300696 Animal Status: Species: Bison      |                               |  |
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative                      |  |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative@1:10                 |  |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | Negative 9 Delta mP           |  |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25                 |  |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Positive@1:50                 |  |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     | Positive@1:25                 |  |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                      |  |
| Sample: Specimen Type: Serum Animal ID: 9300697 Animal Status: Species: Bison      |                               |  |
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Positive                      |  |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Positive@1:80                 |  |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | Positive 67 Delta mP          |  |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Incomplete Agglutination@1:25 |  |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Positive@1:50                 |  |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     | Positive@1:50                 |  |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Positive                      |  |

| Sample: Specimen Type: Serum Animal ID: 9300702 Animal Status: Species: Bison      |                                |  |
|--|--------------------------------|--|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative                       |  |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative@1:10                  |  |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | Negative 6 Delta mP            |  |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25                  |  |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Negative@1:25                  |  |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     | Positive@1:50                  |  |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                       |  |
| Sample: Specimen Type: Serum Animal ID: 81AJW3753 Animal Status: Species: Bison    |                                |  |
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative                       |  |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative@1:10                  |  |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | Negative 4 Delta mP            |  |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25                  |  |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Incomplete Agglutination@1:25  |  |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     | Positive@1:50                  |  |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                       |  |
| Sample: Specimen Type: Serum Animal ID: 9300705 Animal Status: Species: Bison      |                                |  |
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative                       |  |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative@1:10                  |  |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | Negative 5 Delta mP            |  |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25                  |  |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Incomplete Agglutination@1:25  |  |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     | Positive@1:50                  |  |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                       |  |
| Sample: Specimen Type: Serum Animal ID: 9300706 Animal Status: Species: Bison      |                                |  |
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative                       |  |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Positive@1:80                  |  |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | Positive 49.5 Delta mP         |  |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Positive@1:50                  |  |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Incomplete Agglutination@1:200 |  |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     | Positive@1:200                 |  |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Positive                       |  |
| Sample: Specimen Type: Serum Animal ID: 9300709 Animal Status: Species: Bison      |                                |  |
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Positive                       |  |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Positive@1:40                  |  |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | Positive 63.5 Delta mP         |  |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Incomplete Agglutination@1:50  |  |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Incomplete Agglutination@1:100 |  |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     | Positive@1:100                 |  |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Positive                       |  |
| Sample: Specimen Type: Serum Animal ID: 9300711 Animal Status: Species: Bison      |                                |  |
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Positive                       |  |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Positive@1:640                 |  |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | Positive 98 Delta mP           |  |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Positive@1:200                 |  |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Positive@1:200                 |  |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     | Positive@1:200                 |  |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Positive                       |  |

| Sample: Specimen Type: Serum Animal ID: 9300714 Animal Status: Species: Bison      |  |                               |
|--|--|-------------------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test |  | Positive                      |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        |  | Positive@1:10                 |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         |  | Positive 44 Delta mP          |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 |  | Negative@1:25                 |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   |  | Positive@1:50                 |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     |  | Positive@1:50                 |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               |  | Negative                      |
| Sample: Specimen Type: Serum Animal ID: 9300725 Animal Status: Species: Bison      |  |                               |
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test |  | Negative                      |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        |  | Negative@1:10                 |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         |  | Negative 4 Delta mP           |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 |  | Negative@1:25                 |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   |  | Incomplete Agglutination@1:50 |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     |  | Incomplete agglutination@1:25 |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               |  | Negative                      |
| Sample: Specimen Type: Serum Animal ID: 9300731 Animal Status: Species: Bison      |  |                               |
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test |  | Negative                      |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        |  | Negative@1:10                 |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         |  | Negative 9 Delta mP           |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 |  | Negative@1:25                 |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   |  | Negative@1:25                 |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     |  | Incomplete agglutination@1:25 |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               |  | Negative                      |
| Sample: Specimen Type: Serum Animal ID: 9300740 Animal Status: Species: Bison      |  |                               |
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test |  | Negative                      |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        |  | Negative@1:10                 |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         |  | Negative 3 Delta mP           |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 |  | Negative@1:25                 |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   |  | Negative@1:25                 |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     |  | Negative@1:25                 |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               |  | Negative                      |
| Sample: Specimen Type: Serum Animal ID: 9300754 Animal Status: Species: Bison      |  |                               |
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test |  | Negative                      |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        |  | Negative@1:10                 |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         |  | Negative 8 Delta mP           |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 |  | Negative@1:25                 |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   |  | Incomplete Agglutination@1:25 |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     |  | Incomplete agglutination@1:50 |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               |  | Negative                      |
| Sample: Specimen Type: Serum Animal ID: 9300755 Animal Status: Species: Bison      |  |                               |
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test |  | Negative                      |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        |  | Negative@1:10                 |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         |  | Negative 1 Delta mP           |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 |  | Negative@1:25                 |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   |  | Negative@1:25                 |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     |  | Incomplete agglutination@1:50 |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               |  | Negative                      |

| Sample: Specimen Type: Serum Animal ID: 81AJW3751 Animal Status: Species: Bison    |  |                      |
|--|--|----------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test |  | Negative             |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        |  | <b>Positive@1:20</b> |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         |  | Negative 5 Delta mP  |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 |  | Negative@1:25        |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   |  | <b>Positive@1:25</b> |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     |  | <b>Positive@1:25</b> |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               |  | Negative             |
| Sample: Specimen Type: Serum Animal ID: 81AJW3752 Animal Status: Species: Bison    |  |                      |
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test |  | Negative             |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        |  | Negative@1:10        |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         |  | Negative 6 Delta mP  |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 |  | Negative@1:25        |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   |  | Negative@1:25        |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     |  | Negative@1:25        |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               |  | Negative             |
| Sample: Specimen Type: Serum Animal ID: 9300670 Animal Status: Species: Bison      |  |                      |
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test |  | Negative             |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        |  | Negative@1:10        |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         |  | Negative 2 Delta mP  |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 |  | Negative@1:25        |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   |  | Negative@1:25        |
| Brucellosis (Brucella abortus/suis) - Standard Tube Test (STT)                     |  | <b>Positive@1:25</b> |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               |  | Negative             |

Results authorized by: Dr. David Kinker, Head, Serology (515-337-7563)

12-01161



Darrell Geist  
<z@wildrockies.org>  
01/06/2012 02:19 PM

To FOIA Officer/MD/APHIS/USDA  
cc <z@wildrockies.org>, Patrick R Clarke/MT/APHIS/USDA  
bcc  
Subject JANUARY 6 2012 FREEDOM OF INFORMATION ACT  
REQUEST

1 attachment



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FOIA Request # 12-01161  
Date Rec'd 1/6/2012  
Date Due 1/6/2012  
Assigned to Robbie  
Category All other  
Search VS



**BUFFALO FIELD CAMPAIGN**

P.O. BOX 957  
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(406) 646-0070 PHONE (406) 646-0071 FAX  
<http://www.buffalofieldcampaign.org>  
[buffalo@wildrockies.org](mailto:buffalo@wildrockies.org)

January 6, 2012

Tonya Woods, FOIA/PA Officer  
Animal and Plant Health Inspection Service  
U.S. Department of Agriculture  
4700 River Road, Unit 50  
Riverdale, MD 20737-1232  
Tel. 301-734-5267  
Fax 301-734-5941  
Email: [FOIA.Officer@aphis.usda.gov](mailto:FOIA.Officer@aphis.usda.gov)

**RE: FEDERAL FREEDOM OF INFORMATION ACT REQUEST**

Ms. Woods:

Pursuant to the federal Freedom of Information Act (5 U.S.C. 552 et. seq.), Buffalo Field Campaign is filing this request for information.

Buffalo Field Campaign is a 501(c) (3) non-profit, public interest, grassroots media-based organization, which provides news reports directly to thousands of supporters which include concerned American citizens, and people from around the globe, as well as to regional, national and international media.

We would prefer an electronic copy of this information on CD but we would be happy to get a paper copy of anything that is not available electronically.

We request the following documentation from USDA APHIS:

1. Brucella Genotyping Reports (final, preliminary, draft) generated by APHIS during calendar years 2010 and 2011 for incidents or suspected incidents of *brucella abortus* infection in elk, bison and cattle in Montana, Idaho, and Wyoming.

As you know, the Freedom of Information Act (FOIA) provides that if portions of a document are exempt from release, the remainder must be segregated and disclosed. We expect to receive all non-exempt portions of the documents that we have requested, and ask that you justify any deletions by reference to specific exemptions allowed under the FOI Act. The Buffalo Field Campaign reserves the right to appeal a decision to withhold any materials.

We hereby request a fee waiver for all search and duplication fees under the FOIA regulations [5 U.S.C. Sec. 552 (a) (4) (A) and 36 CFR 2.19(c) (1)]. The information requested will benefit the citizens of the United States and is for the purpose of public education and to encourage public debate on important policy issues. The requested information will be made available to the public through Buffalo Field Campaign's central office and/or our website.

Information available through the office and website is used in press conferences and releases, television and radio interviews, and regional and national publications, and reaches a significant number of individuals nationwide, including through the following news sources: New York Times, Los Angeles Times, Washington Post, CNN, CBS, ABC, NBC, Headline News, London Times, UK Guardian, Japanese and German TV, National Geographic, PBS, Associated Press (nationally syndicated), Reuters (internationally syndicated), Planet Green Discovery Channel, Examiner, Indian Country Today, News from Indian Country, Bozeman Daily Chronicle, Helena Independent Record, Billings Gazette, Missoulian, Great Falls Tribune, West Yellowstone News, Livingston Enterprise, Montana Pioneer, Montana Standard, Flathead Beacon, Missoula Independent, Big Sky Weekly, Montana Public Radio, Pacifica Radio Stations, WBAI First Voices Indigenous Radio, KBZK-TV Bozeman, KXLF-TV Butte, ABC Montana, NBC Montana, CBS Montana, KGNU Colorado, Fox News Channel 8 Cleveland, Montana News Casper Star Tribune, Planet Jackson Hole, Jackson Hole News & Guide, Jackson Hole Weekly, Island Park News, Salt Lake Tribune, Powell Tribune, Ag Information Network, Idaho Statesman, Huffington Post, Word Press, New West, Yahoo! News, AlterNet, Mother Jones, Prairie Star, The Republic, Environmental News Service, Earth First! Journal, Mother Nature Network, CounterPunch, Animal People, Independent Media, multiple blogs and online news resources.

The language of the FOIA clearly indicates that Congress intended fees not to be a barrier to private individuals or public



interest organizations seeking access to government records. In addition, the legislative history of the FOIA fee waiver language indicates that Congress intended a liberal interpretation of the phrase "primarily benefiting the public." This suggests that all fees are to be waived whenever the release of information contributes to public debate on important policy issues. This has been affirmed by the US Court of Appeals for the District of Columbia, in *Better Government Association v. Department of State*, 780 F. 2d 86 (D.C. Cir. 1986). In that case, the court found that under the FOIA, Congress had explicitly recognized the need for non-profit organizations to have free access to government documents and those government agencies cannot impair this free access by charging duplication or search for FOIA information requests. *Id.* at 89.

I appreciate your help and prompt response. Thank you for your time.

Sincerely,

/s/  
Darrell Geist  
Habitat Coordinator  
Buffalo Field Campaign  
P.O. Box 957  
West Yellowstone, MT 59758  
406-646-0070  
<http://www.buffalofieldcampaign.org>



Darrell Geist  
<z@wildrockies.org>  
02/06/2012 06:27 PM

To FOIA Officer/MD/APHIS/USDA  
cc <z@wildrockies.org>  
bcc  
Subject FEBRUARY 6 2012 FREEDOM OF INFORMATION ACT  
REQUEST

1 attachment



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FOIA Request # 12-01470  
Date Rec'd 2/6/2012  
Date Due 3/6/2012  
Assigned to Reggie  
Category all other  
Search WS



**BUFFALO FIELD CAMPAIGN**

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February 6, 2012

Tonya Woods, FOIA/PA Officer  
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Tel. 301-734-5267  
Fax 301-734-5941  
Email: [FOIA.Officer@aphis.usda.gov](mailto:FOIA.Officer@aphis.usda.gov)

**RE: FEDERAL FREEDOM OF INFORMATION ACT REQUEST**

Ms. Woods:

Pursuant to the federal Freedom of Information Act (5 U.S.C. 552 et. seq.), Buffalo Field Campaign is filing this request for information.

Buffalo Field Campaign is a 501(c) (3) non-profit, public interest, grassroots media-based organization, which provides news reports directly to thousands of supporters which include concerned American citizens, and people from around the globe, as well as to regional, national and international media.

We would prefer an electronic copy of this information on CD but we would be happy to get a paper copy of anything that is not available electronically.

We request the following documentation from USDA APHIS:

1. All quarterly, semi-annual and final financial reports for the USDA APHIS Montana Department of Livestock Bison Cooperative Agreement #11-9730-0124-CA.
2. Bison Operation Cooperative Agreement for the time period January 1, 2012 through December 31, 2012.
3. A current agreement or MOU between APHIS and Montana Department of Livestock on the use of APHIS employees or contractors to pilot aircraft in Montana.
4. A current inventory of any APHIS Federally-owned or Federally-leased equipment on loan to the Montana Department of Livestock.
5. Please include all correspondence in the agency's possession on items 1 through 5 above.

As you know, the Freedom of Information Act (FOIA) provides that if portions of a document are exempt from release, the remainder must be segregated and disclosed. We expect to receive all non-exempt portions of the documents that we have requested, and ask that you justify any deletions by reference to specific exemptions allowed under the FOI Act. The Buffalo Field Campaign reserves the right to appeal a decision to withhold any materials.

We hereby request a fee waiver for all search and duplication fees under the FOIA regulations [5 U.S.C. Sec. 552 (a) (4) (A) and 36 CFR 2.19(c) (1)]. The information requested will benefit the citizens of the United States and is for the purpose of public education and to encourage public debate on important policy issues. The requested information will be made available to the public through Buffalo Field Campaign's central office and/or our website.

Information available through the office and website is used in press conferences and releases, television and radio interviews, and regional and national publications, and reaches a significant number of individuals nationwide, including through the following news sources: New York Times, Los Angeles Times, Washington Post, CNN, CBS, ABC, NBC, Headline News, London Times, UK Guardian, Japanese and German TV, National Geographic, PBS, Associated Press (nationally syndicated), Reuters (internationally syndicated), Planet Green Discovery Channel, Examiner, Indian Country Today, News from Indian Country, Bozeman Daily Chronicle, Helena Independent Record, Billings Gazette, Missoulian, Great Falls Tribune, West Yellowstone News, Livingston Enterprise, Montana Pioneer, Montana Standard, Flathead Beacon, Missoula Independent, Big Sky Weekly, Montana Public Radio, Pacifica Radio Stations, WBAI First Voices Indigenous Radio, KBZK-TV Bozeman, KXLF-TV Butte, ABC Montana, NBC Montana, CBS Montana, KGNU Colorado, Fox News Channel 8 Cleveland, Montana News Casper Star Tribune, Planet Jackson Hole, Jackson Hole News & Guide, Jackson

Hole Weekly, Island Park News, Salt Lake Tribune, Powell Tribune, Ag Information Network, Idaho Statesman, Huffington Post, Word Press, New West, Yahoo! News, AlterNet, Mother Jones, Prairie Star, The Republic, Environmental News Service, Earth First! Journal, Mother Nature Network, CounterPunch, Animal People, Independent Media, multiple blogs and online news resources.

The language of the FOIA clearly indicates that Congress intended fees not to be a barrier to private individuals or public interest organizations seeking access to government records. In addition, the legislative history of the FOIA fee waiver language indicates that Congress intended a liberal interpretation of the phrase "primarily benefiting the public." This suggests that all fees are to be waived whenever the release of information contributes to public debate on important policy issues. This has been affirmed by the US Court of Appeals for the District of Columbia, in *Better Government Association v. Department of State*, 780 F. 2d 86 (D.C. Cir. 1986). In that case, the court found that under the FOIA, Congress had explicitly recognized the need for non-profit organizations to have free access to government documents and those government agencies cannot impair this free access by charging duplication or search for FOIA information requests. *Id.* at 89.

I appreciate your help and prompt response. Thank you for your time.

Sincerely,

/s/  
Darrell Geist  
Habitat Coordinator  
Buffalo Field Campaign  
P.O. Box 957  
West Yellowstone, MT 59758  
406-646-0070  
<http://www.buffalofieldcampaign.org>



United States  
Department of  
Agriculture

Animal and  
Plant Health  
Inspection  
Service

Legislative and  
Public Affairs

Freedom of  
Information

4700 River Road  
Unit 50  
Riverdale, MD  
20737-1232

February 22, 2012

Stephany Seay  
Post Office Box 957  
West Yellowstone, Montana, 59758

Dear Stephany Seay:

This is in response to your February 21, 2012, Freedom of Information Act (FOIA) request for the records surrounding APHIS's official comments to the Environmental Protection Agency (EPA) concerning the use of GonaCon for experimental use on Bison. Your request was received in this office on February 21, 2012, and assigned tracking number 2012-APHIS-01625-F.

The Program office advises that the information you are seeking is publicly available at the following website:

[http://www.aphis.usda.gov/animal\\_health/animal\\_diseases/brucellosis/downloads/gnrh\\_ea.pdf](http://www.aphis.usda.gov/animal_health/animal_diseases/brucellosis/downloads/gnrh_ea.pdf)

You may appeal our adequacy of search. If you choose to appeal, your appeal must be in writing and received within 45 days of the date of this letter. Please send your appeal to:

Administrator  
Animal and Plant Health Inspection Service  
Ag Box 3401  
Washington, DC 20250-3401

If you should appeal, please refer to tracking number 2012-APHIS-01625-F in your appeal letter and add the words "FOIA Appeal" to the front of the envelope. To assist the Administrator in reviewing your appeal, provide specific reasons for the appeal.

Because the cost to process your request is less than \$25.00, all fees have been waived. If you have any questions, please contact Ms. Lyndia Taylor of my staff at (301) 851-4042.

Sincerely,

  
Tonya G. Woods  
Director

Freedom of Information & Privacy Act  
Legislative and Public Affairs



Safeguarding American Agriculture  
APHIS is an agency of USDA's Marketing and Regulatory Programs

An Equal Opportunity Provider and Employer

000154



BUFFALO FIELD CAMPAIGN  
P.O. BOX 957  
WEST YELLOWSTONE, MONTANA 59758  
406-646-0070

[bfc-media@wildrockies.org](mailto:bfc-media@wildrockies.org) \* <http://www.buffalofieldcampaign.org>

March 20, 2012

Director Tonya Woods  
Freedom of Information & Privacy Act  
USDA-Animal & Plant Health Inspection Service  
4700 River Road, Unit 50  
Riverdale, MD 20737-1232

12-01942  
FOIA Request #  
Date Rec'd 3/20/2012  
Date Due 4/18/2012  
Assigned to Melinda  
Category All Others  
Search VS / WS

**RE: FREEDOM OF INFORMATION ACT REQUEST**

Dear Director Woods,

On behalf of Buffalo Field Campaign I am submitting a request pursuant to the Freedom of Information Act, 5 U.S.C. § 552 for an electronic copy of public records on the buffalo removed from Yellowstone National Park by USDA-Animal & Plant Health Inspection Service (USDA-APHIS) for the proposed "Evaluation of GonaCon" study.

To reduce costs and waste of resources, Buffalo Field Campaign asks USDA-APHIS to provide and disclose the following records in electronic form on CD:

1. The specific number of buffalo or bison originally removed from the Yellowstone National Park wild populations and transferred to USDA-APHIS during May 2011 for the proposed "Evaluation of GonaCon" study, or for any other purpose and what, specifically, those purposes are.
2. The number of viable buffalo or bison currently being held by USDA-APHIS for the proposed "Evaluation of GonaCon" study.
3. Records of any buffalo or bison deaths, injuries or other incidents that have incurred, to date, since USDA-APHIS acquired the buffalo or bison for the proposed "Evaluation of GonaCon" study.
4. Specific records of any and all buffalo or bison handling, testing, ear-tagging, collaring, telemetry implants, sorting, vaccinating, medications administered, pregnancies (viable or failed), feeding schedules, quantities and types of feed distributed, water availability for bison held by USDA-APHIS for purpose of the proposed "Evaluation of GonaCon" study.
5. List of the sex and age of all bison acquired by USDA-APHIS for the proposed "Evaluation of GonaCon" study for bison
6. Specific location, sizes, dates used, natural forage availability and water availability of pastures being used by USDA-APHIS for the proposed "Evaluation of GonaCon" study.
7. Specific number, age and sex of buffalo or bison in each pasture being held by USDA-APHIS for the proposed "Evaluation of GonaCon" study.

Records will include any letters, faxes, notes, proposals, reports, plans, permits, video footage, photos, analysis, impact statements, correspondence including emails and attachments, if any. **All correspondence should go through Attorney Daniel C. Snyder, Law Offices of Charles M. Tebbutt, P.C., 451 Blair Blvd., Eugene, Oregon, 97402; (phone) 541-344-3505; (email) [dan.tebbuttlaw@gmail.com](mailto:dan.tebbuttlaw@gmail.com).**

Buffalo Field Campaign requests a waiver of fees as "disclosure of the information is in the public interest because it is likely to contribute significantly to public understanding of the operations or activities of the government and is not primarily in the commercial interest of the requester."

Full disclosure of records will shed light on the operations and activities of USDA-APHIS and its proposed "Evaluation of GonaCon" study.

The records requested will help provide information of how the proposed "Evaluation of GonaCon" study impacts our environment and the public concern/public trust.

Full disclosure fosters Buffalo Field Campaign and our members' ability to engage decision makers, the public, Congress, among others, on a federal decision impacting wild American bison in the ecosystem.

Full disclosure of records requested pursuant to the Freedom of Information Act fosters public access to and knowledge of the proposed "Evaluation of GonaCon" study and such records will inform dialogue amongst the public, decision makers, members of Congress, among others, on a federal decision impacting wild American bison in the ecosystem.

Buffalo Field Campaign is a nonprofit organization incorporated in the state of Montana in 1997 whose projects educate and involve the public in finding solutions to the Yellowstone buffalo slaughter. As part of our mission to involve and educate the American people in important federal decisions impacting the Yellowstone buffalo herd's historic and native range, Buffalo Field Campaign actively develops, promotes and supports programs involving a diverse and broad section of the public at large. These programs include community presence in Gardiner and West Yellowstone, Montana, and outreach through our web site, online news and list serve capabilities that reach tens of thousands of people who, through their involvement, have demonstrated significant concern over the government's actions and activities impacting our country's last wild buffalo herd. Buffalo Field Campaign seeks disclosure of these records for their educational, scientific and informative values.

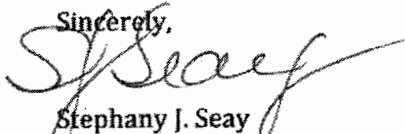
Buffalo Field Campaign has demonstrated a capability to reach out to and include the public at large and a broad audience of people who have an active interest and concern for American bison and the ecosystems wild populations depend upon for survival. Buffalo Field Campaign programs reach and involve the public in Yellowstone National Park gateway communities, at large in all 50 states, and abroad in various countries, through our newsletter, web site, email list serve, public events outreach and programmatic capabilities.

Fully disclosing these records through a fee waiver to Buffalo Field Campaign will contribute significantly to the public's understanding of the USDA-APHIS proposed "Evaluation of GonaCon" study and its impacts on wild American bison and the ecosystem upon which they depend.

Buffalo Field Campaign has no commercial interest in the records requested, and the waiver of fees sought is consistent with the public interest criteria of the Freedom of Information Act.

To expedite disclosure of records by USDA-APHIS please contact me if I can be of help in any way.

Sincerely,



Stephany J. Seay  
Buffalo Field Campaign  
P.O. Box 957  
West Yellowstone, MT 59758  
[bfc-media@wildrockies.org](mailto:bfc-media@wildrockies.org)

cc: Daniel C. Snyder, Attorney at Law, Law Offices of Charles M. Tubbett, P.C.



Buffalo Field Campaign  
<BFC-Media@wildrockies.org>

03/20/2012 08:03 PM

To FOIA Officer/MD/APHIS/USDA

cc <dan.tebbuttlaw@gmail.com>

bcc

Subject \*Freedom of Information Act Request

1 attachment



APHIS FOIA 3-20-12\_buffalo info.pdf

*Melinda  
VS/WS  
all other*

Greetings Director Woods,

Attached is a Freedom of Information Act Request from Buffalo Field Campaign.

Please be advised that all correspondence in regards to this FOIA request should go through our attorney, Daniel C. Snyder at the following:

Daniel C. Snyder  
Law Offices of Charles M. Tebbutt, P.C.  
451 Blair Blvd.  
Eugene, OR 97402  
Ph: 541-344-3505  
dan.tebbuttlaw@gmail.com

Thank you for your prompt attention to this request.

Sincerely,

Stephany J. Seay

--  
Media & Outreach  
Buffalo Field Campaign  
P.O. Box 957  
West Yellowstone, MT 59758  
406-646-0070  
bfc-media@wildrockies.org  
<http://www.buffalofieldcampaign.org>

\*\*\* BFC is the only group working in the field every day in defense of the last wild buffalo population in the U.S. \*\*\*

Watch and Share: "Protect the Wild Bison"  
<http://www.youtube.com/BFCMEDIA#p/a/f/0/joSrf7Qi7Cw>

Endangered Status of Wild American Buffalo  
<http://www.buffalofieldcampaign.org/habitat/bisonconservation.html>

Bison Abuse Merits Harsh Criticism  
<http://wolves.wordpress.com/2011/02/17/bison-abuse-merits-harsh-criticism/>

BOYCOTT BEEF! It's what's killing wild buffalo  
<http://www.buffalofieldcampaign.org/actnow/boycott.html>

Find BFC on Facebook



<http://www.facebook.com/buffalowild>



## National Veterinary Services Laboratories

PO Box 844

Ames, Iowa 50010

Phone: 515-337-7514 Fax: 515-337-7938

FEDERAL RELAY SERVICE (Voice/TTY/ASCII/Spanish) 1-800-877-8339

The USDA is an equal opportunity provider and employer.

FINAL REPORT

### Laboratory Test Report

\*\*\*\*\* This is a confidential report intended for official use only. \*\*\*\*\*

**Owner**

USDA APHIS VS

Fort Collins, CO

**Animal Location**

Park County MT

**Submitter - 2649**

DR Jack C. Rhyan

USDA, APHIS, VS

National Wildlife Research Center

4101 La Porte Ave.

Fort Collins, CO 80521

FAX #: 970-266-6138

Phone #: 970-266-6140

**Accession Number:**

**13-002818**

**Date Collected:**

01/09/2013

**Date Received:**

01/24/2013

**Date Completed:**

02/27/2013

**Collected By:**

Rhyan

**Purpose:**

Development /  
Research

**Referral Number:**

**This is not a billable case.**

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

**Sample:** G02 **Animal ID:** G02 **Brucella Case Number:** B13-0012 **Specimen Type:** BLOOD, SWAB **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

Contaminated

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** G03 **Animal ID:** G03 **Brucella Case Number:** B13-0013 **Specimen Type:** BLOOD, SWAB **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** G04 **Animal ID:** G04 **Brucella Case Number:** B13-0014 **Specimen Type:** BLOOD, SWAB **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** G06 **Animal ID:** G06 **Brucella Case Number:** B13-0015 **Specimen Type:** BLOOD, SWAB **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** G08 **Animal ID:** G08 **Brucella Case Number:** B13-0016 **Specimen Type:** BLOOD, SWAB **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

Contaminated

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** G09 **Animal ID:** G09 **Brucella Case Number:** B13-0017 **Specimen Type:** BLOOD, SWAB **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: G10 Animal ID: G10 Brucella Case Number: B13-0018 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

Contaminated

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: G14 Animal ID: G14 Brucella Case Number: B13-0019 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

Contaminated

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: G15 Animal ID: G15 Brucella Case Number: B13-0020 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

Contaminated

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: G17 Animal ID: G17 Brucella Case Number: B13-0021 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R01 Animal ID: R01 Brucella Case Number: B13-0022 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

Contaminated

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R02 Animal ID: R02 Brucella Case Number: B13-0023 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R03 Animal ID: R03 Brucella Case Number: B13-0024 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R04 Animal ID: R04 Brucella Case Number: B13-0025 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

Contaminated

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** R05 **Animal ID:** R05 **Brucella Case Number:** B13-0026 **Specimen Type:** BLOOD, SWAB **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** R06 **Animal ID:** R06 **Brucella Case Number:** B13-0027 **Specimen Type:** BLOOD, SWAB **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** R07 **Animal ID:** R07 **Brucella Case Number:** B13-0028 **Specimen Type:** BLOOD, SWAB **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** R08 **Animal ID:** R08 **Brucella Case Number:** B13-0029 **Specimen Type:** BLOOD, SWAB **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R09 Animal ID: R09 Brucella Case Number: B13-0030 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R11 Animal ID: R11 Brucella Case Number: B13-0031 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R13 Animal ID: R13 Brucella Case Number: B13-0032 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

Contaminated

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R14 Animal ID: R14 Brucella Case Number: B13-0033 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R15 Animal ID: R15 Brucella Case Number: B13-0034 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R16 Animal ID: R16 Brucella Case Number: B13-0035 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R17 Animal ID: R17 Brucella Case Number: B13-0036 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

Contaminated

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R18 Animal ID: R18 Brucella Case Number: B13-0037 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made



**Sample: R19 Animal ID: R19 Brucella Case Number: B13-0038 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R20 Animal ID: R20 Brucella Case Number: B13-0039 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R21 Animal ID: R21 Brucella Case Number: B13-0040 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R22 Animal ID: R22 Brucella Case Number: B13-0041 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

Contaminated

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R23 Animal ID: R23 Brucella Case Number: B13-0042 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R24 Animal ID: R24 Brucella Case Number: B13-0043 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R25 Animal ID: R25 Brucella Case Number: B13-0044 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R26 Animal ID: R26 Brucella Case Number: B13-0045 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R27 Animal ID: R27 Brucella Case Number: B13-0046 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R28 Animal ID: R28 Brucella Case Number: B13-0047 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R29 Animal ID: R29 Brucella Case Number: B13-0048 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R30 Animal ID: R30 Brucella Case Number: B13-0049 Specimen Type: BLOOD, SWAB Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** R31 **Animal ID:** R31 **Brucella Case Number:** B13-0050 **Specimen Type:** BLOOD, SWAB **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

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FINAL REPORT

## Laboratory Test Report

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### Owner

USDA/APHIS/VS

Fort Collins, CO

### Animal Location

Larimer County CO

### Submitter - 2649

DR Jack C. Rhyan

USDA, APHIS, VS

National Wildlife Research Center

4101 La Porte Ave.

Fort Collins, CO 80521

FAX #: 970-266-6138

Phone #: 970-266-6140

### Accession Number:

13-002820

### Date Collected:

### Date Received:

01/24/2013

### Date Completed:

02/25/2013

### Collected By:

McCollum

### Purpose:

Development /  
Research

### Referral Number:

This is not a billable case.

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

**Sample:** 641-10/1 **Animal ID:** 641 **Brucella Case Number:** B13-0051 **Specimen Type:** Blood **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Blood / Blood

Brucella Isolation Result

No Isolation Made

#### Blood / Blood- Enriched in TSB

Brucella Isolation Result

Contaminated

**Sample:** 426-9/19 **Animal ID:** 426 **Brucella Case Number:** B13-0052 **Specimen Type:** Blood **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Blood / Blood

Brucella Isolation Result

No Isolation Made

#### Blood / Blood- Enriched in TSB

Brucella Isolation Result

Contaminated

**Sample:** 393-9/19 **Animal ID:** 393 **Brucella Case Number:** B13-0053 **Specimen Type:** Blood **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Blood / Blood

Brucella Isolation Result

No Isolation Made

#### Blood / Blood- Enriched in TSB

Brucella Isolation Result

Contaminated

**Sample:** 354-9/19 **Animal ID:** 354 **Brucella Case Number:** B13-0054 **Specimen Type:** Blood **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Sample:** 017-1/8 **Animal ID:** 017 **Brucella Case Number:** B13-0055 **Specimen Type:** BLOOD, SEMEN **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Semen / Semen**

Brucella Isolation Result

No Isolation Made

**Semen / Semen**

Brucella Isolation Result

No Isolation Made

**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

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FINAL REPORT

## Laboratory Test Report

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### Owner

BQFS - Gonacon Project

Corwin Spring, MT

### Animal Location

Park County MT

### Submitter - 1961

DR Patrick Ryan Clarke Ryan

USDA, APHIS, VS

### Accession Number:

13-005136

### Date Collected:

02/01/2013

### Date Received:

02/12/2013

### Date Completed:

02/27/2013

### Collected By:

Rebecca Frey

### Purpose:

Development /  
Research

### Referral Number:

This is not a billable case.

(b) (6)

**NOTE:** Condition of the sample(s) was adequate unless otherwise noted.

Sample: Red 03 Animal ID: Red 03 Brucella Case Number: B13-0061 Specimen Type: SWAB, MILK, BLOOD Species: Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

Individual specimen results are listed below:

#### Swab / Swab- Vaginal

Brucella Isolation Result

Isolate Determined

#### Swab, Environmental / Swab- Not Identified

Brucella Isolation Result

Suspect Isolated

#### Swab, Environmental / Swab- Not Identified

Brucella Isolation Result

Suspect Isolated

#### Swab, Environmental / Swab- Not Identified

Brucella Isolation Result

Isolate Determined

#### Milk / Milk

Brucella Isolation Result

Isolate Determined

#### Blood / Blood

Brucella Isolation Result

No Isolation Made

#### Blood / Blood- Enriched in TSB

Brucella Isolation Result

No Isolation Made

**Sample:** Green 08 **Animal ID:** Green 08 **Brucella Case Number:** B13-0062 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab, Environmental / Swab- Not Identified**

Brucella Isolation Result

No Isolation Made

**Swab, Environmental / Swab- Not Identified**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 09 **Animal ID:** Green 09 **Brucella Case Number:** B13-0063 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab, Environmental / Swab- Not Identified**

Brucella Isolation Result

No Isolation Made

**Swab, Environmental / Swab- Not Identified**

Brucella Isolation Result

No Isolation Made

**Swab, Environmental / Swab- Not Identified**

Brucella Isolation Result

No Isolation Made

**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

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FINAL REPORT

### Laboratory Test Report

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**Owner**

Bison Quarantine Feasibility - GonaCon  
Corwin Springs, MT

**Animal Location**

Park County MT

**Submitter - 1961**

Patrick Clarke

USDA, APHIS, VS

**Accession Number:**

13-006974

**Date Collected:**

02/18/2013

**Date Received:**

02/26/2013

**Date Completed:**

03/13/2013

**Collected By:**

R. Frey

**Purpose:**

Development /  
Research

**Referral Number:**

This is not a billable case.

(b) (6)

**NOTE:** Condition of the sample(s) was adequate unless otherwise noted.

Sample: Grn 15 Animal ID: Grn 15 Brucella Case Number: B13-0075 Specimen Type: SWAB, MILK Species: Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Exudate / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Environmental / Environmental**

Brucella Isolation Result

No Isolation Made

**Environmental / Environmental**

Brucella Isolation Result

No Isolation Made

**Environmental / Environmental**

Brucella Isolation Result

No Isolation Made

**Environmental / Environmental**

Brucella Isolation Result

No Isolation Made

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

Contaminated

The subsamples listed as 'Environmental' above were labeled as follows: Abortion-Top, Abortion-Bottom, Implant-Top, Implant-Bottom.

**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

**Help Us Help You**

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FINAL REPORT

### Laboratory Test Report

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**Owner**

Bison Quarantine Feasibility  
, MT

**Animal Location**

Park County MT

**Submitter - 1961**

Patrick Clarke

USDA, APHIS, VS

**Accession Number:**

**13-013440**

**Date Collected:**

04/11/2013

**Date Received:**

04/16/2013

**Date Completed:**

05/06/2013

**Collected By:**

R. Frey

**Purpose:**

Development /  
Research

**Referral Number:**

This is not a billable case.

(b) (6)

**NOTE:** Condition of the sample(s) was adequate unless otherwise noted.

**Sample:** Red 16 **Animal ID:** Red 16 **Brucella Case Number:** B13-0083 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

Individual specimen results are listed below:

**Milk / Milk Cream**

Brucella Isolation Result

Suspect Isolated

**Milk / Milk Sediment**

Brucella Isolation Result

Suspect Isolated

**Swab / Swab- Vaginal**

Brucella Isolation Result

Suspect Isolated

**Swab / Swab- Not Identified**

Brucella Isolation Result

Suspect Isolated

**Swab / Swab- Not Identified**

Brucella Isolation Result

Suspect Isolated

**Swab / Swab- Not Identified**

Brucella Isolation Result

Suspect Isolated

**Swab, Environmental / Swab- Not Identified**

Brucella Isolation Result

Suspect Isolated

**Swab, Environmental / Swab- Not Identified**

Brucella Isolation Result

Suspect Isolated

**Feces / Feces**

Brucella Isolation Result

Suspect Isolated

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

No Isolation Made

**Tissue / Placenta**

Brucella Isolation Result

Isolate Determined

|                                |                           |
|--------------------------------|---------------------------|
| Brucella Identification Result | Brucella abortus biovar 1 |
| <b>Tissue / Placenta</b>       |                           |
| Brucella Isolation Result      | Suspect Isolated          |

Only one specimen was chosen for complete identification. Quantification is as follows:

Milk, Cream = >100 cfu

Milk, Sediment = >100 cfu

Swab, Vaginal = TNTC (lawn)

Swab, AT = >100 cfu

Swab, AB = >100 cfu

Swab, AE = TNTC (lawn)

Swab, IT = >100 cfu

Swab IB = >100 cfu

Feces = (>100 cfu heavy contamination)

Placenta = >100 cfu

Placenta = >100 cfu

Sample: Grn 08 Animal ID: Grn 08 Brucella Case Number: B13-0084 Specimen Type: Tissue Species: Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab, Environmental / Swab- Not Identified**

Brucella Isolation Result

No Isolation Made

**Swab, Environmental / Swab- Not Identified**

Brucella Isolation Result

No Isolation Made

Sample: Grn 09 Animal ID: Grn 09 Brucella Case Number: B13-0085 Specimen Type: Tissue Species: Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab, Environmental / Swab- Not Identified**

Brucella Isolation Result

No Isolation Made

**Swab, Environmental / Swab- Not Identified**

Brucella Isolation Result

No Isolation Made

**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

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FINAL REPORT

### Laboratory Test Report

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**Owner**

Bison Quarantine Herd

Gardiner, MT

**Animal Location**

Park County MT

**Submitter - 2047**

MT Department of Livestock

Diagnostic Laboratory Division

19th and Lincoln

PO Box 997

Bozeman, MT 59771-0997

FAX #: 406-994-6344

Phone #: 406-994-4885

**Accession Number:**

**13-013849**

**Date Collected:**

04/11/2013

**Date Received:**

04/18/2013

**Date Completed:**

04/25/2013

**Collected By:**

Dr. Jack Rhyan, (Becky Frey)

**Purpose:**

General Diagnostic

**Referral Number:**

8-435-13

**This is not a billable case.**

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

**Sample:** 8-435 **Animal ID:** Red 16 fetus / bison **Brucella Case Number:** B13-0086 **Specimen Type:** Culture **Species:** Bison

Brucella Final Identification

Brucella abortus biovar 1

**Results authorized by:**

Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

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FINAL REPORT

### Laboratory Test Report

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**Owner**

Bison Quarantine

Corwin Springs, MT

**Animal Location**

Park County MT, US

**Submitter - 1961**

Patrick Clarke

USDA, APHIS, VS

**Accession Number:**

13-015343

**Date Collected:**

04/22/2013

**Date Received:**

04/30/2013

**Date Completed:**

05/14/2013

**Collected By:**

RK Frey / R. Clarke

**Purpose:**

Development /  
Research

**Referral Number:**

This is not a billable case.

(b) (6)

**NOTE:** Condition of the sample(s) was adequate unless otherwise noted.

**Sample:** 3R21 **Animal ID:** 3R21 **Brucella Case Number:** B13-0089 **Specimen Type:** BLOOD, SWAB **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made



**Sample:** Red 21 **Animal ID:** Red 21 **Brucella Case Number:** B13-0090 **Specimen Type:** SWAB, BLOOD, MILK **Species:** Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

Individual specimen results are listed below:

**Exudate / Exudate- Vaginal**

Brucella Isolation Result

Suspect Isolated

Brucella Identification Result

Brucella abortus biovar 1

**Swab / Swab- Vaginal**

Brucella Isolation Result

Suspect Isolated

Brucella Identification Result

Brucella abortus biovar 1

**Swab / Swab, Placenta**

Brucella Isolation Result

Suspect Isolated

Brucella Identification Result

Brucella abortus biovar 1

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**All suspect and confirmed positive specimens were too numerous to count.**

**Sample:** Green 09 **Animal ID:** Green 09 **Brucella Case Number:** B13-0091 **Specimen Type:** SWAB, BLOOD, MILK **Species:** Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

Individual specimen results are listed below:

**Tissue / Placenta**

Brucella Isolation Result

Suspect Isolated

Brucella Identification Result

Brucella abortus biovar 1

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Milk / Milk Cream**

Brucella Isolation Result

Suspect Isolated

Brucella Identification Result

Brucella abortus biovar 1

**Milk / Milk Sediment**

Brucella Isolation Result

Suspect Isolated

**Fetus / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

Brucella Identification Result

Not a Brucella species

**Swab, Environmental / Swab- Not Identified**

Brucella Isolation Result

Suspect Isolated

**Swab, Environmental / Swab- Not Identified**

Brucella Isolation Result

Suspect Isolated

**Swab / Swab- Vaginal**

Brucella Isolation Result

Suspect Isolated

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Blood / Blood- Enriched in TSB**

Brucella Isolation Result

Contaminated

**All suspect and confirmed positive specimens were too numerous to count.****Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388**Help Us Help You**

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FINAL REPORT

### Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

#### Owner

**Accession Number:** 14-010351

#### Animal Location

Park County MT, US

**Date Collected:**

**Date Received:** 04/01/2014

#### Submitter - 4932

John Treanor

**Date Completed:** 07/28/2014

**Collected By:** John Treanor

Yellowstone National Park

**Purpose:** General Diagnostic

Yellowstone Center for Resources

PO Box 168

Yellowstone National Park, WY 82190

**Referral Number:**

**This is not a billable case.**

FAX #: 307-344-2014

Phone #: 307-344-2505

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

**Sample:** 022714-01 **Animal ID:** 6642 **Brucella Case Number:** B14-0213 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

Individual specimen results are listed below:

#### Lymph Node / Lymph Node- S. Mammary

Brucella Isolation Result

No Isolation Made

#### Lymph Node / Lymph Node- Internal Iliac

Brucella Isolation Result

No Isolation Made

#### Lymph Node / Lymph Node- Retropharyngeal

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

#### Tissue / Mammary Gland

Brucella Isolation Result

No Isolation Made

**Sample:** 022714-02 **Animal ID:** 6636 **Brucella Case Number:** B14-0214 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 022714-03 **Animal ID:** 6710 **Brucella Case Number:** B14-0215 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 022714-04 **Animal ID:** 6700 **Brucella Case Number:** B14-0216 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 022714-05 **Animal ID:** 6691 **Brucella Case Number:** B14-0217 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 022714-06 **Animal ID:** 6718 **Brucella Case Number:** B14-0218 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 022714-07 **Animal ID:** 6671 **Brucella Case Number:** B14-0219 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 022714-08 **Animal ID:** 6684 **Brucella Case Number:** B14-0220 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 022714-09 **Animal ID:** 6732 **Brucella Case Number:** B14-0221 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 022714-10 **Animal ID:** 6715 **Brucella Case Number:** B14-0222 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 022714-11 **Animal ID:** 6740 **Brucella Case Number:** B14-0223 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 022714-12 **Animal ID:** 6730 **Brucella Case Number:** B14-0224 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 022714-13 **Animal ID:** 6675 **Brucella Case Number:** B14-0225 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 022714-14 **Animal ID:** 6699 **Brucella Case Number:** B14-0226 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made



**Sample:** 022714-15 **Animal ID:** 6639 **Brucella Case Number:** B14-0227 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 022714-16 **Animal ID:** 6701 **Brucella Case Number:** B14-0228 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 022714-17 **Animal ID:** 6719 **Brucella Case Number:** B14-0229 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 022714-18 **Animal ID:** 6706 **Brucella Case Number:** B14-0230 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 022714-19 **Animal ID:** 6688 **Brucella Case Number:** B14-0231 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

Suspect Isolated

Brucella Identification Result

Brucella abortus biovar 1

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 022714-20 **Animal ID:** 6746 **Brucella Case Number:** B14-0232 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 022714-21 **Animal ID:** 6689 **Brucella Case Number:** B14-0233 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 022714-22 **Animal ID:** 6681 **Brucella Case Number:** B14-0234 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 022714-23 **Animal ID:** 6692 **Brucella Case Number:** B14-0235 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 022714-24 **Animal ID:** 6736 **Brucella Case Number:** B14-0236 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** Y031 **Animal ID:** 6614 **Brucella Case Number:** B14-0237 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 030514-01 **Animal ID:** 6793 **Brucella Case Number:** B14-0238 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 030514-02 **Animal ID:** 6768 **Brucella Case Number:** B14-0239 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 030514-03 **Animal ID:** 6766 **Brucella Case Number:** B14-0240 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

**Tissue / Mammary Gland**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

**Sample:** 030514-04 **Animal ID:** 6797 **Brucella Case Number:** B14-0241 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 030514-05 **Animal ID:** 6779 **Brucella Case Number:** B14-0242 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 030514-06 **Animal ID:** 6762 **Brucella Case Number:** B14-0243 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 030514-07 **Animal ID:** 6754 **Brucella Case Number:** B14-0244 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

**Tissue / Mammary Gland**

Brucella Isolation Result

Suspect Isolated

**Sample:** 030514-08 **Animal ID:** 6794 **Brucella Case Number:** B14-0245 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 030514-09 **Animal ID:** 6764 **Brucella Case Number:** B14-0246 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 030514-10 **Animal ID:** 6757 **Brucella Case Number:** B14-0247 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

**Tissue / Mammary Gland**

Brucella Isolation Result

Suspect Isolated



**Sample:** 030514-11 **Animal ID:** 6760 **Brucella Case Number:** B14-0248 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 030514-12 **Animal ID:** 6805 **Brucella Case Number:** B14-0249 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 030514-13 **Animal ID:** 6778 **Brucella Case Number:** B14-0250 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 030514-14 **Animal ID:** 6792 **Brucella Case Number:** B14-0251 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus biovar 1

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Sample:** 030514-15 **Animal ID:** 6775 **Brucella Case Number:** B14-0252 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Tissue / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

**[Help Us Help You](#)**

(This new section will be updated periodically with tips for submitters.)

Quality samples yield the most accurate results. Please call if you have questions.



# National Veterinary Services Laboratories

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FINAL REPORT

## Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

### Owner

USDA, APHIS, VS  
Corwin Springs, MT

### Animal Location

Park County MT

### Submitter - 1961

DR Patrick Ryan Clarke  
USDA, APHIS, VS

Accession Number: 14-021009

### Date Collected:

Date Received: 07/03/2014

### Date Completed:

Collected By: Frey Clarke

### Purpose:

General Diagnostic

### Referral Number:

This is not a billable case.

(b) (6)

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

Sample: Red09 Animal ID: Red09 Brucella Case Number: B14-0461 Specimen Type: Multiple - Specify in Sample Species: Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Swab / Swab- Vaginal

Brucella Isolation Result

No Isolation Made

#### Blood / Blood

Brucella Isolation Result

No Isolation Made

#### Feces / Feces

Brucella Isolation Result

No Isolation Made

Sample: 3R22 Animal ID: 3R22 Brucella Case Number: B14-0462 Specimen Type: Multiple - Specify in Sample Species: Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Swab / Swab- Vaginal

Brucella Isolation Result

No Isolation Made

#### Blood / Blood

Brucella Isolation Result

No Isolation Made

#### Feces / Feces

Brucella Isolation Result

No Isolation Made

**Sample:** Red26 **Animal ID:** Red26 **Brucella Case Number:** B14-0463 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** Gr09 **Animal ID:** Gr09 **Brucella Case Number:** B14-0464 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Sample:** Gr10 **Animal ID:** Gr10 **Brucella Case Number:** B14-0465 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Placenta / Placenta**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** 3G08 **Animal ID:** 3G08 **Brucella Case Number:** B14-0466 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** Red13 **Animal ID:** Red13 **Brucella Case Number:** B14-0467 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Exudate / Exudate- Vaginal**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** 3G14 **Animal ID:** 3G14 **Brucella Case Number:** B14-0468 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** Red18 **Animal ID:** Red18 **Brucella Case Number:** B14-0469 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** Red20 **Animal ID:** Red20 **Brucella Case Number:** B14-0470 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** Red17 **Animal ID:** Red17 **Brucella Case Number:** B14-0471 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
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FINAL REPORT

## Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

### Owner

USDA, APHIS, VS-GonaCon Study  
Corwin Springs, MT

Accession Number: 14-021012

### Animal Location

Park County MT

Date Collected:

Date Received: 07/03/2014

### Submitter - 1961

DR Patrick Ryan Clarke  
USDA, APHIS, VS

Date Completed:

Collected By: Frey Clarke

Purpose:

General Diagnostic

Referral Number:

This is not a billable case.

(b) (6)

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

Sample: Red11 Animal ID: Red11 Brucella Case Number: B14-0472 Specimen Type: Multiple - Specify in Sample Species: Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Swab / Swab- Vaginal

Brucella Isolation Result

No Isolation Made

#### Blood / Blood

Brucella Isolation Result

No Isolation Made

#### Feces / Feces

Brucella Isolation Result

No Isolation Made

Sample: 3R20 Animal ID: 3R20 Brucella Case Number: B14-0473 Specimen Type: Multiple - Specify in Sample Species: Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Swab / Swab- Vaginal

Brucella Isolation Result

No Isolation Made

#### Blood / Blood

Brucella Isolation Result

No Isolation Made

#### Feces / Feces

Brucella Isolation Result

No Isolation Made

**Sample:** Red29 **Animal ID:** Red29 **Brucella Case Number:** B14-0474 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** Gr03 **Animal ID:** Gr03 **Brucella Case Number:** B14-0475 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Sample:** 3G03 **Animal ID:** 3G03 **Brucella Case Number:** B14-0476 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** Red01 **Animal ID:** Red01 **Brucella Case Number:** B14-0477 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated



**Sample:** Red27 **Animal ID:** Red27 **Brucella Case Number:** B14-0478 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** 3G17 **Animal ID:** 3G17 **Brucella Case Number:** B14-0479 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Sample:** Red28 **Animal ID:** Red28 **Brucella Case Number:** B14-0480 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** Red04 **Animal ID:** Red04 **Brucella Case Number:** B14-0481 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** Red14 **Animal ID:** Red14 **Brucella Case Number:** B14-0482 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Sample:** Red19 **Animal ID:** Red19 **Brucella Case Number:** B14-0483 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Sample:** Red31 **Animal ID:** Red31 **Brucella Case Number:** B14-0484 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** 4G10 **Animal ID:** 4G10 **Brucella Case Number:** B14-0485 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab, Skin / Swab- Not Identified**

Brucella Isolation Result

No Isolation Made

**Sample:** 4R13 **Animal ID:** 4R13 **Brucella Case Number:** B14-0486 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
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### Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

#### Owner

Embryo Transfer Study  
Ft. Collins, CO

**Accession Number:** 14-029714

#### Animal Location

Park County MT

**Date Collected:** 08/21/2014

**Date Received:** 09/16/2014

#### Submitter - 2649

DR Jack C. Rhyan  
USDA, APHIS, VS  
National Wildlife Research Center  
4101 La Porte Ave  
Fort Collins, CO 80521  
FAX #: 970-266-6138  
Phone #: 970-266-6140

**Date Completed:** 01/07/2015

**Collected By:** Jack Rhyan

**Purpose:** Development /  
Research

**Referral Number:**

**This is not a billable case.**

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

**Sample:** 49 **Animal ID:** 49 **Brucella Case Number:** B14-0564 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

Individual specimen results are listed below:

#### Placenta / Placenta

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

#### Swab / Swab, Placenta

Brucella Isolation Result

Contaminated

#### Milk / Milk- Left Front

Brucella Isolation Result

No Isolation Made

#### Milk / Milk- Left Rear

Brucella Isolation Result

No Isolation Made

#### Milk / Milk- Right Front

Brucella Isolation Result

No Isolation Made

#### Milk / Milk- Right Rear

Brucella Isolation Result

No Isolation Made

#### Blood / Blood

Brucella Isolation Result

No Isolation Made

**Placenta and Placenta swab samples were very heavily contaminated. Both were overgrown with swarming bacteria, so the amount of Brucella could not be estimated.**

**Sample:** 49 Calf **Animal ID:** 49 Calf **Brucella Case Number:** B14-0565 **Specimen Type:** Tissue **Species:** Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

Individual specimen results are listed below:

**Lymph Node Pool / Lymph Node- Not Identified**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

**Lymph Node / Lymph Node- Throacic Region**

Brucella Isolation Result

Suspect Isolated

**Lymph Node / Lymph Node- Abdominal Region**

Brucella Isolation Result

Suspect Isolated

**Spleen / Spleen**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

**Lung / Lung**

Brucella Isolation Result

Suspect Isolated

**Liver / Liver**

Brucella Isolation Result

Suspect Isolated

**Estimated amount of Brucella on inital isolation:****LN-NI: Confluent lawn of *Brucella*****Thoracic LN: Confluent lawn of *Brucella*****Abdominal LN: >300 colonies****Spleen: ~250 colonies****Lung: Confluent lawn of *Brucella*****Liver: ~250 colonies****Results authorized by:**Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388**Help Us Help You**

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## Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

### Owner

Accession Number: 14-032973

### Animal Location

Larimer County CO

Date Collected:

Date Received: 10/09/2014

### Submitter - 2649

DR Jack C. Rhyan

USDA, APHIS, VS

National Wildlife Research Center

4101 La Porte Ave

Fort Collins, CO 80521

FAX #: 970-266-6138

Phone #: 970-266-6140

Date Completed: 12/30/2014

Collected By: Jack Rhyan

Purpose:

Development /  
Research

Referral Number:

This is not a billable case.

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

Sample: 10 Animal ID: 10 Brucella Case Number: B14-0640 Specimen Type: Blood, Whole Species: Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Blood / Blood

Brucella Isolation Result

No Isolation Made

Sample: 12 Animal ID: 12 Brucella Case Number: B14-0641 Specimen Type: Blood, Whole Species: Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Blood / Blood

Brucella Isolation Result

No Isolation Made

Sample: No Tag Animal ID: No Tag Brucella Case Number: B14-0642 Specimen Type: Blood, Whole Species: Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Blood / Blood

Brucella Isolation Result

No Isolation Made

**Sample: 58 Animal ID: 58 Brucella Case Number: B14-0643 Specimen Type: Blood, Whole Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample: 59 Animal ID: 59 Brucella Case Number: B14-0644 Specimen Type: Blood, Whole Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample: 292 Animal ID: 292 Brucella Case Number: B14-0645 Specimen Type: Blood, Whole Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample: 66 Animal ID: 66 Brucella Case Number: B14-0646 Specimen Type: Blood, Whole Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample: 69 Animal ID: 69 Brucella Case Number: B14-0647 Specimen Type: Blood, Whole Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Results authorized by:**Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
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### Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

#### Owner

GonaCon Study - APHIS  
Corwin Springs, MT

#### Animal Location

Park County MT

#### Submitter - 1961

DR Patrick Ryan Clarke  
USDA, APHIS, VS

#### Accession Number:

14-041525

#### Date Collected:

08/13/2014

#### Date Received:

12/17/2014

#### Date Completed:

12/30/2014

#### Collected By:

R. Frey, et al

#### Purpose:

General Diagnostic

#### Referral Number:

This is not a billable case.

(b) (6)

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

Sample: Red25 Animal ID: Red25 Brucella Case Number: B14-0700 Specimen Type: Multiple - Specify in Sample Species: Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Milk / Milk

Brucella Isolation Result

No Isolation Made

#### Blood / Blood

Brucella Isolation Result

No Isolation Made

#### Swab / Swab- Vaginal

Brucella Isolation Result

No Isolation Made

#### Fluid / Fluid- Vaginal

Brucella Isolation Result

No Isolation Made

#### Feces / Feces

Brucella Isolation Result

No Isolation Made

#### Results authorized by:

Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

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## Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

### Owner

USDA/APHIS/VS-GonaCon Study

Corwin Springs, MT

### Animal Location

Park County MT

### Submitter - 1961

DR Patrick Ryan Clarke

USDA, APHIS, VS

### Accession Number:

14-041526

### Date Collected:

07/15/2014

### Date Received:

12/17/2014

### Date Completed:

01/05/2015

### Collected By:

R. Frey, et al

### Purpose:

General Diagnostic

### Referral Number:

This is not a billable case.

(b) (6)

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

**Sample:** Gm21 **Animal ID:** Gm21 **Brucella Case Number:** B14-0701 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Swab / Swab- Vaginal

Brucella Isolation Result

No Isolation Made

#### Blood / Blood

Brucella Isolation Result

No Isolation Made

#### Feces / Feces

Brucella Isolation Result

Contaminated

**Sample:** Gm24 **Animal ID:** Gm24 **Brucella Case Number:** B14-0702 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Swab / Swab- Vaginal

Brucella Isolation Result

No Isolation Made

#### Blood / Blood

Brucella Isolation Result

No Isolation Made

#### Feces / Feces

Brucella Isolation Result

Contaminated

**Sample:** Gm25 **Animal ID:** Gm25 **Brucella Case Number:** B14-0703 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
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Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

### Owner

USDA, APHIS GonaCon Study  
Corwin Springs, MT

### Animal Location

Park County MT

### Submitter - 1961

DR Patrick Ryan Clarke  
USDA APHIS VS

### Accession Number:

14-041527

### Date Collected:

09/16/2014

### Date Received:

12/17/2014

### Date Completed:

12/30/2014

### Collected By:

R. Frey, et al

### Purpose:

General Diagnostic

### Referral Number:

This is not a billable case.

(b) (6)

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

Sample: Gm19 Animal ID: Gm19 Brucella Case Number: B14-0704 Specimen Type: Blood Species: Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Blood / Blood

Brucella Isolation Result

No Isolation Made

Sample: Gm31 Animal ID: Gm31 Brucella Case Number: B14-0705 Specimen Type: Blood Species: Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Blood / Blood

Brucella Isolation Result

No Isolation Made

Sample: Gm32 Animal ID: Gm32 Brucella Case Number: B14-0706 Specimen Type: Blood Species: Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Blood / Blood

Brucella Isolation Result

No Isolation Made

### Results authorized by:

Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

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### Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

#### Owner

USDA APHIS VS- GonaCon Study  
Corwin Springs, MT

#### Animal Location

Park County MT

#### Submitter - 1961

DR Patrick Ryan Clarke

#### Accession Number:

15-005636

#### Date Collected:

#### Date Received:

02/19/2015

#### Date Completed:

#### Collected By:

03/05/2015

Clarke, Frey

#### Purpose:

General Diagnostic

#### Referral Number:

This is not a billable case.

(b) (6)

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

**Sample:** 1-Red08 **Animal ID:** Red08 **Brucella Case Number:** B15-0094 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

Individual specimen results are listed below:

#### Milk / Milk

Brucella Isolation Result

No Isolation Made

#### Blood / Blood

Brucella Isolation Result

No Isolation Made

#### Swab / Swab- Vaginal

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

#### Feces / Feces

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

#### Placenta / Placenta

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

#### Results authorized by:

Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

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Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

**Owner**

USDA, APHIS, VS-GonaCon Study  
Corwin Springs, MT

**Accession Number:** 15-008065

**Animal Location**

Park County MT

**Date Collected:**

**Date Received:** 03/11/2015

**Submitter - 1961**

DR Patrick Ryan Clarke  
USDA, APHIS, VS

**Date Completed:**

**Collected By:** Clarke, Frey

**Purpose:** General Diagnostic

**Referral Number:**

This is not a billable case.

(b) (6)

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

**Sample:** Red20 **Animal ID:** Red20 **Brucella Case Number:** B15-0100 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Fluid- Uterine**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Results authorized by:**

Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
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FINAL REPORT

## Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

### Owner

USDA APHIS VS- GonaCon Study  
Corwin Springs, MT

Accession Number: 15-010268

### Animal Location

Park County MT

Date Collected:

Date Received: 03/31/2015

Submitter - 1961

Dr. Patrick Ryan Clarke

Date Completed:

Collected By: Clarke, et al

Purpose: General Diagnostic

Referral Number:

This is not a billable case.

(b) (6)

NOTE: Condition of the sample(s) was adequate unless otherwise noted.

Sample: Gm14 Animal ID: Gm14 Brucella Case Number: B15-0108 Specimen Type: Multiple - Specify in Sample Species: Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

Individual specimen results are listed below:

#### Swab / Swab- Vaginal

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

#### Milk / Milk

Brucella Isolation Result

No Isolation Made

#### Blood / Blood

Brucella Isolation Result

No Isolation Made

#### Feces / Feces

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

#### Fluid / Fluid- Vaginal

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

Estimated Colony Counts as follows:

Swab, Vaginal = >300 cfu

Feces = 69 cfu

Fluid, Vaginal = TNTC (lawn)

**Sample:** 5G14 **Animal ID:** 5G14 **Brucella Case Number:** B15-0109 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

Individual specimen results are listed below:

**Swab / Swab, Placenta**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

**Estimated Colony Counts as follows:****Swab, Placenta = TNTC (lawn)****Sample:** Red21 **Animal ID:** Red21 **Brucella Case Number:** B15-0110 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

**Fluid / Fluid- Vaginal**

Brucella Isolation Result

Suspect Isolated

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

**Estimated Colony Counts as follows:****Swab, Vaginal = TNTC (lawn)****Fluid, Vaginal = TNTC (lawn)****Feces = 8 cfu****Results authorized by:**Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388**[Help Us Help You](#)**

(This new section will be updated periodically with tips for submitters.)

Quality samples yield the most accurate results. Please call if you have questions.





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FINAL REPORT

### Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

**Owner**

Jack Rhyan  
Fort Collins, CO

**Accession Number:**

**15-014146**

**Animal Location**

Larimer County CO

**Date Collected:**

04/30/2015

**Date Received:**

05/01/2015

**Date Completed:**

05/06/2015

**Submitter - 2649**

Dr. Jack C. Rhyan  
USDA, APHIS, VS  
National Wildlife Research Center  
4101 La Porte Ave  
Fort Collins, CO 80521  
FAX #: 970-266-6138  
Phone #: 970-266-6140

**Collected By:**

Rhyan

**Purpose:**

NVSL Internal

**Referral/Retain Tag Number:**

**This is not a billable case.**

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

**Animal ID: R60 Case #: TB15-01738 Sample: 1 Specimen Type: Feces Species: Bison**

Johnes Direct PCR - Result

Ct = Undetermined

Interpretation = Negative - No Mycobacterium avium ssp.  
paratuberculosis DNA was detected

**Results authorized by:**

Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

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FINAL REPORT

## Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

### Owner

USDA, APHIS, VS  
Corwin Springs, MT

### Animal Location

Park County MT

### Submitter - 1961

Dr. Patrick Ryan Clarke  
USDA, APHIS, VS

Accession Number: 15-014777

### Date Collected:

Date Received: 05/07/2015

### Date Completed:

Collected By: Frey Clarke

### Purpose:

General Diagnostic

### Referral Number:

This is not a billable case.

(b) (6)

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

Sample: 5G01 Animal ID: 5G01 Brucella Case Number: B15-0126 Specimen Type: Multiple - Specify in Sample Species: Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Swab / Swab- Conjunctival

Brucella Isolation Result

No Isolation Made

#### Blood / Blood

Brucella Isolation Result

No Isolation Made

Sample: 5G03 Animal ID: 5G03 Brucella Case Number: B15-0127 Specimen Type: Multiple - Specify in Sample Species: Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Swab / Swab- Conjunctival

Brucella Isolation Result

No Isolation Made

#### Blood / Blood

Brucella Isolation Result

No Isolation Made

Sample: 5G04 Animal ID: 5G04 Brucella Case Number: B15-0128 Specimen Type: Multiple - Specify in Sample Species: Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Swab / Swab- Conjunctival

Brucella Isolation Result

No Isolation Made

#### Blood / Blood

Brucella Isolation Result

No Isolation Made

**Sample:** 5G06 **Animal ID:** 5G06 **Brucella Case Number:** B15-0129 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample:** 5G08 **Animal ID:** 5G08 **Brucella Case Number:** B15-0130 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample:** 5G09 **Animal ID:** 5G09 **Brucella Case Number:** B15-0131 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample:** 5G13 **Animal ID:** 5G13 **Brucella Case Number:** B15-0132 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample:** 5G15 **Animal ID:** 5G15 **Brucella Case Number:** B15-0133 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample:** 5R02 **Animal ID:** 5R02 **Brucella Case Number:** B15-0134 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample:** 5R03 **Animal ID:** 5R03 **Brucella Case Number:** B15-0135 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample:** 5R13 **Animal ID:** 5R13 **Brucella Case Number:** B15-0136 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample:** 5R14 **Animal ID:** 5R14 **Brucella Case Number:** B15-0137 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample:** 5R18 **Animal ID:** 5R18 **Brucella Case Number:** B15-0138 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample:** 5R26 **Animal ID:** 5R26 **Brucella Case Number:** B15-0139 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample:** G01 **Animal ID:** Green 01 **Brucella Case Number:** B15-0140 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Fluid / Discharge, Vaginal**

Brucella Isolation Result

No Isolation Made

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample:** G02 **Animal ID:** Green 02 **Brucella Case Number:** B15-0141 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Discharge, Vaginal**

Brucella Isolation Result

No Isolation Made

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample:** G03 **Animal ID:** Green 03 **Brucella Case Number:** B15-0142 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Discharge, Vaginal**

Brucella Isolation Result

No Isolation Made

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample:** G04 **Animal ID:** Green04 **Brucella Case Number:** B15-0143 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Discharge, Vaginal**

Brucella Isolation Result

No Isolation Made

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample:** G06 **Animal ID:** Green06 **Brucella Case Number:** B15-0144 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Discharge, Vaginal**

Brucella Isolation Result

No Isolation Made

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample:** G07 **Animal ID:** Green07 **Brucella Case Number:** B15-0145 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Discharge, Vaginal**

Brucella Isolation Result

No Isolation Made

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample:** G08 **Animal ID:** Green08 **Brucella Case Number:** B15-0146 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Discharge, Vaginal**

Brucella Isolation Result

No Isolation Made

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample:** G09 **Animal ID:** Green09 **Brucella Case Number:** B15-0147 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Discharge, Vaginal**

Brucella Isolation Result

No Isolation Made

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample:** G13 **Animal ID:** Green13 **Brucella Case Number:** B15-0148 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Discharge, Vaginal**

Brucella Isolation Result

No Isolation Made

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample:** G15 **Animal ID:** Green 15 **Brucella Case Number:** B15-0149 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Discharge, Vaginal**

Brucella Isolation Result

No Isolation Made

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample:** R02 **Animal ID:** Red02 **Brucella Case Number:** B15-0150 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Discharge, Vaginal**

Brucella Isolation Result

No Isolation Made

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made



**Sample:** R03 **Animal ID:** Red 03 **Brucella Case Number:** B15-0151 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Discharge, Vaginal**

Brucella Isolation Result

No Isolation Made

**Milk / Milk**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample:** R06 **Animal ID:** Red 06 **Brucella Case Number:** B15-0152 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Tissue / Placenta**

Brucella Isolation Result

No Isolation Made

**Sample:** R09 **Animal ID:** Red09 **Brucella Case Number:** B15-0153 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

**Fluid / Discharge, Vaginal**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Tissue / Placenta**

Brucella Isolation Result

Suspect Isolated

**Sample:** R13 **Animal ID:** Red13 **Brucella Case Number:** B15-0154 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Discharge, Vaginal**

Brucella Isolation Result

No Isolation Made

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample:** R14 **Animal ID:** Red 14 **Brucella Case Number:** B15-0155 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Discharge, Vaginal**

Brucella Isolation Result

No Isolation Made

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample:** R18 **Animal ID:** Red 18 **Brucella Case Number:** B15-0156 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Discharge, Vaginal**

Brucella Isolation Result

No Isolation Made

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample:** R26 **Animal ID:** Red26 **Brucella Case Number:** B15-0157 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Milk / Milk**

Brucella Isolation Result

Contaminated

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

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FINAL REPORT

### Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

**Owner**

USDA, APHIS, VS  
Corwin Springs, MT

**Accession Number:** 15-015494

**Animal Location**

Park County MT

**Date Collected:** 05/02/2015

**Date Received:** 05/13/2015

**Submitter - 2047**

MT Department of Livestock  
Diagnostic Laboratory Division  
1911 W Lincoln St

**Date Completed:** 05/15/2015

**Collected By:** Dr. Patrick Ryan Clarke

PO Box 997

Bozeman, MT 59718

FAX #: 406-994-6344

Phone #: 406-994-4885

**Purpose:** General Diagnostic

**Referral Number:** 8-396-15

**This is not a billable case.**

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

Sample: 8-396-15 Animal ID: 5R09 Brucella Case Number: B15-0160 Specimen Type: Culture Species: Bison

Brucella Final Identification

Brucella abortus

**Results authorized by:**

Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

**Help Us Help You**

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FINAL REPORT

### Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

**Owner**

Jack Rhyan  
Fort Collins, CO

**Animal Location**

Larimer County CO

**Submitter - 2649**

Dr. Jack C. Rhyan  
USDA, APHIS, VS  
National Wildlife Research Center  
4101 La Porte Ave  
Fort Collins, CO 80521  
FAX #: 970-266-6138  
Phone #: 970-266-6140

**Accession Number:**

**15-017999**

**Date Collected:****Date Received:**

06/04/2015

**Date Completed:****Collected By:**

06/25/2015

Jack Rhyan

**Purpose:**

NVSL Internal

**Referral Number:****Country Origin/Destination:**

**This is not a billable case.**

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

**Sample: 1 Specimen Type: Serum Animal ID: 4R21 (5/28/15) Animal Status: Species: Bison**

|  |                  |
|--|------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative         |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative tr@1:10 |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | 0 Delta mP       |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25    |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Negative@1:25    |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative         |

**Sample: 2 Specimen Type: Serum Animal ID: 4R16 (5/28/15) Animal Status: Species: Bison**

|  |                  |
|--|------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative         |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative tr@1:10 |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | 2 Delta mP       |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25    |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Negative@1:25    |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative         |

**Sample: 3 Specimen Type: Serum Animal ID: 420 (1/27/15) Animal Status: Species: Bison**

|  |                         |
|--|-------------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative                |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | <b>Positive 1+@1:10</b> |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | 3 Delta mP              |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25           |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Negative@1:25           |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                |

**Sample: 4 Specimen Type: Serum Animal ID: 62 (1/27/15) Animal Status: Species: Bison**

|  |                  |
|--|------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative         |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative tr@1:10 |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | -2 Delta mP      |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | QNS              |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | QNS              |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative         |

**Sample: 5 Specimen Type: Serum Animal ID: 69 (1/27/15) Animal Status: Species: Bison**

|  |                         |
|--|-------------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative                |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | <b>Positive 1+@1:10</b> |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | 3 Delta mP              |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | QNS                     |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | QNS                     |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                |

**Sample: 6 Specimen Type: Serum Animal ID: 3R21 (1/27/15) Animal Status: Species: Bison**

|  |                               |
|--|-------------------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative                      |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative tr@1:10              |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | 6 Delta mP                    |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25                 |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Incomplete Agglutination@1:25 |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                      |

**Sample: 7 Specimen Type: Serum Animal ID: 66 (1/27/15) Animal Status: Species: Bison**

|  |                               |
|--|-------------------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative                      |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | <b>Positive 1+@1:10</b>       |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | 0 Delta mP                    |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25                 |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Incomplete Agglutination@1:25 |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                      |

**Sample: 8 Specimen Type: Serum Animal ID: 63 (1/27/15) Animal Status: Species: Bison**

|  |                 |
|--|-----------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative        |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative 0@1:10 |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | -4 Delta mP     |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25   |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Negative@1:25   |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative        |

**Sample: 9 Specimen Type: Serum Animal ID: 5R18 (1/27/15) Animal Status: Species: Bison**

|  |                         |
|--|-------------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative                |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | <b>Positive 1+@1:10</b> |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | -81 Delta mP            |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25           |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Negative@1:25           |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                |

**Sample: 10 Specimen Type: Serum Animal ID: 61 (1/27/15) Animal Status: Species: Bison**

|  |                  |
|--|------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative         |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative tr@1:10 |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | 3 Delta mP       |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25    |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Negative@1:25    |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative         |

**Sample: 11 Specimen Type: Serum Animal ID: 3R13 (1/27/15) Animal Status: Species: Bison**

|  |                         |
|--|-------------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative                |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | <b>Positive 1+@1:10</b> |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | 1 Delta mP              |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25           |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Negative@1:25           |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                |

**Sample: 12 Specimen Type: Serum Animal ID: 3R26 (1/27/15) Animal Status: Species: Bison**

|  |                         |
|--|-------------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative                |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | <b>Positive 3+@1:10</b> |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | 1 Delta mP              |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25           |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Negative@1:25           |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                |

**Sample: 13 Specimen Type: Serum Animal ID: 65 (1/27/15) Animal Status: Species: Bison**

|  |                         |
|--|-------------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative                |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | <b>Positive 2+@1:10</b> |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | -5 Delta mP             |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | <b>Positive@1:100</b>   |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Negative@1:25           |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                |

**Sample: 14 Specimen Type: Serum Animal ID: 130 (1/27/15) Animal Status: Species: Bison**

|  |                                |
|--|--------------------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative                       |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative tr@1:10               |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | -1 Delta mP                    |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25                  |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Incomplete Agglutination@1:100 |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                       |

**Sample: 15 Specimen Type: Serum Animal ID: 3R30 (1/27/15) Animal Status: Species: Bison**

|  |                               |
|--|-------------------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative                      |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative tr@1:10              |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | 1 Delta mP                    |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Incomplete Agglutination@1:50 |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Negative@1:25                 |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                      |



**Sample: 16 Specimen Type: Serum Animal ID: 3R7 (1/27/15) Animal Status: Species: Bison**

|  |                               |
|--|-------------------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative                      |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative tr@1:10              |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | 1 Delta mP                    |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Incomplete Agglutination@1:50 |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Negative@1:25                 |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                      |

**Sample: 17 Specimen Type: Serum Animal ID: 3R25 (1/27/15) Animal Status: Species: Bison**

|  |                               |
|--|-------------------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative                      |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative tr@1:10              |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | 0 Delta mP                    |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Incomplete Agglutination@1:50 |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Negative@1:25                 |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                      |

**Sample: 18 Specimen Type: Serum Animal ID: 3R24 (1/27/15) Animal Status: Species: Bison**

|  |                               |
|--|-------------------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative                      |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | <b>Positive 2+@1:10</b>       |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | -3 Delta mP                   |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Incomplete Agglutination@1:50 |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Negative@1:25                 |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                      |

**Sample: 19 Specimen Type: Serum Animal ID: 52R (5/6/15) Animal Status: Species: Bison**

|  |                                |
|--|--------------------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | <b>Positive</b>                |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | <b>Positive 1+@1:10</b>        |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | 91/83 Delta mP                 |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | <b>Positive@1:50</b>           |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Incomplete Agglutination@1:100 |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                       |

**Sample: 20 Specimen Type: Serum Animal ID: 47 (5/6/15) Animal Status: Species: Bison**

|  |                                |
|--|--------------------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | <b>Positive</b>                |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | <b>Positive 4+@1:160</b>       |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | 96/82 Delta mP                 |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | <b>Positive@1:100</b>          |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Incomplete Agglutination@1:100 |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | <b>Positive</b>                |

**Sample: 21 Specimen Type: Serum Animal ID: R57 (10/9/14) Animal Status: Species: Bison**

|  |                                |
|--|--------------------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | <b>Positive</b>                |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | <b>Positive 4+@1:320</b>       |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | 180/173 Delta mP               |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Incomplete Agglutination@1:200 |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | <b>Positive@1:100</b>          |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | <b>Positive</b>                |

**Sample: 22 Specimen Type: Serum Animal ID: 156 (10/9/14) Animal Status: Species: Bison**

|  |                          |
|--|--------------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | <b>Positive</b>          |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | <b>Positive 4+@1:320</b> |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | 154/155 Delta mP         |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | <b>Positive@1:200</b>    |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | <b>Positive@1:200</b>    |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | <b>Positive</b>          |

**Sample: 23 Specimen Type: Serum Animal ID: 4R7 (5/27/15) Animal Status: Species: Bison**

|  |                         |
|--|-------------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative                |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | <b>Positive 3+@1:10</b> |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | 5 Delta mP              |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25           |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Negative@1:25           |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                |

**Sample: 24 Specimen Type: Serum Animal ID: 3G02 (1/27/15) Animal Status: Species: Bison**

|  |                  |
|--|------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative         |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative tr@1:10 |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | 0 Delta mP       |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25    |
| Brucellosis (Brucella abortus/suis) - Plate Test                                   | Negative@1:25    |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative         |

**FPA:****Delta mP > 20 = Positive****Delta mP 10-20 = Suspect****Delta mP < 10 = Negative****Results authorized by:** Dr. David Kinker, Head, Serology (515-337-7563)**Help Us Help You**

(This new section will be updated periodically with tips for submitters.)

Quality samples yield the most accurate results. Please call if you have questions.



# National Veterinary Services Laboratories

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FINAL REPORT

## Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

### Owner

Bison Quarantine-G. Study  
Corwin Springs, MT

Accession Number: 15-019452

### Animal Location

Park County MT

Date Collected:

Date Received: 06/16/2015

### Submitter - 1961

Dr. Patrick Ryan Clarke  
USDA, APHIS, VS

Date Completed:

Collected By: R. Frey

Purpose:

Development /  
Research

Referral Number:

This is not a billable case.

(b) (6)

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

Sample: 3G03 Animal ID: 3G03 Brucella Case Number: B15-0238 Specimen Type: Swab Species: Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Swab / Swab- Vaginal

Brucella Isolation Result

No Isolation Made

Sample: 3G17 Animal ID: 3G17 Brucella Case Number: B15-0239 Specimen Type: Swab Species: Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Swab / Swab- Vaginal

Brucella Isolation Result

No Isolation Made

Sample: 4G08 Animal ID: 4G08 Brucella Case Number: B15-0240 Specimen Type: Swab Species: Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Swab / Swab- Vaginal

Brucella Isolation Result

No Isolation Made

**Sample:** 4G17 **Animal ID:** 4G17 **Brucella Case Number:** B15-0241 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** 4R06 **Animal ID:** 4R06 **Brucella Case Number:** B15-0242 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** 4R13 **Animal ID:** 4R13 **Brucella Case Number:** B15-0243 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** 4R22 **Animal ID:** 4R22 **Brucella Case Number:** B15-0244 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** R01 **Animal ID:** R01 **Brucella Case Number:** B15-0245 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** R04 **Animal ID:** R04 **Brucella Case Number:** B15-0246 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R05 Animal ID: R05 Brucella Case Number: B15-0247 Specimen Type: Swab Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R11 Animal ID: R11 Brucella Case Number: B15-0248 Specimen Type: Swab Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R17 Animal ID: R17 Brucella Case Number: B15-0249 Specimen Type: Swab Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R19 Animal ID: R19 Brucella Case Number: B15-0250 Specimen Type: Swab Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R25 Animal ID: R25 Brucella Case Number: B15-0251 Specimen Type: Swab Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R27 Animal ID: R27 Brucella Case Number: B15-0252 Specimen Type: Swab Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R28 Animal ID: R28 Brucella Case Number: B15-0253 Specimen Type: Swab Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R29 Animal ID: R29 Brucella Case Number: B15-0254 Specimen Type: Swab Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R31 Animal ID: R31 Brucella Case Number: B15-0255 Specimen Type: Swab Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

**[Help Us Help You](#)**

(This new section will be updated periodically with tips for submitters.)

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FINAL REPORT

## Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

### Owner

Bison Quarantine-G. Study  
Corwin Springs, MT

### Animal Location

Park County MT

### Submitter - 1961

Dr. Patrick Ryan Clarke  
USDA, APHIS, VS

### Accession Number:

15-019452

### Date Collected:

### Date Received:

06/16/2015

### Date Completed:

### Collected By:

07/16/2015

R. Frey

### Purpose:

Development /  
Research

### Referral Number:

This is not a billable case.

(b) (6)

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

**Sample: 3G03 Animal ID: 3G03 Brucella Case Number: B15-0238 Specimen Type: Swab Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Swab / Swab- Vaginal

Brucella Isolation Result

No Isolation Made

**Sample: 3G17 Animal ID: 3G17 Brucella Case Number: B15-0239 Specimen Type: Swab Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Swab / Swab- Vaginal

Brucella Isolation Result

No Isolation Made

**Sample: 4G08 Animal ID: 4G08 Brucella Case Number: B15-0240 Specimen Type: Swab Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Swab / Swab- Vaginal

Brucella Isolation Result

No Isolation Made

**Sample:** 4G17 **Animal ID:** 4G17 **Brucella Case Number:** B15-0241 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** 4R06 **Animal ID:** 4R06 **Brucella Case Number:** B15-0242 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** 4R13 **Animal ID:** 4R13 **Brucella Case Number:** B15-0243 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** 4R22 **Animal ID:** 4R22 **Brucella Case Number:** B15-0244 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** R01 **Animal ID:** R01 **Brucella Case Number:** B15-0245 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** R04 **Animal ID:** R04 **Brucella Case Number:** B15-0246 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made



**Sample: R05 Animal ID: R05 Brucella Case Number: B15-0247 Specimen Type: Swab Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R11 Animal ID: R11 Brucella Case Number: B15-0248 Specimen Type: Swab Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R17 Animal ID: R17 Brucella Case Number: B15-0249 Specimen Type: Swab Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R19 Animal ID: R19 Brucella Case Number: B15-0250 Specimen Type: Swab Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R25 Animal ID: R25 Brucella Case Number: B15-0251 Specimen Type: Swab Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R27 Animal ID: R27 Brucella Case Number: B15-0252 Specimen Type: Swab Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R28 Animal ID: R28 Brucella Case Number: B15-0253 Specimen Type: Swab Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R29 Animal ID: R29 Brucella Case Number: B15-0254 Specimen Type: Swab Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample: R31 Animal ID: R31 Brucella Case Number: B15-0255 Specimen Type: Swab Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

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FINAL REPORT

## Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

### Owner

USDA APHIS VS  
Corwin Springs, MT

### Animal Location

Park County MT

### Submitter - 1961

Dr. Patrick Ryan Clarke  
USDA, APHIS, VS

Accession Number: 15-020347

### Date Collected:

Date Received: 06/25/2015

### Date Completed:

Collected By: Clarke Frey

### Purpose:

General Diagnostic

### Referral Number:

This is not a billable case.

(b) (6)

**NOTE:** Condition of the sample(s) was adequate unless otherwise noted.

Sample: R22 Animal ID: R22 Brucella Case Number: B15-0286 Specimen Type: Multiple - Specify in Sample Species: Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Swab / Swab- Vaginal

Brucella Isolation Result

No Isolation Made

#### Exudate / Exudate- Vaginal

Brucella Isolation Result

No Isolation Made

#### Blood / Blood

Brucella Isolation Result

No Isolation Made

#### Milk / Milk

Brucella Isolation Result

No Isolation Made

#### Feces / Feces

Brucella Isolation Result

Contaminated

Sample: 5R22 Animal ID: 5R22 Brucella Case Number: B15-0287 Specimen Type: Multiple - Specify in Sample Species: Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Swab / Swab- Conjunctival

Brucella Isolation Result

No Isolation Made

#### Blood / Blood

Brucella Isolation Result

No Isolation Made

**Sample:** G25 **Animal ID:** G25 **Brucella Case Number:** B15-0288 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Exudate / Exudate- Vaginal**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** 5G25 **Animal ID:** 5G25 **Brucella Case Number:** B15-0289 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Sample:** R16 **Animal ID:** R16 **Brucella Case Number:** B15-0290 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Exudate / Exudate- Vaginal**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Milk / Milk**

Brucella Isolation Result

Contaminated

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Sample:** 5R16 **Animal ID:** 5R16 **Brucella Case Number:** B15-0291 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Blood / Blood**

Brucella Isolation Result

No Isolation Made

**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

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FINAL REPORT

**Laboratory Test Report**

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

**Owner**Jack Rhyan  
Fort Collins, CO**Accession Number:****15-026723****Animal Location**

Larimer County CO

**Date Collected:**

08/20/2015

**Date Received:**

08/25/2015

**Date Completed:**

08/28/2015

**Submitter - 2649**Dr. Jack C. Rhyan  
USDA, APHIS, VS  
National Wildlife Research Center  
4101 La Porte Ave  
Fort Collins, CO 80521  
FAX #: 970-266-6138  
Phone #: 970-266-6140**Collected By:**

Rhyan

**Purpose:**

NVSL Internal

**Referral/Retain Tag Number:****This is not a billable case.****NOTE: Condition of the sample(s) was adequate unless otherwise noted.****Animal ID: 4G8 Case #: TB15-03506 Sample: 4G8 Specimen Type: Feces Species: Bison**

Johnes Direct PCR - Result

Ct = Undetermined

Interpretation = Negative - No Mycobacterium avium ssp.  
paratuberculosis DNA was detected**Animal ID: 4R6 Case #: TB15-03507 Sample: 4R6 Specimen Type: Feces Species: Bison**

Johnes Direct PCR - Result

Ct = Undetermined

Interpretation = Negative - No Mycobacterium avium ssp.  
paratuberculosis DNA was detected**Animal ID: 4R13 Case #: TB15-03508 Sample: 4R13 Specimen Type: Feces Species: Bison**

Johnes Direct PCR - Result

Ct = Undetermined

Interpretation = Negative - No Mycobacterium avium ssp.  
paratuberculosis DNA was detected

**Animal ID: 4R22 Case #: TB15-03509 Sample: 4R22 Specimen Type: Feces Species: Bison**

Johnes Direct PCR - Result

Ct = Undetermined

Interpretation = Negative - No Mycobacterium avium ssp.  
paratuberculosis DNA was detected**Animal ID: 3G03 Case #: TB15-03510 Sample: 3G03 Specimen Type: Feces Species: Bison**

Johnes Direct PCR - Result

Ct = Undetermined

Interpretation = Negative - No Mycobacterium avium ssp.  
paratuberculosis DNA was detected**Animal ID: 4G02 Case #: TB15-03511 Sample: 4G02 Specimen Type: Feces Species: Bison**

Johnes Direct PCR - Result

Ct = Undetermined

Interpretation = Negative - No Mycobacterium avium ssp.  
paratuberculosis DNA was detected**Animal ID: 4G06 Case #: TB15-03512 Sample: 4G06 Specimen Type: Feces Species: Bison**

Johnes Direct PCR - Result

Ct = Undetermined

Interpretation = Negative - No Mycobacterium avium ssp.  
paratuberculosis DNA was detected**Animal ID: 3R21 Case #: TB15-03513 Sample: 3R21 Specimen Type: Feces Species: Bison**

Johnes Direct PCR - Result

Ct = 39.0

Interpretation: Suspect - Very low levels of Mycobacterium  
avium ssp. paratuberculosis DNA was detected. See below.**Animal ID: 4R16 Case #: TB15-03514 Sample: 4R16 Specimen Type: Feces Species: Bison**

Johnes Direct PCR - Result

Ct = Undetermined

Interpretation = Negative - No Mycobacterium avium ssp.  
paratuberculosis DNA was detected**Animal ID: 4R? Case #: TB15-03515 Sample: 4R? Specimen Type: Feces Species: Bison**

Johnes Direct PCR - Result

Ct = Undetermined

Interpretation = Negative - No Mycobacterium avium ssp.  
paratuberculosis DNA was detected

**Animal ID:** G23 **Case #:** TB15-03516 **Sample:** G23 **Specimen Type:** Feces **Species:** Bison

Johnes Direct PCR - Result

Ct = 38.6

Interpretation: Suspect - Very low levels of Mycobacterium avium ssp. paratuberculosis DNA was detected. See below.

**Animal ID:** G26 **Case #:** TB15-03517 **Sample:** G26 **Specimen Type:** Feces **Species:** Bison

Johnes Direct PCR - Result

Ct = Undetermined

Interpretation = Negative - No Mycobacterium avium ssp. paratuberculosis DNA was detected

**Animal ID:** 4R7 **Case #:** TB15-03518 **Sample:** 4R7 **Specimen Type:** Feces **Species:** Bison

Johnes Direct PCR - Result

Ct = Undetermined

Interpretation = Negative - No Mycobacterium avium ssp. paratuberculosis DNA was detected

**Animal ID:** 4R21 **Case #:** TB15-03519 **Sample:** 4R21 **Specimen Type:** Feces **Species:** Bison

Johnes Direct PCR - Result

Ct = Undetermined

Interpretation = Negative - No Mycobacterium avium ssp. paratuberculosis DNA was detected

**Animal ID:** 27 **Case #:** TB15-03520 **Sample:** 27 **Specimen Type:** Feces **Species:** Bison

Johnes Direct PCR - Result

Ct = Undetermined

Interpretation = Negative - No Mycobacterium avium ssp. paratuberculosis DNA was detected

Cycle Threshold (Ct) provides an estimate of the amount of *M. avium* subsp. *paratuberculosis* (MAP) DNA in the fecal material. Generally the lower the number, the more DNA in the fecal material. MAP DNA can then be correlated to the number of organisms shed in the fecal material.

General guidelines are as follows:

<25 Ct = Very Heavy Fecal Shedder

<30 Ct = Heavy Fecal Shedder

<33 Ct = Moderate Fecal Shedder

<36 Ct = Light Fecal Shedder

<40 Ct = Suspect Fecal Shedder - DNA was detected, but at a low level. Without epidemiological information, correlation to fecal culture is not consistent.

Undetermined = No MAP DNA was detected



**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

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FINAL REPORT

**Laboratory Test Report**

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

**Owner**Jack Rhyan  
Fort Collins, CO**Accession Number:****15-027129****Animal Location**

Larimer County CO

**Date Collected:**

08/25/2015

**Date Received:**

08/27/2015

**Date Completed:**

08/28/2015

**Submitter - 2649**Dr. Jack C. Rhyan  
USDA, APHIS, VS  
National Wildlife Research Center  
4101 La Porte Ave  
Fort Collins, CO 80521  
FAX #: 970-266-6138  
Phone #: 970-266-6140**Collected By:**

Rhyan

**Purpose:**

NVSL Internal

**Referral/Retain Tag Number:****This is not a billable case.****NOTE: Condition of the sample(s) was adequate unless otherwise noted.****Animal ID: 10 Case #: TB15-03536 Sample: 10 Specimen Type: Feces Species: Bison**

Johnes Direct PCR - Result

Ct = Undetermined

Interpretation = Negative - No Mycobacterium avium ssp.  
paratuberculosis DNA was detected**Animal ID: 12 Case #: TB15-03537 Sample: 12 Specimen Type: Feces Species: Bison**

Johnes Direct PCR - Result

Ct = Undetermined

Interpretation = Negative - No Mycobacterium avium ssp.  
paratuberculosis DNA was detected**Animal ID: 49 Case #: TB15-03538 Sample: 49 Specimen Type: Feces Species: Bison**

Johnes Direct PCR - Result

Ct = Undetermined

Interpretation = Negative - No Mycobacterium avium ssp.  
paratuberculosis DNA was detected

**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

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FINAL REPORT

## Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

**Owner** *Wildlife*

USDA, APHIS, VS- GonaCon Study

Corwin Springs, MT

**Animal Location**

Park County MT

**Submitter - 1961**

Dr. Patrick Ryan Clarke

USDA, APHIS, VS

**Accession Number:** 16-004807

**Date Collected:**

**Date Received:** 02/10/2016

**Date Completed:** 03/22/2016

**Collected By:** Clarke, et al

**Purpose:** General Diagnostic

**Referral Number:**

This is not a billable case.

(b) (6)

**NOTE:** Condition of the sample(s) was adequate unless otherwise noted.

**Sample:** Red 32 **Animal ID:** Red 32 **Brucella Case Number:** B16-0012 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 33 **Animal ID:** Red 33 **Brucella Case Number:** B16-0013 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 34 **Animal ID:** Red 34 **Brucella Case Number:** B16-0014 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 35 **Animal ID:** Red 35 **Brucella Case Number:** B16-0015 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 36 **Animal ID:** Red 36 **Brucella Case Number:** B16-0016 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 37 **Animal ID:** Red 37 **Brucella Case Number:** B16-0017 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 38 **Animal ID:** Red 38 **Brucella Case Number:** B16-0018 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 39 **Animal ID:** Red 39 **Brucella Case Number:** B16-0019 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 40 **Animal ID:** Red 40 **Brucella Case Number:** B16-0020 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 41 **Animal ID:** Red 41 **Brucella Case Number:** B16-0021 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 42 **Animal ID:** Red 42 **Brucella Case Number:** B16-0022 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 43 **Animal ID:** Red 43 **Brucella Case Number:** B16-0023 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 44 **Animal ID:** Red 44 **Brucella Case Number:** B16-0024 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 45 **Animal ID:** Red 45 **Brucella Case Number:** B16-0025 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 46 **Animal ID:** Red 46 **Brucella Case Number:** B16-0026 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 47 **Animal ID:** Red 47 **Brucella Case Number:** B16-0027 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 48 **Animal ID:** Red 48 **Brucella Case Number:** B16-0028 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 49 **Animal ID:** Red 49 **Brucella Case Number:** B16-0029 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 50 **Animal ID:** Red 50 **Brucella Case Number:** B16-0030 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 51 **Animal ID:** Red 51 **Brucella Case Number:** B16-0031 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 53 **Animal ID:** Red 53 **Brucella Case Number:** B16-0032 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 54 **Animal ID:** Red 54 **Brucella Case Number:** B16-0033 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 55 **Animal ID:** Red 55 **Brucella Case Number:** B16-0034 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 56 **Animal ID:** Red 56 **Brucella Case Number:** B16-0035 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 64 **Animal ID:** Red 64 **Brucella Case Number:** B16-0036 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 67 **Animal ID:** Red 67 **Brucella Case Number:** B16-0037 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 68 **Animal ID:** Red 68 **Brucella Case Number:** B16-0038 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made



**Sample:** Red 71 **Animal ID:** Red 71 **Brucella Case Number:** B16-0039 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 72 **Animal ID:** Red 72 **Brucella Case Number:** B16-0040 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 73 **Animal ID:** Red 73 **Brucella Case Number:** B16-0041 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 74 **Animal ID:** Red 74 **Brucella Case Number:** B16-0042 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 7 **Animal ID:** Green 7 **Brucella Case Number:** B16-0043 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 01 **Animal ID:** Green 01 **Brucella Case Number:** B16-0044 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

This sample was listed on the submission form as Green 10. The sample was labeled Green 01. Dr. Clarke confirmed the correct ID as Green 01.

**Sample:** Green 11 **Animal ID:** Green 11 **Brucella Case Number:** B16-0045 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 12 **Animal ID:** Green 12 **Brucella Case Number:** B16-0046 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 13 **Animal ID:** Green 13 **Brucella Case Number:** B16-0047 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 18 **Animal ID:** Green 18 **Brucella Case Number:** B16-0048 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 20 **Animal ID:** Green 20 **Brucella Case Number:** B16-0049 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 21 **Animal ID:** Green 21 **Brucella Case Number:** B16-0050 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 24 **Animal ID:** Green 24 **Brucella Case Number:** B16-0051 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 25 **Animal ID:** Green 25 **Brucella Case Number:** B16-0052 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 30 **Animal ID:** Green 30 **Brucella Case Number:** B16-0053 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** 3G17 **Animal ID:** 3G17 **Brucella Case Number:** B16-0054 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Or3G08 **Animal ID:** Or3G08 **Brucella Case Number:** B16-0055 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Or3G14 **Animal ID:** Or3G14 **Brucella Case Number:** B16-0056 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Or3R20 **Animal ID:** Or3R20 **Brucella Case Number:** B16-0057 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Or3R22 **Animal ID:** Or3R22 **Brucella Case Number:** B16-0058 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

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FINAL REPORT

**Laboratory Test Report**

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

**Owner** *Wildlife*

USDA, APHIS, VS- GonaCon Study

Corwin Springs, MT

**Animal Location**

Park County MT

**Submitter - 1961**

Dr. Patrick Ryan Clarke

USDA, APHIS, VS

**Accession Number:** 16-004824**Date Collected:****Date Received:** 02/10/2016**Date Completed:** 03/22/2016**Collected By:** Clarke, Frey**Purpose:** General Diagnostic**Referral Number:**

This is not a billable case.

**(b) (6)****NOTE: Condition of the sample(s) was adequate unless otherwise noted.****Sample:** Green 2 **Animal ID:** Green 2 **Brucella Case Number:** B16-0059 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 3 **Animal ID:** Green 3 **Brucella Case Number:** B16-0060 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 4 **Animal ID:** Green 4 **Brucella Case Number:** B16-0061 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 6 **Animal ID:** Green 6 **Brucella Case Number:** B16-0062 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Exudate / Exudate- Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Sample:** Green 8 **Animal ID:** Green 8 **Brucella Case Number:** B16-0063 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 9 **Animal ID:** Green 9 **Brucella Case Number:** B16-0064 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 14 **Animal ID:** Green 14 **Brucella Case Number:** B16-0065 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 15 **Animal ID:** Green 15 **Brucella Case Number:** B16-0066 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 17 **Animal ID:** Green 17 **Brucella Case Number:** B16-0067 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 1 **Animal ID:** Red 1 **Brucella Case Number:** B16-0068 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 2 **Animal ID:** Red 2 **Brucella Case Number:** B16-0069 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 3 **Animal ID:** Red 3 **Brucella Case Number:** B16-0070 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 4 **Animal ID:** Red 4 **Brucella Case Number:** B16-0071 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 5 **Animal ID:** Red 5 **Brucella Case Number:** B16-0072 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 6 **Animal ID:** Red 6 **Brucella Case Number:** B16-0073 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 7 **Animal ID:** Red 7 **Brucella Case Number:** B16-0074 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 8 **Animal ID:** Red 8 **Brucella Case Number:** B16-0075 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 9 **Animal ID:** Red 9 **Brucella Case Number:** B16-0076 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 11 **Animal ID:** Red 11 **Brucella Case Number:** B16-0077 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 13 **Animal ID:** Red 13 **Brucella Case Number:** B16-0078 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made



**Sample:** Red 14 **Animal ID:** Red 14 **Brucella Case Number:** B16-0079 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 16 **Animal ID:** Red 16 **Brucella Case Number:** B16-0080 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 17 **Animal ID:** Red 17 **Brucella Case Number:** B16-0081 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 18 **Animal ID:** Red 18 **Brucella Case Number:** B16-0082 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 19 **Animal ID:** Red 19 **Brucella Case Number:** B16-0083 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 20 **Animal ID:** Red 20 **Brucella Case Number:** B16-0084 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 21 **Animal ID:** Red 21 **Brucella Case Number:** B16-0085 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 22 **Animal ID:** Red 22 **Brucella Case Number:** B16-0086 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 24 **Animal ID:** Red 24 **Brucella Case Number:** B16-0087 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 25 **Animal ID:** Red 25 **Brucella Case Number:** B16-0088 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 26 **Animal ID:** Red 26 **Brucella Case Number:** B16-0089 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 27 **Animal ID:** Red 27 **Brucella Case Number:** B16-0090 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 28 **Animal ID:** Red 28 **Brucella Case Number:** B16-0091 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 29 **Animal ID:** Red 29 **Brucella Case Number:** B16-0092 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 31 **Animal ID:** Red 31 **Brucella Case Number:** B16-0093 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

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FINAL REPORT

### Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

#### Owner

USDA APHIS VS- GonaCon  
Corwin Springs, MT

Accession Number: 16-009019

#### Animal Location

Park County MT

Date Collected:

Date Received: 03/17/2016

#### Submitter - 1961

Dr. Patrick Ryan Clarke

Date Completed: 03/31/2016

Collected By: Clarke, Fray

Purpose:

Development /  
Research

Referral Number:

This is not a billable case.

(b) (6)

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

Sample: Red43 Animal ID: Red43 Brucella Case Number: B16-0117 Specimen Type: MILK, TISSUE Species: Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

Individual specimen results are listed below:

#### Swab / Swab- Not Identified

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

#### Swab / Swab- Vaginal

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

#### Fluid / Discharge, Vaginal

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

#### Feces / Feces

Brucella Isolation Result

Suspect

Colony estimates: Milk Swab: 10-50, Vaginal Swab: >300, Vaginal Discharge: Confluent growth, Feces: 10-50.

**Sample:** Red13 **Animal ID:** Red13 **Brucella Case Number:** B16-0118 **Specimen Type:** MILK, TISSUE **Species:** Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

**Fluid / Discharge, Vaginal**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Colony Estimates: Vaginal Swab: >300, Vaginal Discharge: >300.****Sample:** Green14 **Animal ID:** Green14 **Brucella Case Number:** B16-0119 **Specimen Type:** MILK, TISSUE **Species:** Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

**Fluid / Discharge, Vaginal**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

**Milk / Milk**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

**Feces / Feces**

Brucella Isolation Result

Suspect

**Colony Estimates: Vaginal Swab: >300, Vaginal Discharge: >300, Milk: 1 colony, Feces: 1 colony, but contaminated.**

**Sample:** 3G14 **Animal ID:** 3G14 **Brucella Case Number:** B16-0120 **Specimen Type:** MILK, TISSUE **Species:** Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

**Fluid / Discharge, Vaginal**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

**Milk / Milk**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

**Feces / Feces**

Brucella Isolation Result

Suspect

**Colony Estimates: Vaginal Swab: >300, Vaginal Discharge: >300, Milk: 10-50, Feces: 1 colony, but contaminated.****Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388**[Help Us Help You](#)**

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FINAL REPORT

## Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

Owner **Wildlife**

USDA, APHIS, VS- GonaCon Study

Corwin Springs, MT

Animal Location

Park County MT

Submitter - 1961

Dr. Patrick Ryan. Clarke

USDA, APHIS, VS

Accession Number: **16-017206**

Date Collected:

Date Received: 05/25/2016

Date Completed: 10/16/2017

Collected By: Clark, et al

Purpose: General Diagnostic

Referral Number:

This is not a billable case.

(b) (6)

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

Sample: 3G17 Animal ID: 3G17 Brucella Case Number: B16-0292 Specimen Type: Multiple - Specify in Sample Species: Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Fluid- Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

Sample: 6317 Animal ID: 6317 Brucella Case Number: B16-0293 Specimen Type: Swab Species: Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Sample:** G12 **Animal ID:** G12 **Brucella Case Number:** B16-0294 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

Individual specimen results are listed below:

**Milk / Milk**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

**Swab / Swab- Vaginal**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

**Tissue / Placenta**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

**Feces / Feces**

Brucella Isolation Result

Suspect

**Sample:** G21 **Animal ID:** G21 **Brucella Case Number:** B16-0295 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Fluid- Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Sample:** 6G21 **Animal ID:** 6G21 **Brucella Case Number:** B16-0296 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made



**Sample:** G30 **Animal ID:** G30 **Brucella Case Number:** B16-0297 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

Individual specimen results are listed below:

**Milk / Milk**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

**Swab / Swab- Vaginal**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

**Fluid / Fluid- Vaginal**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** R02 **Animal ID:** R02 **Brucella Case Number:** B16-0298 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Fluid- Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** 6R02 **Animal ID:** 6R02 **Brucella Case Number:** B16-0299 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Sample:** R16 **Animal ID:** R16 **Brucella Case Number:** B16-0300 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Fluid- Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** 6R16 **Animal ID:** 6R16 **Brucella Case Number:** B16-0301 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Sample:** R22 **Animal ID:** R22 **Brucella Case Number:** B16-0302 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Fluid- Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** 6R22 **Animal ID:** 6R22 **Brucella Case Number:** B16-0303 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Sample:** R26 **Animal ID:** R26 **Brucella Case Number:** B16-0304 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Fluid- Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** 6R26 **Animal ID:** 6R26 **Brucella Case Number:** B16-0305 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Sample:** R38 **Animal ID:** R38 **Brucella Case Number:** B16-0306 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Fluid- Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** 6R38 **Animal ID:** 6R38 **Brucella Case Number:** B16-0307 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Sample:** R46 **Animal ID:** R46 **Brucella Case Number:** B16-0308 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Fluid- Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** 6R46 **Animal ID:** 6R46 **Brucella Case Number:** B16-0309 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**WGS Genotyping Report:**

The isolates, B16-0294\_16BA\_MT-067\_BI-Gonacon-G12 and B16-0297\_16BA\_MT-067\_BI-Gonacon-G30, share a profile with several other isolates from the GonaCon project, and have one additional SNP from sharing a most recent common ancestor with isolates from other YNP bison.

The attached appendix contains a low resolution tree that includes *B. abortus* from the NVSL database, a high resolution tree showing the relationship of these isolates to others within the same group, and a table showing the SNP calls for a portion of the group. The isolates of interest are in red font.

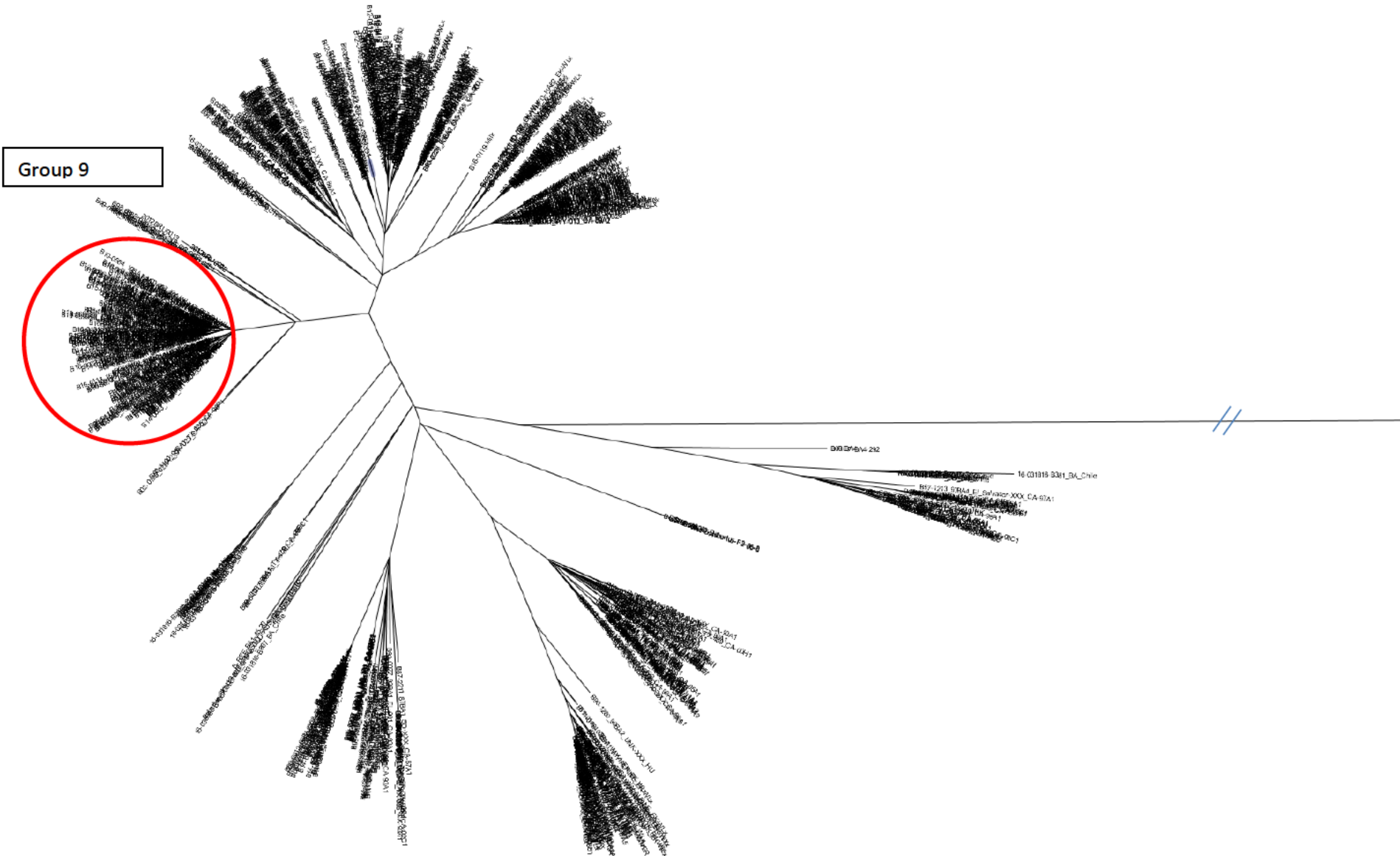
**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

**Help Us Help You**

(This new section will be updated periodically with tips for submitters.)

Try the new NCAH Portal for VS Form 10-4 submissions to NVSL! For more information, please click or visit:  
<https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/lab-info-services/portal>

**Figure 1. Low resolution phylogenetic tree detailing the genetic relationship of *Brucella* isolates (n=709) from the NVSL database. The red circle contains the isolate of interest (not shown at this resolution).**





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## APPENDIX – GENOTYPING REPORT

Date: 10/16/2017

Accession: 16-017206

Figure 2. High resolution phylogenetic tree for the isolates in Subgroup 9D. The red font indicates the isolate of interest.







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## APPENDIX – GENOTYPING REPORT

Date: 10/16/2017

Accession: 16-017206

**change back to the reference call.**

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FINAL REPORT

## Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

**Owner** *Wildlife*

USDA, APHIS, VS- GonaCon Study

Corwin Springs, MT

**Animal Location**

Park County MT

**Submitter - 1961**

Dr. Patrick Ryan. Clarke

USDA, APHIS, VS

**Accession Number:** 16-019718

**Date Collected:**

**Date Received:** 06/16/2016

**Date Completed:** 10/16/2017

**Collected By:** Clarke, et al

**Purpose:** General Diagnostic

**Referral Number:**

This is not a billable case.

(b) (6)

**NOTE:** Condition of the sample(s) was adequate unless otherwise noted.

**Sample:** R71 **Animal ID:** R71 **Brucella Case Number:** B16-0392 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Fluid / Exudate- Vaginal**

Brucella Isolation Result

No Isolation Made

**Milk / Milk**

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

**Milk sample colony estimate:** ~1 col/plate

**Sample:** 6R71 **Animal ID:** 6R71 **Brucella Case Number:** B16-0393 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made



**Sample:** G17 **Animal ID:** G17 **Brucella Case Number:** B16-0394 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Fluid / Exudate- Vaginal**

Brucella Isolation Result

No Isolation Made

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Sample:** 6G17 **Animal ID:** 6G17 **Brucella Case Number:** B16-0395 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Sample:** G25 **Animal ID:** G25 **Brucella Case Number:** B16-0396 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Fluid / Exudate- Vaginal**

Brucella Isolation Result

No Isolation Made

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Sample:** 6G25 **Animal ID:** 6G25 **Brucella Case Number:** B16-0397 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Sample:** R53 **Animal ID:** R53 **Brucella Case Number:** B16-0398 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Fluid / Exudate- Vaginal**

Brucella Isolation Result

No Isolation Made

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Sample:** 6R53 **Animal ID:** 6R53 **Brucella Case Number:** B16-0399 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Sample:** G15 **Animal ID:** G15 **Brucella Case Number:** B16-0400 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Fluid / Exudate- Vaginal**

Brucella Isolation Result

No Isolation Made

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Sample:** 6G15 **Animal ID:** 6G15 **Brucella Case Number:** B16-0401 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Sample:** G09 **Animal ID:** G09 **Brucella Case Number:** B16-0402 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**WGS Genotyping Report:**

The isolate, B16-0392\_16BA\_MT-067\_BI-Gonacon-R71, contains one additional SNP since sharing a most recent common ancestor with isolates from other wild bison collected in 2016.

The attached appendix contains a low resolution tree that includes *B. abortus* from the NVSL database, a high resolution tree showing the relationship of this isolate to others within the same group, and a table showing the SNP calls for a portion of the group. The isolate of interest is in red font.

**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

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(This new section will be updated periodically with tips for submitters.)

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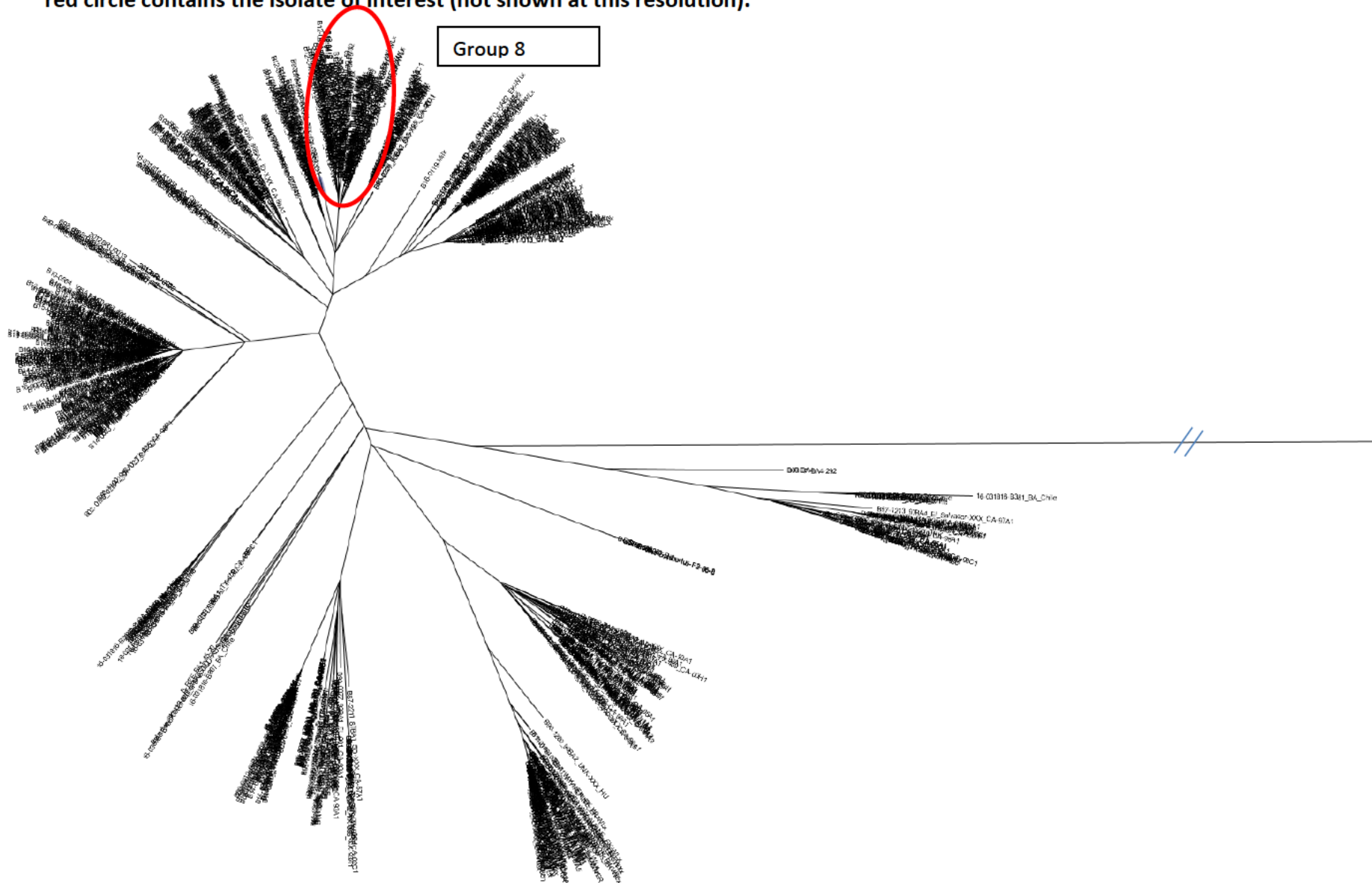
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APPENDIX – GENOTYPING REPORT

Date: 10/16/2017

Accession: 16-019718

Figure 1. Low resolution phylogenetic tree detailing the genetic relationship of *Brucella* isolates (n=709) from the NVSL database. The red circle contains the isolate of interest (not shown at this resolution).



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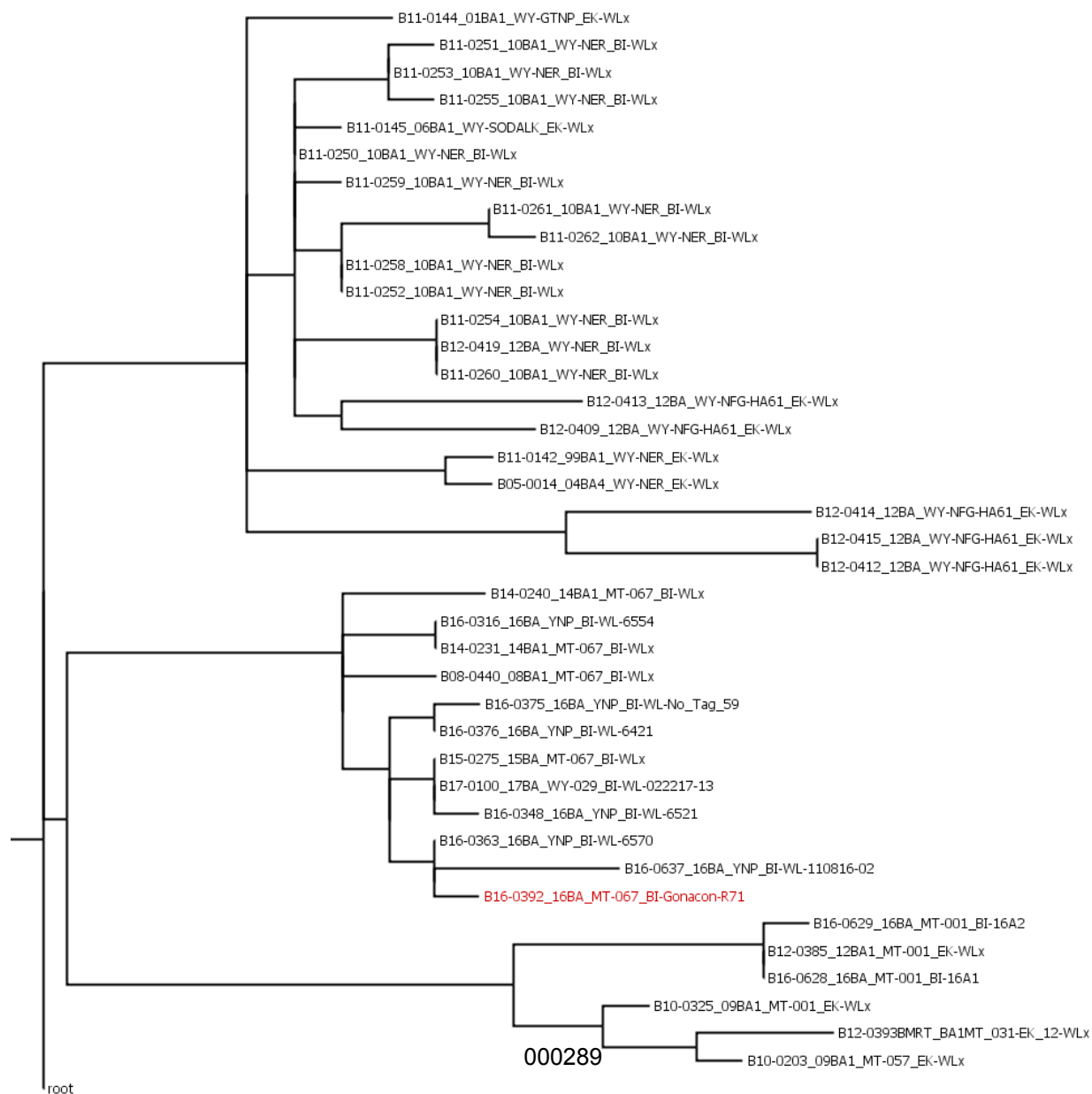
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## APPENDIX – GENOTYPING REPORT

Figure 2. High resolution phylogenetic tree for the isolates in Subgroup 8G. The red font indicates the isolate of interest.





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Accession: 16-019718

**change back to the reference call.**

|  | reference_pos | reference_call | g1 | g2 | g3 | g4 | g5 | g6 | g7 | g8 | g9 | g10 | g11 | g12 | g13 | g14 | g15 | g16 | g17 | g18 | g19 | g20 | g21 | g22 | g23 | g24 | g25 | g26 | g27 | g28 | g29 | g30 | g31 | g32 | g33 | g34 | g35 | g36 | g37 | g38 | g39 | g40 | g41 | g42 | g43 | g44 | g45 | g46 | g47 | g48 | g49 | g50 | g51 | g52 | g53 | g54 | g55 | g56 | g57 | g58 | g59 | g60 | g61 | g62 | g63 | g64 | g65 | g66 | g67 | g68 | g69 | g70 | g71 | g72 | g73 | g74 | g75 | g76 | g77 | g78 | g79 | g80 | g81 | g82 | g83 | g84 | g85 | g86 | g87 | g88 | g89 | g90 | g91 | g92 | g93 | g94 | g95 | g96 | g97 | g98 | g99 | g100 |
|--|---------------|----------------|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
|  |               |                | g1 | g2 | g3 | g4 | g5 | g6 | g7 | g8 | g9 | g10 | g11 | g12 | g13 | g14 | g15 | g16 | g17 | g18 | g19 | g20 | g21 | g22 | g23 | g24 | g25 | g26 | g27 | g28 | g29 | g30 | g31 | g32 | g33 | g34 | g35 | g36 | g37 | g38 | g39 | g40 | g41 | g42 | g43 | g44 | g45 | g46 | g47 | g48 | g49 | g50 | g51 | g52 | g53 | g54 | g55 | g56 | g57 | g58 | g59 | g60 | g61 | g62 | g63 | g64 | g65 | g66 | g67 | g68 | g69 | g70 | g71 | g72 | g73 | g74 | g75 | g76 | g77 | g78 | g79 | g80 | g81 | g82 | g83 | g84 | g85 | g86 | g87 | g88 | g89 | g90 | g91 | g92 | g93 | g94 | g95 | g96 | g97 | g98 | g99 | g100 |
|  |               |                | g1 | g2 | g3 | g4 | g5 | g6 | g7 | g8 | g9 | g10 | g11 | g12 | g13 | g14 | g15 | g16 | g17 | g18 | g19 | g20 | g21 | g22 | g23 | g24 | g25 | g26 | g27 | g28 | g29 | g30 | g31 | g32 | g33 | g34 | g35 | g36 | g37 | g38 | g39 | g40 | g41 | g42 | g43 | g44 | g45 | g46 | g47 | g48 | g49 | g50 | g51 | g52 | g53 | g54 | g55 | g56 | g57 | g58 | g59 | g60 | g61 | g62 | g63 | g64 | g65 | g66 | g67 | g68 | g69 | g70 | g71 | g72 | g73 | g74 | g75 | g76 | g77 | g78 | g79 | g80 | g81 | g82 | g83 | g84 | g85 | g86 | g87 | g88 | g89 | g90 | g91 | g92 | g93 | g94 | g95 | g96 | g97 | g98 | g99 | g100 |
|  |               |                | g1 | g2 | g3 | g4 | g5 | g6 | g7 | g8 | g9 | g10 | g11 | g12 | g13 | g14 | g15 | g16 | g17 | g18 | g19 | g20 | g21 | g22 | g23 | g24 | g25 | g26 | g27 | g28 | g29 | g30 | g31 | g32 | g33 | g34 | g35 | g36 | g37 | g38 | g39 | g40 | g41 | g42 | g43 | g44 | g45 | g46 | g47 | g48 | g49 | g50 | g51 | g52 | g53 | g54 | g55 | g56 | g57 | g58 | g59 | g60 | g61 | g62 | g63 | g64 | g65 | g66 | g67 | g68 | g69 | g70 | g71 | g72 | g73 | g74 | g75 | g76 | g77 | g78 | g79 | g80 | g81 | g82 | g83 | g84 | g85 | g86 | g87 | g88 | g89 | g90 | g91 | g92 | g93 | g94 | g95 | g96 | g97 | g98 | g99 | g100 |
|  |               |                | g1 | g2 | g3 | g4 | g5 | g6 | g7 | g8 | g9 | g10 | g11 | g12 | g13 | g14 | g15 | g16 | g17 | g18 | g19 | g20 | g21 | g22 | g23 | g24 | g25 | g26 | g27 | g28 | g29 | g30 | g31 | g32 | g33 | g34 | g35 | g36 | g37 | g38 | g39 | g40 | g41 | g42 | g43 | g44 | g45 | g46 | g47 | g48 | g49 | g50 | g51 | g52 | g53 | g54 | g55 | g56 | g57 | g58 | g59 | g60 | g61 | g62 | g63 | g64 | g65 | g66 | g67 | g68 | g69 | g70 | g71 | g72 | g73 | g74 | g75 | g76 | g77 | g78 | g79 | g80 | g81 | g82 | g83 | g84 | g85 | g86 | g87 | g88 | g89 | g90 | g91 | g92 | g93 | g94 | g95 | g96 | g97 | g98 | g99 | g100 |
|  |               |                | g1 | g2 | g3 | g4 | g5 | g6 | g7 | g8 | g9 | g10 | g11 | g12 | g13 | g14 | g15 | g16 | g17 | g18 | g19 | g20 | g21 | g22 | g23 | g24 | g25 | g26 | g27 | g28 | g29 | g30 | g31 | g32 | g33 | g34 | g35 | g36 | g37 | g38 | g39 | g40 | g41 | g42 | g43 | g44 | g45 | g46 | g47 | g48 | g49 | g50 | g51 | g52 | g53 | g54 | g55 | g56 | g57 | g58 | g59 | g60 | g61 | g62 | g63 | g64 | g65 | g66 | g67 | g68 | g69 | g70 | g71 | g72 | g73 | g74 | g75 | g76 | g77 | g78 | g79 | g80 | g81 | g82 | g83 | g84 | g85 | g86 | g87 | g88 | g89 | g90 | g91 | g92 | g93 | g94 | g95 | g96 | g97 | g98 | g99 | g100 |
|  |               |                | g1 | g2 | g3 | g4 | g5 | g6 | g7 | g8 | g9 | g10 | g11 | g12 | g13 | g14 | g15 | g16 | g17 | g18 | g19 | g20 | g21 | g22 | g23 | g24 | g25 | g26 | g27 | g28 | g29 | g30 | g31 | g32 | g33 | g34 | g35 | g36 | g37 | g38 | g39 | g40 | g41 | g42 | g43 | g44 | g45 | g46 | g47 | g48 | g49 | g50 | g51 | g52 | g53 | g54 | g55 | g56 | g57 | g58 | g59 | g60 | g61 | g62 | g63 | g64 | g65 | g66 | g67 | g68 | g69 | g70 | g71 | g72 | g73 | g74 | g75 | g76 | g77 | g78 | g79 | g80 | g81 | g82 | g83 | g84 | g85 | g86 | g87 | g88 | g89 | g90 | g91 | g92 | g93 | g94 | g95 | g96 | g97 | g98 | g99 | g100 |
|  |               |                | g1 | g2 | g3 | g4 | g5 | g6 | g7 | g8 | g9 | g10 | g11 | g12 | g13 | g14 | g15 | g16 | g17 | g18 | g19 | g20 | g21 | g22 | g23 | g24 | g25 | g26 | g27 | g28 | g29 | g30 | g31 | g32 | g33 | g34 | g35 | g36 | g37 | g38 | g39 | g40 | g41 | g42 | g43 | g44 | g45 | g46 | g47 | g48 | g49 | g50 | g51 | g52 | g53 | g54 | g55 | g56 | g57 | g58 | g59 | g60 | g61 | g62 | g63 | g64 | g65 | g66 | g67 | g68 | g69 | g70 | g71 | g72 | g73 | g74 | g75 | g76 | g77 | g78 | g79 | g80 | g81 | g82 | g83 | g84 | g85 | g86 | g87 | g88 | g89 | g90 | g91 | g92 | g93 | g94 | g95 | g96 | g97 | g98 | g99 | g100 |
|  |               |                | g1 | g2 | g3 | g4 | g5 | g6 | g7 | g8 | g9 | g10 | g11 | g12 | g13 | g14 | g15 | g16 | g17 | g18 | g19 | g20 | g21 | g22 | g23 | g24 | g25 | g26 | g27 | g28 | g29 | g30 | g31 | g32 | g33 | g34 | g35 | g36 | g37 | g38 | g39 | g40 | g41 | g42 | g43 | g44 | g45 | g46 | g47 | g48 | g49 | g50 | g51 | g52 | g53 | g54 | g55 | g56 | g57 | g58 | g59 | g60 | g61 | g62 | g63 | g64 | g65 | g66 | g67 | g68 | g69 | g70 | g71 | g72 | g73 | g74 | g75 | g76 | g77 | g78 | g79 | g80 | g81 | g82 | g83 | g84 | g85 | g86 | g87 | g88 | g89 | g90 | g91 | g92 | g93 | g94 | g95 | g96 | g97 | g98 | g99 | g100 |
|  |               |                | g1 | g2 | g3 | g4 | g5 | g6 | g7 | g8 | g9 | g10 | g11 | g12 | g13 | g14 | g15 | g16 | g17 | g18 | g19 | g20 | g21 | g22 | g23 | g24 | g25 | g26 | g27 | g28 | g29 | g30 | g31 | g32 | g33 | g34 | g35 | g36 | g37 | g38 | g39 | g40 | g41 | g42 | g43 | g44 | g45 | g46 | g47 | g48 | g49 | g50 | g51 | g52 | g53 | g54 | g55 | g56 | g57 | g58 | g59 | g60 | g61 | g62 | g63 | g64 | g65 | g66 | g67 | g68 | g69 | g70 | g71 | g72 | g73 | g74 | g75 | g76 | g77 | g78 | g79 | g80 | g81 | g82 | g83 | g84 | g85 | g86 | g87 | g88 | g89 | g90 | g91 | g92 | g93 | g94 | g95 | g96 | g97 | g98 | g99 | g100 |
|  |               |                | g1 | g2 | g3 | g4 | g5 | g6 | g7 | g8 | g9 | g10 | g11 | g12 | g13 | g14 | g15 | g16 | g17 | g18 | g19 | g20 | g21 | g22 | g23 | g24 | g25 | g26 | g27 | g28 | g29 | g30 | g31 | g32 | g33 | g34 | g35 | g36 | g37 | g38 | g39 | g40 | g41 | g42 | g43 | g44 | g45 | g46 | g47 | g48 | g49 | g50 | g51 | g52 | g53 | g54 | g55 | g56 | g57 | g58 | g59 | g60 | g61 | g62 | g63 | g64 | g65 | g66 | g67 | g68 | g69 | g70 | g71 | g72 | g73 | g74 | g75 | g76 | g77 | g78 | g79 | g80 | g81 | g82 | g83 | g84 | g85 | g86 | g87 | g88 | g89 | g90 | g91 | g92 | g93 | g94 | g95 | g96 | g97 | g98 | g99 | g100 |
|  |               |                | g1 | g2 | g3 | g4 | g5 | g6 | g7 | g8 | g9 | g10 | g11 | g12 | g13 | g14 | g15 | g16 | g17 | g18 | g19 | g20 | g21 | g22 | g23 | g24 | g25 | g26 | g27 | g28 | g29 | g30 | g31 | g32 | g33 | g34 | g35 | g36 | g37 | g38 | g39 | g40 | g41 | g42 | g43 | g44 | g45 | g46 | g47 | g48 | g49 | g50 | g51 | g52 | g53 | g54 | g55 | g56 | g57 | g58 | g59 | g60 | g61 | g62 | g63 | g64 | g65 | g66 | g67 | g68 | g69 | g70 | g71 | g72 | g73 | g74 | g75 | g76 | g77 | g78 | g79 | g80 | g81 | g82 | g83 | g84 | g85 | g86 | g87 | g88 | g89 | g90 | g91 | g92 | g93 | g94 | g95 | g96 | g97 | g98 | g99 | g100 |
|  |               |                | g1 | g2 | g3 | g4 | g5 | g6 | g7 | g8 | g9 | g10 | g11 | g12 | g13 | g14 | g15 | g16 | g17 | g18 | g19 | g20 | g21 | g22 | g23 | g24 | g25 | g26 | g27 | g28 | g29 | g30 | g31 | g32 | g33 | g34 | g35 | g36 | g37 | g38 | g39 | g40 | g41 | g42 | g43 | g44 | g45 | g46 | g47 | g48 | g49 | g50 | g51 | g52 | g53 | g54 | g55 | g56 | g57 | g58 | g59 | g60 | g61 | g62 | g63 | g64 | g65 | g66 | g67 | g68 | g69 | g70 | g71 | g72 | g73 | g74 | g75 | g76 | g77 | g78 | g79 | g80 | g81 | g82 | g83 | g84 | g85 | g86 | g87 | g88 | g89 | g90 | g91 | g92 | g93 | g94 | g95 | g96 | g97 | g98 | g99 | g100 |
|  |               |                | g1 | g2 | g3 | g4 | g5 | g6 | g7 | g8 | g9 | g10 | g11 | g12 | g13 | g14 | g15 | g16 | g17 | g18 | g19 | g20 | g21 | g22 | g23 | g24 | g25 | g26 | g27 | g28 | g29 | g30 | g31 | g32 | g33 | g34 | g35 | g36 | g37 | g38 | g39 | g40 | g41 | g42 | g43 | g44 | g45 | g46 | g47 | g48 | g49 | g50 | g51 | g52 | g53 | g54 | g55 | g56 | g57 | g58 | g59 | g60 | g61 | g62 | g63 | g64 | g65 | g66 | g67 | g68 | g69 | g70 | g71 | g72 | g73 | g74 | g75 | g76 | g77 | g78 | g79 | g80 | g81 | g82 | g83 | g84 | g85 | g86 | g87 | g88 | g89 | g90 | g91 | g92 | g93 | g94 | g95 | g96 | g97 | g98 | g99 | g100 |
|  |               |                | g1 | g2 | g3 | g4 | g5 | g6 | g7 | g8 | g9 | g10 | g11 | g12 | g13 | g14 | g15 | g16 | g17 | g18 | g19 | g20 | g21 | g22 | g23 | g24 | g25 | g26 | g27 | g28 | g29 | g30 | g31 | g32 | g33 | g34 | g35 | g36 | g37 | g38 | g39 | g40 | g41 | g42 | g43 | g44 | g45 | g46 | g47 | g48 | g49 | g50 | g51 | g52 | g53 | g54 | g55 | g56 | g57 | g58 | g59 | g60 | g61 | g62 | g63 | g64 | g65 | g66 | g67 | g68 | g69 | g70 | g71 | g72 | g73 | g74 | g75 | g76 | g77 | g78 | g79 | g80 | g81 | g82 | g83 | g84 | g85 | g86 | g87 | g88 | g89 | g90 | g91 | g92 | g93 | g94 | g95 | g96 | g97 | g98 | g99 | g100 |
|  |               |                | g1 | g2 | g3 | g4 | g5 | g6 | g7 | g8 | g9 | g10 | g11 | g12 | g13 | g14 | g15 | g16 | g17 | g18 | g19 | g20 | g21 | g22 | g23 | g24 | g25 | g26 | g27 | g28 | g29 | g30 | g31 | g   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |



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FINAL REPORT

### Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

#### Owner

USDA/APHIS/VS  
Fort Collins, CO

**Animal Location**  
CO

**Submitter - 2649**  
Dr. Jack C. Rhyan  
USDA, APHIS, VS  
National Wildlife Research Center  
4101 La Porte Ave  
Fort Collins, CO 80521  
FAX #: 970-266-6138  
Phone #: 970-266-6140

**Accession Number:** 16-022848

**Date Collected:** 03/29/2016

**Date Received:** 07/15/2016

**Date Completed:** 10/05/2016

**Collected By:** Barfield

**Purpose:** NVSL Internal

**Referral Number:**

**This is not a billable case.**

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

**Sample: E1 Animal ID: 91 embryos Brucella Case Number: B16-0439 Specimen Type: Embryo Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Embryo / Tissue- Not Identified**

Brucella Isolation Result

No Isolation Made

**Sample: E2 Animal ID: 78 embryos Brucella Case Number: B16-0441 Specimen Type: Embryo Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Embryo / Tissue- Not Identified**

Brucella Isolation Result

No Isolation Made

**Sample: E3 Animal ID: 48 embryos Brucella Case Number: B16-0442 Specimen Type: Embryo Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Embryo / Tissue- Not Identified**

Brucella Isolation Result

No Isolation Made

**Sample: E4 Animal ID: 129 embryos Brucella Case Number: B16-0443 Specimen Type: Embryo Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Embryo / Tissue- Not Identified**

Brucella Isolation Result

No Isolation Made

**Sample: E5 Animal ID: 95 embryos Brucella Case Number: B16-0444 Specimen Type: Embryo Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Embryo / Tissue- Not Identified**

Brucella Isolation Result

No Isolation Made

**Sample: M1 Animal ID: 1ml of combined C2 from E1 Brucella Case Number: B16-0445 Specimen Type: Embryo Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Embryo / Tissue- Not Identified**

Brucella Isolation Result

No Isolation Made

**Sample: M2 Animal ID: 1ml of combined C2 from E2 Brucella Case Number: B16-0446 Specimen Type: Embryo Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Embryo / Tissue- Not Identified**

Brucella Isolation Result

No Isolation Made

**Sample: M3 Animal ID: 1ml of combined C2 from E3 Brucella Case Number: B16-0447 Specimen Type: Embryo Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Embryo / Tissue- Not Identified**

Brucella Isolation Result

No Isolation Made

**Sample: M4 Animal ID: 1ml of combined C2 from E4 Brucella Case Number: B16-0448 Specimen Type: Embryo Species: Bison**

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Embryo / Tissue- Not Identified**

Brucella Isolation Result

No Isolation Made



**Sample:** M5 **Animal ID:** 1ml of combined C2 from E5 **Brucella Case Number:** B16-0449 **Specimen Type:** Embryo **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Embryo / Tissue- Not Identified**

Brucella Isolation Result

No Isolation Made

**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

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FINAL REPORT

### Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

#### Owner

USDA/APHIS/VS

Fort Collins, CO

#### Animal Location

CO

#### Submitter - 2649

Dr. Jack C. Rhyan

USDA, APHIS, VS

National Wildlife Research Center

4101 La Porte Ave

Fort Collins, CO 80521

FAX #: 970-266-6138

Phone #: 970-266-6140

#### Accession Number:

16-022849

#### Date Collected:

07/11/2016

#### Date Received:

07/15/2016

#### Date Completed:

10/05/2016

#### Collected By:

McCollum

#### Purpose:

NVSL Internal

#### Referral Number:

This is not a billable case.

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

Sample: Animal ID: 26 Brucella Case Number: B16-0440 Specimen Type: UTERS, MILK Species: Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Swab / Swab- Vaginal

Brucella Isolation Result

No Isolation Made

#### Milk / Milk

Brucella Isolation Result

No Isolation Made

#### Results authorized by:

Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

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FINAL REPORT

## Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

### Owner

USDA APHIS VS- GonaCon Study  
Corwin Springs, MT

### Animal Location

Park County MT

### Submitter - 1961

Dr. Patrick Ryan Clarke  
USDA, APHIS, VS

### Accession Number:

16-025296

### Date Collected:

### Date Received:

08/05/2016

### Date Completed:

### Collected By:

10/05/2016

Frey, Clarke

### Purpose:

NVSL Internal

### Referral Number:

First Cohort

This is not a billable case.

(b) (6)

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

**Sample:** 5G09 **Animal ID:** 5G09 **Brucella Case Number:** B16-0489 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Swab / Swab- Vaginal

Brucella Isolation Result

No Isolation Made

**Sample:** 5R02 **Animal ID:** 5R02 **Brucella Case Number:** B16-0490 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Swab / Swab- Vaginal

Brucella Isolation Result

No Isolation Made

**Sample:** Red29 **Animal ID:** Red29 **Brucella Case Number:** B16-0491 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Swab / Swab- Vaginal

Brucella Isolation Result

No Isolation Made

**Sample:** Red28 **Animal ID:** Red28 **Brucella Case Number:** B16-0492 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red1 **Animal ID:** Red1 **Brucella Case Number:** B16-0493 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red5 **Animal ID:** Red5 **Brucella Case Number:** B16-0494 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red11 **Animal ID:** Red11 **Brucella Case Number:** B16-0495 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red14 **Animal ID:** Red14 **Brucella Case Number:** B16-0496 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red4 **Animal ID:** Red4 **Brucella Case Number:** B16-0497 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red27 **Animal ID:** Red27 **Brucella Case Number:** B16-0498 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red19 **Animal ID:** Red19 **Brucella Case Number:** B16-0499 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red25 **Animal ID:** Red25 **Brucella Case Number:** B16-0500 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red31 **Animal ID:** Red31 **Brucella Case Number:** B16-0501 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

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FINAL REPORT

## Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

### Owner

USDA APHIS VS- GonaCon Study  
Corwin Springs, MT

Accession Number: 16-025297

### Animal Location

Park County MT

Date Collected:

Date Received: 08/05/2016

### Submitter - 1961

Dr. Patrick Ryan Clarke  
USDA, APHIS, VS

Date Completed: 10/05/2016

Collected By: Frey, Clarke

Purpose: NVSL Internal

Referral Number: 2nd Cohort

This is not a billable case.

(b) (6)

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

Sample: Red35 Animal ID: Red35 Brucella Case Number: B16-0502 Specimen Type: Multiple - Specify in Sample Species: Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Swab / Swab- Vaginal

Brucella Isolation Result

No Isolation Made

#### Fluid / Fluid- Vaginal

Brucella Isolation Result

No Isolation Made

#### Milk / Milk

Brucella Isolation Result

No Isolation Made

#### Feces / Feces

Brucella Isolation Result

No Isolation Made

Sample: 6R35 Animal ID: 6R35 Brucella Case Number: B16-0503 Specimen Type: Swab Species: Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Swab / Swab- Conjunctival

Brucella Isolation Result

No Isolation Made

**Sample:** Red32 **Animal ID:** Red32 **Brucella Case Number:** B16-0504 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red36 **Animal ID:** Red36 **Brucella Case Number:** B16-0505 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red39 **Animal ID:** Red39 **Brucella Case Number:** B16-0506 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red41 **Animal ID:** Red41 **Brucella Case Number:** B16-0507 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red42 **Animal ID:** Red42 **Brucella Case Number:** B16-0508 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red44 **Animal ID:** Red44 **Brucella Case Number:** B16-0509 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red45 **Animal ID:** Red45 **Brucella Case Number:** B16-0510 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red47 **Animal ID:** Red47 **Brucella Case Number:** B16-0511 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red48 **Animal ID:** Red48 **Brucella Case Number:** B16-0512 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red49 **Animal ID:** Red49 **Brucella Case Number:** B16-0513 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red51 **Animal ID:** Red51 **Brucella Case Number:** B16-0514 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red53 **Animal ID:** Red53 **Brucella Case Number:** B16-0515 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made



**Sample:** Red54 **Animal ID:** Red54 **Brucella Case Number:** B16-0516 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red55 **Animal ID:** Red55 **Brucella Case Number:** B16-0517 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red56 **Animal ID:** Red56 **Brucella Case Number:** B16-0518 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red33 **Animal ID:** Red33 **Brucella Case Number:** B16-0519 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red37 **Animal ID:** Red37 **Brucella Case Number:** B16-0520 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red40 **Animal ID:** Red40 **Brucella Case Number:** B16-0521 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red50 **Animal ID:** Red50 **Brucella Case Number:** B16-0522 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red64 **Animal ID:** Red64 **Brucella Case Number:** B16-0523 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red67 **Animal ID:** Red67 **Brucella Case Number:** B16-0524 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red72 **Animal ID:** Red72 **Brucella Case Number:** B16-0525 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red74 **Animal ID:** Red74 **Brucella Case Number:** B16-0526 **Specimen Type:** Swab **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

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FINAL REPORT

## Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

### Owner

USDA APHIS VS- GonaCon  
Corwin Springs, MT

### Animal Location

Park County MT

### Submitter - 1961

Dr. Patrick Ryan Clarke  
USDA, APHIS, VS

### Accession Number:

16-025298

### Date Collected:

07/21/2016

### Date Received:

08/05/2016

### Date Completed:

09/21/2016

### Collected By:

R. Frey, P.R. Clarke

### Purpose:

General Diagnostic

### Referral Number:

Cohort #1

This is not a billable case.

(b) (6)

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

**Sample:** Red20 **Animal ID:** Red20 **Brucella Case Number:** B16-0527 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Swab / Swab- Vaginal

Brucella Isolation Result

No Isolation Made

#### Feces / Feces

Brucella Isolation Result

No Isolation Made

**Sample:** Green08 **Animal ID:** Green08 **Brucella Case Number:** B16-0528 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Swab / Swab- Vaginal

Brucella Isolation Result

No Isolation Made

#### Fluid / Fluid- Vaginal

Brucella Isolation Result

No Isolation Made

#### Milk / Milk

Brucella Isolation Result

No Isolation Made

#### Feces / Feces

Brucella Isolation Result

Contaminated

### Results authorized by:

Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

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FINAL REPORT

## Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

### Owner

APHIS-BQS-GoraCon Study  
Corwin Springs, MT

### Animal Location

Park County MT

### Submitter - 1961

Dr. Patrick Ryan Clarke  
USDA, APHIS, VS

### Accession Number:

17-008210

### Date Collected:

### Date Received:

03/14/2017

### Date Completed:

### Collected By:

05/15/2017

R. Clarke, et al

### Purpose:

Development /  
Research

### Referral Number:

This is not a billable case.

(b) (6)

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

**Sample:** Green 08 **Animal ID:** Green 08 **Brucella Case Number:** B17-0113 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

#### Swab / Swab- Vaginal

Brucella Isolation Result

No Isolation Made

**Sample:** Green 14 **Animal ID:** Green 14 **Brucella Case Number:** B17-0114 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

#### Swab / Swab- Vaginal

Brucella Isolation Result

No Isolation Made

**Sample:** Green 15 **Animal ID:** Green 15 **Brucella Case Number:** B17-0115 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

#### Swab / Swab- Vaginal

Brucella Isolation Result

No Isolation Made

**Sample:** Red 03 **Animal ID:** Red 03 **Brucella Case Number:** B17-0116 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

#### Swab / Swab- Vaginal

Brucella Isolation Result

No Isolation Made

**Sample:** Red 06 **Animal ID:** Red 06 **Brucella Case Number:** B17-0117 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 07 **Animal ID:** Red 07 **Brucella Case Number:** B17-0118 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 08 **Animal ID:** Red 08 **Brucella Case Number:** B17-0119 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 09 **Animal ID:** Red 09 **Brucella Case Number:** B17-0120 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 13 **Animal ID:** Red 13 **Brucella Case Number:** B17-0121 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 16 **Animal ID:** Red 16 **Brucella Case Number:** B17-0122 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 18 **Animal ID:** Red 18 **Brucella Case Number:** B17-0123 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 20 **Animal ID:** Red 20 **Brucella Case Number:** B17-0124 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 21 **Animal ID:** Red 21 **Brucella Case Number:** B17-0125 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 22 **Animal ID:** Red 22 **Brucella Case Number:** B17-0126 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 24 **Animal ID:** Red 24 **Brucella Case Number:** B17-0127 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 26 **Animal ID:** Red 26 **Brucella Case Number:** B17-0128 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** 5 Gr 09 **Animal ID:** 5 Gr 09 **Brucella Case Number:** B17-0129 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

Contaminated

**Sample:** Green 02 **Animal ID:** Green 02 **Brucella Case Number:** B17-0130 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 03 **Animal ID:** Green 03 **Brucella Case Number:** B17-0131 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

Contaminated

**Sample:** Green 04 **Animal ID:** Green 04 **Brucella Case Number:** B17-0132 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 06 **Animal ID:** Green 06 **Brucella Case Number:** B17-0133 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 17 **Animal ID:** Green 17 **Brucella Case Number:** B17-0134 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 01 **Animal ID:** Red 01 **Brucella Case Number:** B17-0135 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 02 **Animal ID:** Red 02 **Brucella Case Number:** B17-0136 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 04 **Animal ID:** Red 04 **Brucella Case Number:** B17-0137 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made



**Sample:** Red 05 **Animal ID:** Red 05 **Brucella Case Number:** B17-0138 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 11 **Animal ID:** Red 11 **Brucella Case Number:** B17-0139 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 14 **Animal ID:** Red 14 **Brucella Case Number:** B17-0140 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 19 **Animal ID:** Red 19 **Brucella Case Number:** B17-0141 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 27 **Animal ID:** Red 27 **Brucella Case Number:** B17-0142 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 28 **Animal ID:** Red 28 **Brucella Case Number:** B17-0143 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 29 **Animal ID:** Red 29 **Brucella Case Number:** B17-0144 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 31 **Animal ID:** Red 31 **Brucella Case Number:** B17-0145 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** 5 R 02 **Animal ID:** 5 R 02 **Brucella Case Number:** B17-0146 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 11 **Animal ID:** Green 11 **Brucella Case Number:** B17-0147 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 12 **Animal ID:** Green 12 **Brucella Case Number:** B17-0148 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 18 **Animal ID:** Green 18 **Brucella Case Number:** B17-0149 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 20 **Animal ID:** Green 20 **Brucella Case Number:** B17-0150 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 30 **Animal ID:** Green 30 **Brucella Case Number:** B17-0151 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** 3 GR 17 **Animal ID:** 3 GR 17 **Brucella Case Number:** B17-0152 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Orage 3 Gr 08 **Animal ID:** Orage 3 Gr 08 **Brucella Case Number:** B17-0153 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Orage 3 Gr 14 **Animal ID:** Orage 3 Gr 14 **Brucella Case Number:** B17-0154 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Orage 3 R 20 **Animal ID:** Orage 3 R 20 **Brucella Case Number:** B17-0155 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Orage 3 R 22 **Animal ID:** Orage 3 R 22 **Brucella Case Number:** B17-0156 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 33 **Animal ID:** Red 33 **Brucella Case Number:** B17-0157 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 35 **Animal ID:** Red 35 **Brucella Case Number:** B17-0158 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 37 **Animal ID:** Red 37 **Brucella Case Number:** B17-0159 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 40 **Animal ID:** Red 40 **Brucella Case Number:** B17-0160 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 50 **Animal ID:** Red 50 **Brucella Case Number:** B17-0161 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 64 **Animal ID:** Red 64 **Brucella Case Number:** B17-0162 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 67 **Animal ID:** Red 67 **Brucella Case Number:** B17-0163 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 71 **Animal ID:** Red 71 **Brucella Case Number:** B17-0164 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 72 **Animal ID:** Red 72 **Brucella Case Number:** B17-0165 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 73 **Animal ID:** Red 73 **Brucella Case Number:** B17-0166 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 74 **Animal ID:** Red 74 **Brucella Case Number:** B17-0167 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 01 **Animal ID:** Green 01 **Brucella Case Number:** B17-0168 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 07 **Animal ID:** Green 07 **Brucella Case Number:** B17-0169 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 13 **Animal ID:** Green 13 **Brucella Case Number:** B17-0170 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 21 **Animal ID:** Green 21 **Brucella Case Number:** B17-0171 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 24 **Animal ID:** Green 24 **Brucella Case Number:** B17-0172 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Green 25 **Animal ID:** Green 25 **Brucella Case Number:** B17-0173 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 32 **Animal ID:** Red 32 **Brucella Case Number:** B17-0174 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 34 **Animal ID:** Red 34 **Brucella Case Number:** B17-0175 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 36 **Animal ID:** Red 36 **Brucella Case Number:** B17-0176 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 38 **Animal ID:** Red 38 **Brucella Case Number:** B17-0177 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 39 **Animal ID:** Red 39 **Brucella Case Number:** B17-0178 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 41 **Animal ID:** Red 41 **Brucella Case Number:** B17-0179 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 42 **Animal ID:** Red 42 **Brucella Case Number:** B17-0180 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 43 **Animal ID:** Red 43 **Brucella Case Number:** B17-0181 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 44 **Animal ID:** Red 44 **Brucella Case Number:** B17-0182 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 45 **Animal ID:** Red 45 **Brucella Case Number:** B17-0183 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 46 **Animal ID:** Red 46 **Brucella Case Number:** B17-0184 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 47 **Animal ID:** Red 47 **Brucella Case Number:** B17-0185 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 48 **Animal ID:** Red 48 **Brucella Case Number:** B17-0186 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 49 **Animal ID:** Red 49 **Brucella Case Number:** B17-0187 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 51 **Animal ID:** Red 51 **Brucella Case Number:** B17-0188 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 53 **Animal ID:** Red 53 **Brucella Case Number:** B17-0189 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 54 **Animal ID:** Red 54 **Brucella Case Number:** B17-0190 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 55 **Animal ID:** Red 55 **Brucella Case Number:** B17-0191 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** Red 56 **Animal ID:** Red 56 **Brucella Case Number:** B17-0192 **Specimen Type:** Swab **Species:** Bison

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

**Help Us Help You**

(This new section will be updated periodically with tips for submitters.)

Quality samples yield the most accurate results. Please call if you have questions.





# National Veterinary Services Laboratories

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FINAL REPORT

## Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

### Owner

USDA / APHIS / VS  
Fort Collins, CO

### Animal Location

CO

### Submitter - 2649

Dr. Jack C. Rhyan  
USDA, APHIS, VS  
National Wildlife Research Center  
4101 La Porte Ave  
Fort Collins, CO 80521  
FAX #: 970-266-6138  
Phone #: 970-266-6140

### Accession Number:

17-010101

### Date Collected:

03/29/2017

### Date Received:

03/30/2017

### Date Completed:

04/03/2017

### Collected By:

McCollum

### Purpose:

NVSL Internal

### Referral Number:

### Country Origin/Destination:

This is not a billable case.

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

**Sample: Specimen Type:** Serum **Animal ID:** 4R07 **Animal Status:** **Species:** Bison (Not otherwise specified)

|  |               |
|--|---------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative      |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative@1:10 |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | 0/1 Delta mP  |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25 |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative      |

**Submission form lists Animal ID as "4R07", specimen labeled as "4R733017".**

**Sample: Specimen Type:** Serum **Animal ID:** 4G02 **Animal Status:** **Species:** Bison (Not otherwise specified)

|  |               |
|--|---------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative      |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative@1:10 |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | -3/0 Delta mP |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25 |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative      |

**Sample: Specimen Type:** Serum **Animal ID:** 4R16 **Animal Status:** **Species:** Bison (Not otherwise specified)

|  |               |
|--|---------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative      |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative@1:10 |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | -3/0 Delta mP |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25 |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative      |

**Sample:** Specimen Type: Serum Animal ID: 4R24 Animal Status: Species: Bison (Not otherwise specified)

|  |                |
|--|----------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative       |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative@1:10  |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | -2/-3 Delta mP |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25  |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative       |

**Sample:** Specimen Type: Serum Animal ID: 4G17 Animal Status: Species: Bison (Not otherwise specified)

|  |                  |
|--|------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative         |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative tr@1:10 |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | -1/-2 Delta mP   |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25    |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative         |

**Sample:** Specimen Type: Serum Animal ID: 4G06 Animal Status: Species: Bison (Not otherwise specified)

|  |                  |
|--|------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative         |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | Negative tr@1:10 |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | -3/-3 Delta mP   |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25    |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative         |

Submission form lists Animal ID as "4G06", specimen labeled as "4G08".

**Sample:** Specimen Type: Serum Animal ID: 4R03 Animal Status: Species: Bison (Not otherwise specified)

|  |                         |
|--|-------------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative                |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | <b>Positive 1+@1:10</b> |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | -1/0 Delta mP           |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25           |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                |

**Sample:** Specimen Type: Serum Animal ID: 3R21 Animal Status: Species: Bison (Not otherwise specified)

|  |                         |
|--|-------------------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative                |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test        | <b>Positive 1+@1:10</b> |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | 1/3 Delta mP            |
| Brucellosis (Brucella abortus/suis) - Rivanol Test                                 | Negative@1:25           |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative                |

|   |                 |
|---|-----------------|
| <b>Sample:</b> <b>Specimen Type:</b> Serum <b>Animal ID:</b> 4R21 <b>Animal Status:</b> <b>Species:</b> Bison (Not otherwise specified) |                 |
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test  | Negative        |
| Brucellosis (Brucella abortus/suis) - Complement Fixation (CF - Cold ) Test   | Negative 0@1:10 |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)  | -1/0 Delta mP   |
| Brucellosis (Brucella abortus/suis) - Rivanol Test  | Negative@1:25   |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)  | Negative        |

**FPA:**  
**Delta mP > 20    = Positive**  
**Delta mP 10-20   = Suspect/Indeterminate**  
**Delta mP < 10    = Negative**

**The FPA results noted above refer to two separate results and are not fractions. NVSL tests each sample in duplicate with each result being reported.**

**Please refer to the Designated Brucellosis Epidemiologist for the test interpretation and final animal classification.**

**Results authorized by:**      Dr. David Kinker, Head, Serology (515-337-7563)

**Help Us Help You**  
(This new section will be updated periodically with tips for submitters.)  
Quality samples yield the most accurate results. Please call if you have questions.



# MONTANA VETERINARY DIAGNOSTIC LABORATORY

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PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

CASE: 17-11116  
Name/ID: Red 34  
Species: American Bison  
Breed: American bison  
Sex: Female Age: Adult  
Owner: UDSA, APHIS, VS

FINAL REPORT 02/03/17

Accessioned: 01/19/17  
Authorized by: AF

Previous Reports  
02/03/17

## SEROLOGY

### Brucella abortus

#### Animal

Red 34  
FPA= 43.2 mP

#### FPA

Positive

#### Serum

Verified on: 02/03/17 by: AF

#### Animal

Red 34

#### B. Abortus

#### BAPA

Positive

#### Serum

Verified on 01/24/17 by: AF

#### Animal

Red 34

#### BRUCF

2+ 1:40

#### BRUCARD

Negative

#### Serum

Verified on: 01/24/17 by: AF

000321

FEES:

|   |      |
|---|------|
| B. Abortus Card                             | 1.60 |
| Brucella abortus/suis - Complement Fixation | 2.65 |
| Brucella abortus FPA                        | 1.60 |
| B. Abortus Bapa                             | 1.60 |
| Total                                       | 7.45 |

(This is not a bill. Do not make payments from this report.)



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PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

CASE: 17-11465  
Name/ID: Red 01  
Species: American Bison  
Breed: American bison  
Sex: Female Age: Adult  
County: Park  
Owner: USDA, APHIS, VS

FINAL REPORT 02/03/17

Accessioned: 01/25/17  
Authorized by: AF

Previous Reports  
02/03/17

## SEROLOGY

### Brucella abortus

Animal  
Red 01  
FPA=0.5mP value.

FPA  
Negative

Serum

Verified on: 01/31/17 by: AF

Animal  
Red 01

B. Abortus  
BAPA  
Negative

Serum

Verified on 01/30/17 by: AF

Animal  
Red 01  
Bru. CR anticomplementary reaction with a 2+(1:20) titer.

BRUCF  
Anticomplementa Negative

Serum

Verified on: 01/30/17 by: AF



000324



FEES:

|   |      |
|---|------|
| B. Abortus Card                             | 1.60 |
| Brucella abortus/suis - Complement Fixation | 2.65 |
| Brucella abortus FPA                        | 1.60 |
| B. Abortus Bapa                             | 1.60 |
| Total                                       | 7.45 |

(This is not a bill. Do not make payments from this report.)



## MONTANA VETERINARY DIAGNOSTIC LABORATORY

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PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

**CASE: 17-11586**  
**Name/ID:** Red 71  
**Species:** American Bison

**PRELIMINARY REPORT 02/07/17**

**Sex:** Female **Age:** Adult  
**County:** Park  
**Owner:** USDA, APHIS, VS - Cattle Health

**Accessioned:** 01/27/17  
**Authorized by:** DJM

**Previous Reports**  
02/07/17

### CASE SUMMARY

Verified on: 02/07/17 by: DJM

#### REASON FOR SUBMISSION:

Bison Mortality.

#### LABORATORY DIAGNOSIS:

Pericarditis; Suspected hardware disease

#### COMMENT:

The necropsy findings are suggestive of hardware disease. Cow is not pregnant. No uterine tracking device is detected. Some clinical microbiological investigations are still in progress. Final results will be reported as soon as complete.

D. J. Marshall, BVSc, PhD

### PATHOLOGY

Verified on: 02/07/17 by: DJM

#### GROSS DESCRIPTION:

An adult female bison (tag# red 71) was submitted for necropsy and subsequent laboratory evaluation. Necropsy is performed between 11.30 am and 1.00 pm on 27th January 2017. Significant gross findings include a thickened pericardium. Pericardial sac contains increased amounts of a tan viscous fluid. Pericardium is adhered to the diaphragm wall and abomasum is adhered to the diaphragm. The cow is not pregnant and no uterine tracking device is detected in the reproductive tract.

#### GROSS DIAGNOSIS

Pericarditis with adhesion to diaphragm; Abomasal adhesion to diaphragm.

### CLINICAL MICROBIOLOGY

Aerobic Culture

Verified on: 01/31/17 by: KK

| Animal ID   | Specimen          | Isolate # | Organism  | Amount |
|---|-------------------|-----------|-----------|--------|
| Red 71  | pericardial fluid |           | Mixed sp. | 4+     |
| Mixed population of bacteria including; Trueperella pyogenes, Bacillus sp., and mixed enterics. |                   |           |           |        |

REFERRAL

---

Results are Pending for [Brucella Culture](#)



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PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

CASE: 17-11735  
Name/ID:  
Species: American Bison  
  
Sex: Age:  
Owner: USDA, APHIS, VS

PRELIMINARY REPORT 02/02/17

Accessioned: 01/31/17  
Authorized by: AF

Previous Reports  
02/03/17

## SEROLOGY

### Brucella abortus

#### Animal

Gr 11 FPA= 164.5 mP  
Gr 30 FPA= 99.9 mP

#### FPA

Positive

Positive

Clotted Blood

Verified on: 02/02/17 by: AF

#### Animal

Gr 11  
Gr 30

#### B. Abortus BAPA

Positive  
Positive

Clotted Blood

Verified on 02/02/17 by: AF

#### Animal

Gr 11  
Gr 30

#### BRUCARD

Positive  
Positive

Clotted Blood

Verified on: 02/02/17 by: AF

Results are Pending for [Brucella abortus/suis - Complement Fixation](#)

000329



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FINAL REPORT

## Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

### Owner

USDA APHIS VS  
Cowin Springs, MT

### Animal Location

Park County MT

### Submitter - 1961

Dr. Patrick Ryan. Clarke  
USDA, APHIS, VS

### Accession Number:

17-011844

### Date Collected:

04/03/2017

### Date Received:

04/12/2017

### Date Completed:

07/20/2017

### Collected By:

Clarke, Frey

### Purpose:

General Diagnostic

### Referral Number:

This is not a billable case.

(b) (6)

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

Sample: Green03 Animal ID: Green03 Brucella Case Number: B17-0226 Specimen Type: Multiple - Specify in Sample Species: Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

#### Lymph Node / Lymph Node- Mesenteric

Brucella Isolation Result

No Isolation Made

#### Lymph Node / Lymph Node- Prefemoral

Brucella Isolation Result

No Isolation Made

#### Lymph Node / Lymph Node- Hepatic

Brucella Isolation Result

No Isolation Made

#### Lymph Node / Lymph Node- S. Mammary

Brucella Isolation Result

No Isolation Made

#### Lymph Node / Lymph Node- Retropharyngeal

Brucella Isolation Result

No Isolation Made

#### Lymph Node / Lymph Node- Mandibular

Brucella Isolation Result

No Isolation Made

#### Lymph Node / Lymph Node- Prescapular

Brucella Isolation Result

No Isolation Made

#### Lymph Node / Lymph Node- Internal Iliac

Brucella Isolation Result

No Isolation Made

#### Lymph Node / Lymph Node- Parotid

Brucella Isolation Result

No Isolation Made

#### Lymph Node / Lymph Node- Bronchial

Brucella Isolation Result

No Isolation Made

#### Lymph Node / Lymph Node- Popliteal

Brucella Isolation Result

No Isolation Made

Uterus/Vagina / Uterus

---

|                                      |                   |
|--------------------------------------|-------------------|
| Brucella Isolation Result            | No Isolation Made |
| <b>Ovary/Oviduct / Ovary</b>         |                   |
| Brucella Isolation Result            | No Isolation Made |
| <b>Mammary Gland / Mammary Gland</b> |                   |
| Brucella Isolation Result            | No Isolation Made |
| <b>Spleen / Spleen</b>               |                   |
| Brucella Isolation Result            | No Isolation Made |
| <b>Kidney / Kidney</b>               |                   |
| Brucella Isolation Result            | No Isolation Made |
| <b>Liver / Liver</b>                 |                   |
| Brucella Isolation Result            | No Isolation Made |
| <b>Milk / Milk Cream</b>             |                   |
| Brucella Isolation Result            | No Isolation Made |
| <b>Intestine / Ileum</b>             |                   |
| Brucella Isolation Result            | No Isolation Made |
| <b>Feces / Feces</b>                 |                   |
| Brucella Isolation Result            | No Isolation Made |
| <b>Milk / Milk Sediment</b>          |                   |
| Brucella Isolation Result            | No Isolation Made |

**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

**Help Us Help You**

(This new section will be updated periodically with tips for submitters.)

Quality samples yield the most accurate results. Please call if you have questions.





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PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

CASE: 17-11936  
Name/ID: Red 08  
Species: American Bison  
  
Sex: Female Age: Adult  
County: Park  
Owner: USDA, APHIS, VS - BQFS

FINAL REPORT 02/09/17

Accessioned: 02/03/17  
Authorized by: AF

Previous Reports  
02/09/17  
02/09/17

## SEROLOGY

### Brucella abortus

Animal  
Red 08  
Bru. FPA= 185.1 mP

FPA  
Positive

Clotted Blood

Verified on: 02/09/17 by: AF

Animal  
Red 08

Clotted Blood  
B. Abortus  
BAPA  
Positive

Verified on 02/06/17 by: AF

Animal  
Red 08

BRUCF  
3+ 1:10

Clotted Blood  
BRUCARD  
Positive

Verified on: 02/06/17 by: AF





FEES:

|   |      |
|---|------|
| B. Abortus Card                             | 1.60 |
| Brucella abortus/suis - Complement Fixation | 2.65 |
| Brucella abortus FPA                        | 1.60 |
| B. Abortus Bapa                             | 1.60 |
| Total                                       | 7.45 |

(This is not a bill. Do not make payments from this report.)



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EMAIL: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)



PATRICK RYAN CLARKE  
PO BOX 202001  
HELENA MT 59601

**CASE: 17-12001**  
**Name/ID:** 7G18  
**Species:** American Bison

**PRELIMINARY REPORT 02/08/17**

**Sex:** Unknown **Age:** Fetus  
**Owner:** USDA - APHIS - GonaCon

**Accessioned:** 02/06/17  
**Authorized by:** DJM

**Previous Reports**  
02/09/17

### CASE SUMMARY

Verified on: 02/08/17 by: DJM

#### REASON FOR SUBMISSION:

Bison fetus abortion from a brucella seropositive cow.

#### LABORATORY DIAGNOSIS:

Bovine abortion. Cultures pending.

#### COMMENT:

Clinical microbiological investigations are still in progress and will be reported when complete.

D. J. Marshall, BVSc, PhD

### PATHOLOGY

Verified on: 02/08/17 by: DJM

#### GROSS DESCRIPTION:

A bison fetus is submitted for histological evaluation. Necropsy is performed between 5.00 and 5.30 pm on Monday 6th February 2017. Fetus is submitted in a moderate state of post mortem preservation and has a crown rump measurement of 37 cm. No hair is present on the skin. Red serous fluid is present in thoracic and abdominal cavities. Skeletal muscles are autolysed. Brain is liquid. No other significant gross abnormalities are detected.

#### HISTOLOGIC DESCRIPTION:

Sections of brain, liver, kidney, heart, lung, spleen, thymus, skeletal muscle, abomasum and small intestine are examined. Extramedullary hematopoiesis is present in the liver. Lung is not aerated and some alveoli contain deposits of squamous epithelial debris. No other significant histological abnormalities are detected.

#### HISTOLOGIC DIAGNOSIS:

Liver: Extramedullary hematopoiesis.  
Lung: Non aeration; Intra-alveolar squamous epithelial debris.

## CLINICAL MICROBIOLOGY

---

Results are Pending for [Tritrichomonas foetus Culture](#)

Results are Pending for [Brucella Culture](#)

Results are Pending for [Campylobacter Culture](#)

Results are Pending for [Aerobic Culture](#)



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PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

**CASE: 17-15227**  
**Name/ID:** Green 03  
**Species:** American Bison

**FINAL REPORT 10/07/17**

**Sex:** Female **Age:** 8 Years  
**County:** Park  
**Owner:** USDA,APHIS,VS - GonaCon

**Accessioned:** 04/03/17  
**Authorized by:** SS

**Previous Reports**  
10/10/17  
10/10/17

### CASE SUMMARY

Verified on: 10/07/17 by: SS

#### REASON FOR SUBMISSION:

Dystocia and lymph node collection

#### LABORATORY DIAGNOSIS:

Fetal pneumonia with bacteria

#### COMMENT:

Histologic evaluation of tissues from these animals confirms the presence of the fetal pneumonia, with associated bacterial, and culture basal fluid reveals mixed populations of organisms, some of which may have been associated with the observed lesions. No additional changes were noted, and in-house Brucella culture was negative.

Stephen K. Smith, DVM, Diplomate, ACVP

### PATHOLOGY

Verified on: 10/07/17 by: SS

#### GROSS DESCRIPTION:

Examined are the carcasses of an adult female bison and a male bison fetus with a crown rump length of 33 cm, following dystocia and euthanasia. Samples were collected for Brucella culture, but sent to NVSL by the submitter.

#### HISTOLOGIC DESCRIPTION:

A selection of fetal and material tissues are examined, some of which are characterized by post-mortem autolysis and bacterial overgrowth.

Fetal lung. Scattered throughout alveolar air spaces are occasional aggregates of neutrophils, associated with cell debris, squamous epithelial cells and bacteria.

All of the following tissues are examined histologically, and contain no significant microscopic changes: kidney, skeletal muscle, spleen, tongue, diaphragm, thymus, small intestine, abomasum, colon, uterus, brain, and liver.

HISTOLOGIC DIAGNOSIS:

Fetal pneumonia with bacteria.

CLINICAL MICROBIOLOGY

---

**Tritrichomonas foetus Culture** Verified on: 04/10/17 by: JR

| Animal ID | Specimen       | Isolate # | Organism                           | Amount |
|-----------|----------------|-----------|------------------------------------|--------|
| Green 03  | Abomasal Fluid |           | Negative for Tritrichomonas foetus |        |

**Brucella Culture** Verified on: 04/14/17 by: JR

| Animal ID | Specimen       | Isolate # | Organism                  | Amount |
|-----------|----------------|-----------|---------------------------|--------|
| Green 03  | Abomasal Fluid |           | Negative for Brucella sp. |        |

**Campylobacter Culture** Verified on: 04/10/17 by: JR

| Animal ID | Specimen       | Isolate # | Organism                       | Amount |
|-----------|----------------|-----------|--------------------------------|--------|
| Green 03  | Abomasal Fluid |           | Negative for Campylobacter sp. |        |

**Aerobic Culture** Verified on: 04/05/17 by: KK

| Animal ID | Specimen       | Isolate # | Organism  | Amount |
|-----------|----------------|-----------|---|--------|
| Green 03  | Abomasal Fluid | 1         | Mixed enteric organisms present<br>Mixed enteric organisms including Escherichia coli, and Enterococcus sp. | 3+     |

FEES:

---

|                               |        |
|-------------------------------|--------|
| Tritrichomonas foetus Culture | 0.00   |
| Case Summary                  | 0.00   |
| Brucella Culture              | 0.00   |
| Campylobacter Culture         | 0.00   |
| Aerobic Culture               | 0.00   |
| Hematoxylin & Eosin           | 0.00   |
| Necropsy LA >500#             | 157.50 |
| Incineration per pound        | 260.00 |
| Total                         | 417.50 |

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FINAL REPORT

### Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

#### Owner

USDA,APHIS,VS  
Corwin Springs, MT

#### Animal Location

Park County MT, US

#### Submitter - 30025

Montana Veterinary Diagnostic Laboratory  
Box 997  
Bozeman, MT 59771  
FAX #: 406-994-6344  
Phone #: 406-994-4885

#### Accession Number:

17-016588

#### Date Collected:

05/22/2017

#### Date Received:

05/23/2017

#### Date Completed:

11/16/2017

#### Collected By:

Stephen K. Smith, et al

#### Purpose:

Surveillance

#### Referral Number:

17-19393

This is not a billable case.

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

Sample: 17-19393 Animal ID: Red43 Brucella Case Number: B17-0258 Specimen Type: Tissue Species: Bison (Not otherwise specified)

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

Individual specimen results are listed below:

#### Lymph Node / Lymph Node- S. Cervical

Brucella Isolation Result

Suspect

#### Lymph Node / Lymph Node- S. Mammary

Brucella Isolation Result

Suspect

#### Lymph Node / Lymph Node- Internal Iliac

Brucella Isolation Result

Suspect

#### Lymph Node / Lymph Node- Retropharyngeal

Brucella Isolation Result

Isolate Determined

Brucella Identification Result

Brucella abortus

#### Lymph Node / Lymph Node- Mandibular

Brucella Isolation Result

No Isolation Made

#### Lymph Node / Lymph Node- Popliteal

Brucella Isolation Result

No Isolation Made

#### Lymph Node / Lymph Node- Prefemoral

Brucella Isolation Result

Suspect

#### Lymph Node / Lymph Node- Mesenteric

Brucella Isolation Result

Suspect

#### Lymph Node / Lymph Node- Parotid

Brucella Isolation Result

Suspect

#### Lymph Node / Lymph Node- Bronchial

Brucella Isolation Result

Suspect

#### Lymph Node / Lymph Node- Hepatic

Brucella Isolation Result

No Isolation Made



**Kidney / Kidney**

|                           |                   |
|---------------------------|-------------------|
| Brucella Isolation Result | No Isolation Made |
|---------------------------|-------------------|

**Liver / Liver**

|                           |         |
|---------------------------|---------|
| Brucella Isolation Result | Suspect |
|---------------------------|---------|

**Spleen / Spleen**

|                           |         |
|---------------------------|---------|
| Brucella Isolation Result | Suspect |
|---------------------------|---------|

**Uterus/Vagina / Uterus**

|                                |                    |
|--------------------------------|--------------------|
| Brucella Isolation Result      | Isolate Determined |
| Brucella Identification Result | Brucella abortus   |

**Udder/Teat / Udder**

|                                |                    |
|--------------------------------|--------------------|
| Brucella Isolation Result      | Isolate Determined |
| Brucella Identification Result | Brucella abortus   |

**Ovary/Oviduct / Ovary**

|                           |         |
|---------------------------|---------|
| Brucella Isolation Result | Suspect |
|---------------------------|---------|

**Intestine / Ileum**

|                           |                   |
|---------------------------|-------------------|
| Brucella Isolation Result | No Isolation Made |
|---------------------------|-------------------|

**Colony estimates from tissues:**

Lymph\_SCerv: 3  
 Lymph\_SMam: 10  
 Lymph\_Iliac: 5  
 Lymph\_Retro: 1  
 Lymph\_Prefem: 2  
 Lymph\_Mesen: 2  
 Lymph\_Parotid: 2  
 Lymph\_Bronch: 1  
 Liver: 1  
 Spleen: 1  
 Uterus: >300  
 Udder: >300  
 Ovary: 10

**WGS Genotyping Results:**

The isolate, B17-0258\_17BA\_MT-067\_BI-GonaCon-Red43, has the same profile as other isolates from this animal and it's progeny. They all share a common ancestor with other wild bison isolates.

The attached appendix contains a low resolution tree that includes *B. abortus* from the NVSL database, a high resolution tree showing the relationship of this isolate to others within the same group, and a table showing the SNP calls for a portion of the group. The isolate of interest is in red font.

**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
 NVSL MB General Phone: 515-337-7388

**Help Us Help You**

(This new section will be updated periodically with tips for submitters.)

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<https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/lab-info-services/portal>



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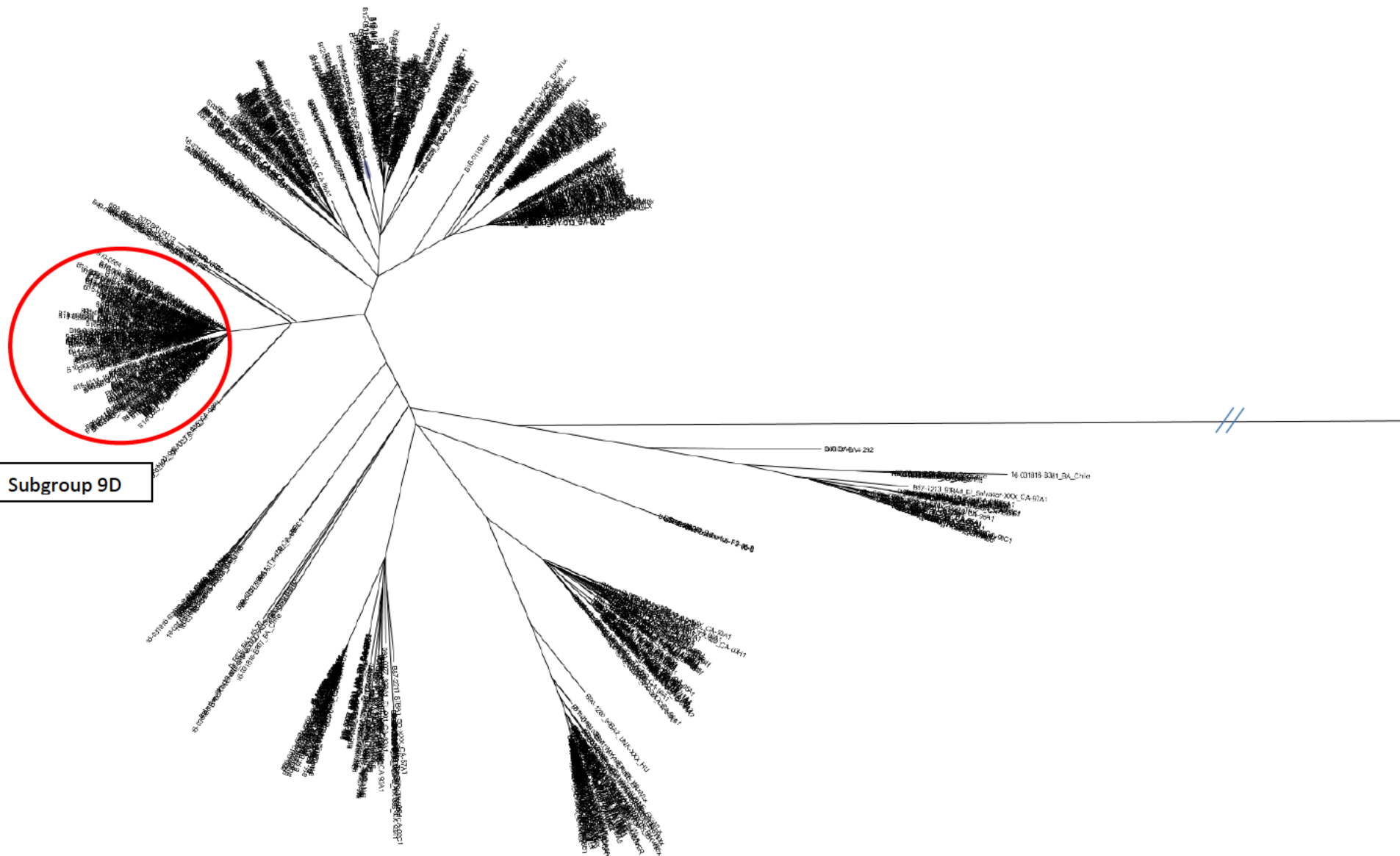
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APPENDIX – GENOTYPING REPORT

Date: 11/16/2017

Accession: 17-016588

Figure 1. Low resolution phylogenetic tree detailing the genetic relationship of *Brucella* isolates (n=709) from the NVSL database. The red circle contains the isolates of interest (none are shown at this resolution).



000342





PO Box 844  
Ames, Iowa 50010

APPENDIX – GENOTYPING REPORT

Accession: 17-016588

**change back to the reference call.**

A<sup>6</sup>G<sup>A</sup>G<sup>A</sup>G<sup>G</sup>000344



# MONTANA VETERINARY DIAGNOSTIC LABORATORY

1911 WEST LINCOLN, BOZEMAN, MT 59718  
P.O. Box 997, BOZEMAN, MT 59771  
WEB: [www.liv.mt.gov/lab](http://www.liv.mt.gov/lab)

PHONE: (406) 994-4885  
FAX: (406) 994-6344  
EMAIL: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)



PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

CASE: 17-17245  
Name/ID:  
Species: American Bison

FINAL REPORT 05/03/17

Sex: Age:  
County: Park  
Owner: USDA - APHIS - VS

Accessioned: 04/25/17  
Authorized by: AF

Previous Reports  
05/03/17

## SEROLOGY

### Brucella abortus

Clotted Blood

Verified on: 04/28/17 by: DK

#### Animal

#### FPA

Gr13  
7G13  
R01  
FPA Positive (26.4)  
7R01  
7R03  
FPA Positive (173.3)

Negative  
Negative  
**Positive**  
  
Negative  
**Positive**

Clotted Blood

Verified on 04/27/17 by: DK

#### Animal

#### B. Abortus

#### BAPA

Gr13  
7G13  
R01  
7R01  
7R03

Negative  
Negative  
Negative  
Negative  
**Positive**

Clotted Blood

Verified on: 05/03/17 by: DK

#### Animal

#### BRUCF

#### BRUCARD

Gr13  
7G13  
R01  
7R01  
7R03

Negative @  
1:10  
3+ 1:10  
4+ 1:20  
4+ 1:80  
4+ 1:640

Negative  
Negative  
Negative  
Negative  
**Positive**





FEES:

|   |       |
|---|-------|
| B. Abortus Card                             | 8.00  |
| Brucella abortus/suis - Complement Fixation | 13.25 |
| Brucella abortus FPA                        | 8.00  |
| B. Abortus Bapa                             | 8.00  |
| Total                                       | 37.25 |

(This is not a bill. Do not make payments from this report.)

**National Veterinary Services Laboratories**

PO Box 844

Ames, Iowa 50010

**Phone:** 515-337-7514 **Fax:** 515-337-7938

FEDERAL RELAY SERVICE (Voice/TTY/ASCII/Spanish) 1-800-877-8339

The USDA is an equal opportunity provider and employer.

FINAL REPORT

**Laboratory Test Report**

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

**Owner**USDA / Aphis / VS  
Fort Collins, CO**Animal Location**

CO

**Submitter - 2649**Dr. Jack C. Rhyan  
USDA, APHIS, VS  
National Wildlife Research Center  
4101 La Porte Ave  
Fort Collins, CO 80521  
FAX #: 970-266-6138  
Phone #: 970-266-6140**Accession Number:****17-017831****Date Collected:****Date Received:**

06/02/2017

**Date Completed:****Collected By:**

06/06/2017

McCollum

**Purpose:**

NVSL Internal

**Referral Number:****Country Origin/Destination:****This is not a billable case.****NOTE: Condition of the sample(s) was adequate unless otherwise noted.****Sample:** 3R21 **Specimen Type:** Serum **Animal ID:** 3R21 **Animal Status:** **Species:** Bison (Not otherwise specified)

|  |              |
|--|--------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative     |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | 4/4 Delta mP |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative     |

**Sample:** 4G02 **Specimen Type:** Serum **Animal ID:** 4G02 **Animal Status:** **Species:** Bison (Not otherwise specified)

|  |              |
|--|--------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative     |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | 3/4 Delta mP |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative     |

**Sample:** 4G06 **Specimen Type:** Serum **Animal ID:** 4G06 **Animal Status:** **Species:** Bison (Not otherwise specified)

|  |              |
|--|--------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative     |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | 5/7 Delta mP |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative     |

**Sample:** 4R03 **Specimen Type:** Serum **Animal ID:** 4R03 **Animal Status:** **Species:** Bison (Not otherwise specified)

|  |              |
|--|--------------|
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test | Negative     |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)         | 3/1 Delta mP |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)                               | Negative     |



|   |              |
|---|--------------|
| Sample: 4R07 Specimen Type: Serum Animal ID: 4R07 Animal Status: Species: Bison (Not otherwise specified) |              |
| Brucellosis (Brucella abortus/suis) - Buffered Acidified Plate Antigen (BAPA) Test                        | Negative     |
| Brucellosis (Brucella abortus/suis) - Fluorescent Polarization Assay (FPA)                                | 7/1 Delta mP |
| Brucellosis (Brucella abortus/suis) - Card Test (8%)  | Negative     |

FPA:

Delta mP > 20 = Positive

Delta mP 10-20 = Suspect/Indeterminate

Delta mP < 10 = Negative

The FPA results noted above refer to two separate results and are not fractions. NVSL tests each sample in duplicate with each result being reported.

Results authorized by: Dr. David Kinker, Head, Serology (515-337-7563)

Help Us Help You

(This new section will be updated periodically with tips for submitters.)

Quality samples yield the most accurate results. Please call if you have questions.



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EMAIL: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)



PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

CASE: 17-17917  
Name/ID:  
Species: American Bison

FINAL REPORT 05/16/17

Sex: Age:  
County: Park  
Owner: USDA, APHIS, VS

Accessioned: 05/02/17  
Authorized by: AF

Previous Reports  
05/16/17

## SEROLOGY

### Brucella abortus

Clotted Blood

Verified on: 05/16/17 by: DK

| <u>Animal</u>      | <u>FPA</u>      |
|--------------------|-----------------|
| Red 7              | Negative        |
| 7R7                | Negative        |
| Red 20             | <b>Positive</b> |
| #3 FPA Pos (42.4)  |                 |
| 7R20               | <b>Positive</b> |
| #4 FPA Pos (108.2) |                 |
| Gr14               | <b>Positive</b> |
| #5 FPA Pos (192.2) |                 |
| 7G14               | <b>Positive</b> |
| #6 FPA Pos (188.1) |                 |
| Gr06               | Negative        |
| 7G6                | Negative        |

Clotted Blood

Verified on 05/12/17 by: AF

| <u>Animal</u> | <u>B. Abortus</u><br><u>BAPA</u> |
|---------------|----------------------------------|
| Red 7         | Negative                         |
| 7R7           | Negative                         |
| Red 20        | Negative                         |
| 7R20          | Negative                         |
| Gr14          | <b>Positive</b>                  |
| 7G14          | <b>Positive</b>                  |
| Gr06          | Negative                         |
| 7G6           | Negative                         |

Clotted Blood

Verified on: 05/03/17 by: DK

| <u>Animal</u> | <u>BRUCF</u>       | <u>BRUCARD</u> |
|---------------|--------------------|----------------|
| Red 7         | Negative @<br>1:10 | Negative       |
| 7R7           | Negative @<br>1:10 | Negative       |
| Red 20        | 3+ 1:20            | Negative       |
| 7R20          | 3+ 1:320           | Negative       |

Species: Bison  
County: Park

# MONTANA VETERINARY DIAGNOSTIC LABORATORY

Box 997 - Bozeman, MT 59771  
Phone (406) 994 - 4885 Fax (406) 994 - 6344  
Email: livdiagnosticlab@mt.gov

Collection Date: 5-1-17  
Page 1 of 1

## SEROLOGY REPORT (SV2A) - Complete Light Shaded Areas Only (SEE EXAMPLE and KEY on back Page 4)

OWNER: USDA, APHIS, VS  
ADDRESS:  
CITY/STATE/ZIP: Corwin Springs, MT  
REASON FOR TEST - MANDATORY INFORMATION (See Key)  
BQFS - Gona Con - Cattle Health

SUBMITTER'S SIGNATURE: [Signature]  
SUBMITTER'S NAME (PRINT): P. Ryan Clarke  
ADDRESS: (b) (6)  
CITY/STATE/ZIP:  
RESULT REPORTING OPTIONS: PHONE/FAX/EMAIL  
NUMBER OR EMAIL ADDRESS: J. Phye, B. Frey, R. Clarke

| CIRCLE DISEASE TEST REQUIRED: If needed, indicate specific test and/or dilution. Example on back. |                       |      |     |       |               | BRU          | BT     | ANA                   | EHF    | PTB     | BR | BVD | BLV | LEPTOSPIROSIS<br>8 - SEROVARS | OTHER |
|---|-----------------------|------|-----|-------|---------------|--------------|--------|-----------------------|--------|---------|----|-----|-----|-------------------------------|-------|
| TUBE NO.  | ANIMAL IDENTIFICATION | AGE  | SEX | BREED | OFFICIAL VAC. |              |        |                       |        |         |    |     |     |                               |       |
| 1   | Red 7                 | Ad   | Fe  | Bron  |               | Neg          | N      | Neg                   | N      | (4-1)   |    |     |     |                               |       |
| 2   | TR 7                  | calf |     |       |               | N            | N      | Neg                   | N      | (-2-3)  |    |     |     |                               |       |
| 3   | Red 20                | Ad   |     |       |               | N            | N      | 3 <sup>+</sup> (1:20) | Pos    | (42-4)  |    |     |     |                               |       |
| 4   | TR 20                 | calf | M   |       |               | N            | N      | 3 <sup>+</sup> (1:20) | Pos    | (108-2) |    |     |     |                               |       |
| 5   | Gr 14                 | Ad   | Fe  |       |               | Pos          | Pos    | 4 <sup>+</sup> (1:14) | Pos    | (192-2) |    |     |     |                               |       |
| 6   | 7G14                  | calf |     |       |               | Pos          | Pos    | 4 <sup>+</sup> (1:14) | Pos    | (188-1) |    |     |     |                               |       |
| 7   | Gr 06                 | Ad   |     |       |               | Neg          | N      | Neg                   | N      | (0-9)   |    |     |     |                               |       |
| 8   | 7G6                   | Calf |     |       |               | Neg          | N      | Neg                   | N      | (6-8)   |    |     |     |                               |       |
| 9   |                       |      |     |       |               |              |        |                       |        |         |    |     |     |                               |       |
| Laboratory Comments:  |                       |      |     |       |               | Samples      | 8      | 8                     | 8      | 8       |    |     |     |                               |       |
|   |                       |      |     |       |               | Seropositive | 2      | 2                     | 4      | 4       |    |     |     |                               |       |
|   |                       |      |     |       |               | Suspect      | -      | -                     | -      | -       |    |     |     |                               |       |
|   |                       |      |     |       |               | Seronegative | 6      | 6                     | 4      | 4       |    |     |     |                               |       |
|   |                       |      |     |       |               | Undetermined | ap     | ap                    | ap     | ap      |    |     |     |                               |       |
|   |                       |      |     |       |               | Tested By    | 5/2/17 | 5/3/17                | 5/4/17 | 5/14/17 |    |     |     |                               |       |

Please do FPA, CF  
Card - BAPA

FEE: DATE RECEIVED: 5-1-2017



17-17917  
05/02/17

The MVDL is an accredited AAVLD laboratory and a member of the USDA National Animal Health Laboratory Network. Completing and submitting any submission form or a contractual agreement for services requested and the specimens submitted become the property of the MVDL. In addition, at no additional expense to our clients, specimens submitted for additional testing upon the order of the state or federal animal health officials, or when a report of a reportable animal disease is suspected, or in support of surveillance for other animal

000351

Positive  
Positive  
Negative  
Negative  
4+ 1:640  
4+ 1:640  
Negative @  
1:10  
Negative @  
1:10

Gr14  
7G14  
Gr06  
7G6

FEES:

---

|   |       |
|---|-------|
| B. Abortus Card                             | 12.80 |
| Brucella abortus/suis - Complement Fixation | 21.20 |
| Brucella abortus FPA                        | 12.80 |
| B. Abortus Bapa                             | 12.80 |
| Total                                       | 59.60 |

(This is not a bill. Do not make payments from this report.)



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PHONE: (406) 994-4885  
FAX: (406) 994-6344  
EMAIL: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)



PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

CASE: 17-18070  
Name/ID:  
Species: American Bison

FINAL REPORT 05/27/17

Sex: Age:  
County: Park  
Owner: USDA, APHIS, VS

Accessioned: 05/03/17  
Authorized by: AF

Previous Reports  
05/27/17

## SEROLOGY

### Brucella abortus

Clotted Blood

Verified on: 05/27/17 by: DK

#### Animal

#### FPA

|        |          |
|--------|----------|
| Gr07   | Negative |
| 7G07   | Negative |
| Red 64 | Positive |
| 7R64   | Positive |
| Red 43 | Positive |
| 7R43   | Positive |
| Red 56 | Positive |
| 7R56   | Positive |
| Red 14 | Positive |
| 7R14   | Positive |
| Gr02   | Negative |
| 7G02   | Negative |
| Gr24   | Negative |
| 7G24   | Negative |

Clotted Blood

Verified on 05/04/17 by: AF

#### Animal

#### B. Abortus

#### BAPA

|        |          |
|--------|----------|
| Gr07   | Negative |
| 7G07   | Negative |
| Red 64 | Positive |
| 7R64   | Positive |
| Red 43 | Positive |
| 7R43   | Positive |
| Red 56 | Positive |
| 7R56   | Positive |
| Red 14 | Negative |
| 7R14   | Positive |
| Gr02   | Negative |
| 7G02   | Negative |
| Gr24   | Negative |
| 7G24   | Negative |

| <u>Animal</u> | <u>BRUCF</u>       | <u>BRUCARD</u>  |
|---------------|--------------------|-----------------|
| Gr07          | Negative @<br>1:10 | Negative        |
| 7G07          | Negative @<br>1:10 | Negative        |
| Red 64        | 3+ 1:40            | <b>Positive</b> |
| 7R64          | 4+ 1:40            | Negative        |
| Red 43        | 3+ 1:640           | <b>Positive</b> |
| 7R43          | 4+ 1:640           | <b>Positive</b> |
| Red 56        | 3+ 1:640           | <b>Positive</b> |
| 7R56          | 4+ 1:640           | <b>Positive</b> |
| Red 14        | 4+ 1:10            | Negative        |
| 7R14          | 2+ 1:40            | Negative        |
| Gr02          | Negative @<br>1:10 | Negative        |
| 7G02          | Negative @<br>1:10 | Negative        |
| Gr24          | Negative @<br>1:10 | Negative        |
| 7G24          | Negative @<br>1:10 | Negative        |



Species: Bison  
County: Park

# MONTANA VETERINARY DIAGNOSTIC LABORATORY

Box 997 - Bozeman, MT 59771  
Phone (406) 994 - 4885 Fax (406) 994 - 6344  
Email: livdiagnosticlab@mt.gov

Collection Date: 5-2-17  
Page 1 of 2

## SEROLOGY REPORT (SV2A) - Complete Light Shaded Areas Only (SEE EXAMPLE and KEY on back Page 4)

OWNER: USDA, APHIS VS  
ADDRESS:  
CITY/STATE/ZIP: Corvallis Springs, MT  
REASON FOR TEST - MANDATORY INFORMATION (See Key)  
BQFS, Gona Con - Cattle Health

SUBMITTER'S SIGNATURE: Phyllis O'Neil  
SUBMITTER'S NAME (PRINT): (b) (6)  
ADDRESS:  
CITY/STATE/ZIP:  
RESULT REPORTING OPTIONS: PHONE / FAX / EMAIL  
NUMBER OR EMAIL ADDRESS: R. Clarke, B. Frey, J. Ryan

CIRCLE DISEASE TEST REQUIRED: If needed, indicate specific test and/or dilution. Example on back.

| TUBE NO.     | ANIMAL IDENTIFICATION | AGE | SEX | BREED | OFFICIAL VAC. | BRU       | BT     | ANA     | END     | PTB          | IBR | BVD | BLV | LEPTOSPIROSIS 8 - SEROVARS | OTHER |
|--------------|-----------------------|-----|-----|-------|---------------|-----------|--------|---------|---------|--------------|-----|-----|-----|----------------------------|-------|
| 1            | G+07                  | Ad  | Fe  | Beem  |               | CF (1:10) | Neg    | N       | N       | 7.6          |     |     |     |                            |       |
| 2            | 7G07                  | cal | M   |       |               | Neg       | Neg    | N       | N       | 4.1          |     |     |     |                            |       |
| 3            | Red64                 | Ad  | Fe  |       |               | 3+(1:40)  | Pos    | Pos     | Pos     | 144.5, 139.0 |     |     |     |                            |       |
| 4            | 7R64                  | cal | M   |       |               | 4+(1:40)  | Pos    | N       | Pos     | 127.1, 126.6 |     |     |     |                            |       |
| 5            | Red43                 | Ad  | Fe  |       |               | 3+(1:640) | Pos    | Pos     | Pos     | 196.3, 199.5 |     |     |     |                            |       |
| 6            | 7R43                  | cal | M   |       |               | 4+(1:640) | Pos    | Pos     | Pos     | 199.6, 198.4 |     |     |     |                            |       |
| 7            | Red56                 | Ad  | Fe  |       |               | 3+(1:640) | Pos    | Pos     | Pos     | 188.4, 188.3 |     |     |     |                            |       |
| 8            | 7R56                  | cal | Fe  |       |               | 4+(1:640) | Pos    | Pos     | Pos     | 182.4, 183.3 |     |     |     |                            |       |
| 9            | Red14                 | Ad  | Fe  |       |               | 4+(1:10)  | Neg    | N       | Pos     | 23.8, 26.1   |     |     |     |                            |       |
| 10           | 7R14                  | cal | Fe  |       |               | 2+(1:40)  | Pos    | N       | Pos     | 52.7, 58.3   |     |     |     |                            |       |
| Samples      |                       |     |     |       |               | 14        | 14     | 14      | 14      |              |     |     |     |                            |       |
| Seropositive |                       |     |     |       |               | 8         | 7      | 5       | 8       |              |     |     |     |                            |       |
| Suspect      |                       |     |     |       |               | -         | -      | -       | -       |              |     |     |     |                            |       |
| Seronegative |                       |     |     |       |               | 6         | 7      | 9       | 6       |              |     |     |     |                            |       |
| Undetermined |                       |     |     |       |               |           |        |         |         |              |     |     |     |                            |       |
| Tested By    |                       |     |     |       |               | af        | af     | af      | af      |              |     |     |     |                            |       |
|              |                       |     |     |       |               | 5/4/17    | 5/4/17 | 5/23/17 | 5/23/17 |              |     |     |     |                            |       |

Laboratory Comments:

Please do CF, FPA  
BAPA, Card.

FEE:

DATE RECEIVED: 5-3-17



17-18070  
05/03/17

The MYDL is an accredited AAVLD laboratory and a member of the USDA National Animal Health Laboratory Network. Completing and submitting any submission form or any o. contractual agreement for services requested and the specimens submitted become the property of the MYDL. In addition, at no additional expense to our clients, specimens submitted to the MYDL may be subjected to additional testing upon the order of the state or federal animal health officials, or whenever a Foreign Animal Disease or in support of surveillance for other animal disease. Serology SV-2A (Rev. 11/09)

000355







FEES:

|   |        |
|---|--------|
| B. Abortus Card                             | 22.40  |
| Brucella abortus/suis - Complement Fixation | 37.10  |
| Brucella abortus FPA                        | 22.40  |
| B. Abortus Bapa                             | 22.40  |
| Total                                       | 104.30 |

(This is not a bill. Do not make payments from this report.)



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EMAIL: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)



PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

CASE: 17-18293  
Name/ID: 3G14  
Species: American Bison

FINAL REPORT 05/27/17

Sex: Female Age: Adult  
County: Park  
Owner: USDA, APHIS, VS

Accessioned: 05/05/17  
Authorized by: AF

Previous Reports  
05/27/17

## SEROLOGY

### Brucella abortus

Animal  
3G14

FPA  
Positive

Clotted Blood

Verified on: 05/27/17 by: DK

Animal  
3G14

B. Abortus  
BAPA  
Positive

Clotted Blood

Verified on 05/12/17 by: AF

Animal  
3G14

BRUCF  
3+ 1:40

BRUCARD  
Positive

Clotted Blood

Verified on: 05/23/17 by: DK

Page 1 of 1

FEES:

|   |      |
|---|------|
| B. Abortus Card                             | 1.60 |
| Brucella abortus/suis - Complement Fixation | 2.65 |
| Brucella abortus FPA                        | 1.60 |
| B. Abortus Bapa                             | 1.60 |
| Total                                       | 7.45 |

(This is not a bill. Do not make payments from this report.)



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EMAIL: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)



PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

CASE: 17-18423  
Name/ID:  
Species: American Bison  
  
Sex: Age:  
Owner: USDA, APHIS, VS

FINAL REPORT 05/28/17

Accessioned: 05/08/17  
Authorized by: AF

Previous Reports  
05/28/17

## SEROLOGY

### Brucella abortus

Clotted Blood

Verified on: 05/28/17 by: DK

| <u>Animal</u> | <u>FPA</u> |
|---------------|------------|
| R16           | Positive   |
| 7R16          | Positive   |
| R13           | Positive   |
| 7R13          | Positive   |
| Gr21          | Negative   |
| 7G21          | Negative   |
| R72           | Positive   |
| 7R72          | Positive   |
| R40           | Positive   |
| 7R40          | Positive   |
| R73           | Positive   |
| 7R73          | Positive   |

Clotted Blood

Verified on 05/23/17 by: DK

| <u>Animal</u> | <u>B. Abortus</u> |
|---------------|-------------------|
|               | <u>BAPA</u>       |
| R16           | Positive          |
| 7R16          | Positive          |
| R13           | Positive          |
| 7R13          | Positive          |
| Gr21          | Negative          |
| 7G21          | Negative          |
| R72           | Positive          |
| 7R72          | Positive          |
| R40           | Positive          |
| 7R40          | Positive          |
| R73           | Positive          |
| 7R73          | Positive          |

Clotted Blood

Verified on: 05/23/17 by: DK

| <u>Animal</u> | <u>BRUCF</u> | <u>BRUCARD</u> |
|---------------|--------------|----------------|
| R16           | 4+ 1:640     | Positive       |
| 7R16          | 4+ 1:640     | Positive       |

|      |                    |                 |
|------|--------------------|-----------------|
| R13  | Negative @<br>1:10 | <b>Positive</b> |
| 7R13 | 3+ 1:320           | <b>Positive</b> |
| Gr21 | Negative @<br>1:10 | Negative        |
| 7G21 | 2+ 1:40            | Negative        |
| R72  | Negative @<br>1:10 | <b>Positive</b> |
| 7R72 | 3+ 1:320           | <b>Positive</b> |
| R40  | 3+ 1:80            | <b>Positive</b> |
| 7R40 | 4+ 1:640           | <b>Positive</b> |
| R73  | 2+ 1:80            | <b>Positive</b> |
| 7R73 | 4+ 1:80            | <b>Positive</b> |



Species: Bison  
County: Park

# MONTANA VETERINARY DIAGNOSTIC LABORATORY

Box 997 - Bozeman, MT 59771  
Phone (406) 994 - 4885 Fax (406) 994 - 6344  
Email: livdiagnosticlab@mt.gov

Collection Date: 5-8-17  
Page 1 of 2

## SEROLOGY REPORT (SV2A) - Complete Light Shaded Areas Only (SEE EXAMPLE and KEY on back Page 4)

OWNER: USDA, APHIS, VS  
ADDRESS:  
CITY/STATE/ZIP: Corwin Springs, MT  
REASON FOR TEST - MANDATORY INFORMATION (See Key)  
BQFS-Gona Con- Cattle Health

SUBMITTER'S SIGNATURE: R. Clarke  
SUBMITTER'S NAME (PRINT): R. Clarke  
ADDRESS:  
CITY/STATE/ZIP: **(b) (6)**  
RESULT REPORTING OPTIONS: PHONE / FAX / EMAIL  
NUMBER OR EMAIL ADDRESS: R. Clarke, B. Frey, J. Phelan

CIRCLE DISEASE TEST REQUIRED: If needed, indicate specific test and/or dilution. Example on back.

| TUBE NO.     | ANIMAL IDENTIFICATION | AGE  | SEX | BREED | OFFICIAL VAC. | BRU        | BT      | ANA     | END     | PTB     | IBR          | BVD | BLV | LEPTOSPIROSIS 8 - SEROVARS | OTHER |
|--------------|-----------------------|------|-----|-------|---------------|------------|---------|---------|---------|---------|--------------|-----|-----|----------------------------|-------|
| 1            | R16                   | Ad   | Fe  | Bison |               | CF (1:10)  | Pos     | Pos     | Pos     | Pos     | 179.1, 178.2 |     |     |                            |       |
| 2            | 7R16                  | calf | M   |       |               | 4+ (1:640) | Pos     | Pos     | Pos     | Pos     | 192.0, 189.5 |     |     |                            |       |
| 3            | R13                   | Ad   | Fe  |       |               | Neg (1:10) | Pos     | Pos     | Pos     | Pos     | 189.8, 191.0 |     |     |                            |       |
| 4            | 7R13                  | calf | Fe  |       |               | 3+ (1:320) | Pos     | Pos     | Pos     | Pos     | 170.2, 170.3 |     |     |                            |       |
| 5            | Gr 21                 | Ad   | Fe  |       |               | Neg (1:10) | N       | N       | N       | N       | 4.0          |     |     |                            |       |
| 6            | 7G21                  | calf | Fe  |       |               | 2+ (1:40)  | N       | N       | N       | N       | -21.4, -20.9 |     |     |                            |       |
| 7            | R72                   | Ad   | Fe  |       |               | Neg (1:10) | Pos     | Pos     | Pos     | Pos     | 177.6, 180.0 |     |     |                            |       |
| 8            | 7R72                  | calf | M   |       |               | 3+ (1:320) | Pos     | Pos     | Pos     | Pos     | 135.0, 136.6 |     |     |                            |       |
| 9            | R40                   | Ad   | Fe  |       |               | 3+ (1:80)  | Pos     | Pos     | Pos     | Pos     | 205.4, 205.4 |     |     |                            |       |
| 10           | 7R40                  | calf | Fe  |       |               | 4+ (1:640) | Pos     | Pos     | Pos     | Pos     | 184.6, 181.6 |     |     |                            |       |
| Samples      |                       |      |     |       |               | 12         | 12      | 12      | 12      |         |              |     |     |                            |       |
| Seropositive |                       |      |     |       |               | 9          | 10      | 10      | 10      |         |              |     |     |                            |       |
| Suspect      |                       |      |     |       |               | -          |         |         |         |         |              |     |     |                            |       |
| Seronegative |                       |      |     |       |               | 3          | 2       | 2       | 2       |         |              |     |     |                            |       |
| Undetermined |                       |      |     |       |               |            |         |         |         |         |              |     |     |                            |       |
| Tested By    |                       |      |     |       |               | 5/11/17    | 5/23/17 | 5/23/17 | 5/23/17 | 5/23/17 |              |     |     |                            |       |

Laboratory Comments:

Please do FPA, BAPA  
CF = card

FEE: DATE RECEIVED: 5-8-17



17-18423

05/08/17

The MVDL is an accredited AAVLD laboratory and a member of the USDA National Animal Health Laboratory Network. Completing and submitting any submission form or a contractual agreement for services requested and the specimens submitted become the property of the MVDL. In addition, at no additional expense to our clients, specimens submitted for additional testing upon the order of the state or federal animal health officials, or whenever a Foreign Animal Disease is suspected, or in support of surveillance for other animal

000363







FEES:

|   |       |
|---|-------|
| B. Abortus Card                             | 19.20 |
| Brucella abortus/suis - Complement Fixation | 31.80 |
| Brucella abortus FPA                        | 19.20 |
| B. Abortus Bapa                             | 19.20 |
| Total                                       | 89.40 |

(This is not a bill. Do not make payments from this report.)



# MONTANA VETERINARY DIAGNOSTIC LABORATORY

1911 WEST LINCOLN, BOZEMAN, MT 59718  
P.O. Box 997, BOZEMAN, MT 59771  
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PHONE: (406) 994-4885  
FAX: (406) 994-6344  
EMAIL: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)



PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

CASE: 17-18635  
Name/ID:  
Species: American Bison

FINAL REPORT 06/06/17

Sex: Age:  
Owner: USDA, APHIS, VS

Accessioned: 05/10/17  
Authorized by: AF

Previous Reports  
06/06/17  
06/06/17  
06/06/17

## SEROLOGY

### Brucella abortus

| Animal | FPA      |
|--------|----------|
| Red 37 | Negative |
| 7R37   | Negative |
| Red 46 | Positive |
| 7R46   | Positive |
| 3R22   | Positive |
| 73R22  | Positive |
| Red 21 | Positive |
| 7R21   | Positive |

Clotted Blood

Verified on: 06/06/17 by: DK

### Animal

| Animal | B. Abortus |
|--------|------------|
| Red 37 | BAPA       |
| 7R37   | Positive   |
| Red 46 | Negative   |
| 7R46   | Negative   |
| 3R22   | Negative   |
| 73R22  | Positive   |
| Red 21 | Positive   |
| 7R21   | Positive   |

Clotted Blood

Verified on 05/23/17 by: DK

### Animal

| Animal | BRUCF              | BRUCARD  |
|--------|--------------------|----------|
| Red 37 | 1+ 1:10            | Negative |
| 7R37   | 1+ 1:40            | Negative |
| Red 46 | AC                 | Negative |
| 7R46   | AC                 | Negative |
| 3R22   | 1+ 1:10            | Positive |
| 73R22  | 4+ 1:320           | Positive |
| Red 21 | Negative @<br>1:10 | Positive |
| 7R21   | 4+ 1:320           | Positive |

Clotted Blood

Verified on: 05/23/17 by: DK

Species: Bison  
County: Park

# MONTANA VETERINARY DIAGNOSTIC LABORATORY

Box 997 - Bozeman, MT 59771  
Phone (406) 994 - 4885 Fax (406) 994 - 6344  
Email: livdiagnosticlab@mt.gov

Collection Date: 5-10-17  
Page 1 of 1

## SEROLOGY REPORT (SV2A) - Complete Light Shaded Areas Only (SEE EXAMPLE and KEY on back Page 4)

OWNER: USDA, APHIS, VS  
ADDRESS:  
CITY/STATE/ZIP: Crown Springs, MT  
REASON FOR TEST - MANDATORY INFORMATION (See Key)  
BQFS - GonaCon - Cattle Health

SUBMITTER'S SIGNATURE: P. Ryan Clarke  
SUBMITTER'S NAME (PRINT): P. Ryan Clarke  
ADDRESS: (b) (6)  
CITY/STATE/ZIP:  
RESULT REPORTING OPTIONS: PHONE / FAX / EMAIL  
NUMBER OR EMAIL ADDRESS: B. Frey, R. Clarke, J. Rhyon

| CIRCLE DISEASE TEST REQUIRED: If needed, indicate specific test and/or dilution. Example on back. |                       |      |     |       |               | BRU          | BT  | ANA | EHD | PTD          | IBR | BVD | BLV | LEPTOSPIROSIS<br>8 - SEROVARS | OTHER |
|---|-----------------------|------|-----|-------|---------------|--------------|-----|-----|-----|--------------|-----|-----|-----|-------------------------------|-------|
| TUBE NO.  | ANIMAL IDENTIFICATION | AGE  | SEX | BREED | OFFICIAL VAC. |              |     |     |     |              |     |     |     |                               |       |
| 1   | Red 37                | Ad   | Fe  | Bison |               | CF (1:10)    | Brn | Brn | Brn |              |     |     |     |                               |       |
| 2   | 7R 37                 | calf | M   |       |               | 1:10         | Pos | N   | N   | 7.4, 9.2     |     |     |     |                               |       |
| 3   | Red 46                | Ad   | Fe  |       |               | 1:40         | N   | N   | N   | 5.7, 6.3     |     |     |     |                               |       |
| 4   | 7R 46                 | calf | Fe  |       |               | AC           | N   | N   | Pos | 117.4, 118.6 |     |     |     |                               |       |
| 5   | 3R 22                 | Ad   | Fe  |       |               | AC           | N   | N   | Pos | 121.8, 119.3 |     |     |     |                               |       |
| 6   | 73R 22                | calf | Fe  |       |               | 1:10         | Pos | Pos | Pos | 144.9, 196.0 |     |     |     |                               |       |
| 7   | Red 21                | Ad   | Fe  |       |               | 4:320        | Pos | Pos | Pos | 160.8, 159.7 |     |     |     |                               |       |
| 8   | 7R 21                 | calf | M   |       |               | N            | Pos | Pos | Pos | 183.4, 184.8 |     |     |     |                               |       |
|   |                       |      |     |       |               | 4:320        | Pos | Pos | Pos | 154.0, 154.1 |     |     |     |                               |       |
| Laboratory Comments:  |                       |      |     |       |               | Samples      | 8   | 8   | 8   | 8            |     |     |     |                               |       |
|   |                       |      |     |       |               | Seropositive | 3   | 5   | 4   | 6            |     |     |     |                               |       |
|   |                       |      |     |       |               | Suspect      |     |     |     |              |     |     |     |                               |       |
|   |                       |      |     |       |               | Seronegative | 3   | 3   | 4   | 2            |     |     |     |                               |       |
|   |                       |      |     |       |               | Undetermined | 2   |     |     |              |     |     |     |                               |       |
|   |                       |      |     |       |               | Tested By    | BR  | SA  | AL  | AL           | AL  |     |     |                               |       |

Laboratory Comments:

Please do BAPA, CF  
Card, FPA

released by BR 6/6/17

FEE: \_\_\_\_\_ DATE RECEIVED: 5-10-17



17 - 18635

05/10/17

The MVDL is an accredited AAEP laboratory and a member of the USDA National Animal Health Laboratory Network. Completing and submitting any submission form or any contractual agreement for services requested and the specimens submitted become the property of the MVDL. In addition, at no additional expense to our clients, specimens submitted for additional testing upon the order of the state or federal animal health officials, or whenever a Foreign Animal Disease is suspected or in support of surveillance for other animal diseases.

000367

FEES:

|   |       |
|---|-------|
| B. Abortus Card                             | 12.80 |
| Brucella abortus/suis - Complement Fixation | 21.20 |
| Brucella abortus FPA                        | 12.80 |
| B. Abortus Bapa                             | 12.80 |
| Total                                       | 59.60 |

(This is not a bill. Do not make payments from this report.)



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EMAIL: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)



PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

CASE: 17-18793  
Name/ID:  
Species: American Bison  
Breed: American bison  
Sex: Age:  
County: Park  
Owner: USDA, APHIS, VS, GonaCon

FINAL REPORT 06/06/17

Accessioned: 05/11/17  
Authorized by: AF

Previous Reports  
06/06/17  
06/06/17  
06/06/17

## SEROLOGY

### Brucella abortus

#### Animal

Red 26  
7R26  
Red 24  
7R24  
Red 22  
7R22

#### FPA

Positive  
Positive  
Positive  
Positive  
Positive  
Positive

Clotted Blood

Verified on: 06/06/17 by: DK

#### Animal

Red 26  
7R26  
Red 24  
7R24  
Red 22  
7R22

#### B. Abortus BAPA

Negative  
Positive  
Positive  
Positive  
Positive  
Positive

Clotted Blood

Verified on 05/23/17 by: DK

#### Animal

Red 26  
7R26  
Red 24  
7R24  
Red 22  
7R22

#### BRUCF

3+ 1:40  
2+ 1:160  
Negative @  
1:10  
3+ 1:320  
1+ 1:320  
1+ 1:320

#### BRUCARD

Negative  
Negative  
Positive  
Positive  
Positive  
Positive

Clotted Blood

Verified on: 05/23/17 by: DK





FEES:

|   |       |
|---|-------|
| B. Abortus Card                             | 9.60  |
| Brucella abortus/suis - Complement Fixation | 15.90 |
| Brucella abortus FPA                        | 9.60  |
| B. Abortus Bapa                             | 9.60  |
| Total                                       | 44.70 |

(This is not a bill. Do not make payments from this report.)



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PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

**CASE: 17-18880**  
**Name/ID:** 7R09  
**Species:** American Bison

**FINAL REPORT 06/30/17**

**Sex:** Unknown **Age:** Fetus  
**Owner:** USDA APHIS VS

**Accessioned:** 05/12/17  
**Authorized by:** DJM

**Previous Reports**  
06/30/17  
06/30/17

### CASE SUMMARY

Verified on: 06/30/17 by: DJM

#### REASON FOR SUBMISSION:

Bison stillborn calf from a Brucellosis positive dam.

#### LABORATORY DIAGNOSIS:

Bison stillbirth; Culture negative for Brucella abortus.

#### COMMENT:

Tissues were in an advanced state of autolysis. Brucella abortus was not isolated from the lung of this fetus.

D. J. Marshall, BVSc, PhD

### PATHOLOGY

Verified on: 06/30/17 by: DJM

#### GROSS DESCRIPTION:

A stillborn bison calf (Tag# 7R09) was submitted for necropsy and subsequent laboratory evaluation. Necropsy was performed between 1.00 and 11.30 am on 12th May 2017. Crown rump length of the mummified fetus measured 76 cm. hair is absent from the head and from legs. No abomasal fluid is recovered. Internal tissues are in an advanced state of autolysis.

#### HISTOLOGIC DESCRIPTION:

Sections of liver, lung, spleen, kidney, abomasum, small intestine, heart and skeletal muscle are examined. Tissues are in an advanced state of autolysis.

### CLINICAL MICROBIOLOGY



**Brucella Culture**

Verified on: 05/22/17 by: JR

| Animal ID | Specimen | Isolate # | Organism                  | Amount |
|-----------|----------|-----------|---------------------------|--------|
| 7R09      | lung     |           | Negative for Brucella sp. |        |

**Campylobacter Culture**

Verified on: 05/22/17 by: JR

| Animal ID | Specimen | Isolate # | Organism                       | Amount |
|-----------|----------|-----------|--------------------------------|--------|
| 7R09      | lung     |           | Negative for Campylobacter sp. |        |

**Aerobic Culture**

Verified on: 05/16/17 by: KK

| Animal ID | Specimen | Isolate # | Organism         | Amount |
|-----------|----------|-----------|------------------|--------|
| 7R09      | lung     | 1         | Escherichia coli | 4+     |

FEES:

---

|                       |       |
|-----------------------|-------|
| Case Summary          | 0.00  |
| Brucella Culture      | 0.00  |
| Campylobacter Culture | 0.00  |
| Aerobic Culture       | 0.00  |
| Abortion panel        | 0.00  |
| Hematoxylin & Eosin   | 0.00  |
| Fetal Necropsy        | 73.50 |
| Total                 | 73.50 |

(This is not a bill. Do not make payments from this report.)



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EMAIL: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)



PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

**CASE: 17-18925**  
**Name/ID:** Red 24  
**Species:** American Bison

**FINAL REPORT 07/03/17**

**Sex:** Female **Age:** Adult  
**County:** Park  
**Owner:** USDA, APHIS, VS- GonaCon

**Accessioned:** 05/15/17  
**Authorized by:** DJM

**Previous Reports**  
07/03/17  
07/03/17

### CASE SUMMARY

**Verified on: 07/03/17 by: DJM**

#### REASON FOR SUBMISSION:

Harvest lymph node and tissues for Brucella culture from a serologically positive Bison cow.

#### LABORATORY DIAGNOSIS:

USDA APHIS Brucella in Bison Study; Bison mortality; Bacillus anthracis negative.

#### COMMENT:

Tissues were sent independently by Dr Clarke to NVSL Ames Iowa.

D. J. Marshall, BVSc, PhD

### PATHOLOGY

**Verified on: 07/03/17 by: DJM**

#### GROSS DESCRIPTION:

An adult lactating female bison (Tag Red 24) was submitted for necropsy and lymph node harvest for Brucella culture investigation. Necropsy was performed on 15th May 2017. Carcass is moderately fleshed. Spleen is enlarged. Multiple adhesions of lung to thoracic wall are present in the thoracic cavity

#### HISTOLOGIC DESCRIPTION:

Sections of spleen, liver, kidney, heart, and lung. Tissues are autoysed.

### CLINICAL MICROBIOLOGY

#### Aerobic Culture

**Verified on: 05/19/17 by: KK**

| Animal ID | Specimen | Isolate # | Organism                        | Amount |
|-----------|----------|-----------|---------------------------------|--------|
| Red 24    | spleen   |           | Negative for Bacillus anthracis |        |

FEES:

---

|                        |        |
|------------------------|--------|
| Aerobic Culture        | 0.00   |
| Hematoxylin & Eosin    | 0.00   |
| Case Summary           | 0.00   |
| Necropsy LA >500#      | 157.50 |
| Incineration per pound | 260.00 |
| Total                  | 417.50 |

(This is not a bill. Do not make payments from this report.)



## MONTANA VETERINARY DIAGNOSTIC LABORATORY

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PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

**CASE: 17-18925**  
**Name/ID:** Red 24  
**Species:** American Bison

**AMENDED REPORT 07/21/17**

**Sex:** Female **Age:** Adult  
**County:** Park  
**Owner:** USDA, APHIS, VS- GonaCon

**Accessioned:** 05/15/17  
**Authorized by:** DJM

**Previous Reports**  
07/03/17  
07/03/17  
07/21/17

### CASE SUMMARY

Verified on: 07/21/17 by: DJM

#### ADDITIONAL INFORMATION:

BRUCELLA CULTURE (NVSL Ames Iowa):

Brucella abortus was not isolated from the tissues submitted.

D. J. Marshall, BVSc, PhD

Verified on: 07/03/17 by: DJM

#### REASON FOR SUBMISSION:

Harvest lymph node and tissues for Brucella culture from a serologically positive Bison cow.

#### LABORATORY DIAGNOSIS:

USDA APHIS Brucella in Bison Study; Bison mortality; Bacillus anthracis negative.

#### COMMENT:

Tissues were sent independently by Dr Clarke to NVSL Ames Iowa.

D. J. Marshall, BVSc, PhD

### PATHOLOGY

Verified on: 07/03/17 by: DJM

#### GROSS DESCRIPTION:

An adult lactating female bison (Tag Red 24) was submitted for necropsy and lymph node harvest for Brucella culture investigation. Necropsy was performed on 15th May 2017. Carscase is moderately fleshed. Spleen is enlarged. Multiple adhesions of lung to thoracic wall are present in the thoracic cavity

HISTOLOGIC DESCRIPTION:

Sections of spleen, liver, kidney, heart, and lung. Tissues are autoysed.

CLINICAL MICROBIOLOGY

| Aerobic Culture |          |           |                                 |        | Verified on: 05/19/17 by: KK |
|-----------------|----------|-----------|---------------------------------|--------|------------------------------|
| Animal ID       | Specimen | Isolate # | Organism                        | Amount |                              |
| Red 24          | spleen   |           | Negative for Bacillus anthracis |        |                              |



## National Veterinary Services Laboratories

PO Box 844

Ames, Iowa 50010

Phone: 515-337-7514 Fax: 515-337-7938

FEDERAL RELAY SERVICE (Voice/TTY/ASCII/Spanish) 1-800-877-8339

The USDA is an equal opportunity provider and employer.

FINAL REPORT

## Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

## Owner

USDA,APHIS,VS

Corwin Springs, MT

## Animal Location

Park County MT, US

## Submitter - 30025

Montana Veterinary Diagnostic Laboratory

Box 997

Bozeman, MT 59771

FAX #: 406-994-6344

Phone #: 406-994-4885

Accession Number: 17-015981

Date Collected: 05/15/2017

Date Received: 05/17/2017

Date Completed: 07/20/2017

Collected By: D.J. Marshall

Purpose: Surveillance

Referral Number: 17-18925

This is not a billable case.

NOTE: Condition of the sample(s) was adequate unless otherwise noted.

Sample: 17-18925 Animal ID: Red 24 Brucella Case Number: B17-0253 Specimen Type: Multiple - Specify in Sample Species: Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

## Lymph Node / Lymph Node- Retropharyngeal

Brucella Isolation Result

No Isolation Made

## Lymph Node / Lymph Node- Parotid

Brucella Isolation Result

No Isolation Made

## Lymph Node / Lymph Node- Prescapular

Brucella Isolation Result

No Isolation Made

## Lymph Node / Lymph Node- Bronchial

Brucella Isolation Result

No Isolation Made

## Lymph Node / Lymph Node- Mesenteric

Brucella Isolation Result

No Isolation Made

## Lymph Node / Lymph Node- Internal Iliac

Brucella Isolation Result

No Isolation Made

## Lymph Node / Lymph Node- S. Mammary

Brucella Isolation Result

No Isolation Made

## Lymph Node / Lymph Node- Popliteal

Brucella Isolation Result

No Isolation Made

## Lymph Node / Lymph Node- Prefemoral

Brucella Isolation Result

No Isolation Made

## Kidney / Kidney

Brucella Isolation Result

No Isolation Made

## Liver / Liver

Brucella Isolation Result

No Isolation Made

## Spleen / Spleen



17-18925

05/15/17

Page 1 of 2

Date Generated: 7/20/2017



Accession 17-015981 Owner: USDA,APHIS,VS

Referral Number:

17-18925

|                               |                   |
|-------------------------------|-------------------|
| Brucella Isolation Result     | No Isolation Made |
| <b>Ovary/Oviduct / Ovary</b>  |                   |
| Brucella Isolation Result     | No Isolation Made |
| <b>Uterus/Vagina / Uterus</b> |                   |
| Brucella Isolation Result     | No Isolation Made |
| <b>Udder/Teat / Udder</b>     |                   |
| Brucella Isolation Result     | No Isolation Made |
| <b>Intestine / Ileum</b>      |                   |
| Brucella Isolation Result     | No Isolation Made |

**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

Help Us Help You

(This new section will be updated periodically with tips for submitters.)

Quality samples yield the most accurate results. Please call if you have questions.



17-18925

FEES:

|                        |      |
|------------------------|------|
| Additional Information | 0.00 |
| Total                  | 0.00 |

(This is not a bill. Do not make payments from this report.)



## MONTANA VETERINARY DIAGNOSTIC LABORATORY

1911 WEST LINCOLN, BOZEMAN, MT 59718  
P.O. Box 997, BOZEMAN, MT 59771  
WEB: [www.liv.mt.gov/lab](http://www.liv.mt.gov/lab)

PHONE: (406) 994-4885  
FAX: (406) 994-6344  
EMAIL: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)



PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

**CASE: 17-18926**  
**Name/ID:** Green 15  
**Species:** American Bison

**AMENDED REPORT 07/21/17**

**Sex:** Female **Age:** Adult  
**County:** Park  
**Owner:** USDA, APHIS, VS- GonaCon

**Accessioned:** 05/15/17  
**Authorized by:** DJM

**Previous Reports**  
07/03/17  
07/03/17  
07/21/17

### CASE SUMMARY

Verified on: 07/21/17 by: DJM

#### ADDITIONAL INFORMATION:

BRUCELLA CULTURE (NVSL Ames Iowa):

Brucella abortus was not isolated from the tissues submitted (see attached report).

D. J. Marshall, BVSc, PhD

Verified on: 07/03/17 by: DJM

#### REASON FOR SUBMISSION:

Harvest lymph node and tissues for Brucella culture from a serologically positive Bison cow.

#### LABORATORY DIAGNOSIS:

USDA APHIS Brucella in Bison Study; Bison mortality; Bacillus anthracis negative.

#### COMMENT:

Tissues were sent independently by Dr Clarke to NVSL Ames Iowa.

D. J. Marshall, BVSc, PhD

### PATHOLOGY

Verified on: 07/03/17 by: DJM

GROSS DESCRIPTION:

An adult lactating female bison (tag green 15) was submitted for necropsy and lymph node harvest fo Brucella investigation. Necropsy was performed on 15th May 2017. Carscase is lightly fleshed. Spleen is enlarged.

HISTOLOGIC DESCRIPTION:

Sections of spleen, liver, kidney, heart, and lung. Tissues are autoysed.

CLINICAL MICROBIOLOGY

---

| Aerobic Culture |          |           |                                 |        | Verified on: 05/19/17 by: KK |
|-----------------|----------|-----------|---------------------------------|--------|------------------------------|
| Animal ID       | Specimen | Isolate # | Organism                        | Amount |                              |
| Green 15        | spleen   |           | Negative for Bacillus anthracis |        |                              |

**National Veterinary Services Laboratories**

PO Box 844

Ames, Iowa 50010

Phone: 515-337-7514 Fax: 515-337-7938

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FINAL REPORT

**Laboratory Test Report**

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

**Owner**USDA,APHIS,VS - GonaCon  
Corwin Springs, MT**Accession Number:** 17-015980**Animal Location**

Park County MT, US

**Date Collected:** 05/15/2017**Date Received:** 05/17/2017**Submitter - 30025**Montana Veterinary Diagnostic Laboratory  
Box 997  
Bozeman, MT 59771  
FAX #: 406-994-6344  
Phone #: 406-994-4885**Date Completed:** 07/20/2017**Collected By:** D. Jeff Marshall**Purpose:** Surveillance**Referral Number:** 17-18926

This is not a billable case.

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

Sample: 17-18926 Animal ID: Green 15 Brucella Case Number: B17-0252 Specimen Type: Multiple - Specify in Sample Species: Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Lymph Node / Lymph Node- Retropharyngeal**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Prescapular**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Prefemoral**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Parotid**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- S. Mammary**

Brucella Isolation Result

No Isolation Made

**Lymph Node / Lymph Node- Mandibular**

Brucella Isolation Result

No Isolation Made

**Mammary Gland / Mammary Gland**

Brucella Isolation Result

No Isolation Made

**Kidney / Kidney**

Brucella Isolation Result

No Isolation Made

**Spleen / Spleen**

Brucella Isolation Result

No Isolation Made

**Liver / Liver**

Brucella Isolation Result

No Isolation Made

**Uterus/Vagina / Uterus**

Brucella Isolation Result

No Isolation Made

**Ovary/Oviduct / Ovary**

17 - 18926

05/15/17

Page 1 of 2

Date Generated: 7/20/2017

DJM

Accession 17-015980 Owner: USDA,APHIS,VS - GonaCon

Referral Number: 17-18926

Brucella Isolation Result No Isolation Made

**Lymph Node / Lymph Node- Internal Iliac**

Brucella Isolation Result No Isolation Made

**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

Help Us Help You

(This new section will be updated periodically with tips for submitters.)

Quality samples yield the most accurate results. Please call if you have questions.



17-18926

FEES:

|                        |      |
|------------------------|------|
| Additional Information | 0.00 |
| Total                  | 0.00 |

(This is not a bill. Do not make payments from this report.)



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EMAIL: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)



PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

CASE: 17-18976  
Name/ID:  
Species: American Bison

FINAL REPORT 06/06/17

Sex: Age:  
County: Park  
Owner: USDA, APHIS, VS

Accessioned: 05/16/17  
Authorized by: AF

Previous Reports  
06/06/17  
06/06/17  
06/06/17

## SEROLOGY

### Brucella abortus

| Animal | FPA      |
|--------|----------|
| Gr 01  | Negative |
| 7G 01  | Negative |
| Red 02 | Negative |
| 7R 02  | Negative |
| Gr 17  | Negative |
| 7G 17  | Negative |

Clotted Blood

Verified on: 06/06/17 by: DK

| Animal | B. Abortus<br>BAPA |
|--------|--------------------|
| Gr 01  | Negative           |
| 7G 01  | Negative           |
| Red 02 | Negative           |
| 7R 02  | Negative           |
| Gr 17  | Negative           |
| 7G 17  | Negative           |

Clotted Blood

Verified on 05/23/17 by: DK

| Animal | BRUCF              | BRUCARD  |
|--------|--------------------|----------|
| Gr 01  | Negative @<br>1:10 | Negative |
| 7G 01  | 2+ 1:10            | Negative |
| Red 02 | Negative @<br>1:10 | Negative |
| 7R 02  | 3+ 1:10            | Negative |
| Gr 17  | Negative @<br>1:10 | Negative |
| 7G 17  | Negative @<br>1:10 | Negative |

Clotted Blood

Verified on: 05/23/17 by: DK





FEES:

|   |       |
|---|-------|
| B. Abortus Card                             | 9.60  |
| Brucella abortus/suis - Complement Fixation | 15.90 |
| Brucella abortus FPA                        | 9.60  |
| B. Abortus Bapa                             | 9.60  |
| Total                                       | 44.70 |

(This is not a bill. Do not make payments from this report.)



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PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

**CASE: 17-19000**  
**Name/ID:** 7R 43  
**Species:** American Bison

**FINAL REPORT 07/03/17**

**Sex:** Unknown **Age:** 1 Week  
**County:** Park  
**Owner:** USDA-APHIS-VS

**Accessioned:** 05/16/17

**Authorized by:** DJM

**Previous Reports**  
07/03/17  
07/03/17

### CASE SUMMARY

**Verified on: 07/03/17 by: DJM**

#### REASON FOR SUBMISSION:

Bison calf mortality.

#### LABORATORY DIAGNOSIS:

Bison calf mortality; Brucella culture negative.

#### COMMENT:

Culture of the lung was negative for Brucella abortus.

D. J. Marshall, BVSc, PhD

### PATHOLOGY

**Verified on: 07/03/17 by: DJM**

#### GROSS DESCRIPTION:

A 1-week-old male bison calf (Tag 7R43) was submitted for necropsy and subsequent laboratory evaluation. Necropsy was performed on 16th May 2017. There is marked predation to tissues of the abdomen and thorax. Only tissues available for evaluation are lung, kidney spleen, brain and intestine.

#### HISTOLOGIC DESCRIPTION:

Sections of brain, lung, kidney, spleen, abomasum and small intestine are examined. No significant histological abnormalities are detected.

### CLINICAL MICROBIOLOGY

000391

**Brucella Culture**

Verified on: 05/30/17 by: JR

| Animal ID | Specimen | Isolate # | Organism                  | Amount |
|-----------|----------|-----------|---------------------------|--------|
| 7R 43     | lung     |           | Negative for Brucella sp. |        |

**Campylobacter Culture**

Verified on: 05/30/17 by: JR

| Animal ID | Specimen | Isolate # | Organism  | Amount |
|-----------|----------|-----------|---|--------|
| 7R 43     | lung     |           | Overgrowth of Pseudomonas spp.;<br>results inconclusive |        |

**Aerobic Culture**

Verified on: 05/18/17 by: KK

| Animal ID | Specimen | Isolate # | Organism  | Amount |
|-----------|----------|-----------|-----------|--------|
| 7R 43     | lung     | 1         | Mixed sp. | 4+     |

FEES:

|                       |       |
|-----------------------|-------|
| Hematoxylin & Eosin   | 0.00  |
| Case Summary          | 0.00  |
| Brucella Culture      | 0.00  |
| Campylobacter Culture | 0.00  |
| Aerobic Culture       | 0.00  |
| Fetal Necropsy        | 73.50 |
| Total                 | 73.50 |

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EMAIL: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)



PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

CASE: 17-19198  
Name/ID:  
Species: American Bison  
  
Sex:    Age:  
Owner: USDA, APHIS, VS

FINAL REPORT 06/06/17

Accessioned: 05/17/17  
Authorized by: AF

Previous Reports  
06/06/17  
06/06/17  
06/06/17

## SEROLOGY

### Brucella abortus

#### Animal

Gr20  
7Gr20  
Red 50  
7R50  
3G08  
73G08

#### FPA

Negative  
Negative  
**Positive**  
**Positive**  
**Positive**  
**Positive**

Clotted Blood

Verified on: 06/06/17 by: DK

#### Animal

Gr20  
7Gr20  
Red 50  
7R50  
3G08  
73G08

#### B. Abortus BAPA

Negative  
Negative  
**Positive**  
**Positive**  
**Positive**  
**Positive**

Clotted Blood

Verified on 05/23/17 by: DK

#### Animal

Gr20  
7Gr20  
Red 50  
7R50  
3G08  
73G08

#### BRUCF

2+ 1:10  
2+ 1:20  
2+ 1:10  
3+ 1:80  
2+ 1:10  
3+ 1:320

#### BRUCARD

Negative  
Negative  
**Positive**  
Negative  
**Positive**  
**Positive**

Clotted Blood

Verified on: 05/23/17 by: DK





FEES:

|   |       |
|---|-------|
| B. Abortus Card                             | 9.60  |
| Brucella abortus/suis - Complement Fixation | 15.90 |
| Brucella abortus FPA                        | 9.60  |
| B. Abortus Bapa                             | 9.60  |
| Total                                       | 44.70 |

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EMAIL: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)



PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

CASE: 17-19309  
Name/ID:  
Species: American Bison

FINAL REPORT 06/06/17

Sex: Age:  
County: Park  
Owner: USDA, APHIS, VS - Cattle Health

Accessioned: 05/18/17  
Authorized by: AF

Previous Reports  
06/06/17  
06/06/17  
06/06/17

## SEROLOGY

### Brucella abortus

#### Animal

Gr 08  
7G 08  
Red 33  
7R 33

#### FPA

Positive  
Positive  
Positive  
Positive

Clotted Blood

Verified on: 06/06/17 by: DK

#### Animal

Gr 08  
7G 08  
Red 33  
7R 33

#### B. Abortus BAPA

Positive  
Positive  
Positive  
Positive

Clotted Blood

Verified on 05/23/17 by: DK

#### Animal

Gr 08  
7G 08  
Red 33  
7R 33

#### BRUCF

3+ 1:160  
4+ 1:640  
Negative @  
1:10  
4+ 1:160

#### BRUCARD

Positive  
Positive  
Positive  
Positive

Clotted Blood

Verified on: 05/23/17 by: DK



FEES:

|   |       |
|---|-------|
| B. Abortus Card                             | 6.40  |
| Brucella abortus/suis - Complement Fixation | 10.60 |
| Brucella abortus FPA                        | 6.40  |
| B. Abortus Bapa                             | 6.40  |
| Total                                       | 29.80 |

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EMAIL: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)



PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

**CASE: 17-19393**  
**Name/ID:** Red 43  
**Species:** American Bison

**FINAL REPORT 07/03/17**

**Sex:** Female **Age:** Adult  
**County:** Park  
**Owner:** USDA, APHIS, VS

**Accessioned:** 05/19/17  
**Authorized by:** DJM

**Previous Reports**  
07/03/17  
07/03/17

### CASE SUMMARY

**Verified on: 07/03/17 by: DJM**

#### REASON FOR SUBMISSION:

Harvest lymph node and tissues for Brucella culture from a serologically positive Bison cow.

#### LABORATORY DIAGNOSIS:

USDA APHIS Brucella in Bison Study; Acute necrotizing bronchopneumonia; Trueperella pyogenes.

#### COMMENT:

This cow had a severe necrotizing bronchopneumonia from which Trueperella pyogenes was isolated. Tissues and lymph nodes were sent independently by Dr Clarke to NVSL Ames Iowa for brucella culture.

D. J. Marshall, BVSc, PhD

### PATHOLOGY

**Verified on: 07/03/17 by: DJM**

#### GROSS DESCRIPTION:

A lactating female bison (tag red 43) was submitted for necropsy and tissue and lymph node harvest for Brucella abortus culture investigations. Necropsy was performed on Monday 22nd May 2017. Cow is in light body condition and has trauma to right eye. Multiple adhesions are present in the thoracic cavity (lung to thoracic wall). Abscessation is present in the left cranial lobe of the lung.

#### HISTOLOGIC DESCRIPTION:

Sections of lung are examined. Lung is effaced by widespread necrosis and inflammation across multiple lobules.

#### HISTOLOGIC DIAGNOSIS:

Lung: Bronchopneumonia, acute necrotizing.

CLINICAL MICROBIOLOGY

Mycoplasma Culture

Verified on: 06/05/17 by: JR

| Animal ID | Specimen | Isolate # | Organism                    | Amount |
|-----------|----------|-----------|-----------------------------|--------|
| Red 43    | lung     |           | Negative for Mycoplasma sp. |        |

Aerobic Culture

Verified on: 05/26/17 by: KK

| Animal ID | Specimen | Isolate # | Organism   | Amount |
|-----------|----------|-----------|--|--------|
| Red 43    | lung     | 1         | Trueperella pyogenes (formerly Arcanobacterium pyogenes) | 4+     |
| Red 43    | lung     |           | Mixed enteric organisms present                          | 1+     |
| Red 43    | spleen   |           | Negative for Bacillus anthracis                          |        |

FEES:

---

|                     |        |
|---------------------|--------|
| Shipping            | 22.00  |
| Hematoxylin & Eosin | 0.00   |
| Aerobic Culture     | 0.00   |
| Mycoplasma Culture  | 0.00   |
| Case Summary        | 0.00   |
| Necropsy LA >500#   | 157.50 |
| Total               | 179.50 |

(This is not a bill. Do not make payments from this report.)

**National Veterinary Services Laboratories**

PO Box 844

Ames, Iowa 50010

**Phone:** 515-337-7514 **Fax:** 515-337-7938

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FINAL REPORT

**Laboratory Test Report**

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

**Owner**

USDA/APHIS/VS

Fort Collins, CO

**Animal Location**

CO

**Submitter - 2649**

Dr. Jack C. Rhyan

USDA, APHIS, VS

National Wildlife Research Center

4101 La Porte Ave

Fort Collins, CO 80521

FAX #: 970-266-6138

Phone #: 970-266-6140

**Accession Number:****17-020239****Date Collected:****Date Received:**

06/21/2017

**Date Completed:**

07/31/2017

**Collected By:**

McCullum

**Purpose:**

General Diagnostic

**Referral Number:****This is not a billable case.****NOTE: Condition of the sample(s) was adequate unless otherwise noted.****Sample:** 4R21 **Animal ID:** 4R21 **Brucella Case Number:** B17-0324 **Specimen Type:** Swab **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** 4R24 **Animal ID:** 4R24 **Brucella Case Number:** B17-0325 **Specimen Type:** Swab **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Sample:** 3R21 **Animal ID:** 3R21 **Brucella Case Number:** B17-0326 **Specimen Type:** Swab **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made



**Sample:** 3R21 calf **Animal ID:** 3R21 calf **Brucella Case Number:** B17-0327 **Specimen Type:** Swab **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Rectal**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Sample:** 4R21 calf **Animal ID:** 4R21 calf **Brucella Case Number:** B17-0328 **Specimen Type:** Swab **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

**Help Us Help You**

(This new section will be updated periodically with tips for submitters.)

Quality samples yield the most accurate results. Please call if you have questions.





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PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

CASE: 17-20287

Name/ID:

Species: American Bison

Sex: Age:

County: Park

Owner: USDA, APHIS, VS - GonaCon

FINAL REPORT 06/06/17

Accessioned: 05/31/17

Authorized by: AF

## Previous Reports

06/06/17

06/06/17

06/06/17

## SEROLOGY

### Brucella abortus

#### Animal

Red 48

7R 48

#### FPA

Positive

Positive

Clotted Blood

Verified on: 06/06/17 by: DK

#### Animal

Red 48

7R 48

#### B. Abortus

##### BAPA

Positive

Positive

Clotted Blood

Verified on 06/02/17 by: DK

#### Animal

Red 48

7R 48

#### BRUCF

3+ 1:160

1+ 1:640

#### BRUCARD

Positive

Positive

Clotted Blood

Verified on: 06/06/17 by: DK



FEES:

|   |       |
|---|-------|
| B. Abortus Card                             | 3.20  |
| Brucella abortus/suis - Complement Fixation | 5.30  |
| Brucella abortus FPA                        | 3.20  |
| B. Abortus Bapa                             | 3.20  |
| Total                                       | 14.90 |

(This is not a bill. Do not make payments from this report.)



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Ames, Iowa 50010

Phone: 515-337-7514 Fax: 515-337-7938

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FINAL REPORT

## Laboratory Test Report

Sensitive But Unclassified/Sensitive Security Information - Disseminate on a Need-To-Know Basis Only

**Owner** *W i l d l i f e*

USDA,APHIS,VS

Corwin Springs, MT

**Animal Location**

Park County MT

**Submitter - 1961**

Dr. Patrick Ryan. Clarke

USDA, APHIS, VS

**Accession Number:** 17-021001

**Date Collected:**

**Date Received:** 06/28/2017

**Date Completed:** 07/31/2017

**Collected By:** R. Clarke, et al

**Purpose:** General Diagnostic

**Referral Number:** Cora Con

**This is not a billable case.**

(b) (6)

**NOTE: Condition of the sample(s) was adequate unless otherwise noted.**

**Sample:** Red37 **Animal ID:** Red37 **Brucella Case Number:** B17-0330 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Exudate / Exudate- Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** 7R37 **Animal ID:** 7R37 **Brucella Case Number:** B17-0331 **Specimen Type:** Swab **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Sample:** Red46 **Animal ID:** Red46 **Brucella Case Number:** B17-0332 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk Cream**

Brucella Isolation Result

No Isolation Made

**Milk / Milk Sediment**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Discharge, Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Sample:** 7R46 **Animal ID:** 7R46 **Brucella Case Number:** B17-0333 **Specimen Type:** Swab **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Sample:** 3R22 **Animal ID:** 3R22 **Brucella Case Number:** B17-0334 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk Cream**

Brucella Isolation Result

No Isolation Made

**Milk / Milk Sediment**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Discharge, Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** 73R22 **Animal ID:** 73R22 **Brucella Case Number:** B17-0335 **Specimen Type:** Swab **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Sample:** Red21 **Animal ID:** Red21 **Brucella Case Number:** B17-0336 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk Cream**

Brucella Isolation Result

No Isolation Made

**Milk / Milk Sediment**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Discharge, Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Sample:** 7R21 **Animal ID:** 7R21 **Brucella Case Number:** B17-0337 **Specimen Type:** Swab **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Sample:** Red26 **Animal ID:** Red26 **Brucella Case Number:** B17-0338 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk Cream**

Brucella Isolation Result

No Isolation Made

**Milk / Milk Sediment**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Discharge, Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Sample:** 7R26 **Animal ID:** 7R26 **Brucella Case Number:** B17-0339 **Specimen Type:** Swab **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made



**Sample:** Red24 **Animal ID:** Red24 **Brucella Case Number:** B17-0340 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Exudate / Discharge, Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Sample:** 7R24 **Animal ID:** 7R24 **Brucella Case Number:** B17-0341 **Specimen Type:** Swab **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Sample:** Red22 **Animal ID:** Red22 **Brucella Case Number:** B17-0342 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated

**Sample:** 7R22 **Animal ID:** 7R22 **Brucella Case Number:** B17-0343 **Specimen Type:** Swab **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Sample:** Green15 **Animal ID:** Green15 **Brucella Case Number:** B17-0344 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Exudate / Discharge, Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** 7G15 **Animal ID:** 7G15 **Brucella Case Number:** B17-0345 **Specimen Type:** Swab **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Sample:** Red09 **Animal ID:** Red09 **Brucella Case Number:** B17-0346 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Exudate / Discharge, Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** Gr01 **Animal ID:** Gr01 **Brucella Case Number:** B17-0347 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Exudate / Discharge, Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

Contaminated



**Sample:** 7G01 **Animal ID:** 7G01 **Brucella Case Number:** B17-0348 **Specimen Type:** Swab **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Sample:** Red02 **Animal ID:** Red02 **Brucella Case Number:** B17-0349 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Exudate / Discharge, Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** 7R02 **Animal ID:** 7R02 **Brucella Case Number:** B17-0350 **Specimen Type:** Swab **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Sample:** Gr17 **Animal ID:** Gr17 **Brucella Case Number:** B17-0351 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Exudate / Discharge, Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** 7G17 **Animal ID:** 7G17 **Brucella Case Number:** B17-0352 **Specimen Type:** Swab **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Sample:** Gr20 **Animal ID:** Gr20 **Brucella Case Number:** B17-0353 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Exudate / Discharge, Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** 7G20 **Animal ID:** 7G20 **Brucella Case Number:** B17-0354 **Specimen Type:** Swab **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Sample:** Red50 **Animal ID:** Red50 **Brucella Case Number:** B17-0355 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Fluid- Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** 7R50 **Animal ID:** 7R50 **Brucella Case Number:** B17-0356 **Specimen Type:** Swab **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Sample:** 3G08 **Animal ID:** 3G08 **Brucella Case Number:** B17-0357 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Fluid- Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** 73G08 **Animal ID:** 73G08 **Brucella Case Number:** B17-0358 **Specimen Type:** Swab **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Sample:** Red33 **Animal ID:** Red33 **Brucella Case Number:** B17-0359 **Specimen Type:** Multiple - Specify in Sample **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Fluid- Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

**Sample:** 7R33 **Animal ID:** 7R33 **Brucella Case Number:** B17-0360 **Specimen Type:** Swab **Species:** Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

Sample: Gr08 Animal ID: Gr08 Brucella Case Number: B17-0361 Specimen Type: Multiple - Specify in Sample Species: Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Milk / Milk**

Brucella Isolation Result

No Isolation Made

**Swab / Swab- Vaginal**

Brucella Isolation Result

No Isolation Made

**Fluid / Fluid- Vaginal**

Brucella Isolation Result

No Isolation Made

**Feces / Feces**

Brucella Isolation Result

No Isolation Made

Sample: 7G08 Animal ID: 7G08 Brucella Case Number: B17-0362 Specimen Type: Swab Species: Bison (Not otherwise specified)

Brucella Isolation Result

No Isolation Made

Individual specimen results are listed below:

**Swab / Swab- Conjunctival**

Brucella Isolation Result

No Isolation Made

**Results authorized by:** Dr. Suelee Robbe-Austerman, Section Head, Mycobacteria and Brucella Section  
NVSL MB General Phone: 515-337-7388

**Help Us Help You**

(This new section will be updated periodically with tips for submitters.)

Quality samples yield the most accurate results. Please call if you have questions.

**From:** [Darrell Geist](#)  
**To:** [APHIS-FOIA Officer](#)  
**Cc:** [Darrell Geist](#)  
**Subject:** FREEDOM OF INFORMATION ACT REQUEST  
**Date:** Wednesday, October 11, 2017 7:09:30 PM

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## FREEDOM OF INFORMATION ACT REQUEST

October 11, 2017

Tonya Woods, FOIA Director  
Legislative and Public Affairs  
Freedom of Information Act  
4700 River Road, Unit 50  
Riverdale, MD 20737  
Phone: 301-851-4102  
Fax: 301-734 -5941  
[Email: foia.officer@aphis.usda.gov](mailto:foia.officer@aphis.usda.gov)

Dear FOIA Director Tonya Woods, ,

Pursuant to the Freedom of Information Act 5 U.S.C. § 552 *et. seq.*, Buffalo Field Campaign is filing this request for public information and records.

Buffalo Field Campaign is a 501(c)(3) non-profit, public interest, news media and field organization which provides information and news reports to people in all 50 states, to broadcast networks and news media outlets in the United States and abroad, and to various local, regional, and international communities.

In responding to our request, Buffalo Field Campaign requests the agency reduce costs and waste by providing the information and records in electronic PDF or Word format on a web site for downloading or on a CD/DVD that can be mailed to the address below.

Buffalo Field Campaign requests the following information and records on the U.S. Dept. of Agriculture Animal and Plant Health Inspection Service's study Evaluation of GonaCon™, an Immunocontraceptive Vaccine, as a Means of Decreasing Transmission of *Brucella abortus* in Bison in the Greater Yellowstone Area:

1. All publications, studies, reports, memos, and communications (emails, faxes, letters).
2. All animal welfare monitoring, including inspections, reports, evaluations, appointment books, and notes related to injury, abandonment, and death of bison.
3. Bison abortions and births.
4. Removal and disposition of genetic material from bison.
5. Number and status of bison, held for study, incinerated, landfill buried, distributed to food banks, or other activities resulting in removal.

To facilitate our FOIA request, the contact person listed for the study is:

Dr. Donald E. Herriott

Associate Regional Director – Western Region

Veterinary Services

Animal and Plant Health Inspection Service

U.S. Department of Agriculture

2150 Centre Avenue, Bldg B, Mailstop 3E13

Fort Collins, CO 80526-8117

As you know, the Freedom of Information Act provides that if portions of a document are exempt from release, the remainder must be segregated and disclosed. Buffalo Field Campaign expects to receive all non-exempt portions of the documents that we have requested, and ask that you justify any deletions by reference to specific exemptions allowed under the Freedom of Information Act. Buffalo Field Campaign reserves the right to appeal a decision by the agency to withhold any information or records.

Buffalo Field Campaign requests a fee waiver for all search and duplication fees under the Freedom of Information Act regulations 5 U.S.C. § 552(a)(4)(A) and 7 CFR § 1.5. A fee waiver and release of the information and records requested will benefit the people of the United States by fostering public understanding of government activities and encouraging public involvement in important policy and management issues.

The released information and records is for the public's benefit and in the public's interest and will be made available to the public through Buffalo Field Campaign's offices and our website, list-serve and network outlets. Information and records available to Buffalo Field Campaign are used in press conferences and releases, television and radio interviews, regional and national publications, local and national broadcast networks, in public meetings and before legislative bodies, and is shared online through a variety of media that reaches the public nationwide and abroad. All of these activities significantly contribute to public understanding of government operations and activities.

The language of the Freedom of Information Act clearly indicates the U.S. Congress intended fees not to be a barrier to private individuals or public interest organizations seeking access to government information and records. In addition, the legislative history of the Freedom of Information Act fee waiver language indicates the U.S. Congress intended a liberal interpretation of the phrase "primarily benefiting the public." This suggests that all fees are to be waived whenever the release of information contributes to public debate on important public policy and management issues. This standard has been affirmed by the U.S. Court of Appeals for the District of Columbia in *Better Government Association v. Department of State*, 780 F.2d 86 (D.C. Cir. 1986). In *Better Government*, the D.C. Circuit Court found that under the Freedom of Information Act, the U.S. Congress explicitly recognized the need for non-profit organizations to have free access to government documents and those government agencies cannot impair this free access by charging duplication or search for Freedom of Information Act requests. *Id.* at 89.

If I can be of assistance in expediting this Freedom of Information Act request please contact

me at the information below. Thank you for your time and assistance.

Sincerely,

/s/

Darrell Geist, habitat coordinator

Buffalo Field Campaign

PO Box 957

West Yellowstone, MT 59758

(406) 531-9284

[z@wildrockies.org](mailto:z@wildrockies.org)



# MONTANA VETERINARY DIAGNOSTIC LABORATORY

1911 WEST LINCOLN, BOZEMAN, MT 59718  
P.O. Box 997, BOZEMAN, MT 59771  
WEB: [www.liv.mt.gov/lab](http://www.liv.mt.gov/lab)

PHONE: (406) 994-4885  
FAX: (406) 994-6344  
EMAIL: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)



PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

CASE: 18-557  
Name/ID:  
Species: American Bison

FINAL REPORT 08/08/17

Sex: Age:  
Owner: USDA, APHIS, VS

Accessioned: 07/11/17  
Authorized by: AF

Previous Reports  
08/08/17

## SEROLOGY

### Brucella abortus

Clotted Blood

Verified on: 08/08/17 by: DK

| Animal | FPA      |
|--------|----------|
| 1      | Negative |
| 2      | Positive |
| 3      | Positive |
| 4      | Positive |
| 5      | Positive |
| 6      | Positive |
| 7      | Positive |
| 8      | Positive |
| 9      | Positive |
| 10     | Positive |

Clotted Blood

Verified on 07/31/17 by: DK

| Animal | B. Abortus<br>BAPA |
|--------|--------------------|
| 1      | Negative           |
| 2      | Negative           |
| 3      | Positive           |
| 4      | Positive           |
| 5      | Positive           |
| 6      | Negative           |
| 7      | Negative           |
| 8      | Negative           |
| 9      | Positive           |
| 10     | Positive           |

Clotted Blood

Verified on: 08/01/17 by: DK

| Animal | BRUCF              | BRUCARD  |
|--------|--------------------|----------|
| 1      | Negative @<br>1:10 | Negative |
| 2      | 2+ 1:20            | Negative |
| 3      | 4+ 1:640           | Positive |
| 4      | 2+ 1:10            | Positive |
| 5      | 2+ 1:160           | Positive |



|    |                    |                 |
|----|--------------------|-----------------|
| 6  | Negative @<br>1:10 | Negative        |
| 7  | 2+ 1:20            | Negative        |
| 8  | 3+ 1:20            | Negative        |
| 9  | 3+ 1:320           | <b>Positive</b> |
| 10 | 4+ 1:640           | <b>Positive</b> |



FEES:

|   |       |
|---|-------|
| B. Abortus Card                             | 16.00 |
| Brucella abortus/suis - Complement Fixation | 26.50 |
| Brucella abortus FPA                        | 16.00 |
| B. Abortus Bapa                             | 16.00 |
| Total                                       | 74.50 |

(This is not a bill. Do not make payments from this report.)



# MONTANA VETERINARY DIAGNOSTIC LABORATORY

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PHONE: (406) 994-4885  
FAX: (406) 994-6344  
EMAIL: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)



PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

CASE: 18-557  
Name/ID:  
Species: American Bison

FINAL REPORT 08/08/17

Sex: Age:  
Owner: USDA, APHIS, VS

Accessioned: 07/11/17  
Authorized by: AF

Previous Reports  
08/08/17  
08/08/17  
08/08/17

## SEROLOGY

### Brucella abortus

Clotted Blood

Verified on: 08/08/17 by: DK

| <u>Animal</u> | <u>FPA</u> |
|---------------|------------|
| 1             | Negative   |
| 2             | Positive   |
| 3             | Positive   |
| 4             | Positive   |
| 5             | Positive   |
| 6             | Positive   |
| 7             | Positive   |
| 8             | Positive   |
| 9             | Positive   |
| 10            | Positive   |

Clotted Blood

Verified on 07/31/17 by: DK

| <u>Animal</u> | <u>B. Abortus</u><br><u>BAPA</u> |
|---------------|----------------------------------|
| 1             | Negative                         |
| 2             | Negative                         |
| 3             | Positive                         |
| 4             | Positive                         |
| 5             | Positive                         |
| 6             | Negative                         |
| 7             | Negative                         |
| 8             | Negative                         |
| 9             | Positive                         |
| 10            | Positive                         |

Clotted Blood

Verified on: 08/01/17 by: DK

| <u>Animal</u> | <u>BRUCF</u>       | <u>BRUCARD</u> |
|---------------|--------------------|----------------|
| 1             | Negative @<br>1:10 | Negative       |
| 2             | 2+ 1:20            | Negative       |
| 3             | 4+ 1:640           | Positive       |
| 4             | 2+ 1:10            | Positive       |

|    |                    |                 |
|----|--------------------|-----------------|
| 5  | 2+ 1:160           | <b>Positive</b> |
| 6  | Negative @<br>1:10 | Negative        |
| 7  | 2+ 1:20            | Negative        |
| 8  | 3+ 1:20            | Negative        |
| 9  | 3+ 1:320           | <b>Positive</b> |
| 10 | 4+ 1:640           | <b>Positive</b> |





FEES:

---

|   |       |
|---|-------|
| B. Abortus Card                             | 16.00 |
| Brucella abortus/suis - Complement Fixation | 26.50 |
| Brucella abortus FPA                        | 16.00 |
| B. Abortus Bapa                             | 16.00 |
| Total                                       | 74.50 |

(This is not a bill. Do not make payments from this report.)



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PHONE: (406) 994-4885  
FAX: (406) 994-6344  
EMAIL: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)



PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

CASE: 18-558  
Name/ID:  
Species: American Bison  
  
Sex: Age:  
Owner: USDA, APHIS, VS

FINAL REPORT 08/08/17

Accessioned: 07/11/17  
Authorized by: AF

Previous Reports  
08/08/17

## SEROLOGY

### Brucella abortus

Clotted Blood

Verified on: 08/08/17 by: DK

| <u>Animal</u> | <u>FPA</u> |
|---------------|------------|
| 1             | Positive   |
| 2             | Negative   |
| 3             | Positive   |
| 4             | Positive   |
| 5             | Negative   |
| 6             | Positive   |
| 7             | Negative   |
| 8             | Positive   |
| 9             | Positive   |
| 10            | Negative   |
| 11            | Negative   |
| 12            | Negative   |
| 13            | Negative   |
| 14            | Negative   |
| 15            | Negative   |
| 16            | Negative   |
| 17            | Negative   |

Clotted Blood

Verified on 07/31/17 by: DK

| <u>Animal</u> | <u>B. Abortus</u><br><u>BAPA</u> |
|---------------|----------------------------------|
| 1             | Positive                         |
| 2             | Negative                         |
| 3             | Negative                         |
| 4             | Positive                         |
| 5             | Negative                         |
| 6             | Positive                         |
| 7             | Negative                         |
| 8             | Negative                         |
| 9             | Positive                         |
| 10            | Negative                         |
| 11            | Negative                         |
| 12            | Negative                         |



|    |          |
|----|----------|
| 13 | Negative |
| 14 | Negative |
| 15 | Negative |
| 16 | Negative |
| 17 | Negative |

Clotted Blood

Verified on: 08/01/17 by: DK

| <u>Animal</u> | <u>BRUCF</u>       | <u>BRUCARD</u>  |
|---------------|--------------------|-----------------|
| 1             | Negative @<br>1:10 | <b>Positive</b> |
| 2             | Negative @<br>1:10 | Negative        |
| 3             | Negative @<br>1:10 | Negative        |
| 4             | 1+ 1:40            | Negative        |
| 5             | Negative @<br>1:10 | Negative        |
| 6             | 1+ 1:40            | Negative        |
| 7             | Negative @<br>1:10 | Negative        |
| 8             | Negative @<br>1:10 | Negative        |
| 9             | 1+ 1:40            | <b>Positive</b> |
| 10            | Negative @<br>1:10 | Negative        |
| 11            | Negative @<br>1:10 | Negative        |
| 12            | Negative @<br>1:10 | Negative        |
| 13            | Negative @<br>1:10 | Negative        |
| 14            | Negative @<br>1:10 | Negative        |
| 15            | Negative @<br>1:10 | Negative        |
| 16            | Negative @<br>1:10 | Negative        |
| 17            | Negative @<br>1:10 | Negative        |

Species: Bison  
County: Park

**S N S**  
**MONTANA VETERINARY DIAGNOSTIC LABORATORY**

Box 997 - Bozeman, MT 59771  
Phone (406) 994 - 4885 Fax (406) 994 - 6344  
Email: livdiagnosticlab@mt.gov

Collection Date: 7-11-17  
Page 1 of 2

**SEROLOGY REPORT (SV2A) - Complete Light Shaded Areas Only**  
**(SEE EXAMPLE and KEY on back Page 4)**

OWNER: USDA, APHIS, VS  
ADDRESS:  
CITY/STATE/ZIP: Corwin Springs, MT  
REASON FOR TEST - MANDATORY INFORMATION (See Key)  
BQFS - Gona Con - Cattle Health

SUBMITTER'S SIGNATURE: J. Ryan Clarke  
SUBMITTER'S NAME (PRINT): J. Ryan Clarke  
ADDRESS: **(b) (6)**  
CITY/STATE/ZIP:  
RESULT REPORTING OPTIONS: PHONE / FAX / EMAIL  
NUMBER OR EMAIL ADDRESS: R. Frey, R Clarke, J. Ryan

| CIRCLE DISEASE TEST REQUIRED: If needed, indicate specific test and/or dilution. Example on back. |                       |     |     |       |               | BRU              | BT            | ANA     | END           | PTB   | IBR | BVD | BLV | LEPTOSPIROSIS  | OTHER |
|---|-----------------------|-----|-----|-------|---------------|------------------|---------------|---------|---------------|-------|-----|-----|-----|----------------|-------|
| TUBE NO.  | ANIMAL IDENTIFICATION | AGE | SEX | BREED | OFFICIAL VAC. | BAPA             | Bruc Card     | Bruc CF | Bruc FPA      |       |     |     |     | 2 SEROVARS     |       |
| 1   | Red 19                | Ad  | F   | Bison |               | Pos              | Pos           |         | Pos           | 141.8 |     |     |     | Neg @ (1:10)   |       |
| 2   | Red 31                |     |     |       |               | N                | N             |         | N             | 6.3   |     |     |     | Neg @ (1:10)   |       |
| 3   | Red 04                |     |     |       |               | N                | N             |         | Pos           | 41.5  |     |     |     | Neg @ (1:10)   |       |
| 4   | Red 29                |     |     |       |               | Pos <sup>W</sup> | N             |         | Pos           | 25.0  |     |     |     | 1+ (1:40)      |       |
| 5   | 5R02                  |     |     |       |               | N                | N             |         | N             | 3.3   |     |     |     | Neg @ (1:10)   |       |
| 6   | Red 28                |     |     |       |               | Pos <sup>W</sup> | N             |         | Pos           | 105.1 |     |     |     | 1+ (1:40)      |       |
| 7   | Red 05                |     |     |       |               | N                | N             |         | N             | 7.1   |     |     |     | Neg @ (1:10)   |       |
| 8   | Red 11                |     |     |       |               | N                | N             |         | Pos           | 18.9  |     |     |     | Neg @ (1:10)   |       |
| 9   | Red 27                |     |     |       |               | Pos              | Pos           |         | Pos           | 137.2 |     |     |     | 1+ (1:40)      |       |
| 10  | Red 6320              |     |     |       |               | N                | N             |         | N             | 7.3   |     |     |     | Neg @ (1:10)   |       |
| Samples   |                       |     |     |       |               | 17               | 17            |         | 17            |       |     |     |     | 17             |       |
| Seropositive  |                       |     |     |       |               | 4                | 2             |         | 6             |       |     |     |     |                |       |
| Suspect   |                       |     |     |       |               |                  |               |         |               |       |     |     |     |                |       |
| Seronegative  |                       |     |     |       |               | 13               | 15            |         | 11            |       |     |     |     |                |       |
| Undetermined  |                       |     |     |       |               |                  |               |         |               |       |     |     |     |                |       |
| Tested By   |                       |     |     |       |               | <u>7/31/17</u>   | <u>8/1/17</u> |         | <u>8/1/17</u> |       |     |     |     | <u>8/27/17</u> |       |

Laboratory Comments:

Please do CF, FPA  
BAPA, Card

**S N S**

FEE: \_\_\_\_\_ DATE RECEIVED: \_\_\_\_\_

The MVDL is an accredited AAVLD laboratory and a member of the USDA National Animal Health Laboratory Network. Completing and submitting any submission form or a contractual agreement for services requested and the specimens submitted become the property of the MVDL. In addition, at no additional expense to our clients, specimens su additional testing upon the order of the state or federal animal health officials, or whenever a Foreign Animal Disease is suspected, or in support of surveillance for other animal

000430





Owner: USDA, APHIS, VS  
Submitted By: R. Clarke  
Collection Date: 7-11-17 Page 2 of 2

Box 997 - Bozeman, MT 59771

Phone: (406)994-4885

Fax: (406)994-6344

Email: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)

**Complete light shaded areas only**

[illegible]

SV-2B (PRINT VERSION 08/13)

SNS

000431

CASE # 18-558

FEES:

|   |        |
|---|--------|
| B. Abortus Card                             | 27.20  |
| Brucella abortus/suis - Complement Fixation | 45.05  |
| Brucella abortus FPA                        | 27.20  |
| B. Abortus Bapa                             | 27.20  |
| Total                                       | 126.65 |

(This is not a bill. Do not make payments from this report.)



# MONTANA VETERINARY DIAGNOSTIC LABORATORY

1911 WEST LINCOLN, BOZEMAN, MT 59718  
P.O. BOX 997, BOZEMAN, MT 59771  
WEB: [www.liv.mt.gov/lab](http://www.liv.mt.gov/lab)

PHONE: (406) 994-4885  
FAX: (406) 994-6344  
EMAIL: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)



PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

CASE: 18-558  
Name/ID:  
Species: American Bison

FINAL REPORT 08/08/17

Sex: Age:  
Owner: USDA, APHIS, VS

Accessioned: 07/11/17  
Authorized by: AF

Previous Reports  
08/08/17  
08/08/17  
08/08/17

## SEROLOGY

### Brucella abortus

Clotted Blood

Verified on: 08/08/17 by: DK

| <u>Animal</u> | <u>FPA</u> |
|---------------|------------|
| 1             | Positive   |
| 2             | Negative   |
| 3             | Positive   |
| 4             | Positive   |
| 5             | Negative   |
| 6             | Positive   |
| 7             | Negative   |
| 8             | Positive   |
| 9             | Positive   |
| 10            | Negative   |
| 11            | Negative   |
| 12            | Negative   |
| 13            | Negative   |
| 14            | Negative   |
| 15            | Negative   |
| 16            | Negative   |
| 17            | Negative   |

Clotted Blood

Verified on 07/31/17 by: DK

| <u>Animal</u> | <u>B. Abortus</u><br><u>BAPA</u> |
|---------------|----------------------------------|
| 1             | Positive                         |
| 2             | Negative                         |
| 3             | Negative                         |
| 4             | Positive                         |
| 5             | Negative                         |
| 6             | Positive                         |
| 7             | Negative                         |
| 8             | Negative                         |
| 9             | Positive                         |
| 10            | Negative                         |
| 11            | Negative                         |

|    |          |
|----|----------|
| 12 | Negative |
| 13 | Negative |
| 14 | Negative |
| 15 | Negative |
| 16 | Negative |
| 17 | Negative |

| <u>Animal</u> | Clotted Blood      |                 | Verified on: 08/01/17 by: DK |
|---------------|--------------------|-----------------|------------------------------|
|               | <u>BRUCF</u>       | <u>BRUCARD</u>  |                              |
| 1             | Negative @<br>1:10 | <b>Positive</b> |                              |
| 2             | Negative @<br>1:10 | Negative        |                              |
| 3             | Negative @<br>1:10 | Negative        |                              |
| 4             | 1+ 1:40            | Negative        |                              |
| 5             | Negative @<br>1:10 | Negative        |                              |
| 6             | 1+ 1:40            | Negative        |                              |
| 7             | Negative @<br>1:10 | Negative        |                              |
| 8             | Negative @<br>1:10 | Negative        |                              |
| 9             | 1+ 1:40            | <b>Positive</b> |                              |
| 10            | Negative @<br>1:10 | Negative        |                              |
| 11            | Negative @<br>1:10 | Negative        |                              |
| 12            | Negative @<br>1:10 | Negative        |                              |
| 13            | Negative @<br>1:10 | Negative        |                              |
| 14            | Negative @<br>1:10 | Negative        |                              |
| 15            | Negative @<br>1:10 | Negative        |                              |
| 16            | Negative @<br>1:10 | Negative        |                              |
| 17            | Negative @<br>1:10 | Negative        |                              |



Species: Bison  
County: Park

**MONTANA VETERINARY DIAGNOSTIC LABORATORY**

Box 997 - Bozeman, MT 59771  
Phone (406) 994 - 4885 Fax (406) 994 - 6344  
Email: livdiagnosticlab@mt.gov

Collection Date: 7-11-17  
Page 1 of 2

**SEROLOGY REPORT (SV2A) - Complete Light Shaded Areas Only**  
(SEE EXAMPLE and KEY on back Page 4)

OWNER: USDA, APHIS, VS  
ADDRESS:  
CITY/STATE/ZIP: Corwin Springs, MT  
REASON FOR TEST - MANDATORY INFORMATION (See Key)  
BQFS - Gona Con - Cattle Health

SUBMITTER'S SIGNATURE: J. Ryan Clarke  
SUBMITTER'S NAME (PRINT): P. Ryan Clarke  
ADDRESS: **(b) (6)**  
CITY/STATE/ZIP:  
RESULT REPORTING OPTIONS: PHONE / FAX / EMAIL  
NUMBER OR EMAIL ADDRESS: R. Frey, R Clarke, J. Ryan

| CIRCLE DISEASE TEST REQUIRED: If needed, indicate specific test and/or dilution. Example on back. |                       |     |     |       |               | BRU              | BT             | ANA     | END            | PTB   | IBR | BVD | BLV | LEPTOSPIROSIS  | OTHER |
|---|-----------------------|-----|-----|-------|---------------|------------------|----------------|---------|----------------|-------|-----|-----|-----|----------------|-------|
| TUBE NO.  | ANIMAL IDENTIFICATION | AGE | SEX | BREED | OFFICIAL VAC. | BAPA             | Bruc Card      | Bruc CF | Bruc FPA       |       |     |     |     | SEROVARS       |       |
| 1   | Red 19                | Ad  | Fe  | Bison |               | Pos              | Pos            |         | Pos            | 141.8 |     |     |     | Neg @ (1:10)   |       |
| 2   | Red 31                |     |     |       |               | N                | N              |         | N              | 6.3   |     |     |     | Neg @ (1:10)   |       |
| 3   | Red 04                |     |     |       |               | N                | N              |         | Pos            | 41.5  |     |     |     | Neg @ (1:10)   |       |
| 4   | Red 29                |     |     |       |               | Pos <sup>W</sup> | N              |         | Pos            | 25.0  |     |     |     | 1+ (1:40)      |       |
| 5   | 5R02                  |     |     |       |               | N                | N              |         | N              | 3.3   |     |     |     | Neg @ (1:10)   |       |
| 6   | Red 28                |     |     |       |               | Pos <sup>W</sup> | N              |         | Pos            | 105.1 |     |     |     | 1+ (1:40)      |       |
| 7   | Red 05                |     |     |       |               | N                | N              |         | N              | 7.1   |     |     |     | Neg @ (1:10)   |       |
| 8   | Red 11                |     |     |       |               | N                | N              |         | Pos            | 18.9  |     |     |     | Neg @ (1:10)   |       |
| 9   | Red 27                |     |     |       |               | Pos              | Pos            |         | Pos            | 137.2 |     |     |     | 1+ (1:40)      |       |
| 10  | Red 6320              |     |     |       |               | N                | N              |         | N              | 7.3   |     |     |     | Neg @ (1:10)   |       |
| Samples   |                       |     |     |       |               | 17               | 17             |         | 17             |       |     |     |     | 17             |       |
| Seropositive  |                       |     |     |       |               | 4                | 2              |         | 6              |       |     |     |     |                |       |
| Suspect   |                       |     |     |       |               |                  |                |         |                |       |     |     |     |                |       |
| Seronegative  |                       |     |     |       |               | 13               | 15             |         | 11             |       |     |     |     |                |       |
| Undetermined  |                       |     |     |       |               |                  |                |         |                |       |     |     |     |                |       |
| Tested By   |                       |     |     |       |               | <u>7/21/17</u>   | <u>7/21/17</u> |         | <u>7/21/17</u> |       |     |     |     | <u>7/27/17</u> |       |

Laboratory Comments:

Please do CF, FPA  
BAPA, Card

**SNS**

FEE: \_\_\_\_\_ DATE RECEIVED: \_\_\_\_\_

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000435





Owner: USDA, APHIS, VS  
Submitted By: R. Clarke  
Collection Date: 7-11-17 Page 2 of 2

Box 997 - Bozeman, MT 59771

Phone: (406)994-4885

Fax: (406)994-6344

Email: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)

**Complete light shaded areas only**

[illegible]

SV-2B (PRINT VERSION 08/13)

SNS

000436

CASE # 18-558



FEES:

|   |        |
|---|--------|
| B. Abortus Card                             | 27.20  |
| Brucella abortus/suis - Complement Fixation | 45.05  |
| Brucella abortus FPA                        | 27.20  |
| B. Abortus Bapa                             | 27.20  |
| Total                                       | 126.65 |

(This is not a bill. Do not make payments from this report.)



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PHONE: (406) 994-4885  
FAX: (406) 994-6344  
EMAIL: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)



PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

CASE: 18-1110  
Name/ID:  
Species: American Bison

FINAL REPORT 08/08/17

Sex: Age:  
County: Park  
Owner: USDA, APHIS, VS

Accessioned: 07/19/17  
Authorized by: AF

Previous Reports  
08/08/17

## SEROLOGY

### Brucella abortus

Clotted Blood

Verified on: 08/08/17 by: DK

| <u>Animal</u> | <u>FPA</u> |
|---------------|------------|
| Red 38        | Positive   |
| Red 54        | Positive   |
| Red 39        | Positive   |
| Red 55        | Positive   |
| Red 41        | Positive   |
| Red 53        | Positive   |
| Red 41        | Positive   |
| 6G25          | Positive   |
| 6R 46         | Positive   |
| 6R 08         | Positive   |
| 6G 13         | Positive   |
| 6R 34         | Positive   |
| Red 45        | Positive   |
| 6G 07         | Negative   |
| Red 44        | Positive   |
| 6R 38         | Positive   |
| Red 42        | Positive   |
| Red 49        | Positive   |
| Gr 25         | Positive   |
| Red 51        | Positive   |
| Red 32        | Positive   |
| Red 36        | Positive   |

Clotted Blood

Verified on 07/31/17 by: DK

| <u>Animal</u> | <u>B. Abortus</u><br><u>BAPA</u> |
|---------------|----------------------------------|
| Red 38        | Negative                         |
| Red 54        | Positive                         |
| Red 39        | Positive                         |
| Red 55        | Positive                         |
| Red 41        | Negative                         |
| Red 53        | Positive                         |
| Red 41        | Positive                         |

|        |          |
|--------|----------|
| 6G25   | Positive |
| 6R 46  | Positive |
| 6R 08  | Positive |
| 6G 13  | Positive |
| 6R 34  | Positive |
| Red 45 | Positive |
| 6G 07  | Negative |
| Red 44 | Positive |
| 6R 38  | Positive |
| Red 42 | Negative |
| Red 49 | Positive |
| Gr 25  | Positive |
| Red 51 | Positive |
| Red 32 | Positive |
| Red 36 | Positive |

#### Clotted Blood

Verified on: 08/01/17 by: DK

| <u>Animal</u> | <u>BRUCF</u>       | <u>BRUCARD</u> |
|---------------|--------------------|----------------|
| Red 38        | Negative @<br>1:10 | Negative       |
| Red 54        | 2+ 1:10            | Positive       |
| Red 39        | 1+ 1:40            | Negative       |
| Red 55        | 2+ 1:80            | Positive       |
| Red 41        | Negative @<br>1:10 | Negative       |
| Red 53        | 4+ 1:40            | Negative       |
| Red 41        | 2+ 1:20            | Positive       |
| 6G25          | 1+ 1:640           | Positive       |
| 6R 46         | 1+ 1:640           | Positive       |
| 6R 08         | 4+ 1:20            | Negative       |
| 6G 13         | 2+ 1:320           | Positive       |
| 6R 34         | 3+ 1:320           | Positive       |
| Red 45        | 2+ 1:80            | Positive       |
| 6G 07         | 2+ 1:20            | Negative       |
| Red 44        | 2+ 1:10            | Positive       |
| 6R 38         | 4+ 1:40            | Positive       |
| Red 42        | 2+ 1:20            | Negative       |
| Red 49        | 2+ 1:10            | Positive       |
| Gr 25         | Negative @<br>1:10 | Positive       |
| Red 51        | Negative @<br>1:10 | Positive       |
| Red 32        | 2+ 1:80            | Positive       |
| Red 36        | 2+ 1:160           | Positive       |

Species: Bison  
County: Park

# MONTANA VETERINARY DIAGNOSTIC LABORATORY

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Email: livdiagnosticlab@mt.gov

Collection Date: 7-19-17  
Page 1 of 2

## SEROLOGY REPORT (SV2A) - Complete Light Shaded Areas Only (SEE EXAMPLE and KEY on back Page 4)

OWNER: USDA, APHIS, VS  
ADDRESS:  
CITY/STATE/ZIP: Corwin Springs, MT  
REASON FOR TEST - MANDATORY INFORMATION (See Key)  
BQFS - Bone Con - Cattle Health

SUBMITTER'S SIGNATURE: [Signature]  
SUBMITTER'S NAME (PRINT): R. Ryan Clarke  
ADDRESS: (b) (6)  
CITY/STATE/ZIP: (b) (6)  
RESULT REPORTING OPTIONS: PHONE / FAX / EMAIL  
NUMBER OR EMAIL ADDRESS: B. Frey, R. Clarke, J. Ryan

| CIRCLE DISEASE TEST REQUIRED: If needed, indicate specific test and/or dilution. Example on back. |                       |     |     |       |               | BRU     | BT     | ANA  | END    | PTB    | IBR | BVD | BLV | LEPTOSPIROSIS | OTHER |
|---|-----------------------|-----|-----|-------|---------------|---------|--------|------|--------|--------|-----|-----|-----|---------------|-------|
| TUBE NO.  | ANIMAL IDENTIFICATION | AGE | SEX | BREED | OFFICIAL VAC. | BAPA    | Card   | 1-10 | FPA    |        |     |     |     | -8 SEROVARS   |       |
| 1   | Red 38                | Ad  | Fe  | Bison |               | N       | N      |      | Pos    | 15.6   |     |     |     | Neg @ (1:10)  |       |
| 2   | Red 54                |     |     |       |               | Pos     | Pos    |      | Pos    | 254.18 |     |     |     | 2+ (1:10)     |       |
| 3   | Red 39                |     |     |       |               | Pos     | N      |      | Pos    | 59.9   |     |     |     | 1+ (1:40)     |       |
| 4   | Red 55                |     |     |       |               | Pos     | Pos    |      | Pos    | 162.8  |     |     |     | 2+ (1:80)     |       |
| 5   | Red 41                |     |     |       |               | N       | N      |      | Pos    | 108.0  |     |     |     | Neg @ (1:10)  |       |
| 6   | Red 53                |     |     |       |               | Pos     | N      |      | Pos    | 62.0   |     |     |     | 4+ (1:40)     |       |
| 7   | Red 47                | *   |     |       |               | Pos     | Pos    |      | Pos    | 180.0  |     |     |     | 2+ (1:20)     |       |
| 8   | 6G 25                 | 1yr |     |       |               | Pos     | Pos    |      | Pos    | 135.9  |     |     |     | 1+ (1:640)    |       |
| 9   | 6R 46                 | 1yr |     |       |               | Pos     | Pos    |      | Pos    | 174.3  |     |     |     | 1+ (1:640)    |       |
| 10  | 6R 08                 | 1yr |     |       |               | Pos     | N      |      | Pos    | 50.8   |     |     |     | 4+ (1:20)     |       |
| Samples   |                       |     |     |       |               | 22      | 22     |      | 22     |        |     |     |     | 22            |       |
| Seropositive  |                       |     |     |       |               | 18      | 15     |      | 21     |        |     |     |     |               |       |
| Suspect   |                       |     |     |       |               |         |        |      |        |        |     |     |     |               |       |
| Seronegative  |                       |     |     |       |               | 4       | 7      |      | 1      |        |     |     |     |               |       |
| Undetermined  |                       |     |     |       |               |         |        |      |        |        |     |     |     |               |       |
| Tested By   |                       |     |     |       |               | 7/31/17 | 8/1/17 |      | 8/7/17 |        |     |     |     | of 7/27/17    |       |

Laboratory Comments:

Please do BAPA, CF  
Card, FPA

FEE: \_\_\_\_\_ DATE RECEIVED: \_\_\_\_\_



18-1110  
07/19/17

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000440



Owner: USDA, APHIS, VS  
 Submitted By: P.R. Clarke  
 Collection Date: 7-19-17 Page 2 of 2

**MONTANA VETERINARY DIAGNOSTIC LABORATORY**

Box 997 - Bozeman, MT 59771

Phone: (406)994-4885

Fax: (406)994-6344

Email: livdiagnosticlab@mt.gov

**CONTINUATION SEROLOGY REPORT (SV2B)**

*Complete light shaded areas only*

| CIRCLE DISEASE TEST REQUIRED: If needed, indicate specific test and/or dilution. Example on back of SV2A. |                       |     |     |       |               | BRU  | BT               | ANA                           | EHD     | PTB      | IBR | BVD | BLV | LEPTOSPIROSIS | OTHER |
|---|-----------------------|-----|-----|-------|---------------|------|------------------|-------------------------------|---------|----------|-----|-----|-----|---------------|-------|
| TUBE NO.  | ANIMAL IDENTIFICATION | AGE | SEX | BREED | OFFICIAL VAC. | BAPA | Bru Card         | Bru <del>DE</del> <u>1:10</u> | Bru FPA |          |     |     |     |               |       |
| 11  | GG13                  | 2y  | Fe  | Bison |               | Pos  | Pos              |                               | Pos     | 158.0    |     |     |     | 2+(1:320)     |       |
| 12  | GR34                  | 1y  |     |       |               | Pos  | Pos              |                               | Pos     | 118.7    |     |     |     | 3+(1:320)     |       |
| 13  | Red45                 | Ad  |     |       |               | Pos  | Pos              |                               | Pos     | 178.0    |     |     |     | 2+(1:80)      |       |
| 14  | GG07                  | 1yr |     |       |               | N    | N                |                               | N       | 6.4, 7.3 |     |     |     | 2+(1:20)      |       |
| 15  | Red44                 | Ad  |     |       |               | Pos  | Pos              |                               | Pos     | 161.9    |     |     |     | 2+(1:10)      |       |
| 16  | GR38                  | 1yr |     |       |               | Pos  | Pos              |                               | Pos     | 41.4     |     |     |     | 4+(1:40)      |       |
| 17  | Red42                 | Ad  |     |       |               | N    | N                |                               | Pos     | 56.8     |     |     |     | 2+(1:20)      |       |
| 18  | Red49                 |     |     |       |               | Pos  | Pos              |                               | Pos     | 183.4    |     |     |     | 2+(1:10)      |       |
| 19  | Gr25                  |     |     |       |               | Pos  | Pos              |                               | Pos     | 214.7    |     |     |     | Neg @ (1:10)  |       |
| 20  | Red51                 |     |     |       |               | Pos  | Pos <sup>W</sup> |                               | Pos     | 70.0     |     |     |     | Neg @ (1:10)  |       |
| 21  | Red32                 |     |     |       |               | Pos  | Pos              |                               | Pos     | 154.4    |     |     |     | 2+(1:80)      |       |
| 22  | Red36                 |     |     |       |               | Pos  | Pos              |                               | Pos     | 173.3    |     |     |     | 2+(1:160)     |       |
|   |                       |     |     |       |               |      |                  |                               |         |          |     |     |     |               |       |
|   |                       |     |     |       |               |      |                  |                               |         |          |     |     |     |               |       |
|   |                       |     |     |       |               |      |                  |                               |         |          |     |     |     |               |       |
|   |                       |     |     |       |               |      |                  |                               |         |          |     |     |     |               |       |
|   |                       |     |     |       |               |      |                  |                               |         |          |     |     |     |               |       |
|   |                       |     |     |       |               |      |                  |                               |         |          |     |     |     |               |       |
|   |                       |     |     |       |               |      |                  |                               |         |          |     |     |     |               |       |
|   |                       |     |     |       |               |      |                  |                               |         |          |     |     |     |               |       |
|   |                       |     |     |       |               |      |                  |                               |         |          |     |     |     |               |       |
|   |                       |     |     |       |               |      |                  |                               |         |          |     |     |     |               |       |
|   |                       |     |     |       |               |      |                  |                               |         |          |     |     |     |               |       |
|   |                       |     |     |       |               |      |                  |                               |         |          |     |     |     |               |       |
|   |                       |     |     |       |               |      |                  |                               |         |          |     |     |     |               |       |

FEES:

---

|   |        |
|---|--------|
| B. Abortus Card                             | 35.20  |
| Brucella abortus/suis - Complement Fixation | 58.30  |
| Brucella abortus FPA                        | 35.20  |
| B. Abortus Bapa                             | 35.20  |
| Total                                       | 163.90 |

(This is not a bill. Do not make payments from this report.)



# MONTANA VETERINARY DIAGNOSTIC LABORATORY

1911 WEST LINCOLN, BOZEMAN, MT 59718  
P.O. Box 997, BOZEMAN, MT 59771  
WEB: [www.liv.mt.gov/lab](http://www.liv.mt.gov/lab)

PHONE: (406) 994-4885  
FAX: (406) 994-6344  
EMAIL: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)



PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

CASE: 18-1110  
Name/ID:  
Species: American Bison

FINAL REPORT 08/08/17

Accessioned: 07/19/17

Authorized by: AF

Sex: Age:  
County: Park  
Owner: USDA, APHIS, VS

Previous Reports  
08/08/17  
08/08/17  
08/08/17

## SEROLOGY

### Brucella abortus

Clotted Blood

Verified on: 08/08/17 by: DK

| <u>Animal</u> | <u>FPA</u> |
|---------------|------------|
| Red 38        | Positive   |
| Red 54        | Positive   |
| Red 39        | Positive   |
| Red 55        | Positive   |
| Red 41        | Positive   |
| Red 53        | Positive   |
| Red 41        | Positive   |
| 6G25          | Positive   |
| 6R 46         | Positive   |
| 6R 08         | Positive   |
| 6G 13         | Positive   |
| 6R 34         | Positive   |
| Red 45        | Positive   |
| 6G 07         | Negative   |
| Red 44        | Positive   |
| 6R 38         | Positive   |
| Red 42        | Positive   |
| Red 49        | Positive   |
| Gr 25         | Positive   |
| Red 51        | Positive   |
| Red 32        | Positive   |
| Red 36        | Positive   |

Clotted Blood

Verified on 07/31/17 by: DK

| <u>Animal</u> | <u>B. Abortus</u><br><u>BAPA</u> |
|---------------|----------------------------------|
| Red 38        | Negative                         |
| Red 54        | Positive                         |
| Red 39        | Positive                         |
| Red 55        | Positive                         |
| Red 41        | Negative                         |



|        |                 |
|--------|-----------------|
| Red 53 | <b>Positive</b> |
| Red 41 | <b>Positive</b> |
| 6G25   | <b>Positive</b> |
| 6R 46  | <b>Positive</b> |
| 6R 08  | <b>Positive</b> |
| 6G 13  | <b>Positive</b> |
| 6R 34  | <b>Positive</b> |
| Red 45 | <b>Positive</b> |
| 6G 07  | Negative        |
| Red 44 | <b>Positive</b> |
| 6R 38  | <b>Positive</b> |
| Red 42 | Negative        |
| Red 49 | <b>Positive</b> |
| Gr 25  | <b>Positive</b> |
| Red 51 | <b>Positive</b> |
| Red 32 | <b>Positive</b> |
| Red 36 | <b>Positive</b> |

#### Clotted Blood

Verified on: 08/01/17 by: DK

| <u>Animal</u> | <u>BRUCF</u>       | <u>BRUCARD</u>  |
|---------------|--------------------|-----------------|
| Red 38        | Negative @<br>1:10 | Negative        |
| Red 54        | 2+ 1:10            | <b>Positive</b> |
| Red 39        | 1+ 1:40            | Negative        |
| Red 55        | 2+ 1:80            | <b>Positive</b> |
| Red 41        | Negative @<br>1:10 | Negative        |
| Red 53        | 4+ 1:40            | Negative        |
| Red 41        | 2+ 1:20            | <b>Positive</b> |
| 6G25          | 1+ 1:640           | <b>Positive</b> |
| 6R 46         | 1+ 1:640           | <b>Positive</b> |
| 6R 08         | 4+ 1:20            | Negative        |
| 6G 13         | 2+ 1:320           | <b>Positive</b> |
| 6R 34         | 3+ 1:320           | <b>Positive</b> |
| Red 45        | 2+ 1:80            | <b>Positive</b> |
| 6G 07         | 2+ 1:20            | Negative        |
| Red 44        | 2+ 1:10            | <b>Positive</b> |
| 6R 38         | 4+ 1:40            | <b>Positive</b> |
| Red 42        | 2+ 1:20            | Negative        |
| Red 49        | 2+ 1:10            | <b>Positive</b> |
| Gr 25         | Negative @<br>1:10 | <b>Positive</b> |
| Red 51        | Negative @<br>1:10 | <b>Positive</b> |
| Red 32        | 2+ 1:80            | <b>Positive</b> |
| Red 36        | 2+ 1:160           | <b>Positive</b> |

Species: Bison  
County: Park

# MONTANA VETERINARY DIAGNOSTIC LABORATORY

Box 997 - Bozeman, MT 59771  
Phone (406) 994 - 4885 Fax (406) 994 - 6344  
Email: livdiagnosticlab@mt.gov

Collection Date: 7-19-17  
Page 1 of 2

## SEROLOGY REPORT (SV2A) - Complete Light Shaded Areas Only (SEE EXAMPLE and KEY on back Page 4)

OWNER: USDA, APHIS, VS  
ADDRESS:  
CITY/STATE/ZIP: Corwin Springs, MT  
REASON FOR TEST - MANDATORY INFORMATION (See Key)  
BQFS - Bone Con - Cattle Health

SUBMITTER'S SIGNATURE: [Signature]  
SUBMITTER'S NAME (PRINT): P. Ryan Clarke  
ADDRESS: (b) (6)  
CITY/STATE/ZIP:  
RESULT REPORTING OPTIONS: PHONE / FAX / EMAIL  
NUMBER OR EMAIL ADDRESS: B. Frey, R. Clarke, J. Ryan

| CIRCLE DISEASE TEST REQUIRED: If needed, indicate specific test and/or dilution. Example on back. |                       |     |     |       |               | BRU     | BT     | ANA | END    | PTB    | IBR | BVD | BLV | LEPTOSPIROSIS | OTHER |
|---|-----------------------|-----|-----|-------|---------------|---------|--------|-----|--------|--------|-----|-----|-----|---------------|-------|
| TUBE NO.  | ANIMAL IDENTIFICATION | AGE | SEX | BREED | OFFICIAL VAC. | BAPA    | Brn    | Brn | Brn    |        |     |     |     | -8 SEROVARS   |       |
| 1   | Red 38                | Ad  | Fe  | Bison |               | N       | N      |     | Pos    | 15.6   |     |     |     | Neg @ (1:10)  |       |
| 2   | Red 54                |     |     |       |               | Pos     | Pos    |     | Pos    | 254.18 |     |     |     | 2+ (1:10)     |       |
| 3   | Red 39                |     |     |       |               | Pos     | N      |     | Pos    | 59.9   |     |     |     | 1+ (1:40)     |       |
| 4   | Red 55                |     |     |       |               | Pos     | Pos    |     | Pos    | 162.8  |     |     |     | 2+ (1:80)     |       |
| 5   | Red 41                |     |     |       |               | N       | N      |     | Pos    | 108.0  |     |     |     | Neg @ (1:10)  |       |
| 6   | Red 53                |     |     |       |               | Pos     | N      |     | Pos    | 62.0   |     |     |     | 4+ (1:40)     |       |
| 7   | Red 47                | *   |     |       |               | Pos     | Pos    |     | Pos    | 180.0  |     |     |     | 2+ (1:20)     |       |
| 8   | 6G 25                 | 1yr |     |       |               | Pos     | Pos    |     | Pos    | 135.9  |     |     |     | 1+ (1:640)    |       |
| 9   | 6R 46                 | 1yr |     |       |               | Pos     | Pos    |     | Pos    | 174.3  |     |     |     | 1+ (1:640)    |       |
| 10  | 6R 08                 | 1yr |     |       |               | Pos     | N      |     | Pos    | 50.8   |     |     |     | 4+ (1:20)     |       |
| Samples   |                       |     |     |       |               | 22      | 22     |     | 22     |        |     |     |     | 22            |       |
| Seropositive  |                       |     |     |       |               | 18      | 15     |     | 21     |        |     |     |     |               |       |
| Suspect   |                       |     |     |       |               |         |        |     |        |        |     |     |     |               |       |
| Seronegative  |                       |     |     |       |               | 4       | 7      |     | 1      |        |     |     |     |               |       |
| Undetermined  |                       |     |     |       |               |         |        |     |        |        |     |     |     |               |       |
| Tested By   |                       |     |     |       |               | 7/31/17 | 8/1/17 |     | 8/7/17 |        |     |     |     | of 7/27/17    |       |

Laboratory Comments:

Please do BAPA, CF  
Card, FPA

FEE: \_\_\_\_\_ DATE RECEIVED: \_\_\_\_\_



18-1110  
07/19/17

The MVDL is an accredited AAVLD laboratory and a member of the USDA National Animal Health Laboratory Network. Completing and submitting any submission form or any contractual agreement for services requested and the specimens submitted become the property of the MVDL. In addition, at no additional expense to our clients, specimens submit additional testing upon the order of the state or federal animal health officials, or whenever a Foreign Animal Disease is suspected, or in support of surveillance for other animal disease.

000445



Owner: USDA, APHIS, VS  
 Submitted By: P.R. Clarke  
 Collection Date: 7-19-17 Page 2 of 2

**MONTANA VETERINARY DIAGNOSTIC LABORATORY**

Box 997 - Bozeman, MT 59771

Phone: (406)994-4885

Fax: (406)994-6344

Email: livdiagnosticlab@mt.gov

**CONTINUATION SEROLOGY REPORT (SV2B)**

*Complete light shaded areas only*

| CIRCLE DISEASE TEST REQUIRED: If needed, indicate specific test and/or dilution. Example on back of SV2A. |                       |     |     |       |               | BRU         | BT               | ANA                | EHD               | PTB      | IBR | BVD | BLV | LEPTOSPIROSIS               | OTHER |
|---|-----------------------|-----|-----|-------|---------------|-------------|------------------|--------------------|-------------------|----------|-----|-----|-----|-----------------------------|-------|
| TUBE NO.  | ANIMAL IDENTIFICATION | AGE | SEX | BREED | OFFICIAL VAC. | BRU<br>BAPA | BT<br>Brn Card   | ANA<br>Brn<br>1/10 | EHD<br>Brn<br>FPA | PTB      | IBR | BVD | BLV | LEPTOSPIROSIS<br>Brn (1:10) | OTHER |
| 11  | GG13                  | 2y  | Fe  | Bison |               | Pos         | Pos              |                    | Pos               | 158.0    |     |     |     | 2+(1:320)                   |       |
| 12  | GR34                  | 1y  |     |       |               | Pos         | Pos              |                    | Pos               | 118.7    |     |     |     | 3+(1:320)                   |       |
| 13  | Red45                 | Ad  |     |       |               | Pos         | Pos              |                    | Pos               | 178.0    |     |     |     | 2+(1:80)                    |       |
| 14  | GG07                  | 1yr |     |       |               | N           | N                |                    | N                 | 6.4, 7.3 |     |     |     | 2+(1:20)                    |       |
| 15  | Red44                 | Ad  |     |       |               | Pos         | Pos              |                    | Pos               | 161.9    |     |     |     | 2+(1:10)                    |       |
| 16  | GR38                  | 1yr |     |       |               | Pos         | Pos              |                    | Pos               | 41.4     |     |     |     | 4+(1:40)                    |       |
| 17  | Red42                 | Ad  |     |       |               | N           | N                |                    | Pos               | 56.8     |     |     |     | 2+(1:20)                    |       |
| 18  | Red49                 |     |     |       |               | Pos         | Pos              |                    | Pos               | 183.4    |     |     |     | 2+(1:10)                    |       |
| 19  | Gr25                  |     |     |       |               | Pos         | Pos              |                    | Pos               | 214.7    |     |     |     | Neg @ (1:10)                |       |
| 20  | Red51                 |     |     |       |               | Pos         | Pos <sup>W</sup> |                    | Pos               | 70.0     |     |     |     | Neg @ (1:10)                |       |
| 21  | Red32                 |     |     |       |               | Pos         | Pos              |                    | Pos               | 154.4    |     |     |     | 2+(1:80)                    |       |
| 22  | Red36                 |     |     |       |               | Pos         | Pos              |                    | Pos               | 173.3    |     |     |     | 2+(1:160)                   |       |
|   |                       |     |     |       |               |             |                  |                    |                   |          |     |     |     |                             |       |
|   |                       |     |     |       |               |             |                  |                    |                   |          |     |     |     |                             |       |
|   |                       |     |     |       |               |             |                  |                    |                   |          |     |     |     |                             |       |
|   |                       |     |     |       |               |             |                  |                    |                   |          |     |     |     |                             |       |
|   |                       |     |     |       |               |             |                  |                    |                   |          |     |     |     |                             |       |
|   |                       |     |     |       |               |             |                  |                    |                   |          |     |     |     |                             |       |
|   |                       |     |     |       |               |             |                  |                    |                   |          |     |     |     |                             |       |
|   |                       |     |     |       |               |             |                  |                    |                   |          |     |     |     |                             |       |
|   |                       |     |     |       |               |             |                  |                    |                   |          |     |     |     |                             |       |
|   |                       |     |     |       |               |             |                  |                    |                   |          |     |     |     |                             |       |
|   |                       |     |     |       |               |             |                  |                    |                   |          |     |     |     |                             |       |
|   |                       |     |     |       |               |             |                  |                    |                   |          |     |     |     |                             |       |
|   |                       |     |     |       |               |             |                  |                    |                   |          |     |     |     |                             |       |
|   |                       |     |     |       |               |             |                  |                    |                   |          |     |     |     |                             |       |

FEES:

|   |        |
|---|--------|
| B. Abortus Card                             | 35.20  |
| Brucella abortus/suis - Complement Fixation | 58.30  |
| Brucella abortus FPA                        | 35.20  |
| B. Abortus Bapa                             | 35.20  |
| Total                                       | 163.90 |

(This is not a bill. Do not make payments from this report.)



# MONTANA VETERINARY DIAGNOSTIC LABORATORY

1911 WEST LINCOLN, BOZEMAN, MT 59718  
P.O. Box 997, BOZEMAN, MT 59771  
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PHONE: (406) 994-4885  
FAX: (406) 994-6344  
EMAIL: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)



PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

CASE: 18-1261  
Name/ID:  
Species: American Bison

FINAL REPORT 08/08/17

Sex: Age:  
County: Park  
Owner: USDA,APHIS,VS-GonaCon-Cattle  
H

Accessioned: 07/21/17

Authorized by: AF

Previous Reports  
08/08/17

## SEROLOGY

### Brucella abortus

Clotted Blood

Verified on: 08/08/17 by: DK

| <u>Animal</u> | <u>FPA</u> |
|---------------|------------|
| Gr 40         | Negative   |
| Gr 34         | Negative   |
| Gr 37         | Negative   |
| Gr 33         | Negative   |
| 4R 2          | Negative   |
| Gr 19         | Negative   |
| Gr 28         | Negative   |
| Gr 32         | Negative   |
| Gr 31         | Negative   |

Clotted Blood

Verified on 07/31/17 by: DK

| <u>Animal</u> | <u>B. Abortus</u><br><u>BAPA</u> |
|---------------|----------------------------------|
| Gr 40         | Negative                         |
| Gr 34         | Negative                         |
| Gr 37         | Negative                         |
| Gr 33         | Negative                         |
| 4R 2          | Negative                         |
| Gr 19         | Negative                         |
| Gr 28         | Negative                         |
| Gr 32         | Negative                         |
| Gr 31         | Negative                         |

Clotted Blood

Verified on: 08/01/17 by: DK

| <u>Animal</u> | <u>BRUCF</u>       | <u>BRUCARD</u> |
|---------------|--------------------|----------------|
| Gr 40         | Negative @<br>1:10 | Negative       |
| Gr 34         | Negative @<br>1:10 | Negative       |
| Gr 37         | 3+ 1:20            | Negative       |
| Gr 33         | Negative @<br>1:10 | Negative       |

|       |                    |          |
|-------|--------------------|----------|
| 4R 2  | Negative @<br>1:10 | Negative |
| Gr 19 | Negative @<br>1:10 | Negative |
| Gr 28 | Negative @<br>1:10 | Negative |
| Gr 32 | Negative @<br>1:10 | Negative |
| Gr 31 | Negative @<br>1:10 | Negative |



Species: Bison  
County: Park

**MONTANA VETERINARY DIAGNOSTIC LABORATORY**

Box 997 - Bozeman, MT 59771  
Phone (406) 994 - 4885 Fax (406) 994 - 6344  
Email: livdiagnosticlab@mt.gov

Collection Date: 7-21-17  
Page 1 of 1

**SEROLOGY REPORT (SV2A) - Complete Light Shaded Areas Only**  
(SEE EXAMPLE and KEY on back Page 4)

OWNER: USDA, APHIS, VS  
ADDRESS:  
CITY/STATE/ZIP: Corwin Springs, MT  
REASON FOR TEST - MANDATORY INFORMATION (See Key)  
BQFS - Gonadon - Cattle Health

SUBMITTER'S SIGNATURE: P. Clarke  
SUBMITTER'S NAME (PRINT): P. Ryan Clarke  
ADDRESS: **(b) (6)**  
CITY/STATE/ZIP:  
RESULT REPORTING OPTIONS: PHO  
NUMBER OR EMAIL ADDRESS: R. Clarke, B. Frey, J. Ryan

| CIRCLE DISEASE TEST REQUIRED: If needed, indicate specific test and/or dilution. Example on back. |                       |     |     |       |               | BRU  | BT        | ANA | EBD | PTB | IBR | BVD | BLV | LEPTOSPIROSIS | OTHER           |
|---|-----------------------|-----|-----|-------|---------------|--|-----------|-----|-----|-----|-----|-----|-----|---------------|-----------------|
| TUBE NO.  | ANIMAL IDENTIFICATION | AGE | SEX | BREED | OFFICIAL VAC. | BAPA   | Bruc Card | AE  | FPA |     |     |     |     | 8 SEROVARS    |                 |
| 1   | Gr 40                 | Ad  | M   | Bison |               | N  | N         |     | N   | 3-5 |     |     |     | Neg @ (1:10)  |                 |
| 2   | Gr 34                 |     |     |       |               | N  | N         |     | N   | 5-6 |     |     |     | Neg @ (1:10)  |                 |
| 3   | Gr 37                 |     |     |       |               | N  | N         |     | N   | 1-5 |     |     |     | Neg @ (1:10)  | Correction (#3) |
| 4   | Gr 33                 |     |     |       |               | N  | N         |     | N   | 6-5 |     |     |     | Neg @ (1:10)  | [3+(1:20)]      |
| 5   | YR 2                  |     |     |       |               | N  | N         |     | N   | 5-1 |     |     |     | Neg @ (1:10)  |                 |
| 6   | Gr 19                 |     |     |       |               | N  | N         |     | N   | 4-5 |     |     |     | Neg @ (1:10)  |                 |
| 7   | Gr 28                 |     |     |       |               | N  | N         |     | N   | 1-0 |     |     |     | Neg @ (1:10)  |                 |
| 8   | Gr 32                 |     |     |       |               | N  | N         |     | N   | 2-9 |     |     |     | Neg @ (1:10)  |                 |
| 9   | Gr 31                 |     |     |       |               | N  | N         |     | N   | 3-1 |     |     |     | Neg @ (1:10)  |                 |
|   |                       |     |     |       |               | 9  | 9         | 11  | 9   |     |     |     |     | 9             |                 |
| Laboratory Comments:  |                       |     |     |       |               | Samples  |           |     |     |     |     |     |     |               |                 |
| Please do FPA, CF Card, BAPA  |                       |     |     |       |               | Seropositive   |           |     |     |     |     |     |     |               |                 |
|   |                       |     |     |       |               | Suspect  |           |     |     |     |     |     |     |               |                 |
|   |                       |     |     |       |               | Seronegative   |           |     |     |     |     |     |     |               |                 |
|   |                       |     |     |       |               | Undetermined   |           |     |     |     |     |     |     |               |                 |
|   |                       |     |     |       |               | Tested By  |           |     |     |     |     |     |     |               |                 |
|   |                       |     |     |       |               | 7/31/17 8/1/17 8/1/17 8/1/17 8/1/17 8/1/17 8/1/17 8/1/17 8/1/17 8/1/17 |           |     |     |     |     |     |     |               |                 |

FEE: \_\_\_\_\_ DATE RECEIVED: 7-21-17 CA



18-1261  
07/21/17

The MVDL is an accredited AAVLD laboratory and a member of the USDA National Animal Health Laboratory Network. Completing and submitting any submission form or any other contractual agreement for services requested and the specimens submitted become the property of the MVDL. In addition, at no additional expense to our clients, specimens submitted to additional testing upon the order of the state or federal animal health officials, or whenever a Foreign Animal Disease is suspected, or in support of surveillance for other animal disease.

000450



FEES:

|   |       |
|---|-------|
| B. Abortus Card                             | 14.40 |
| Brucella abortus/suis - Complement Fixation | 23.85 |
| Brucella abortus FPA                        | 14.40 |
| B. Abortus Bapa                             | 14.40 |
| Total                                       | 67.05 |

(This is not a bill. Do not make payments from this report.)



# MONTANA VETERINARY DIAGNOSTIC LABORATORY

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EMAIL: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)



PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

CASE: 18-1261  
Name/ID:  
Species: American Bison

FINAL REPORT 08/08/17

Sex: Age:  
County: Park  
Owner: USDA,APHIS,VS-GonaCon-Cattle  
H

Accessioned: 07/21/17  
Authorized by: AF

Previous Reports  
08/08/17  
08/08/17  
08/08/17

## SEROLOGY

### Brucella abortus

Clotted Blood

Verified on: 08/08/17 by: DK

| <u>Animal</u> | <u>FPA</u> |
|---------------|------------|
| Gr 40         | Negative   |
| Gr 34         | Negative   |
| Gr 37         | Negative   |
| Gr 33         | Negative   |
| 4R 2          | Negative   |
| Gr 19         | Negative   |
| Gr 28         | Negative   |
| Gr 32         | Negative   |
| Gr 31         | Negative   |

Clotted Blood

Verified on 07/31/17 by: DK

| <u>Animal</u> | <u>B. Abortus</u><br><u>BAPA</u> |
|---------------|----------------------------------|
| Gr 40         | Negative                         |
| Gr 34         | Negative                         |
| Gr 37         | Negative                         |
| Gr 33         | Negative                         |
| 4R 2          | Negative                         |
| Gr 19         | Negative                         |
| Gr 28         | Negative                         |
| Gr 32         | Negative                         |
| Gr 31         | Negative                         |

Clotted Blood

Verified on: 08/01/17 by: DK

| <u>Animal</u> | <u>BRUCF</u>       | <u>BRUCARD</u> |
|---------------|--------------------|----------------|
| Gr 40         | Negative @<br>1:10 | Negative       |
| Gr 34         | Negative @<br>1:10 | Negative       |
| Gr 37         | 3+ 1:20            | Negative       |

|       |                    |          |
|-------|--------------------|----------|
| Gr 33 | Negative @<br>1:10 | Negative |
| 4R 2  | Negative @<br>1:10 | Negative |
| Gr 19 | Negative @<br>1:10 | Negative |
| Gr 28 | Negative @<br>1:10 | Negative |
| Gr 32 | Negative @<br>1:10 | Negative |
| Gr 31 | Negative @<br>1:10 | Negative |

Species: Bison  
County: Park

**MONTANA VETERINARY DIAGNOSTIC LABORATORY**

Box 997 - Bozeman, MT 59771  
Phone (406) 994 - 4885 Fax (406) 994 - 6344  
Email: livdiagnosticlab@mt.gov

Collection Date: 7-21-17  
Page 1 of 1

**SEROLOGY REPORT (SV2A) - Complete Light Shaded Areas Only**  
(SEE EXAMPLE and KEY on back Page 4)

OWNER: USDA, APHIS, VS  
ADDRESS:  
CITY/STATE/ZIP: Corwin Springs, MT  
REASON FOR TEST - MANDATORY INFORMATION (See Key)  
BQFS - Gonadon - Cattle Health

SUBMITTER'S SIGNATURE: P. Ryan Clarke  
SUBMITTER'S NAME (PRINT): P. Ryan Clarke  
ADDRESS: **(b) (6)**  
CITY/STATE/ZIP:  
RESULT REPORTING OPTIONS: PHO  
NUMBER OR EMAIL ADDRESS: R. Clarke, B. Frey, J. Ryan

| CIRCLE DISEASE TEST REQUIRED: If needed, indicate specific test and/or dilution. Example on back. |                       |     |     |       |               | BRU     | BT        | ANA | EBD    | PTB | IBR | BVD | BLV | LEPTOSPIROSIS | OTHER         |
|---|-----------------------|-----|-----|-------|---------------|---------|-----------|-----|--------|-----|-----|-----|-----|---------------|---------------|
| TUBE NO.  | ANIMAL IDENTIFICATION | AGE | SEX | BREED | OFFICIAL VAC. | BAPA    | Bruc Card | AE  | FPA    |     |     |     |     | 8 SEROVARS    |               |
| 1   | Gr 40                 | Ad  | M   | Bison |               | N       | N         |     | N      | 3-5 |     |     |     | Neg @ (1:10)  |               |
| 2   | Gr 34                 |     |     |       |               | N       | N         |     | N      | 5-6 |     |     |     | Neg @ (1:10)  |               |
| 3   | Gr 37                 |     |     |       |               | N       | N         |     | N      | 1-5 |     |     |     | Neg @ (1:10)  | Correction #3 |
| 4   | Gr 33                 |     |     |       |               | N       | N         |     | N      | 6-5 |     |     |     | Neg @ (1:10)  | [3+(1:20)]    |
| 5   | YR 2                  |     |     |       |               | N       | N         |     | N      | 5-1 |     |     |     | Neg @ (1:10)  |               |
| 6   | Gr 19                 |     |     |       |               | N       | N         |     | N      | 4-5 |     |     |     | Neg @ (1:10)  |               |
| 7   | Gr 28                 |     |     |       |               | N       | N         |     | N      | 1-0 |     |     |     | Neg @ (1:10)  |               |
| 8   | Gr 32                 |     |     |       |               | N       | N         |     | N      | 2-9 |     |     |     | Neg @ (1:10)  |               |
| 9   | Gr 31                 |     |     |       |               | N       | N         |     | N      | 3-1 |     |     |     | Neg @ (1:10)  |               |
| Samples   |                       |     |     |       |               | 9       | 9         |     | 9      |     |     |     |     | 9             |               |
| Seropositive  |                       |     |     |       |               |         |           |     |        |     |     |     |     |               |               |
| Suspect   |                       |     |     |       |               |         |           |     |        |     |     |     |     |               |               |
| Seronegative  |                       |     |     |       |               | 9       | 9         |     | 9      |     |     |     |     |               |               |
| Undetermined  |                       |     |     |       |               |         |           |     |        |     |     |     |     |               |               |
| Tested By   |                       |     |     |       |               | 7/31/17 | 8/1/17    |     | 8/1/17 |     |     |     |     | 8/7/17        |               |

Laboratory Comments:

Please do FPA, CF  
Card, BAPA

FEE: \_\_\_\_\_ DATE RECEIVED: 7-21-17 CA



18-1261  
07/21/17

The MVDL is an accredited AAVLD laboratory and a member of the USDA National Animal Health Laboratory Network. Completing and submitting any submission form or any other contractual agreement for services requested and the specimens submitted become the property of the MVDL. In addition, at no additional expense to our clients, specimens submitted to additional testing upon the order of the state or federal animal health officials, or whenever a Foreign Animal Disease is suspected, or in support of surveillance for other animal disease.

000454

FEES:

|   |       |
|---|-------|
| B. Abortus Card                             | 14.40 |
| Brucella abortus/suis - Complement Fixation | 23.85 |
| Brucella abortus FPA                        | 14.40 |
| B. Abortus Bapa                             | 14.40 |
| Total                                       | 67.05 |

(This is not a bill. Do not make payments from this report.)



# MONTANA VETERINARY DIAGNOSTIC LABORATORY

1911 WEST LINCOLN, BOZEMAN, MT 59718  
P.O. Box 997, BOZEMAN, MT 59771  
WEB: [www.liv.mt.gov/lab](http://www.liv.mt.gov/lab)

PHONE: (406) 994-4885  
FAX: (406) 994-6344  
EMAIL: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)



PATRICK RYAN CLARKE D.V.M.  
PO BOX 202001  
HELENA MT 59601

CASE: 18-5860  
Name/ID:  
Species: American Bison  
  
Sex: Age:  
County: Park  
Owner: USDA APHIS VS/GonaCon

FINAL REPORT 10/25/17

Accessioned: 10/11/17  
Authorized by: AF

Previous Reports  
10/26/17  
10/26/17  
10/26/17

## SEROLOGY

### Brucella abortus

Clotted Blood

Verified on: 10/25/17 by: DK

| <u>Animal</u> | <u>FPA</u> |
|---------------|------------|
| Red 27        | Positive   |
| Red 29        | Positive   |
| Red 32        | Positive   |
| Red 41        | Positive   |
| Red 42        | Positive   |
| Red 44        | Positive   |
| Red 45        | Positive   |
| Red 49        | Positive   |
| Red 51        | Positive   |
| Red 53        | Positive   |
| Red 54        | Positive   |
| Red 55        | Positive   |

Clotted Blood

Verified on 10/12/17 by: DK

| <u>Animal</u> | <u>B. Abortus</u> |
|---------------|-------------------|
|               | <u>BAPA</u>       |
| Red 27        | Positive          |
| Red 29        | Positive          |
| Red 32        | Positive          |
| Red 41        | Positive          |
| Red 42        | Positive          |
| Red 44        | Positive          |
| Red 45        | Positive          |
| Red 49        | Positive          |
| Red 51        | Positive          |
| Red 53        | Positive          |
| Red 54        | Positive          |
| Red 55        | Positive          |

Clotted Blood

Verified on: 10/25/17 by: DK

| <u>Animal</u> | <u>BRUCF</u> | <u>BRUCARD</u> |
|---------------|--------------|----------------|
|---------------|--------------|----------------|

|        |                    |                 |
|--------|--------------------|-----------------|
| Red 27 | 3+ 1:40            | <b>Positive</b> |
| Red 29 | 3+ 1:20            | Negative        |
| Red 32 | 1+ 1:80            | <b>Positive</b> |
| Red 41 | Negative @<br>1:10 | Negative        |
| Red 42 | 2+ 1:20            | Negative        |
| Red 44 | 3+ 1:10            | <b>Positive</b> |
| Red 45 | 3+ 1:10            | <b>Positive</b> |
| Red 49 | 3+ 1:10            | <b>Positive</b> |
| Red 51 | Negative @<br>1:10 | <b>Positive</b> |
| Red 53 | 2+ 1:80            | Negative        |
| Red 54 | Negative @<br>1:10 | <b>Positive</b> |
| Red 55 | 2+ 1:80            | <b>Positive</b> |



Species: Bison  
County: Park



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Email: livdiagnosticlab@mt.gov

Collection Date: 10/11/17  
Page 1 of 2

## SEROLOGY REPORT (SV2A) - Complete Light Shaded Areas Only (SEE EXAMPLE and KEY on back, Page 4).

OWNER: USDA ADHS US  
ADDRESS: Gona Con Study  
CITY/STATE/ZIP: Coxin Springs  
REASON FOR TEST - MANDATORY INFORMATION (See Key)  
Gona Con Study - Research

SUBMITTER'S SIGNATURE (Mandatory): [Signature]  
SUBMITTER'S NAME (PRINT): Rebecca Frey  
ADDRESS: 20301165  
CITY/STATE/ZIP: Emigrant MT 59027  
RESULT REPORTING OPTIONS: PHONE / FAX / EMAIL  
NUMBER OR EMAIL ADDRESS: R.Frey & R. Clarke

| CIRCLE DISEASE TEST REQUIRED: If needed, indicate specific test and/or dilution. Example on back. |                       |     |     |       |               | BRU          | <del>BT</del> | ANA      | <del>EM</del> | PTB | <del>DR</del> | BVD         | BLV | LEPTOSPIROSIS | OTHER |
|---|-----------------------|-----|-----|-------|---------------|--------------|---------------|----------|---------------|-----|---------------|-------------|-----|---------------|-------|
| Tube NO.  | ANIMAL IDENTIFICATION | AGE | SEX | BREED | OFFICIAL VAC. |              |               |          |               |     |               |             |     |               |       |
| 1   | Red 27                | AD  | F   | Bison | N/A           | BAPA X       | BPA           |          | CF 1:10       |     | BPA           | MP          |     |               |       |
| 2   | Red 29                |     |     |       |               | P05          | P05           |          | 3+20          |     | P05           | 128.2/131.0 |     |               |       |
| 3   | Red 32                |     |     |       |               | P05          | N             |          | 3+20          |     | P05           | 20.6/20.4   |     |               |       |
| 4   | Red 41                |     |     |       |               | P05          | P05           |          | 1+80          |     | P05           | 128.4/126.9 |     |               |       |
| 5   | Red 42                |     |     |       |               | P05          | N             |          | N             |     | P05           | 78.3/77.1   |     |               |       |
| 6   | Red 44                |     |     |       |               | P05          | N             |          | 2+20          |     | P05           | 32.8/38.1   |     |               |       |
| 7   | Red 45                |     |     |       |               | P05          | P05           |          | 3+10          |     | P05           | 158.0/153.2 |     |               |       |
| 8   | Red 49                |     |     |       |               | P05          | P05           |          | 3+10          |     | P05           | 169.0/169.4 |     |               |       |
| 9   | Red 51                |     |     |       |               | P05          | P05           |          | 3+10          |     | P05           | 164.7/164.5 |     |               |       |
| 10  | Red 53                |     |     |       |               | P05          | N             |          | N             |     | P05           | 62.1/62.0   |     |               |       |
|   |                       |     |     |       |               | P05          | P05           |          | 2+80          |     | P05           | 72.0/79.9   |     |               |       |
| Laboratory Comments:  |                       |     |     |       |               | Samples      | 12            | 12       | 12            |     | 12            |             |     |               |       |
|   |                       |     |     |       |               | Seropositive | 12            | 8        | 6             |     | 12            |             |     |               |       |
|   |                       |     |     |       |               | Suspect      |               |          | 3             |     |               |             |     |               |       |
|   |                       |     |     |       |               | Seronegative | 12            | 4        | 3             |     | 8             |             |     |               |       |
|   |                       |     |     |       |               | Undetermined | 12            | 12       | 12            |     | 12            |             |     |               |       |
|   |                       |     |     |       |               | Tested By    | 10/11/17      | 10/11/17 | 10/11/17      |     | 10/11/17      |             |     |               |       |

\*Card, BAPA, FPA, CF

Released by DR Date 10/25/17

FEE:

DATE RECEIVED: 10-11-17



18-5860  
10/11/17

The MVDL is an accredited AAVLD laboratory and a member of the USDA National Animal Health Laboratory Network. Completing and submitting any submission form or any contractual agreement for services requested and the specimens submitted become the property of the MVDL. In addition, at no additional expense to our clients, specimens submitted to the MVDL may be subjected to



Owner: USDA APHIS US  
Submitted By: P. Fry  
Collection Date: 10/11/17 Page \_\_\_\_ of \_\_\_\_

**MONTANA VETERINARY DIAGNOSTIC LABORATORY**

**Box 997 - Bozeman, MT 59771**

Phone: (406)994-4885

Fax: (406)994-6344

Email: [livdiagnosticlab@mt.gov](mailto:livdiagnosticlab@mt.gov)

## CONTINUATION SEROLOGY REPORT (SV2B)

***Complete light shaded areas only***

**CIRCLE DISEASE TEST REQUIRED:** If needed, indicate specific test and/or dilution. Example on back of front page (SV2A).

[illegible]

FEES:

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|   |       |
|---|-------|
| Accession Fee                               | 4.00  |
| B. Abortus Card                             | 19.20 |
| Brucella abortus/suis - Complement Fixation | 31.80 |
| Brucella abortus FPA                        | 19.20 |
| B. Abortus Bapa                             | 19.20 |
| Total                                       | 93.40 |

(This is not a bill. Do not make payments from this report.)

11- 564

Tamara  
VS  
Individual



Max Coats  
<mcoats@hughes.net>  
06/07/2011 01:41 AM

To foia.officer@aphis.usda.gov  
cc  
bcc

Subject Request for Information - Bison Project

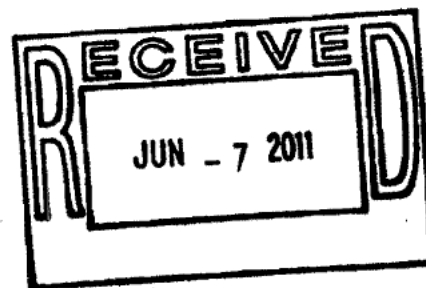
Please consider the following as an official FOIA Request:

I read in the USAHA Alerts about a proposed project involving Yellowstone bison and temporary sterilization. I seek specific information detailing the protocol, total project cost estimates and the logic presented to support the project.

In addition I would request information advising who the principal investigators are to be. I was advised by the Director, Western Region, Veterinary Services to forward my request to you.

Thank you for your response

Max E. Coats Jr. DVM, MS  
Cell Phone (512) 734-3655  
E-Mail [mcoats@hughes.net](mailto:mcoats@hughes.net)



JUL - 6 2011