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Brucellosis Eradication:

Uniform Methods and Rules, Effective October 1, 2003

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Introduction

This publication—Brucellosis Eradication: Uniform Methods and Rules (UM&R)—includes the minimum standards of the Cooperative State-Federal Brucellosis Eradication Program. These UM&R contain minimum standards for certifying herds, classifying States and areas, and detecting, controlling, and eradicating brucellosis, as well as minimum brucellosis requirements for the intrastate and interstate movement of cattle and bison.

This publication is divided into two chapters that are further subdivided into parts. Chapter 1 deals with general provisions for cattle and/or bison. Part I of chapter 1 contains definitions. Part II covers procedures used in the Cooperative State-Federal Brucellosis Eradication Program, and part III explains participation in area plans.

Chapter 2 deals with all of the classifications of herds and areas for bovine brucellosis: Certified Brucellosis-Free Herds (part I), Class Free Status (part II), Class A Status (part III), and Class B Status (part IV).

The provisions of these UM&R were approved by the U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Veterinary Services (VS). These UM&R may be amended in the future by replacing pages or by adding new pages.

Chapter 1, General Provisions—Cattle and Bison

Part I. Definitions

Accredited veterinarian

A veterinarian approved by the Deputy Administrator of VS, APHIS, USDA, in accordance with provisions of part 161, title 9, Code of Federal Regulations (CFR). The veterinarian is accredited to perform certain functions of Federal and cooperative State-Federal programs. The accredited veterinarian is authorized to perform specified activities under the Cooperative State-Federal Brucellosis Eradication Program.

Adjacent herd

A herd of cattle and/or bison that occupies a premises that borders a herd known to be affected with brucellosis (this includes herds separated by roads or fordable streams) or a premises located within a specified area of a herd known to be affected or a premises that was previously occupied by a herd known to be affected within a stated period of time. The applicable period will be determined by the designated brucellosis epidemiologist. In all States, the specified area will be at least 1 mile from the fenceline perimeter of the herd known to be affected unless the designated brucellosis epidemiologist approves a variance.

Animal classification—cattle and/or bison

1. Negative—cattle and/or bison are classified as brucellosis negative:

   a. when their blood serum has been subjected to official serologic tests and the test results fail to disclose evidence of *Brucella* infection, *and*

   b. if blood, milk, or tissues are subjected to bacteriologic methods for cultivating field-strain *Brucella* and none are recovered. In short, for an animal to be classified as negative, all procedures that are performed must fail to disclose evidence of brucellosis.

2. Suspect—Cattle and/or bison are classified as suspects when their blood serum has been subjected to official tests and the test results suggest infection but are inconclusive. If bacteriologic methods to cultivate *Brucella* from blood, milk, or tissues were used, they did not yield field strain *Brucella*.
3. Reactor—Cattle and/or bison are classified as reactors when their blood serum has been subjected to official tests and the test results indicate that the animal has been exposed to and infected with *Brucella*. Cattle and/or bison are also

classified as reactors in the absence of significant serologic test results when other diagnostic methods, such as bacteriologic methods, result in the recovery of field-strain *Brucella* organisms, or a significant rise in the serologic titer occurs, or when other epidemiologic evidence of infection is demonstrated.

Animal health veterinarian

A veterinarian employed on a full-time basis by the State animal health official, APHIS–VS, the county, or other local municipality and given the authority to perform activities in the Cooperative State–Federal Brucellosis Eradication Program.

Approved action plan (also see Individual herd plan)

The document describing the steps and timetable that will be followed by State or Federal animal health personnel to determine the status of a herd suspected of being affected with brucellosis because of positive brucellosis milk surveillance test (BMST) or market cattle inspection (MCI) test results or epidemiologic evidence of direct or indirect contact with an infected animal.

Approved intermediate handling facility

A premises specifically approved by both the Deputy Administrator of VS, APHIS, USDA, and the State Veterinarian for the purpose of receiving and handling cattle and bison for release to recognized slaughtering establishments or quarantined feedlots.

1. Cattle and/or bison may be held at an approved intermediate handling facility for a maximum of 7 days and must not change ownership during that time.

2. No cattle and/or bison except those moved directly from a farm of origin may be permitted to enter an approved intermediate handling facility unless they are accompanied by a permit or "S"-brand permit.

3. Cattle and/or bison transported in vehicles closed with official seals are prohibited from entering such a facility.

4. No cattle and/or bison may leave an approved intermediate handling facility unless they are accompanied by a permit or "S"-brand permit that lists a recognized slaughtering establishment or quarantined feedlot as the point of destination.

5. To qualify for and retain approval, a facility must be separate and apart from livestock handling facilities for breeding cattle and bison and meet the same standards for facilities and records as a specifically approved stockyard.

6. Serviceable equipment for cleaning and disinfecting must be furnished and maintained with adequate disinfectant.

7. Each entrance and exit to a facility must prominently display a sign stating, "ALL CATTLE AND/OR BISON ENTERING THIS FACILITY MUST GO DIRECTLY TO SLAUGHTER OR TO A QUARANTINED FEEDLOT."

8. Any document relating to animals that are or have been in the facility must be maintained by the facility for at least 1 year.

9. State and USDA representatives must be granted, at reasonable hours, access to all documents required to be maintained, and they have the authority to reproduce such documents upon request.

Approved Brucella vaccine

A *Brucella abortus* product that is approved by the Deputy Administrator of APHIS VS for use in the Brucellosis Eradication Program and produced under license of USDA for injection into cattle and/or bison to enhance their resistance to brucellosis.

Approved test

A test that has been reviewed and approved by the Deputy Administrator of APHIS VS for use as an official, presumptive, or supplemental test.

Area

That portion of any State, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, or Guam that has a separate brucellosis classification.

Auction

A public sale of livestock to the highest bidder.

Auctioneer

A person who sells or makes a business of selling livestock at auction.

Bison

All animals in the genus *Bison*, regardless of age or gender.

Brucellosis

An infectious disease of animals and humans caused by bacteria of the genus *Brucella*. The disease is characterized by abortion and impaired fertility in its principal animal hosts. Usually, *Brucella abortus* is associated with the disease in cattle and/or bison, *Brucella suis* with the disease in swine, and *Brucella melitensis* with the disease in sheep and goats. Under appropriate conditions, however, brucellosis may be caused in one species by a *Brucella* organism normally associated with other host species.

Brucellosis-exposed cattle and/or bison

All cattle and/or bison, regardless of the blood test results (except for brucellosis reactors), that are part of a known affected herd or are in a quarantined feedlot or a quarantined pasture or that have been in contact with brucellosis reactors in marketing channels for a period of 24 hours or more or for a period of less than 24 hours if the reactor has recently aborted or calved or has a vaginal or uterine discharge. Brucellosis-suspect cattle and/or bison are also considered to be exposed.

Cattle

All bovine animals (dairy and beef) in the genus *Bos*, regardless of age or gender.

Certificate

A. An official document issued by a VS representative, State representative, or accredited veterinarian at the point of origin of a shipment of cattle or bison. It includes all of the following:

   1. The official eartag number for each animal, or each individual animal's registration tattoo, registration

brand, or the registration number of a breed association recognized by VS;

2. The number of animals covered by the document;

3. The purpose for which the animals are to be moved;

4. The points of origin and destination;

5. The consignor; and

6. The consignee.

B. Ownership brands may be used as identification on certificates for cattle and bison being shipped interstate to States where official tests for brucellosis and other official tests are not required, provided that the ownership brands are registered with the official brand recording agency in the State of origin and that the cattle and bison are accompanied by official brand inspection certificates.

Certified Brucellosis-Free Herd

A herd of cattle or bison that has qualified for and has been issued a Certified Brucellosis-Free Herd certificate signed by both the appropriate State animal health official and by the APHIS, VS, Area Veterinarian-in-Charge (AVIC).

The Certified Brucellosis-Free Herd status is valid for 12 months unless evidence of brucellosis is disclosed or the herd participates in a whole-herd vaccination plan. In the last case, the herd status is suspended until postvaccination testing confirms the herd's negative standing.

Director, National Center for Animal Health Programs (NCAHP)

The veterinarian in the NCAHP, VS, APHIS, USDA, who is responsible for staff field support activities associated with the Federal Government's participation in the Cooperative State-Federal Brucellosis Eradication Program.

Class Free State or Area

A State or an area within a State that meets the classification standards for Class Free brucellosis status and that has been certified as fulfilling the requirements of this status on initial classification or reclassification by the State animal health official, the APHIS AVIC, and the Deputy Administrator of VS, APHIS, USDA. Included among the requirements for Class Free status are that the cattle and/or bison herds in the State or area within the State must have remained free from infections with field strains of *Brucella abortus* for at least 12 months. All cattle and/or bison herds in which field-strain *Brucella*

abortus was known to exist must be legally released from quarantine before the area or State can be certified. In addition, all herds of other species of domestic livestock in which field-strain *Brucella abortus* has been found or suspected must be tested negative, slaughtered, or quarantined, leaving no known focus of infection in any domestic species uncontrolled at the time of certification. The percentage of cases successfully closed for the previous 12 months must be at least 95 percent.

Class A State or Area

A State or an area within a State that meets the classification standards for Class A status and that has been certified as fulfilling the requirements of this status on initial classification or reclassification by the State animal health official, by the APHIS AVIC, and by the Deputy Administrator of VS, APHIS, USDA. Two of the requirements for Class A status are that the infection rate for cattle and bison herds may not exceed 0.1 percent during the previous 12 months and that the successful case closure (SCC) percentage for the previous 12-month period must be at least 95 percent.

Class B State or Area

A State or an area within a State that meets the classification standards for Class B status and that has been certified as fulfilling the requirements of this status on initial classification or reclassification by the State animal health official, by the APHIS AVIC, and by the Deputy Administrator of VS, APHIS, USDA. Two of the requirements for Class B status are that the infection rate for cattle and bison herds may not exceed 1.00 percent during the previous 12 months and that the SCC percentage must be at least 90 percent during the previous 12 months.

Commission firm

A person, partnership, or corporation that buys and sells livestock as a third party and reports details of the transactions to the seller and/or to the buyer. The term includes such persons or organizations whether or not they charge a fee for the service.

Commission sales

Sales conducted by a third party who reports details of the transaction to the seller, the buyer, or both.

Cooperative State-Federal Brucellosis Eradication Program

The Cooperative State-Federal Brucellosis Eradication Program, also referred to as the Brucellosis Eradication Program or simply the Program for convenience in this publication, is administered under a memorandum of understanding between the appropriate agency in each of the States and USDA. This Program includes all of the activities associated with detecting, controlling, and eliminating brucellosis from domestic livestock in the United States. The minimum standards for operating a Cooperative State-Federal Brucellosis Eradication Program within a State are contained in this publication (APHIS 91-45-013), "Brucellosis Eradication: Uniform Methods and Rules." These UM&R are reviewed by representatives of the livestock industry and the appropriate State and Federal agencies annually and are revised as needed and published by USDA-APHIS.

Dairy cattle

Bovine animals of a recognized dairy breed.

Dealer

1. Any persons who engage in the business of buying and/or selling livestock in commerce, either for their own account or as an employee or agent of the seller or buyer; or

2. Any person who engages in the business of buying and/or selling livestock in commerce on a commission basis.

The term "dealer" does not include persons who buy or sell livestock as part of their own bona fide breeding, feeding, dairy, and/or beef operation or who receive livestock exclusively for immediate slaughter on their own premises and who do not engage in the business of buying, selling, trading, or negotiating the transfer of livestock.

Deputy Administrator

The Deputy Administrator of VS, APHIS, USDA, or any other VS official to whom appropriate authority has been delegated.

Designated Brucellosis Epidemiologist

An epidemiologist who has demonstrated the knowledge and ability to perform the functions required under the standards of this UM&R and who has been selected for this position by the State animal health official and the APHIS AVIC. Initial training and continuing education requirements are outlined in VS Memo 551.10. The regional epidemiologist and the VS brucellosis staff must concur in the selection and appointment of the designated brucellosis epidemiologist.

Direct movement

Movement permitted in which the animals are not unloaded en route to their final destination, except for slaughter cattle or bison, which may be unloaded at only one approved intermediate handling facility while en route to slaughter.

Epidemiologist

A veterinarian who has received a master's degree in epidemiology or who has completed a course of study in epidemiology sponsored or approved by VS.

Epidemiology

A branch of medical science that deals with the incidence, distribution, and control of disease in the animal and human population.

Feedlot—cattle and/or bison

A confined drylot area for finish feeding of cattle and/or bison on concentrated feed with no facilities for pasturing or grazing. Only animals that have met all of the required testing provisions at origin and destination are allowed in these feedlots. Animals in such a feedlot are considered to be a herd and must be handled like those in any other herd if brucellosis is suspected or diagnosed.

Finished-fed cattle and/or bison

Cattle and/or bison that have been on feed for a sufficient period of time to achieve the flesh condition desired by slaughter establishments.

First-point testing

Subjecting all test-eligible cattle and bison that are moving within trade or marketing channels to an official test for brucellosis at the first point of concentration. Points of concentration are livestock markets, specifically approved stockyards, buying stations, assembly points, or feedlots receiving cattle and/or bison directly from farms.

Greater Yellowstone Interagency Brucellosis Committee (GYIBC)

A committee—comprised of representatives from the States of Wyoming, Montana, and Idaho, and the United States Departments of the Interior and Agriculture—whose mission is to facilitate the development and implementation of brucellosis management plans for elk and bison in the area in and around Yellowstone National Park while protecting the public interests and economic viability of the livestock industry in the three States.

Herd

1. All animals of the same species, such as cattle and/or bison, under common ownership or supervision that are grouped on one or more parts of any single premises (lot, farm, or ranch); or

2. All animals of the same species under common ownership or supervision on two or more premises that are geographically separated but in which the animals have been interchanged or had contact with animals from different premises. It will be assumed that contact between animals of the same species on the different premises has occurred unless the owner establishes otherwise and the results of the epidemiologic investigation are consistent with the lack of contact between premises; or

3. All animals of the same species on common premises, such as community pastures or grazing association units, but owned by different persons. Other groups of animals owned by the persons involved that are located on other premises are considered to be part of a herd unless the epidemiologic investigation establishes that animals from an affected herd have not had the opportunity for direct or indirect contacts with animals from that specific premises.

The animals in State-approved or federally approved quarantined feedlots and quarantined pastures are not considered to be a herd.

Herd blood test—cattle and/or bison

The herd blood test must include all cattle or bison 6 months of age and older, except steers, spayed heifers, official Strain 19 calfhood vaccinates of the dairy breeds under 20 months of age, and official Strain 19 calfhood vaccinates of bison or beef breeds under 24 months of age. The presence of the first pair of fully erupted permanent incisor teeth is evidence that an animal has reached 24 months of age. Official Strain 19 calfhood-vaccinated cattle or bison under these ages must be included in the herd test if they are parturient (springers) or have already calved.

Herd known to be affected—cattle and/or bison

A herd in which any animal has been classified as a brucellosis reactor and which has not been released from quarantine.

Herd not known to be affected

A herd in which no brucellosis reactor has ever been found or a herd in which one or more animals have been classified as brucellosis reactors but which has since been released from quarantine.

Herd of origin of cattle and/or bison

A herd of cattle or bison or any farm or other premises where the cattle or bison were born or where they have been kept for 4 months or more before the date of shipping, provided that cattle and/or bison from other premises have not been assembled on the farm or premises within 4 months before the date of shipment. For the purposes of this UM&R, herd of origin has the same meaning as place of origin, premises of origin, and farm of origin.

Individual herd plan (Also see Approved action plan)

A written herd-management and testing plan that is designed by the herd owner, the owner's veterinarian if requested, and a State or Federal veterinarian, to control and eradicate brucellosis from an affected herd. A similar plan for determining the true status of animals suspected to harbor *Brucella abortus* and for preventing exposure to brucellosis within the herd is also within the meaning of the term. These plans must incorporate the most appropriate veterinary and herd-management procedures to control the spread of brucellosis within the herd and thereby eradicate the disease from the herd.

Livestock market (Also see Specifically approved stockyards)

A place where livestock are assembled for sale. The animals may be sold by auction, consignment for commission, or by other means of transferring ownership. For the purposes of this UM&R, the term "livestock market" includes both specifically approved stockyards and State-approved livestock markets.

Market Cattle Identification (MCI) test cattle or bison

MCI test cattle or bison are all cows and bulls 2 years of age and older slaughtered at a recognized slaughter establishment, and all test-eligible cattle or bison moving through livestock markets or stockyards. Also, they are those test-eligible cattle and/or bison being assembled at farms or ranches and being prepared for movement to markets, stockyards, slaughter establishments, or other sales, such as consignment or dispersal sales. These cattle and/or bison are to be identified by eartag and/or backtag to the herd of origin before being moved or at the first point of concentration (such as a livestock market or slaughter establishment) that they reach in marketing channels.

Market Cattle Identification (MCI) reactors

For purposes of State or area classification, MCI reactors are defined as MCI tested cattle or bison evaluated using the testing and classification procedures described elsewhere in this document or have been classified as reactors by a designated brucellosis epidemiologist.

Official brand inspection certificate

A certificate issued by an official brand inspection agency in any State in which these certificates are required for moving livestock.

Official brand recording agency

The duly constituted body elected or appointed that is delegated or granted authority by a State to administer laws, regulations, ordinances, or rules pertaining to the brand identification of livestock.

Official eartag

A VS-approved identification eartag (metal, plastic, or other) that conforms to the nine-character alphanumeric National Uniform Eartagging System. It uniquely identifies each individual animal with no duplication of the alphanumeric identification, regardless of the materials or colors used. The term includes the special orange-colored eartag series used to identify calfhood vaccinates.

Official seal

A serially numbered metal or plastic strip consisting of a self-locking device on one end and a slot on the other end,that forms a loop when the ends are engaged. An official seal is tamperproof and cannot be reused if opened. It is applied to the doors of a transport vehicle by a representative of the APHIS AVIC or the State animal health official. A serially numbered, self-locking button that cannot be reused may be substituted for the metal or plastic strip type of seal.

Official test

An approved test that has been developed to aid in determining the presence or absence of blood components associated with field strains of *Brucella abortus, B.abortus Strain 19,* nonspecific agglutinins, etc. An official test typically has a higher specificity than a presumptive test. Results from official tests are used to classify animals as negative, suspect, and/or positive and include the card, complement fixation, rivanol, standard tube, standard plate, and PCFIA tests and the fluorescence polarization assay. Official tests are also known as confirmatory tests.

Official vaccinate (adult)

A bovine or bison female that, as part of a herd that was approved for whole-herd vaccination, was inoculated subcutaneously with an approved *Brucella* vaccine at an age older than that permitted for calfhood vaccination. The animal was inoculated by a State or Federal representative or an accredited veterinarian using the approved procedure. The animal must have been tested negative within 10 days before vaccination. At vaccination, the animal must have been properly identified as an adult vaccinate and must have been reported on the appropriate form to the State or Federal animal health agency in that State.

Official vaccinate (calfhood)

A bovine or bison female that, as a calf, was inoculated subcutaneously with an approved *Brucella* vaccine between the appropriate age limits by a State or Federal representative or an accredited veterinarian using the approved vaccination procedure. The animal must have been properly identified as vaccinate by official eartag and vaccination tattoo and must have been

reported on the appropriate certificate to the appropriate State or Federal animal health agency for that State.

Parturient

Visibly prepared to give birth or within 2 weeks before giving birth.

Permit

An official document (VS Form 1–27 or comparable State form) that is issued by a State or Federal representative or by an accredited veterinarian. The permit is required to accompany all brucellosis reactors and those brucellosis-exposed cattle and/or bison that are being moved under official seal during their movement to the specified destination. (See chapter 1, part II, section 5, Procedures for Moving Restricted Cattle and/or Bison.)

Permit for entry

A premovement authorization for cattle and/or bison to enter other States or areas. The permit for entry is obtained from the animal health official of the State of destination and declares the conditions under which movement may be made. It may be oral or written. (See chapter 1, part II, section 5, Procedures for Moving Restricted Cattle and/or Bison.)

Person

Any individual, corporation, company, association, firm, partnership, society, joint stock company, or other legal entity.

Postparturient

Having already given birth.

Presumptive test

An approved test that typically has higher sensitivity than official tests and is frequently used to screen large numbers of samples at a lower cost. Samples positive on a presumptive test must be retested using an official test. Animals testing negative on presumptive tests are considered negative. Presumptive test are also known as screening tests. The standard plate, BAPA, and RAP are examples of presumptive tests.

Quarantined feedlot

A confined area under State brucellosis quarantine that has been approved by the State animal health official and the APHIS AVIC and is maintained for feeding cattle and/or bison of unknown or brucellosis-exposed status, with limited provisions (see chapter 1, part II, section 6B) for pasturing or grazing. All cattle and/or bison, except steers and spayed heifers, leaving a quarantined feedlot must go to an approved slaughter establishment for immediate slaughter or to another quarantined feedlot. All cattle and/or bison in a quarantined feedlot are considered to be exposed to brucellosis.

Quarantined pasture

A designated, confined grazing area under State quarantine, approved by the State animal health official, APHIS AVIC, and the Deputy Administrator of VS, APHIS, USDA, which is established to use available forage for cattle and/or bison of unknown or brucellosis-exposed status. The cattle and/or bison must originate from the State in which the quarantined pasture is located. A quarantined pasture cannot be approved for periods exceeding 10 months. All cattle and/or bison in a quarantined pasture are considered to be exposed to brucellosis.

Recognized slaughter establishment

Any slaughter establishment operating under the provisions of the Federal Meat Inspection Act (21 United States Code 601 *et seq.)* or a State meat-inspection act.

"S"-brand permit

An official document that may be required for certain animals that are moved to a quarantined feedlot, a quarantined pasture, a slaughter establishment, or an approved stockyard for sale to a slaughter establishment. Its purpose is to control the movement of untested test-eligible cattle and/or bison and brucellosis-exposed cattle and/or bison to restricted destinations. (See chapter 1, part II, section 5, Procedures for Moving Restricted Cattle and/or Bison.)

"S"-branded cattle or bison

Brucellosis-exposed or untested test-eligible cattle and/or bison that have been identified by branding the letter "S" with a hot

iron at least 5 cm × 5 cm (2 × 2 inches) in size high on the tailhead (over the fourth to the seventh coccygeal vertebrae).

Specifically approved stockyard

A stockyard specifically approved for receiving brucellosis-restricted cattle and/or bison. A specifically approved stockyard may be approved to handle all classes of cattle and/or bison including brucellosis reactors or brucellosis-exposed cattle and/or bison.

State

Any State of the United States, the District of Columbia, Puerto Rico and U.S. Virgin Islands.

State animal health official

The chief State official responsible for disease control and eradication programs affecting livestock and poultry.

State-approved livestock market

Any livestock market that has been approved by the State to handle cattle, bison, and/or swine under conditions required by the Cooperative State-Federal Brucellosis Eradication Program.

State-Federal laboratories

State and /or Federal Laboratories approved by both the state and USDA/APHIS/VS and authorized to perform specific brucellosis serologic tests based on having adequate laboratory facilities, testing protocols, and competent personnel as determined by proficiency testing. The laboratories may also have the capability to perform viability testing of approved vaccines and/or isolate *Brucella* species from milk, blood, and tissues.

State or Federal representative

A veterinarian or other person employed in animal health work by a State or political subdivision of the State or by APHIS, VS. This person is authorized by the State, political subdivision, or APHIS to perform animal health activities under a memorandum of understanding with USDA.

Successful case closure (SCC)

Cases completed on MCI reactors successfully traced to herds of origin. Once the trace is successful, a thorough epidemiologic investigation must be completed. Based on that investigation, a decision must be made whether or not to test the herd of origin. If a herd test is conducted, the case is successfully closed. If the herd is not tested, the case is considered successfully closed if the justification is in compliance with this UM&R.

Successful traceback of Market Cattle and/or Bison Identification (MCI) reactors

A successful traceback of MCI reactors occurs when the herd of origin, as defined, is located and a herd blood test is conducted when necessary. When all animals at the premises of origin were sold for slaughter, a successful traceback can also be claimed. Tracebacks to dealers, commission firms, or other intermediary points are not considered successful unless all possible herds of origin are located and the herds are tested.

Supplemental tests

An approved test that has been developed to aid designated brucellosis epidemiologists in better interpreting the results of official tests, allowing trained and qualified epidemiologists a degree of variance from the diagnostic criteria included in this UM&R. Of these, only the card test is an official test, and it is official only when used as the sole test on a blood serum sample. Other test procedures include the concentration immunoassay test (CITE) and the enzyme-linked immunosorbent assay (ELISA). Other supplemental tests may be added as needed, be made available, and may require proficiency testing. Only the designated brucellosis epidemiologist may use and interpret results of supplemental tests.

Test-eligible cattle and/or bison

All cattle and bison 18 months of age and over (as evidenced by the loss of the first pair of temporary incisor teeth), except steers, spayed heifers, official Strain 19 calfhood vaccinates of the dairy breeds under 20 months of age, and official Strain 19 calfhood vaccinates of bison or beef breeds under 24 months of age. (Presence of the first pair of fully erupted permanent incisor teeth is evidence that the animal has reached 24 months of age.) All cattle or bison that are parturient (springers) or postparturient are test eligible regardless of age.

Untested test-eligible cattle and bison

Test-eligible cattle and/or bison that have not been tested for brucellosis to fulfill brucellosis movement requirements.

Veterinarian-in-Charge

The veterinary official of VS, APHIS, USDA, who is assigned by the Deputy Administrator of VS to supervise and perform the official animal health work of APHIS in the State or States concerned.

Veterinary Services (VS)

The division of USDA's Animal and Plant Health Inspection Service in charge of animal health activities within the United States.

Veterinary Services representative

A veterinarian or other person employed by VS, APHIS, USDA, who is authorized to perform specific activities.

Whole-herd vaccination

The vaccination of all female cattle and/or bison 4 months of age or over (including animals older than the age for official calfhood vaccination), when the entire herd is authorized by the State animal health official and by the APHIS AVIC to be vaccinated with an approved dose of an approved *Brucella* vaccine.

Part II. Procedures

1. Administrative Procedures

A. Supervision of the Cooperative State-Federal Brucellosis Eradication Program

The Cooperative State-Federal Brucellosis Eradication Program must be supervised by full-time animal health veterinarians employed by the State or the Federal Government.

B. Entering Premises

Persons working on the Brucellosis Eradication Program must be authorized by the State to enter premises to carry out Program procedures. While on those premises, they must use sanitary procedures to minimize the risk of physically transmitting the disease to other premises.

C. Providing Services to Livestock Owners

Program services may be rendered without expense to the livestock owner; however, owners are responsible for handling their animals. Program administrators may contract with accredited veterinarians, paraprofessionals, other State and Federal agencies, or the management of privately owned firms, as needed, to assist State and Federal animal health personnel in collecting blood, milk, or tissue samples, in identifying animals, and in performing other specified activities.

D. Reporting Brucellosis Activities

All brucellosis activities that are conducted privately, or under agreements with Program officials—such as performing vaccinations or serologic tests for brucellosis—must be reported immediately to cooperating agencies and to the herd owner.

E. Notifying the Community of Brucellosis-Affected Herds, Quarantined Feedlots, and Quarantined Pastures

State or Federal officials of the Brucellosis Eradication Program will notify herd owners in the immediate community about the presence of cattle and/or bison herds that have been placed under quarantine for brucellosis. Program officials will also notify herd owners in the immediate vicinity when the officials approve the establishment of quarantined feedlots and quarantined pastures. Herd owners are to be notified by means of an educational letter delivered in person or by mail within 30 days of the date quarantines are issued. The purpose of this notification is to emphasize to owners the importance of taking appropriate

actions to protect their cattle and/or bison against the possible spread of brucellosis as the result of the presence of an affected herd in their community. Herd owners are also to be notified within 30 days by an educational letter delivered in person or by mail when the herd is released from quarantine or the approval of the quarantined feedlot or the quarantined pasture is terminated.

F. Herd Depopulation

State or Federal officials of the Brucellosis Eradication Program will review cattle and/or bison herds with a high rate of brucellosis infection or chronic infection of long duration to determine the desirability of depopulating the herd with indemnity to the owner. In States that previously had been free of brucellosis, all affected herds must be reviewed for possible depopulation with indemnity in order to reduce the risk of spreading the disease to other herds.

G. Dealers—Registration and Recordkeeping

1. The following dealers (individuals or other legal entities) of cattle and/or bison must be registered or licensed with the appropriate State agency:

   a. Dealers who purchase, deal in, or sell cattle and/or bison;

   b. Dealers who act as commission representatives or brokers; and

   c. Dealers who operate or conduct an auction where cattle and/or bison are sold.

2. These dealers must maintain records required by the State licensing agency to make it possible for State authorities to trace back exposed and/or reactor animals to the herd of origin or other point of original infection.

3. Registering dealers—After giving due notice and opportunity for hearing to the dealer involved, the State animal health agency must have the authority to deny an application for registration or to suspend or cancel the registration when it is satisfied of either or both of the following:
   a. There is adequate evidence to establish that the dealer had the intent to violate or circumvent recordkeeping requirements of this section and/or other animal health regulations;

   b. The dealer has repeatedly demonstrated an unwillingness to keep records making it possible to trace back to the point of origin those exposed or reactor cattle or

bison he or she has handled.

4. *Keeping records*—Each registered or licensed dealer must keep records on all test-eligible cattle and/or bison purchased for resale sufficient to enable the State animal health agency to satisfactorily trace back those animals to their herd of origin. The records must be kept for a minimum of 2 years.

5. *Dealing with violations*—Provisions must exist so that State animal health officials can institute any action at law or in equity that appears necessary to enforce compliance with dealer registration and recordkeeping requirements under this UM&R. Possible actions include the authority to subpoena appropriate records and/or persons who allegedly violate these minimum standards. The appropriate State officials must also have authority to petition the local court that has jurisdiction for an order to enforce these subpoenas.

6. *Reviewing laws and regulations*—States with existing brand inspection laws, rules, and/or regulations may not need to develop new laws and regulations governing dealer registration and recordkeeping if brucellosis-exposed and/or reactor cattle and/or bison are being traced to their herd(s) of origin or point(s) of original infection. Representatives of the Director, NCAHP, VS, APHIS, USDA, will evaluate the scope of the State brand inspection laws, rules, and regulations and their effectiveness in accomplishing the traceback objective. Based upon this review, the Director of NCAHP will determine if new laws or rules are needed to satisfy these objectives.

H. Exceptions to the Deadline(s)

Program officials must follow deadlines for the herd plan, investigation, and testing (see chapter 2, parts II-IV) except when a designated brucellosis epidemiologist determines that there are extenuating circumstances. The extenuating circumstances must make it impossible to meet the deadline established for a particular herd. The designated brucellosis epidemiologist must immediately set a new deadline in consultation with the herd owner or his or her representative, to accomplish the required testing at the earliest opportunity. The new deadline must be consistent with the principles of brucellosis eradication.

I. Administrative Review of Program Activities and Progress

An administrative review of a State's brucellosis program may involve any or all of the following:

1. VS personnel will conduct ongoing reviews at the local and

national levels by receiving and examining routine written monthly, annual, and other statistical and narrative reports that have been prepared and submitted by State and/or Federal animal health officials in each of the States;

2. The Director of NCAHP, VS, will monitor the results of existing State policies and procedures for controlling and eradicating brucellosis by examining factors such as the prevalence of infection in that State;

3. Representatives of the Director of NCAHP evaluate the information provided by the various States in special reports regarding the authorities and the policies for implementing the various minimum standards of these UM&R;

4. Regional Directors, regional epidemiologists, and staff personnel of VS will visit the various States to observe program procedures and to make general or specific program evaluations; and

5. Special evaluation teams comprised of several individuals representing State, Federal, and/or industry and academic interests will make visits to designated States in order to make limited or comprehensive reviews of the Brucellosis Eradication Program.

J. Appointing Designated Brucellosis Epidemiologists

A designated brucellosis epidemiologist must be selected jointly by the cooperating State animal health official and the APHIS AVIC and approved by the regional epidemiologist and the brucellosis staff of the NCAHP, VS, APHIS. Only those persons with the prerequisite brucellosis epidemiology training, experience, and interest will be appointed to this position.

2. Procedures for Vaccination

A. Whole-Herd Vaccination Plan (Adult Vaccination)

Under this plan, a blood test of samples from each animal in the herd is followed by vaccination of the nonreacting female cattle and/or bison. The animals are to be vaccinated within 10 days after the blood test is completed. All animals included on the blood test must be identified with official eartags or other UM&R-approved identification. All brucellosis reactors must be isolated until removed from the premises. A whole-herd vaccination plan will be used in Class Free States or areas only if the chief State animal health official and the Deputy Administrator of VS, APHIS, USDA, specifically approve it on a herd-by-herd basis.

1. *Affected herds*—In affected herds, the individual herd plan may include whole-herd vaccination in addition to other recognized procedures for controlling and eliminating the disease. Whole-herd vaccination may be initiated only when the herd owner receives written permission from the State and Federal officials directly responsible for Program activities in the State where the herd is located. All animals that are vaccinated as adults under these circumstances must be identified using an official eartag and a brand or tattoo (see the section "Identifying Vaccinates"). The initial herd blood test following whole-herd vaccination should be done in 2 months or as early as possible in order to make it easier to eliminate field-strain infection (see chapter 1, part II, section 7E, subparagraph 1). Test and slaughter procedures for affected herds must resume within 6 months after the initial whole-herd vaccination. Testing will take place at the intervals agreed to in the individual herd plan. During the 48 months following the initial whole-herd vaccination, replacement animals that have a negative test within 10 days before entering the herd may be adult-vaccinated if this is needed and if the procedure is included in the individual herd plan.

   a. Beef cattle and/or bison herds—Beef cattle and/or bison herds that are affected with brucellosis and that have participated in a whole-herd vaccination plan ("AV" herds) may be released from quarantine after at least three consecutive whole-herd blood tests that failed to disclose reactors. The first test must be 30–60 days, the second test 180–210 days, and the third test 365 days or more after all reactors have been removed from the herd. All calves in an affected herd are included under the herd quarantine restrictions. These calves may be moved only if they comply with the movement requirements outlined in chapter 2, parts II.4, III.4, or IV.4, as applicable for States in each brucellosis classification. These requirements are the same as those for release of quarantine in other brucellosis-affected herds. An additional herd blood test is recommended 6–12 months or more after the herd has been released from quarantine.

   b. Dairy herds—All of the requirements for beef herds and/or bison also apply to dairy herds participating in a whole-herd vaccination plan ("AV" herds). In addition, dairy herds must be negative on the last herd brucellosis milk surveillance test (BMST). Any "AV" dairy herd in this plan that is released from quarantine but that continues to be suspicious on the herd BMST must be evaluated by the designated brucellosis epidemiologist and monitored with further testing whenever necessary to ensure that there is no

evidence of infection with field strains of *Brucella abortus.*

2. *Herds not known to be affected*—Persons who own cattle and/or bison herds that are at high risk of becoming infected with brucellosis may also request whole-herd vaccination. An individual herd plan that specifies the whole-herd vaccination procedures to be used must be developed and agreed to. The plan should also include other recognized procedures for preventing the introduction of brucellosis into the herd and for controlling its spread if it does occur. Whole-herd vaccination may be initiated only if the owner receives written permission from the State and Federal officials directly responsible for Program activities in the State where the herd is located. As part of this plan, all eligible calves must be calfhood-vaccinated and identified as described in section C, "Identifying Vaccinates."

   All female cattle and/or bison vaccinated as adults under these circumstances must be identified using an official eartag and a brand or tattoo as described in section C, "Identifying Vaccinates."

B. Official Vaccinates

1. *Official calfhood vaccinate*—To be an official calfhood vaccinate, the vaccinated bovine or bison calf must be

   a. Female *and*

   b. Vaccinated with an approved *Brucella* vaccine *and*

   c. Vaccinated by a State or Federal animal health representative or an accredited veterinarian *and*

   d. Permanently identified as a calfhood vaccinate as described in subsection C, "Identifying Vaccinates," *and*

   e. Reported at the time of vaccination by submitting a completed VS Form 1–24 or VS Form 1–26 or comparable form to the appropriate State or Federal animal health agency in that State *and*

   f. Vaccinated between 4 months and 1 year of age (120 through 365 days) *and*

   g. Given a subcutaneous 2-mL dose of *Brucella abortus* Strain 19 vaccine containing at least 2.7 billion and not more than 10 billion live organisms (the optimum dose is 5 billion live organisms administered while the calf is at the optimum age of 5 months) *or*

h. Given a subcutaneous 2-mL dose of *Brucella abortus* Strain RB51 vaccine containing at least 10 billion and not more than 34 billion live organisms, *or*

i. Vaccinated before December 31, 1984, and have met the age and vaccine dose requirements for official vaccination in the State where it was located at the time of vaccination.

2. *Official adult vaccinate*—To be an official adult vaccinate, the vaccinated animal must be

a. Part of a herd approved for whole-herd vaccination at the time of vaccination, *and*

b. Female cattle and/or bison vaccinated at an older age than the maximum age approved for calfhood vaccination, *and*

c. Tested negative within 10 days before vaccination, *and*

d. Vaccinated subcutaneously with an approved 2-mL dose of *Brucella abortus* Strain 19 vaccine containing between 300 million and 1 billion live organisms. (The optimum dose is 500 million live organisms.) If the animal was vaccinated before August 15, 1983, the vaccine must have contained between 300 million and 3 billion live organisms, *or*

e. Vaccinated subcutaneously with an approved 2-mL dose of *Brucella abortus* Strain RB51 vaccine containing at least 1 billion live organisms, *and*

f. Vaccinated by a State or Federal animal health representative or by an accredited veterinarian as instructed by the State animal health official and the APHIS AVIC, *and*

g. Identified as an official adult vaccinate as described in Section C, *and*

h. Reported on the appropriate forms as an adult vaccinate to the State or Federal animal health agency for that State.

C. Identifying Vaccinates

1. *Official calfhood vaccinates*—Calfhood-vaccinated animals must be permanently identified as vaccinates by tattoo and by official vaccination eartag. If the animal is already identified with an official eartag before vaccination, an additional official eartag is not required. Vaccination

tattoos must be applied to the right ear. For *Brucella abortus* Strain 19 vaccinates, the tattoo will include the U.S. Registered Shield and "V," which will be preceded by a number indicating the quarter of the year and followed by a number corresponding to the last digit of the year in which the vaccination was done. For *Brucella abortus* Strain RB51 vaccinates, the tattoo will include the U.S. Registered Shield and "V," which will be preceded by a letter R and followed by a number corresponding to the last digit of the year in which the vaccination was done. Official vaccination (orange) eartags must be applied to the right ear. The eartag will include the State prefix and a V, followed by two letters and four numbers that individually identify each vaccinated animal. States in which a complete series of official vaccination eartags (VAA through VZZ) is used in less than 15 years will use a supplemental series of official vaccination eartags to avoid duplicating animal identification. The supplemental eartag series will use the two-digit State prefix, followed by the letters "T" or "S," followed by two letters and four numbers. After 15 years, the State will again use the "V" series of official vaccination eartags. Consequently, beginning January 1985, the letters "V," "T," and "S" as the first letter in the three-letter portion of the eartag are reserved for exclusive use in official vaccination eartags.

Individual animal registration tattoos or individual animal registration brands may be used for identifying animals in place of official eartags if the cattle and/or bison are registered by breed associations recognized by VS. Official calfhood vaccinates are allowed to be retattooed by an accredited veterinarian designated by the State Veterinarian, or by a Federal or State representative, provided that:

a. The identification of the vaccinated animal(s) is verified by official records maintained in State or Federal offices *and*

b. Prior approval for retattooing is obtained from the State Veterinarian *and*

c. The retattooing produces the original tattoo given at the time of vaccination.

2. *Official adult vaccinates*—Animals that have been vaccinated over calfhood age as part of authorized whole-herd vaccination plans must be permanently identified as vaccinates as follows: Adult-vaccinated cattle and/or bison in these herds must be identified by either an open-ended "V" hot brand high on the hip near the tailhead, or by an official "AV" (adult vaccination) tattoo in the

right ear. For *Brucella abortus* Strain 19-vaccinated animals, the "AV" in the tattoo is to be preceded by a number indicating the quarter of the year and followed by a number corresponding to the last digit of the year in which the vaccination was done. For *Brucella abortus* Strain RB51-vaccinated animals, the "AV" in the tattoo is to be preceded by the letter "R" and followed by a number corresponding to the last digit of the year in which the vaccination was done. The brand or tattoo is in addition to the official eartag identification. If the cattle or bison are registered by a breed association recognized by VS, individual animal registration tattoos or individual animal registration brands may be used for identifying animals in place of official eartags. Large-numbered, unique, plastic bangle tags are recommended to be used in addition to the above identification and are to be correlated on test records with the official eartag.

3. Testing Requirements

A. Cattle and Bison

1. *Herd blood test*—Herd blood tests must include all cattle and/or bison 6 months of age and older except steers, spayed heifers, official calfhood vaccinates of the dairy breeds under 20 months of age, and official calfhood vaccinates of beef breeds and bison that are under 24 months of age. Presence of the first pair of fully erupted permanent incisor teeth is evidence that the animal has reached 24 months of age. However, official calfhood vaccinates that are parturient (springers) or postparturient must be included in the herd blood test regardless of age.

2. *Herd blood test for release of quarantine and postquarantine test*—The herd blood test that is performed to qualify a herd for release of quarantine and the test that is performed 6 to 12 months after a quarantine has been released must include all nonneutered cattle and/or bison (females and males) 6 months of age and older, including cattle and/or bison that have been officially vaccinated for at least 6 months. The purpose for this requirement is to establish baseline titers for each of these animals so that when they are retested, the designated brucellosis epidemiologist can evaluate the probability of their being infected with field strains of *Brucella*.

3. *Market Cattle Identification (MCI) blood tests*

   a. Slaughter establishment—All cattle and/or bison (cows and bulls) 2 years of age and older are to be blood-sampled at each recognized slaughter establishment. The blood samples must be tested for brucellosis.

b. Livestock markets, farms, or ranches—The following cattle and/or bison moving in trade channels or being readied for sale on farms and ranches must be blood-sampled and tested as required (see chapter 2, parts II-IV): all cattle and/or bison 18 months of age and older (as evidenced by the loss of the first pair of temporary incisor teeth), except steers, spayed heifers, official calfhood vaccinates of dairy breeds under 20 months of age, and official calfhood vaccinates of beef breeds and bison under 24 months of age. Presence of the first pair of fully erupted permanent incisor teeth is evidence that the animal has reached 24 months of age. However, all cattle and bison that are parturient (springers) or postparturient must be included as test-eligible cattle and bison regardless of age or vaccination status.

4. *Other movements*—The testing requirements for cattle and/or bison under other circumstances will be the same as those in the immediately preceding paragraph.

B. Identifying Tested Animals—Cattle and Bison

1. Cattle and/or bison included in a herd blood test must be identified with an official eartag, an individual animal's registration tattoo, registration brand, or the registration number of a breed association recognized by VS. Large-numbered, unique, plastic bangle tags may be used in addition if the bangle tags are correlated on the test records with the official eartag.

2. Cattle and/or bison that are tested under the MCI program procedures are to be identified with the herd of origin by an official eartag and/or a USDA-approved backtag before or at the first point of concentration in marketing channels.

C. Requesting a Retest

Within 3 days after being notified of the results of an initial herd blood test, the owner may request an additional blood test on cattle and/or bison reactors, at the owner's expense. The request must be based on sound epidemiologic evidence, and all animals must remain under herd quarantine.

D. Retesting Affected Herds

Retests of affected cattle and/or bison herds must be conducted in accordance with an individual herd plan (see chapter 1, part II,section 6D). Under routine conditions, retests are recommended at approximately 30-day intervals until the herd has passed at least one negative herd test 30-

60 days after the last reactor has been removed and slaughtered. To qualify herds for release from quarantine, as indicated in chapter 1, part II, section 6A, a second negative herd blood test is necessary 180–210 days after the last reactor has been removed, and the third test (releasing test) must occur 365 days or more after all reactors have been removed. Testing at 30-day intervals after the first negative herd test is strongly recommended to detect any

additional infected cattle and/or bison as soon as possible, in order to minimize the spread of disease within the herd.

4. Laboratory and Testing Procedures

A. Laboratories

Blood samples are to be tested for brucellosis only in cooperative State-Federal brucellosis laboratories or by persons who are authorized by Program officials to conduct the standard agglutination tests, the buffered acidified plate antigen (BAPA) test, or the card test. All samples initially tested at other than an approved cooperative State-Federal brucellosis laboratory must be promptly submitted, by the person authorized to do the testing, to an approved cooperative State-Federal brucellosis laboratory, where the results will be confirmed. A cooperative laboratory system will be maintained with States, universities, and industry to review the training and performance of laboratory personnel regularly and to assist laboratories in developing systems of continuing quality control for all laboratory tests and culturing procedures. State-Federal laboratories will be evaluated by a review committee that includes qualified epidemiologists, at least once in each 3-year period. Individuals conducting onsite testing will be proficiency tested annually to determine their competence to perform approved procedures.

B. Diagnostic Reagents for Brucellosis

Brucella antigens used for diagnosing or detecting brucellosis in domestic livestock will be distributed only to State and Federal animal health personnel and to accredited veterinarians who have been approved by State and Federal program officials to conduct specific tests.

C. Using the Tests and Recording Results—Cattle and Bison

1. *Tests on blood serum*

a. Buffered Acidified Plate Antigen (BAPA) Presumptive Test—may be used to classify cattle and/or bison as negative. The test is recorded as either negative or positive. A test is positive when any agglutination is observed.

b. Rapid Automated Presumptive (RAP) Test—may be used as an approved presumptive test in accordance with the published protocol. The test result is recorded as either positive or negative.

c. Card test—may be used to classify cattle and/or bison as negative on surveillance samples collected at slaughter, on routine samples collected on farms, and on tests of suspicious and affected herds. The test results are recorded as either negative or positive. The card test is to be used as an official test to classify cattle and/or bison as reactors under the following circumstances only:

(1) When conditions and time are such that no other test is available; or

(2) When the owner and/or his or her agent request it because of time or situation constraints; or

(3) In stockyards when the State animal health official specifically designates the card test as the official test. No other test except the BAPA is to be used in stockyards as an official test in those States. (The CITE® test can also be used on all cattle and/or bison as a supplemental test whenever the card test is used.); or

(4) In stockyards when the State animal health official designates the card test as the official test, the card test will be the only official diagnostic test; and the CITE test, standard plate test (SPT), or rivanol test may be used as supplemental tests at the stockyard. Cattle and/or bison that are positive to the card test must be classified as reactors or suspects if supplemental tests completed support suspicious or reactor classifications.

(5) To test MCI test samples. Cattle and/or bison that are tested under the MCI program using an approved presumptive test (BAPA or RAP) and that are found to be positive on the presumptive test must be retested using the card test, the SPT, the tube agglutination test, or other official tests. If there is no further testing, all samples that are positive on the card test or SPT or tube agglutination test will be reported as MCI reactors and traced to the herd of origin. However, the designated brucellosis epidemiologist can reclassify MCI reactors for purposes of State or area classification, provided additional information and tests are available that support

such action.

(6) Results of the card test may be used to supplement the results of other tests conducted in the cooperative State-Federal brucellosis laboratory to give the designated brucellosis epidemiologist additional information when classifying cattle and bison. Card-positive cattle and/or bison may be classified negative only by a designated brucellosis epidemiologist, provided that supplemental tests are negative and additional documented information supports such actions.

d. Standard Tube Agglutination Test (STT) or Standard Plate Test (SPT)—The blood titers of cattle and bison tested by the STT or SPT methods are interpreted in table 1.

Note: These interpretations do not apply to official Strain 19 adult-vaccinated cattle or bison until after the STT or SPT titer resulting from vaccination has reverted to negative.

Table 1—Interpretation of standard tube agglutination test (STT) and standard plate test (SPT) results

Test results			Test interpretation	
1:50	1:100	1:200	Non-Strain 19-vaccinated	Strain 19-vaccinated
-	-	-	Negative	Negative
I	-	-	Suspect	Negative
+	-	-	Suspect	Negative
+	I	-	Suspect	Suspect
+	+	-	Reactor	Suspect
+	+	I	Reactor	Suspect
+	+	+	Reactor	Reactor

Key: - = no agglutination; I = incomplete agglutination; + = complete agglutination.

e. Rivanol test—The rivanol test is an official test when conducted in cooperative State-Federal brucellosis laboratories. However, the designated brucellosis epidemiologist can reclassify MCI reactors for purposes of State or area classification, provided that additional information and tests are available to support reclassification. The rivanol test is interpreted in table 2.

Table 2—Interpretation of rivanol test results

Test results		
Non-Strain 19-vaccinated	Strain 19-vaccinated	Test interpretation
I 1:25 or lower	I 1:25 or lower. (But within 5 months after adult vaccination of cattle or bison, a + 1:50 titer or lower titer is considered negative.)	Negative
Not applicable	+ 1:25 to + 1:50, provided the CF test is performed and is interpreted as negative or suspect, as described in paragraphs f and g in this section.	Suspect
+ 1:25 or higher	+ 1:25 or higher, provided the CF test is not performed or when the CF test is interpreted as a reactor, or I 1:100 on the rivanol test regardless of CF test results.	Reactor

Key: I = incomplete agglutination; + = complete agglutination.

f. Manual complement-fixation (CF) test—The CF test is an official test when it is conducted at a cooperative State-Federal brucellosis laboratory using manual methods approved by the National Veterinary Services Laboratories (NVSL) of APHIS, VS. The manual CF test is interpreted in table 3.

Table 3—Interpretation of manual complement-fixation test results

Test results		
Non-Strain 19-vaccinated	Strain 19-vaccinated[1]	Test interpretation
1+ 1:10 or lower	1+ 1:10 or lower	Negative
2+ 1:10 through 1+ 1:20	2+ 1:10 through 4+ 1:20	Suspect
2+ 1:20 or higher	1+ 1:40 or higher	Reactor

[1] Includes Strain 19 adullt-vaccinated cattle and bison beginning 2 months after vaccination.

Key to degree of fixation of complement: 1+ = 25 percent, 2+ = 50 percent, 3+ = 75 percent, 4+ = 100 percent.

g. Technicon automated complement-fixation test—The Technicon automated CF test is an official test when it is conducted at a cooperative State-Federal brucellosis laboratory using recognized methods. This test is interpreted in table 4.

Table 4—Interpretation of the Technician automated complement-fixation test results

Test results		
Non-Strain 19-vaccinated	Strain 19 vaccinated [1]	Test interpretation
N 1:5	+ 1:5 but N 1:10	Negative
+ 1:5 but N 1:10	+ 1:10 but N 1:20	Suspect
+ 1:10 or higher	+ 1:20 or higher	Reactor

[1] Includes Strain 19 adult vaccinates beginning 2 months after vaccination.
Key to fixation of complement: + = observed; N = none observed.

h. Particle Concentration Fluorescence Immunoassay™ (PCFIA) may be used as a presumptive or official diagnostic test and classified according to the following ratio between the test sample and a known negative sample (S/N ratio). Note: The designated brucellosis epidemiologist can reclassify MCI reactors for purposes of State or area classification, provided that additional information and tests are available that support such action.

Table 5 PCFIA

Non-Strain 19 vaccinates (6 months of age and older[1,2])			Strain 19 vaccinates (test-eligible)		
Negative	Suspect	Reactor	Negative	Suspect	Reactor
S/N values greater than 0.6.	S/N values less than or equal to 0.6 and greater than 0.3	S/N values less than or equal to 0.3	Same values as Negative Non-Strain 19 vaccinates	Same values as Suspect Non-Strain 19 vaccinates	Same values as Reactor Non-Strain 19 vaccinates

i. Fluorescent Polarization Assay (FPA) - The Fluorescent Polarization Assay (FPA), can be used as a presumptive or supplemental test. It is used as an official test when conducted in an approved cooperative State-Federal brucellosis laboratory. However, the designated Brucellosis epidemiologist can reclassify MCI reactors for purposes of State or area classification,provided that additional information and tests are available to support reclassification. This test is interpreted in table 6.

Table 6. FPA

Non-Strain 19 vaccinates (6 months of age an older [1,2])			**Strain 19 vaccinates (test-eligible)**		
N	**S**	**P**	**N**	**S**	**P**
Negative<11	Suspect 11-20	Positive>21	Negative < 11	Suspect 11-20	Positive >21

j. Supplemental tests—Supplemental tests are other tests that have been developed to aid in determining the presence or absence of blood components associated with field strains of *Brucella abortus*, Strain 19, nonspecific agglutinins, etc. Of these, only the card test is an official test, and it is official only when used as the sole test on a blood serum sample. Other test procedures include mercaptoethanol (ME), Coombs, heat inactivation (HI), acidified plate antigen (APA), rapid automated presumptive (RAP), fluorescent polarization assay (FPA), enzyme-linked antibody (ELA), concentration immunoassay test (CITE®), field enzyme-linked immunosorbent assay (ELISA), and D-Tec® competitive cELISA. Other supplemental tests may be

added from time to time. Only the designated brucellosis epidemiologist may use and interpret results of supplemental tests.

2. *Semen plasma test*

The semen plasma test is approved as an official test in bulls that are used for artificial insemination when the test is used in conjunction with an official test on blood serum. The classification of these animals must be based on the maximum agglutination titer of either the blood test or the semen plasma test.

3. *Brucellosis milk surveillance tests (BMST)*

a. Standard BRT—The standard BRT is performed on pooled milk from dairy herds and represents all of the lactating cows that contributed milk to that sample.

The BRT samples are to be tested in approved laboratories according to the standard test procedures published by VS.

A modified BRT procedure is available for use on pooled cream samples from dairy herds selling cream commercially.

(1) Collection procedures—Samples of pooled milk from pipeline segments, bulk tanks, or milk cans are to be collected in at least four rounds per year at milk receiving stations, dairy processing plants, or individual dairy herds in each State. All commercial dairy herds will be tested in at least three of the four BRT rounds per year in Class A and B States and at least twice in Class Free States. States may increase the frequency of milk collections to improve the effectiveness of this surveillance method. Records should be kept for each collection point on each collection indicating how the samples were handled by the dairy plant after the samples were collected at the farm and before subsamples were collected for the BRT.

(2) BRT test procedures and adjustments—To provide adequate surveillance for brucellosis in large dairy herds, the sensitivity of the BRT must be adjusted according to the size of the herd to compensate for the dilution of milk from infected animals with milk from large numbers of noninfected negative animals. Increasing the sensitivity of the BRT increases the probability that brucellosis will be detected during the early stages of the disease in the herd.

The number of lactating cows represented in the composite herd milk sample has a significant influence on the sensitivity of the BRT. Consequently, the first step in conducting the BRT is to determine the approximate herd size in order to adjust the sensitivity of the test.

(a) Estimate approximate herd size by:

(i) Dividing the average milk production per cow in the State into the total pounds of milk that the dairy processing plant received from each herd; or

(ii) Reviewing recent blood test records for that herd and adjusting for the estimated number of nonlactating animals; or

(iii) Asking owner, county agent, or dairy field representative.

(b) Use fresh milk samples from herds milking 150 or more cows. Milk samples preserved with either formalin or potassium dichromate are acceptable for herds smaller than 150 head.

(c) Adjust the volume of the milk sample for herd size according to table 7.

Table 7—Correct volume of milk samples, in milliliters, by the size of the herd contributing to the sample, for the brucellosis ring test

Number of lactating animals	Sample size
1–150	1 mL
151–450	2 mL
451–700	3 mL

In herds with more than 700 lactating cows, segment the herd into subunits (25 to 75 cows) and collect composite milk samples from each subunit from the milk pipeline. Herds with fewer than 700 lactating cows may also be segmented using the 1-mL test method for each 60-cow composite milk sample.

(d) Add 0.1 ml of gravity cream (2–4 drops) from brucellosis-negative cows to each BRT tube regardless of the volume of milk used. Obtain gravity cream by using BRT-negative milk from a herd that has at least 50 cows in order to avoid individual differences in creaming quality. Do not pasteurize or clarify the milk used to obtain the negative cream.

(e) Add 0.03 ml (1 drop) of BRT antigen per test, regardless of the volume of milk.

(f) Interpret test results as positive or negative. In the standard 1-mL ring test, the result is positive when the blue color of the cream layer is as dark as or darker than the color of the skim portion of the milk. In the 2-mL and 3-mL tests, the result is positive when the blue color of the cream layer is darker than the color of the skim milk portion of the sample.

b. Serially diluted BRT—The serially diluted BRT procedure is used by designated brucellosis epidemiologists to evaluate the level of antibodies in the milk of individual cows. This test is commonly performed on separate milk samples from individual quarters.

If a composite sample of milk from individual quarters is used, it is important that equal quantities of milk from each quarter be added to the composite sample. Unprocessed raw milk from a herd of brucellosis-negative cows must be used for diluting the test samples and for obtaining negative cream. The negative milk must be obtained from a herd with 25 or more cows to compensate for variations among individual animals in the creaming factors of the test milk. This special test is often combined with bacteriologic attempts to culture *Brucella* from aseptically collected milk samples.

c. The heat-inactivated ring test (HIRT)—This test is an approved supplemental test procedure for milk and/or cream samples whose results from the BRT are suspicious. The interpretation of HIRT results must be made in conjunction with other epidemiologic factors by a designated brucellosis epidemiologist.

   The sensitivity of the HIRT must be adjusted using the same procedures as the BRT.

d. The California BRT—The California BRT was developed to reduce the resources necessary when segmenting large dairy herds. It is performed on pooled milk from dairy herds and represents all of the lactating cows that contributed milk to that sample.

   The California BRT samples are to be tested in approved laboratories. Collection and test procedures are the same as the Standard BRT (e.a.) with the exception of the amount of milk, which is described in table 8.

Table 8—California BRT. Correct volume of milk samples, in milliliters, by the size of the herd contributing to the sample.

Number of lactating animals	Sample size
6–150	1.0
151–250	1.5
251–350	2.0
351–500	2.5
501–700	3.0
701–1,000	3.5
1,001–1,500	4.0

4. Milk ELISA Tests

a. Idexx HerdChek® Milk Antibody Test—This is an official test which may be performed on pooled milk from dairy herds and represents all of the lactating cows that contributed milk to that sample. The number of lactating cows represented in the composite herd milk sample must be fewer than 1,000 animals. This test may also be used to evaluate individual animals. Milk samples should be collected using the same procedures as the brucellosis ring test.

5. Procedures for Moving Restricted Cattle and/or Bison

A. Permits

1. *Permit (cattle and bison)*—An official document (VS Form 1–27 or comparable State form), issued by a VS representative, State representative, or accredited veterinarian, that must accompany certain restricted animals. A permit does not include a "Permit for Entry" or "S"-brand permit. The permit must list one of the following types of identification for each animal:

   a. Official eartag, or

   b. USDA backtag, or

   c. If the animal is registered by a breed association recognized by VS, the

      (1) Individual animal registration number,

      (2) Individual animal registration tattoo, or

      (3) Individual animal registration brand.

      It must list any reactor tag number(s), owner's name and address, location of origin and destination, number of animals covered, and the purpose of the movement. No diversion from the permitted destination is allowed. If a change in destination is desired or becomes necessary, a new permit must be obtained. The copies must be distributed as indicated on the permit.

2. *"S"-brand permit (cattle and/or bison)*—A document that is required to accompany the movement of certain restricted animals. It shows:

   a. the origin,

   b. the destination,

   c. the number of restricted cattle and/or bison,

   d. the purpose of the movement,

   e. the USDA backtag numbers (when applied serially, only the beginning and the ending number need be recorded), and

f. a statement certifying the “S”-brand identification.

It must be prepared at the point of origin by an accredited veterinarian, a representative of the State or Federal animal health officials, or a designated official at a quarantined feedlot. A copy of this “S”-brand permit must be immediately sent to the State animal health official, with the original accompanying the animals. The original must be delivered at the destination and kept at that location for a minimum of 6 months.

3. *Permit for entry (cattle and/or bison)*—A premovement authorization for animals to move into a State, which must be obtained from the State animal health official in the State of destination before the animals are moved. The authorization for entry will state the conditions under which the movement may be made. These conditions may be in addition to the requirements in these UM&R and the Code of Federal Regulations. The authorization may be written or oral.

B. Movement of Restricted Animals

1. Reactors—All cattle and/or bison that test positive to the card test on farm or ranch or at stockyards must be classified as reactors unless supplemental tests are conducted. Approved supplemental tests for use at stockyards only are the standard plate test, rivanol test, and CITE test. All other supplemental testing must be conducted at State–Federal brucellosis laboratories. Reactors must not be moved without a permit unless they are accompanied directly to their destination by a State or Federal animal health representative.

Reactor cattle and/or bison must remain on the premises where they are found until a State or Federal permit for slaughter is obtained (see section A1, “Permits,” immediately preceding). The animals must not be diverted from the permitted destination. The reactor animals can be tagged and branded either on the farm or at a State-approved or federally approved stockyard. Reactors identified at livestock markets may only move to slaughter or return to the herd of origin for further evaluation.

a. Movement to slaughter—Reactor animals must be tagged and “B”-branded either or farm or ranch or at a specifically approved stockyard before movement to slaughter. They must move to a recognized slaughter establishment or to an approved stockyard for further

movement to a recognized slaughter establishment within 15 days of being tagged and branded. This time period may be extended 15 days for reasons mutually acceptable to the State or Federal official in charge. When moved to approved stockyards or intermediate handling facilities, the reactors must be segregated from all other classes of livestock in specially designated pens. Pens at stockyards must be thoroughly cleaned and disinfected prior to use for other than brucellosis-affected or exposed animals.

b. Return to herd of origin—Reactor animals returning to the herd of origin for further evaluation need not be branded but may only move under quarantine and permit. These animals must be transported separately from all other classes of unexposed livestock and maintained under quarantine until evaluation is completed. If evaluation confirms the reactor classification, the herd of origin will be designated as an affected herd and appropriate actions taken.

2. Suspects—Suspects that are being moved or sold must be identified and moved in the same manner as for exposed cattle or bison (see paragraphs B3, “Exposed cattle and/or bison,” immediately following). However, a suspect at a livestock market in a consignment of otherwise negative cattle or bison (i.e., an animal whose response to the card test is positive but whose CITE® test is negative) must be handled as follows.

   In a single consignment of cattle and/or bison that are from a producer's herd of origin, the owner must either:

   a. Return the suspect(s) under quarantine to the herd of origin until the suspect(s) is negative or is declared a stabilized suspect by a designated brucellosis epidemiologist after subsequent test(s) conducted in 30 days or more or is classified a reactor on a subsequent test; or

   b. Sell the suspect(s) to a quarantined feedlot or quarantined pasture or send it to slaughter, identified with an “S” brand.

      If the owner and the market operator agree in writing that they will be fully responsible for preventing contact or other exposure to non-“S”-branded cattle and bison, these “S”-branded cattle and/or bison may be moved to one additional market or to an approved

intermediate handling facility and then either to (1) a quarantined feedlot and then to immediate slaughter, or (2) to a quarantined pasture and then to a quarantined feedlot or to immediate slaughter. All such movements must be under “S”-brand permit and must be permissible under State laws, rules, and regulations.

The owner may either return the cattle and bison that were negative on the card test in this consignment to the herd of origin or sell them for movement to another herd within the State or for movement interstate.

3. Exposed cattle and/or bison—All exposed cattle and/or bison moving from a herd of origin or from a stockyard to a quarantined feedlot or to a quarantined pasture or to immediate slaughter must remain on the premises where they are found until the owner has been issued an “S”-brand permit for movement.

   If they are moved to market for sale, to a quarantined feedlot or a quarantined pasture, or to immediate slaughter, they must be moved through a specifically approved stockyard or a State-approved stockyard or approved intermediate handling facility. Exceptions to the “S” branding and “S”-brand permits are allowed for finished-fed heifers moving directly to immediate slaughter at recognized slaughter establishments and for exposed cattle or bison where movement to slaughter does not require transportation by rail or motor carrier. The cattle and/or bison must not be diverted from the permitted destination.

   In addition, exposed cattle and/or bison may move from the herd of origin or from specifically approved stockyards or State-approved stockyards directly to recognized slaughter establishments in a sealed truck without being permanently identified by “S” brand. The entire truckload of cattle and/or bison or other susceptible species must be consigned directly to slaughter at a single slaughter establishment. Mixed loads of slaughter, feeder, or breeding cattle and/or bison must not be included in shipments of this type. None of the animals may be diverted to holding feedlots, pastures, or dealer pens. Truck seals are to be placed by State or Federal animal health personnel during regular work hours, or by accredited veterinarians. Each shipment must be accompanied by a permit (section A in this part) with the appropriate seal number recorded on the permit. Cattle and/or bison to be transported in sealed vehicles must

remain on the premises until the appropriate animal health personnel or accredited veterinarian issues the permit and seals the vehicle. No post-authorized permits may be approved. Truck seals are to be broken by State or Federal animal health personnel during regular working hours, or by accredited veterinarians, or by a slaughter establishment officer who has been designated by USDA–Food Safety and Inspection Service authorities or by State authorities.

4. Calves from affected herds—All calves in an affected herd are included under the herd quarantine restrictions. These calves may be moved only if they comply with the movement requirements outlined in chapter 2, parts II4 or III4 or IV4, as applicable for States in each brucellosis classification. If heifer calves are retained in the herd, they should be calfhood vaccinated.

5. Other exposed cattle and/or bison in affected herds: All other cattle and/or bison in affected herds (except those in 1, 2, 4, and 7 of this section, and steers and spayed heifers) are exposed and must be handled as described in paragraph 3 of this section.

6. Untested test-eligible cattle and/or bison: When untested test-eligible cattle and/or bison that originate from herds of unknown or negative status or from quarantined areas are sold or moved in marketing channels, these animals must be identified, tested at the first point of concentration, and moved in the same manner as prescribed for exposed cattle and bison. When cattle and/or bison that originate from herds of unknown or negative status in Class B States or areas are sold or moved in marketing channels, these animals must be identified, tested at the first point of concentration, and moved as negative tested cattle and/or bison if they qualify for movement as outlined in chapter 2, part IV,4D; otherwise, they must be moved in the same manner as prescribed for exposed cattle and/or bison. Cattle and/or bison that originate in a Certified Brucellosis-Free Herd are exempt from these restrictions.

7. Herd depopulation—Reactors and “B”-branded exposed cattle and/or bison in herd depopulations must remain on the premises where they were found until the owner has been issued a State or Federal permit for movement for immediate slaughter. These cattle and/or bison must be moved to a recognized slaughter establishment or to a specifically approved stockyard or State-approved

stockyard for sale to a recognized slaughter establishment, or to an approved intermediate handling facility for movement directly to a recognized slaughter establishment, within 15 days of the branding and tagging date. The time may be extended 15 days for reasons mutually acceptable to the cooperating State and Federal officials in charge. The cattle and/or bison must not be diverted from the permitted destination.

Instead of "B" branding, the exposed cattle and/or bison in a herd depopulation may be moved for immediate slaughter using USDA backtags for identification. These animals must be escorted to slaughter by a State or VS representative or be moved directly to slaughter in vehicles that have been closed with official seals.

6. Procedures for Handling Affected or Restricted Herds

A. Quarantines

All cattle and/or bison, except steers and spayed heifers, must be confined to the premises until the herd is free of brucellosis or sold for slaughter under permit or "S"-brand permit. (See chapter 1, part II5A.) Three consecutive negative herd blood tests are required for release from quarantine, with the first negative herd blood test occurring 30–60 days after all reactors have been removed from the herd and slaughtered. The second of these tests must occur 180–210 days after all reactors have been removed and slaughtered. The third test (releasing test) must occur 365 days or more after all reactors have been removed and slaughtered. The releasing test must include all non-neutered cattle and/or bison over 6 months of age. (The purpose of testing official vaccinates of dairy breeds under 20 months of age and beef breeds under 24 months of age is to establish baseline titers for evaluating the probability that these animals will be infected with field strains of *Brucella* and will demonstrate a rising titer when they are retested.) In all areas, an additional blood test of all non-neutered cattle and/or bison over 6 months of age in the herd is recommended between 6 and 12 months after an affected herd has been released from quarantine. All calves in an affected herd are included under the herd quarantine restrictions. These calves may be moved only if they comply with the movement requirements outlined in chapter 2, parts II4, III4, or IV4, as applicable for States in each brucellosis classification.

Exceptions to the interval between the tests required for releasing herds from quarantine are allowable only when approved *Brucella* vaccine organisms have been isolated from the reactor animal or when all epidemiologic evidence is consistent with an approved *Brucella* vaccine infection and not with infection by a field strain of *Brucella abortus.*

All of the above conditions also apply to herds that have participated in a whole-herd vaccination plan.

B. Quarantined Feedlot

1. A quarantined feedlot is maintained for finish-feeding cattle and/or bison in drylot. If provisions for pasturing or grazing adjacent to the feedlot premises are needed, it must be approved as designated below (chapter 1, part II, section 6B2). It must be jointly approved by the State and Federal animal health officials. Breeding or "two-way" cattle and/or bison (those that can be sold for breeding or for meat purposes) are not allowed in a quarantined feedlot. Except in Class Free States, all test-eligible cattle and/or bison must be officially tested for brucellosis within 30 days prior to or upon entry into a quarantined feedlot. All cattle and/or bison in a quarantined feedlot are classified as exposed to brucellosis. Upon entering these feedlots, negative exposed and untested test-eligible animals—but not steers or spayed heifers—must be permanently identified with a hot iron "S" brand high on the tailhead over the fourth to the seventh coccygeal vertebrae. All cattle and/or bison leaving these feedlots—except steers and spayed heifers—must either

   a. Go directly to slaughter; or

   b. Be moved directly to another quarantined feedlot with a permit from the State animal health official; or

   c. Be "S"-branded at the quarantined feedlot and moved to a livestock market to be sold for direct movement to another quarantined feedlot or directly to slaughter. In this case, the cattle and/or bison must be accompanied by a VS Form 1–27 permit issued at the market.

   The animal health officials will establish procedures for accounting for all animals entering or leaving quarantined feedlots. The community must be notified of the presence

of a quarantined feedlot (see chapter 1, part II, section 1E).

Tracebacks to quarantined feedlots are successful and are reported as traced to known reactor herd.

2. Requirements for pasture or grazing areas adjacent to a quarantined feedlot

   a. The pasture area must be located adjacent to the quarantined feedlot and must be jointly approved by State and Federal animal health officials. It must be enclosed by a double fence (2 fences at least 10 feet apart) to eliminate the possibility of direct contact of the quarantined cattle and/or bison with neighboring grazing or breeding cattle and/or bison.

   b. All herd owners with premises that are adjacent to a quarantined feedlot's pasture or grazing areas must receive prior notification of this proposed action and must give their approval.

   c. Records of cattle and/or bison movement into and out of the pasture or grazing areas shall be kept and handled the same as the movement of cattle and/or bison within the feedlot. This will allow inspectors the same surveillance opportunity that exists within the quarantined feedlot.

C. Quarantined Pastures

Applications for establishing quarantined pastures must be reviewed and recommended jointly by the State and Federal animal health officials. The applications must be submitted to the Deputy Administrator of VS for final approval. Approval of a quarantined pasture must not exceed 10 months. Quarantined pastures may receive cattle and/or bison only from intrastate points of origin; these pastures may only involve movements of cattle and/or bison interstate for slaughter or to quarantined feedlots. All animals in the quarantined pasture are classified as exposed to brucellosis. Breeding or “two-way” cattle and/or bison are not allowed in the quarantined pasture. All test-eligible cattle and/or bison must be officially tested for brucellosis within 30 days of entry into a quarantined pasture. All animals in the quarantined pasture must be the same sex, unless they are neutered. Upon entering the quarantined pasture, all animals except steers and spayed heifers must be permanently

identified with a hot-iron “S” brand high on the tailhead over the fourth to the seventh coccygeal vertebrae.

All animals except steers and spayed heifers leaving the quarantined pasture must move only for immediate slaughter or to a quarantined feedlot. The movement must be in accordance with established procedures for handling quarantined (exposed) animals (see chapter 1, part II, section 5), including obtaining “S”-brand permits before movement.

The animal health officials will establish procedures for accounting for all animals entering or leaving the quarantined pasture. All exposed cattle and/or bison must vacate the premises on or before the date the approval expires. The community must be notified of the presence of a quarantined pasture.

Tracebacks to quarantined pastures are successful and are reported as traced to known reactor herd.

D. Approved Bison Quarantine Facilities

A group or individual may establish an approved bison quarantine facility (ABQF) to provide testing for brucellosis-exposed bison from Yellowstone and Grand Teton National Parks in order to qualify the animals as brucellosis free. These facilities may be located in Yellowstone National Park, Grand Teton National Park, or adjacent to the Parks in the adjoining States of Idaho, Montana, or Wyoming. State and Federal animal health officials must approve each facility. Facility approval is valid for 1 year and can be reapproved provided that all requirements are met.

State and/or Federal animal health officials will select the serologic tests to be conducted, establish procedures to account for all animals entering or leaving the ABQF, and supervise all operations.

All bison entering an ABQF are considered to be brucellosis-exposed animals and must be permanently identified with official metal eartags and placed under quarantine restrictions. Prior to entering the facility, all animals must test negative on official brucellosis serologic tests conducted at the National Veterinary Services Laboratories (NVSL) or at an approved Cooperative State–Federal Brucellosis Laboratory (CSFBL). All serologic and/or milk tests conducted in the ABQF are considered preliminary and must be confirmed at NVSL or at an approved CSFBL. Specimens

or milk samples for bacterial culture must also be cultured at NVSL or at an approved CSFBL.

It is recommended that test-negative bison captured during a single season entering the ABQF be placed in an ABQF holding pen until they can be sorted and penned separately into individual test groups (ITGs). The holding pens and ITG pens should be separated by at least two fences that are a minimum of 10 feet apart. When animals enter the ABQF, it is recommended, but not required, that serologic tests be conducted on every bison every 30–45 days while it is in a holding pen or ITG until each animal classified as a reactor has been removed and the remaining animals test negative. If the testing results in any bison being classified as a reactor, a subsequent ITG test must be conducted on the remaining animals in the ITG at least 30 days later.

Initially, this procedure will more readily identify reactor animals, minimizing the time spent in the ABQF completing the testing requirements to qualify for quarantine release.

All *Brucella* culture-positive animals and/or all animals classified as reactors must be removed from the ABQF within 15 days of being identified. Any bison removed from the ABQF before completing the requirements to qualify for quarantine release must move under permit either to an approved research facility or to an approved slaughter facility for slaughter only. All bison that are classified as reactors because they tested positive to an official serologic and/or milk test or are confirmed culture-positive must go to an approved research facility or to an approved slaughter facility for slaughter only.

Each ITG must qualify for quarantine release following the procedures listed below before any individual bison within the ITG may be released from quarantine.

1. *Sexually mature bison (3 years of age or older)*

    a. *Males*—Male bison must pass a minimum of three consecutive negative ITG tests. The first ITG test must be conducted when the ITG starts the quarantine period. The second ITG test must be conducted at least 180 days after the first ITG test. There must be at least 12 months between the first and last consecutive negative ITG tests.

    b. *Pregnant females*—Pregnant female bison must complete two calvings within the ABQF. Pregnant female bison

not born in the facility and continually penned within a test-negative ITG must be rebred in the ABQF following their first calving to a test-negative male from a holding pen or ITG.

An ITG test must be conducted when the ITG starts the quarantine period before the first calving, another ITG test must be conducted at least 30 days and not more than 90 days after each female has calved during the first and second calvings, and an ITG test must be conducted 6 months after the last animal has calved during the first and second calvings. Each postparturient female bison must have discharges, fluids, and swabs collected and cultured within 5 days after calving. There must be at least 12 months between the first and last consecutive negative ITG test.

c. *Nonpregnant females*—Nonpregnant female bison not born in the facility and continually penned within a test-negative ITG must be bred in the ITG to a test-negative male from a holding pen or ITG, complete a gestation cycle, calve, and pass a minimum of three consecutive negative ITG tests.

The first ITG test must be conducted when the ITG starts the quarantine period before being bred. The second ITG test must be conducted at least 30 days and not more than 90 days after each female has calved, and the third ITG test must be conducted 6 months after the last animal has calved in the ITG. Each postparturient female bison must have discharges, fluids, and swabs collected and cultured within 5 days after calving. There must be at least 12 months between the first and last consecutive negative ITG tests.

2. *Sexually immature bison (under 3 years of age)*

a. *Immature males*—Male bison under 3 years of age must pass a minimum of three consecutive ITG tests. The first ITG test must be conducted when the ITG starts the quarantine period, and the last consecutive negative ITG test must be conducted after the animals are at least 3 years of age. The second ITG test will be conducted at least 180 days after the first ITG test. There must be at least 12 months between the first and last consecutive negative ITG tests.

b. *Immature females*—Immature female bison under 3 years of age not born in the facility and continually penned within a test-negative ITG must be bred to a test-negative male from a holding pen or ITG, complete a gestation cycle, calve, and pass a minimum of three consecutive negative ITG tests.

The first ITG test must be conducted when the ITG starts the quarantine period before being bred. The second ITG test must be conducted at least 30 days and not more than 90 days after each female has calved, and the third ITG test must be conducted 6 months after the last animal has calved in the ITG.

Each postparturient female bison must have discharges, fluids, and swabs collected and cultured within 5 days after calving. There must be at least 12 months between the first and last consecutive negative ITG tests.

3. *Calves*—Calves born in the ABQF from a test- and/or culture-negative ITG of adult pregnant females may be released from quarantine at 6 months of age or older provided that all of the following conditions are met: (1) there have been no reactor animals in the ITG immediately after their birth or within 1 month prior to their birth, (2) all calves in the ITG are serologically test negative, (3) each adult in the ITG is serologically test negative at least 30 days postcalving and culturally test negative within 5 days postcalving, and (4) the adult animals in the ITG have tested negative on three consecutive herd tests over a 12-month period. For calves born to females that were pregnant at the time of entrance into the ABQF and/or calves born during a time in which reactors are disclosed, the male calves would be classified as “immature males” and be tested as in 2(a) above, the females would be classified as “immature females” and be tested as in 2(b) above, or the calves could be neutered and released from quarantine without restrictions.

4. *Test- and/or culture-positive animals or animals that die in quarantine*—Any aborted fetus, stillborn animal, or an animal that dies in the ABQF for any reason, will be necropsied, serologically tested, and have its tissues and other appropriate specimens cultured for *Brucella*. Tissue collection methods should be based on the sampling protocol outlined by the Greater Yellowstone Interagency Brucellosis Committee (GYIBC). Any culture and/or

serologically test-positive animal found in an ITG will cause the ITG to restart the quarantine requirements. Restarting the quarantine requires the ITG to be tested every 30–45 days until all animals classified as reactors have been removed from the ITG and a complete ITG test is negative. Bred female bison in the ITG that have been pregnancy checked and determined not be pregnant must be sacrificed, necropsied, and have specimens collected and cultured. In addition, a complete epidemiologic assessment will be made of all test- or culture-positive cases of brucellosis within the ABQF. All *Brucella* culture-positive animals and/or all animals classified as reactors must be removed from the ABQF within 15 days of being identified. They must be neutered, slaughtered, or moved to an approved research facility.

5. *Breeding bulls*—Bulls must be tested negative for brucellosis within 30 days of being placed within an ITG for breeding purposes or be from an ITG that has qualified for a quarantine release.

6. *Neutered animals*—Neutered bison may be released from quarantine without restrictions.

7. *Postquarantine requirements*—The entire ITG must qualify for quarantine release before any individual bison within the ITG may be released to a group or individual in a State or area. All animals released from the ITG must be retested at approximately 6 months and 12 months after release to verify that they remain test negative. An agreement to test must be signed by the receiving owners or managers before the animals will be released into their custody. The agreement must also state that the animals must be kept separate from all other animals until the 6-month test has been completed. In addition, the State Animal Health Authorities in the State of destination must authorize movement into their State.

   Table 9 summarizes the testing protocols for bison of various ages.

Table 9—Testing protocols for bison, by age and sex

	Minimum tests required to release	Minimum test intervals	Minimum quarantine periods
Sexually mature males	3	**first:** start of quarantine period **second :** at least 180 days after first test **third :** at least 12 months after first test	1 year
Pregnant females	5	**first :** before calving **second :** between 30 and 90 days after each animal has calved during first and second calvings **Last:** 6 months after last animal has calved during first and second calvings	1½ years
Nonpregnant sexually mature females	3	**first :** before breeding **second :** between 30 and 90 days after each animal has calved **Last:** 6 months after last animal has calved	1½ years
Immature males	3	**first:** start of quarantine period **second:** at least 180 days after first test **third:** at least 12 months after the first test, and at least 3 years of age	1 year
Immature females	3	**first:** before bred **second:** between 30 and 90 days after each animal has calved **Last:** 6 months after last animal has calved	2½ years
Calves*	1	One test at 6 months of age	½ year

* Calves born to females that were pregnant upon entry into the ABQF and calves born in an ITG in which reactors have been disclosed shall not be released as calves.

E. Individual Herd Plan

1. The herd owner (and his or her veterinarian if the owner so requests) and a veterinarian of the Cooperative State-Federal Brucellosis Eradication Program are to develop a plan for eliminating brucellosis from each affected herd. The plan is to be formalized as a memorandum of agreement between the owner and animal health officials. The plan may be reevaluated and changed if all the parties concerned agree. It is the responsibility of all parties

to the agreement to adhere to the plan throughout the period of eradication of the disease from this herd.

The plan must be designed to reduce and then eliminate brucellosis within the herd, to prevent spread to other herds, and to prevent the reintroduction of brucellosis after the herd is free of the disease.

Developers of the plan should consider the following factors:

a. The brucellosis classification of the State in which the herd is located,

b. The risk of spread to other herds of cattle and/or bison (potential "offsite costs" to other herd owners and society),

c. The amount of infection and possible exposure within the affected herd,

d. The type of cattle and/or bison operation, and

e. How herd management practices and economic factors relate to procedures for controlling and eradicating the disease.

2. Vaccination of calves should be discussed with the owner and recommended for calves that are in high-risk areas or that may be sold into high-risk areas. In special situations, whole-herd vaccination may be recommended with concurrence of appropriate State and Federal officials. The developers are to prepare a written plan that will be epidemiologically sound for the particular herd. It is to include

a. Testing schedules,

b. Herd health management practices,

c. Procedures to handle preparturient and parturient cows,

d. The exit and/or entry of cattle and/or bison into the herd,

e. Identification of cattle and/or bison,

f. Sanitation practices, and

g. The use of an approved *Brucella* vaccine.

The plan should also include other appropriate practices to confine and eliminate the disease.

3. When suspects are found in any herds, a similar individual herd plan may be initiated. This plan should include testing schedules and management plans that will minimize spread of brucellosis within the herd or to other herds.

4. For heifers and heifer calves in herds known to be affected, the plan must contain the following restrictions:

   a. All heifer herds must be included under the quarantine.

   b. All heifer calves between 4 and 8 months of age at the time the herd is quarantined must be officially vaccinated for brucellosis or identified with an official eartag.

   c. All non-*Brucella abortus* Strain 19-vaccinated heifer calves over 6 months of age must be considered test eligible and must be included in all herd tests if kept in the herd.

   d. All *Brucella abortus* Strain 19 calfhood-vaccinated heifers remaining in the herd must be included in all herd tests, provided that the animals have been vaccinated for at least 6 months.

   e. All Strain 19 vaccinated heifer calves that have been vaccinated for at least 6 months and all nonvaccinated heifer calves at least 8 months of age that are maintained separately from the adult herd immediately after weaning should be included on the recommended 6- to 12-month postquarantine release test. It is also recommended that all heifers be tested immediately prior to breeding and at appropriate intervals thereafter until they have calved.

   f. All calves in an infected herd are included under the herd quarantine restrictions. If the heifer calves are not retained in the herd, they should be calfhood-vaccinated. Calves may be moved only if they comply with the following requirements:

      (1) The calves must be "S"-branded or neutered, or

(2) Sexually intact heifer calves must be quarantined and held separate and apart from the affected adult herd after weaning until the heifer calves are negative on an official test no sooner than 30 days following completion of their first calving, or

(3) Sexually intact heifer calves may remain in the affected adult herd, but the entire herd shall not be released from quarantine until all such heifer calves have matured and calved, after which the entire herd must be tested negative for brucellosis no sooner than 30 days after the last heifer has calved to qualify for quarantine release.

F. Herd Depopulation

Among the strategies for eradicating the disease, State and Federal animal health personnel should consider depopulating brucellosis-affected herds that have a high rate of infection or an infection of long duration, or affected herds found in areas that were previously free of brucellosis.

G. Retesting Reactors

Within 3 days after being notified of the results of an initial herd blood test, the owner may request an additional blood test on reactors at his or her own expense. The request must be based on sound epidemiologic evidence, and all animals must remain under herd quarantine.

H. Reclassifying Reactors

Under certain conditions, reactors may be eligible for reclassification, as provided for in chapter 1, part II, section 7H.

I. Cleaning and Disinfection

Premises must be cleaned and disinfected under State or Federal supervision within 15 days after reactors have been removed for slaughter. The time may be extended 15 days for reasons mutually acceptable to the cooperating State and Federal officials in charge. The requirements of 9 CFR 51 must be met to qualify for Federal indemnity.

J. Identifying Reactor Cattle and Bison

All reactor cattle and/or bison must be permanently

identified by hot-iron branding with the letter "B" (at least 2 × 2 inches) on the tailhead over the fourth to the seventh coccygeal vertebrae. An approved reactor tag must be placed in the left ear. Reactors must be identified within 15 days of the test date. The time may be extended 15 days for reasons mutually acceptable to the cooperating State and Federal officials in charge. The requirements of 9 CFR 51 must be met to qualify for Federal indemnity.

K. Identifying Exposed Cattle and Bison

All exposed cattle and/or bison moving from a herd of origin, from a livestock market to a quarantined feedlot or quarantined pasture, or to immediate slaughter must be identified by branding the letter "S" (at least 2 × 2 inches) with a hot iron high on the tailhead over the fourth to the seventh coccygeal vertebrae. The exposed cattle and/or bison must be identified with the "S" brand before being moved. However, there are six exceptions:

1. Exposed cattle and/or bison while in the herd of origin may be identified by other means, and a permit may be issued to the owner to move them to a livestock market, where they must be identified by "S" brand upon arrival.

2. Cattle and/or bison exposed at the livestock market may be returned to the herd of origin under quarantine for further testing without an "S" brand.

3. Exposed cattle and/or bison may move with an "S"-brand permit from the herd of origin or from specifically approved markets directly to Federal- or State-inspected slaughter establishments in a sealed truck without being permanently identified by "S" branding.

4. Finished-fed heifers may move directly from the quarantined feedlot to Federal- or State-inspected slaughter establishments without an "S" brand.

5. Exposed cattle and/or bison may move directly to slaughter at Federal- or State-inspected establishments without "S" branding when the movement does not require rail or motor carrier transportation.

6. Exposed cattle and/or bison in herd depopulations must be "B"-branded or moved for immediate slaughter using USDA backtags for identification and escorted to slaughter by a State or VS representative or moved directly to slaughter in vehicles that have been closed with official seals.

L. Identifying Suspects

Cattle and/or bison classified as suspects that are being

moved or sold must be identified and moved in the same manner as prescribed for exposed cattle and/or bison.

If suspects are moved from a herd of origin directly to a livestock market without changing ownership, they are exempt from the "S"-branding requirement. However, they must be tested or "S"-branded upon arriving at the market.

M. Identifying Untested Test-Eligible Cattle and Bison

Cattle and/or bison that are being moved or sold in marketing channels and that originate from Class B States or areas shall move in the same manner as prescribed for exposed cattle and/or bison unless they are part of a Certified Brucellosis-Free Herd. Testing of test-eligible cattle and/or bison is required at the first point of concentration.

N. Identifying Spayed Heifers

Spayed heifers may be officially identified by applying a hot-iron brand high on the tailhead on either or both sides using an open spade design, as used in playing cards (♠), of not less than 3 inches high.

7. Epidemiologic Procedures

A. Epidemiologic Services

The Brucellosis Eradication Program will furnish epidemiologic services to aid veterinarians and herd owners in preventing and controlling brucellosis, with the goal of eradicating the disease. To accomplish this goal, the following epidemiology-related services will be instituted:

1. State and Federal veterinarians who have responsibilities in the Brucellosis Program will attend an APHIS short course or its equivalent on brucellosis epidemiology within the first year they are assigned to the Program. Those who have been working in the Program but who have not attended a brucellosis epidemiology course will receive this training at the earliest possible date. They will attend refresher courses every other year or whenever they are made available. (See VS Memorandum 551.10)

2. Accredited veterinarians performing official brucellosis work will be required to participate in a structured program of continuing education on Program elements. At least once during each 3-year period after the initial program, they will attend a refresher course on the Program.

3. State livestock inspectors and APHIS animal health technicians will be required to participate in a structured course of continuing education on the Program. They will attend refresher courses annually.

4. Each State brucellosis program supervisor will notify the State public health agency within 15 days of the time a herd has been quarantined for brucellosis. The public health agency will be requested by program officials to mail an educational letter to the owners of quarantined herds.

5. Each State should require that an educational statement on brucellosis be given to buyers and sellers at the time cattle or bison change ownership, to:

   a. Create an awareness that brucellosis is a contagious disease,

   b. Reduce the risk of buying or selling brucellosis-infected cattle or bison,

   c. Encourage new owners to test cattle and bison 45–120 days after purchase,

   d. Encourage owners in high-risk areas to vaccinate calves, and

   e. Motivate buyers or sellers to take positive actions to prevent the spread of brucellosis.

   The statement should be:

   a. Designed to meet varying conditions on a State-by-State or regional basis according to the need for education,

   b. Written in plain English and have the approval of the responsible State and Federal officials, and

c. Printed in large, easily readable type on paper of a contrasting color that will attract the attention of buyers and sellers.

The statement should become a part of the necessary papers involved in any livestock transaction, such as brand release, bill of sale, health certificate, etc., with copies for both buyer and seller.

Figure 1 is an example of such a statement.

Brucellosis is a Contagious Disease

Learn How To Reduce Your Risk of Buying Brucellosis-Infected Cattle and/or Bison

$Save Dollars$—Read This
Brucellosis-exposed cattle or bison may be blood-test negative at the time of sale because they are incubating the disease and do not yet produce a positive result on the blood test.

To reduce risks of spreading disease from cattle and bison that are incubating brucellosis at the time of sale **and to save dollars,** follow these recommendations:

1. Ask the seller to give you information on the brucellosis status of the herd or herds of origin of any cattle or bison you purchase.

2. Take appropriate precautions to protect these cattle and bison from exposure to brucellosis while you own them.

3. Have the cattle and bison blood-tested for brucellosis between 45 and 120 days after you purchase them, to check for previously incubating infection.

4. If the blood tests indicate brucellosis, ask your veterinarian and a veterinarian from the State animal health agency to evaluate the situation and provide assistance to save you dollars that otherwise could be lost.

For Further Information

Call telephone number ___-___-____
or write (name and address of State animal health agency)

Increase Protection With Vaccination

Vaccination with an approved *Brucella* vaccine is recommended in high-risk areas to increase protection for calves that may be sold or exposed to **Brucellosis** in the future.

B. Adjacent Herds and Epidemiologically Traced Herd Testing

Adjacent herds or herds sharing common pasture or having other contact with a herd affected with brucellosis and herds containing previous purchases from or exchanges with an affected herd must have an approved action plan within 15 days in Class Free and Class A States and areas and within 45 days in Class B States and areas from the time the affected herd is disclosed (see chapter 1, part III, section 1C3). The plan should be adapted to the circumstances and may require handling the herd as an affected herd. If a disagreement occurs on the method of handling the herd, the herd owner, the State animal health official, the designated brucellosis epidemiologist, and, if requested, the owner's veterinarian will meet to resolve the differences.

When a brucellosis-affected herd is depopulated, the owners of the potentially exposed herds including adjacent herds (as defined in chapter 1, part I) must have a final negative herd test a minimum of 6 months, and preferably 12 months, after the index herd is depopulated unless a variance is granted by the designated brucellosis epidemiologist. If the designated brucellosis epidemiologist determines that a second test is not required, the State or Federal animal health representative will prepare a statement indicating the reasons that a second test is not needed. The statement will be included in the herd file and a copy will be given to the herd owner.

C. Individual Herd Plan

(See chapter 1, part II, section 6E.)

D. Traceback and Investigation of Reactors

1. *Successful traceback of MCI reactors (cattle or bison)*—A successful traceback of MCI reactors occurs when the herd of origin is located and the herd is tested when necessary. Tracebacks to dealers, commission firms, or other intermediate points are considered successful only if all possible herds of origin are located and the herds are tested when necessary. In order to close an investigation of a "sold-out" MCI cattle or bison reactor herd as a successful traceback, the slaughter of the animals and the absence of any test-eligible cattle and/or

bison remaining on premises must be confirmed and documented (see chapter 1, part I, *Herd)*. Tracebacks to feedlots (see chapter 1, part I, *Feedlot)* are considered successful if the feedlots are quarantined and the animals are then tested or slaughtered. Tracebacks to quarantined feedlots and to quarantined pastures (see chapter 1, part I, for definitions of these terms) are successful and are reported as traced to known reactor herds. A pre-entry test of test-eligible cattle or bison is required for cattle or bison entering quarantined pastures. An entry test is required within 30 days prior to entry or upon entry for all test-eligible cattle and bison entering a quarantined feedlot from Class A and B States.

2. *Epidemiologic investigation of MCI reactors (cattle and bison)*—Every traceback of MCI cattle and/or bison reactors requires an epidemiologic investigation and follow-up (including traces to "sold-out" herds) to effectively locate and control the disease. This investigation must include the following:

   a. If a reactor in marketing channels had positive test results on the CF test, rivanol test, or card test (when the card was the only test conducted), or had appropriate supplemental test titers, then:

      (1) A herd blood test of the herd of origin must be performed, unless the epidemiologic investigation indicates that the results of the blood tests of the MCI cattle or bison reactors were not caused by field strains of *Brucella*. When a herd blood test is not performed, a State or Federal animal health representative will prepare a statement indicating that the findings of the epidemiologic investigation were discussed with the owner or the owner's representative and will include a list of the reasons the herd was not tested. The statement must be signed by both parties, and both parties must receive a copy for future reference.

      (2) Contact and/or adjacent herds must be identified, recorded, and investigated.

      (3) In Class Free and Class A States or areas, all sales following the estimated date of onset of infection must be traced, and the herds of destination must be identified, recorded, and tested for evidence of infection. If the herd is not tested, a statement must be prepared as in (1) above. In Class B States or areas, these procedures will be carried out to the extent resources are available.

(4) If the herd of origin is negative, the herd will be retested 30 to 90 days later if the designated brucellosis epidemiologist considers it necessary.

(5) If the reactor in marketing channels has not been slaughtered and the herd of origin no longer exists or the owner decides to slaughter all of the exposed animals in the herd of origin, the tissues from the reactor animal(s) should be cultured for *Brucella*. State and Federal animal health personnel must conduct epidemiologic investigations of the adjacent herds and other contact herds to determine if infection is present. The designated brucellosis epidemiologist will determine the extent of the investigation.

E. Traceback and Investigation of Suspects

1. If a suspect in marketing channels was positive on presumptive tests but was negative or suspect on the CF test, rivanol test, or supplemental test, the owner must be informed of the results in writing, by telephone, or by personal visit. A joint decision between the animal health authorities and the owner will be reached to test or not to test the herd. Any decision not to test must be documented. The herd must be tested if reasonable doubt exists about the reason for the serologic response, if other evidence of *Brucella* infection is present, or if the status of adjacent, contact, or other herds in the community is questionable.

2. If the herd of origin for these suspects no longer exists or the owner decides to "S"-brand the suspect(s) rather than return them to the herd of origin, the State and Federal animal health personnel must conduct epidemiologic investigations of the adjacent herds and other contact or source herds to determine if infection is present. The designated brucellosis epidemiologist will determine the extent of the investigation.

F. Classification of Cattle and Bison

1. *Serologic tests*—Animals are classified as Negative, Suspect, or Reactor based in part on their serologic test results, using the criteria below for classification. Titer responses for all cattle or bison must be evaluated by a trained, experienced epidemiologist(s) who has been designated to perform and/or supervise this function in each of the States. The designated brucellosis epidemiologist must take into consideration the animal and herd history and other epidemiologic factors. The designated brucellosis epidemiologist has the authority to deviate from the reactor criteria but must document the reasons for doing so.

2. *Other diagnostic tests and methods*—Infection of animals by *Brucella* may also be indicated or confirmed by other diagnostic procedures such as the bacteriologic cultivation and isolation of *Brucella* from tissues, secretions, or excretions and positive agglutination in tests such as the semen plasma test.

G. Reclassifying Reactors

Animals initially classified as reactors, including MCI reactors,may be eligible for reclassification, provided that:

1. Tests are available that support such action, and

2. A complete epidemiologic investigation of the herd is conducted, and there is no evidence of exposure to or infection with *Brucella*, and

3. The herd in which the animals have been maintained remains under quarantine pending final classification, and

4. Final classification is determined by the designated brucellosis epidemiologist.

Table 10 explains the criteria used for classification of animals using serologic responses to various tests.

Table 10 - Serologic classification of cattle and/or bison by vaccination status

Serologic tests	Non-Strain 19 vaccinates (6 months of age and older[1,2])			Strain 19 vaccinates (test-eligible)		
	Negative	Suspect	Reactor	Negative	Suspect	Reactor
BAPA or RAP	No agglutination.	Not used to classify as suspect or reactors but only to identify those samples that must be tested by other test procedures.		No agglutination.	Not used to classify as suspect or reactors but only to identify those samples that must be tested by other test procedures.	
Standard plate and standard tube (SPT and STT)	Complete agglutination at 1:25 or lower.	Any agglutination at the 1:50 titer or incomplete agglutination at the 1:100 dilution	Complete agglutination at the 1:100 titer or higher.	Complete agglutination at the 1:50 titer or lower.	Any agglutination at the 1:100 titer or incomplete agglutination at the 1:200 dilution.	Complete agglutination at the 1:200 titer or higher.
Card test	No agglutination.	Agglutination present and SPT or STT is negative. An animal positive on card test must be classified as as a suspect or a reactor.	Agglutination present (when the card test is the only test conducted).	No agglutination.	Agglutination present and other tests are performed and are used for evaluating animal's status. Animal must be classified as a suspect or a reactor.	Agglutination present (when the card test is the only test conducted).
Manual CF test	1+ (25% fixation) at the 1:10 dilution or lower.	2+ (50% fixation) at the 1:10 dilution or higher but less than 2+ (50% fixation) at the 1:20 dilution	2+ (50% fixation) at the 1:20 dilution or higher.	1+ (25% fixation) at the 1:10 dilution or Lower	At least 2+ (50% fixation) at the 1:10 dilution but less than 1+ (25% fixation) at the 1:40 dilution.	1+ (25% fixation) at the 1:4 dilution or higher.

[1] Except steers and spayed heifers.
[2] Animals that were unofficially vaccinated against brucellosis are considered nonvaccinates.

Table 10 continued – Serologic classification of cattle and/or bison by vaccination status

	Non-Strain 19 vaccinates (6 months of age and older[1,2])			Strain 19 vaccinates (test-eligible)		
Serologic tests	Negative	Suspect	Reactor	Negative	Suspect	Reactor
Technician automated test	No fixation at the 1:5 dilution.	Fixation at the 1:5 dilution but no fixation at the 1:10 dilution.	Fixation at the 1:10 dilution or higher.	May have fixation at the 1:5 dilution or lower but no fixation at the 1:10 dilution.	Fixation at the 1:10 dilution but no fixation at 1:20.	Fixation at the 1:20 dilution or higher.
Rivanol test	Incomplete agglutination at the 1:25 dilution or lower.	Not applicable.	Complete agglutination at the 1:25 dilution or higher.	Incomplete agglutination at the 1:25 dilution or lower. Note: If an animal was adult-vaccinated within the previous 5 months, an Incomplete agglutination at the 1:50 titer level or lower is considered negative.	Complete agglutination at the 1:25 dilution or higher but no agglutination at the 1:100 dilution if the CF test is done and is in the negative or suspect category.	Complete agglutination at the 1:25 dilution or higher when: (1) CF test is not done, or (2) CF test is done and is in the reactor category, or (3) when the rivanol test shows incomplete agglutination at the 1:100 titer or higher, regardless of CF result.
PCFIA	S/N values greater than 0.6.	S/N values less than or equal to 0.6 and greater than 0.3	S/N values less than or equal to 0.3	Same values as Negative Non-Strain 19 vaccinates	Same values as Suspect Non-Strain 19 vaccinates	Same values as Reactor Non-Strain 19 vaccinates
FPA	Negative Less than 11 millipolarization (mp) units greater than the average of the negative control	Suspect 11–20 mp units greater than the average of the negative control	Reactor ≥ 21 mp over the average of the negative control	Negative Less than 11 units greater than the average of the negative	Suspect 11–20 mp units greater than the average of the negative control	Reactor ≥ 21 mp units over the average of the negative control

[1] Except steers and spayed heifers.
[2] Animals that were unofficially vaccinated against brucellosis are considered nonvaccinates.

H. Specific Assignments and Responsibilities of a Designated Brucellosis Epidemiologist

Designated brucellosis epidemiologists have been assigned certain specific responsibilities as part of their duties:

1. *Test interpretation and classification*

a. To evaluate the titer responses for all cattle and bison, taking into consideration the animal and herd history and other epidemiologic factors affecting the classification. The designated brucellosis epidemiologist has authority to deviate from suspect and reactor classifications and to reclassify MCI reactors for purposes of State or area classification, provided that additional information and tests are available to support such action.

b. To determine the final classification of animals that were initially classified as reactors, following a complete epidemiologic investigation of the herd.

c. To determine the interpretation and use of supplemental tests.

d. To evaluate retest results on MCI suspects that were returned to the herd of origin under quarantine and declare the animal a stabilized suspect if a classification other than negative or reactor is warranted.

2. *Epidemiologic investigation and evaluation*

a. To determine the scope of the epidemiologic investigation that is initiated for *Brucella* infections located among herds that were adjacent to or that had epidemiologic contact with the herd of origin of a market cattle suspect, when the herd of origin no longer exists or the suspect is not available for retesting.

b. To assist the State animal health official, the herd owner, and, if requested, the herd owner's veterinarian to resolve differences in the proposed action plan for handling herds that are adjacent to or epidemiologically involved with an affected herd.

c. To determine the extent of the investigation that will be conducted on adjacent herds and other contact herds when an MCI reactor herd of origin has been sold before a herd blood test has been performed.

3. *Continued surveillance of suspicious herds*

a. To determine the necessity for retesting the herd of origin of MCI cattle and bison reactors when the initial

herd blood test was negative.

b. To determine the necessity for retesting those herds that received cattle and/or bison from affected herds when the initial herd blood test was negative.

c. To evaluate each dairy herd that participated in a whole-herd vaccination plan and that continues to be suspicious on BRT surveillance after being released from quarantine

Part III. Participation in Area Plans

1. Certification of States or Areas (Cattle and/or Bison)

A. Obtaining Initial Certification Status

To obtain initial status as a Brucellosis Class Free, A, or B State or area, States or areas must use one or more of the accepted methods listed in chapter 2, parts II–IV, for qualifying for that particular status. The States or areas must meet all of the qualifying standards listed in those parts.

B. Maintaining Certification Status

State and Federal officials in charge of Program activities in each State are responsible for continuously evaluating the efficiency of local procedures for locating and eliminating infected cattle and bison. The minimum standards as described for each plan in chapter 2, parts II–IV, must be met or exceeded throughout the certification period to maintain continuous status. A review committee including representatives from States, universities, and industry will evaluate each State's brucellosis program as needed but at least once every 3 years. To maintain certification, the State and Federal officials in that State must prepare an annual report showing the degree of uniformity and adequacy of the surveillance measures, the number of suspicious and affected herds disclosed, infection rates, and the adequacy of Program standards within the area. The content and format of the annual report is available in VS Memorandum No. 551.4, which is revised as needed.

C. Terminating Certification Status

State or area certification status may be terminated at any time during the period with 10 days' notice if the State or area:

1. Does not have continuous and adequate surveillance measures, including adjacent herd and epidemiologic tracing measures; or

2. Has excessive herd infection rates; or

3. Fails to comply with quarantine requirements, with testing schedules, or with initial testing schedules for suspicious herds detected by the surveillance measures, including those herds designated as adjacent herds and those designated as epidemiologically traced herds (see chapter 1, part II, section 7B); or

4. Improperly disposes of reactors or exposed animals.

It may not be necessary to terminate area status if the specific State's legal representative has initiated legal action against a livestock owner who fails to follow Program standards in the ways described in 2 and 3 of this section and if the State authorities are actively pursuing the case.

D. Reinstating Certification Status

When States or areas lose certification status because of deficiencies in levels of surveillance or in procedures necessary for locating affected herds, controlling infected and exposed animals, and eliminating infected animals, as prescribed under this UM&R, the certification status may be reinstated when the State and Federal officials in that State present sufficient evidence that the procedural deficiencies have been corrected. Areas in which these deficiencies have not been corrected within 6 months of the termination of the status must requalify for initial certification.

When States or areas lose certification status because of an excessive herd infection rate due to field strains of *Brucella abortus* or failure to maintain an acceptable MCI reactor successful case closure percentage, the State or area must qualify as for initial certification.

E. Federal Quarantines Within Class A States

Within Class A States, it is possible to have State-Federal quarantines of circumscribed areas of cattle or bison populations without loss or denial of Class A status for the State.

1. Conditions under which a Federal quarantine may be approved within Class A States:

   a. The chairman of the Brucellosis Committee of the United States Animal Health Association (USAHA) appoints a committee of five members to review an application from cooperating State and Federal animal health officials for a State to retain status as Class A, or to advance to that status, when data indicate that the State has an area that no longer qualifies as Class A or does not qualify for advancement to Class A status.

   b. No State may have more than two such areas.
   c. All members appointed to the committee must be knowledgeable about brucellosis.

   d. The committee should be made up of a representative from each of the following: the cattle and/or bison industry, a university, a State-level animal health organization and USDA-APHIS-VS (with these representatives coming from two nonadjacent States), and the USAHA Brucellosis

Committee.

e. No members may be residents of the State that is making application.

2. The format for the application for quarantine—Class A States requesting a quarantine will prepare a cooperative State-Federal agreement. This agreement will define the responsibility of each agency for the following specific items and issues:

a. The procedures and responsibilities for placing and enforcing quarantines both on the area and herds within the area,

b. The procedures to permit movement for specific purposes both within the defined area and from the defined area,

c. The legal description of geographic boundaries of the areas to be quarantined, and

d. The specific time period for eliminating all foci of infection.

3. Requirements for submitting the application:

a. The application must be accompanied by evidence that the majority of the livestock industry members from the area who participated in developing the proposed plan are aware of the restrictions it will require and will assist in monitoring and enforcing the plan.

b. Before the application is submitted, the State must be certain that the application includes provisions for moving cattle and/or bison to slaughter identified with "B" or "S" brands under permit (VS Form 1-27 or equivalent), or moving them for other purposes with a certificate showing a negative test on each animal within 30 days before the animal is moved.

c. Appropriate legal authority and adequate funding must be available to carry out the provisions of the application.

d. The application may not be for areas larger than two counties, and the areas must have clearly defined boundaries which provide geographic barriers that allow movement of cattle and/or bison into and out of the area to be monitored and restricted.

e. The time period to eliminate all foci of infection must be no longer than 2 years.

4. Monitoring and reporting:

a. Semiannual progress reports must be submitted to VS.

b. The reports will be reviewed and forwarded to committee members together with appropriate comments.

c. The committee may request additional reports at more frequent intervals and/or more detail on some components of the report.

5. Terminating the quarantine:

a. The area quarantine will be terminated and the area restored or advanced to Class A status when all requirements for Class A status have been met.

b. The area quarantine may be terminated and the entire State reclassified as Class B at any time the review committee recommends this action, or when the time period approved by the committee expires.

F. Two Areas in a State

If a State requests a two-area classification, a USAHA committee will be appointed and must assure that all of the following specific criteria will be met.

1. Legislative authority—Legislative authority exists for maintaining separate areas within the State.

2. Regulatory authority—Regulatory authority exists for maintaining separate areas within the State.

3. Resources—Resources are available and are committed to maintaining separate areas within the State.

4. Method—A credible method exists for monitoring and controlling the movement of animals across the boundaries.

Chapter 2. Bovine Brucellosis

Part I. Certified Brucellosis-Free Herds of Cattle or Bison

1. Qualifying Methods

A herd may qualify for status as a Certified Brucellosis-Free Herd by one of the following methods:

A. Brucellosis Milk Surveillance Test (BMST)

For initial certification, a dairy herd must have a minimum of four consecutive negative BMSTs conducted at intervals of 90 days or more. This series must be followed by a negative herd blood test conducted within 90 days after the last negative BMST.

For re-certification, a herd must have a negative herd blood test. For purposes of certifying or re-certifying a herd, the herd blood test must include all natural-addition heifers and bulls that are 18 months of age or older. If a dairy herd has been certified by BMST as specified immediately above or by herd blood tests as specified below in section B, then they may re-certify by conducting four consecutive negative BMSTs at approximate intervals of 90 days, with the fourth test conducted within 60 days before the certification anniversary date. Any test-eligible animals that have not been in the milk herd during the certification period, such as bulls or purchased animals, must be blood-tested annually. If the re-certification test is conducted within 60 days after the anniversary date, the certification period will be 12 months from the date of the re-certifying test. During the interval between the anniversary date and the re-certifying test, certification will be suspended.

B. Complete Herd Blood Test

For initial certification, a herd must have at least two consecutive negative herd blood tests, between 10 and 14 months apart. For purposes of certifying or re-certifying a herd, the herd blood test must include all natural-addition heifers and bulls that are 18 months of age or older. Additional herd blood tests may be conducted if the owner wishes or if the certifying agencies consider it necessary.

For continuous certification, a herd must have a negative herd blood test conducted within 60 days before the certification anniversary date. If the re-certification test is conducted within 60 days after the anniversary date, the certification period will be 12 months from the anniversary and not 12 months from the date of the re-certifying test. During the interval between the anniversary date and the re-certifying test, certification will be suspended. If a herd blood test for re-certification is not conducted within 60 days after the anniversary date, then certification requirements are the same as for initial certification.

C. Purchasing a Certified Brucellosis-Free Herd

1. If a Certified Brucellosis-Free Herd is purchased, a negative herd blood test is not required if the purchased cattle or bison remain on the premises. A new certificate will be issued in the new owner's name. The anniversary date and the herd number will remain the same.

2. If part or all of a Certified Brucellosis-Free Herd is purchased and the cattle and bison move directly to premises without other cattle or bison, they may retain their Free status without a test. A new certification number will be issued. The anniversary date of the new herd is established by the test date of the herd of origin or by a new herd test of the purchased cattle or bison.

2. Conditions for Certifying the Herd

A. Animals Included in Certification

Certified Brucellosis-Free Herd status applies only to individual herds and includes all offspring.

B. Duration of Status

A herd is certified for 12 months.

C. Testing Period

For initial certification: The herd must be tested twice, 10 to 14 months apart. If the BMST is used, herds can qualify for certification in 9 months.

For re-certification: The herd must have a negative herd blood test between 10 and 12 months after the last certification date for continuous status. A 60-day grace period is allowed, during

which a herd may be reinstated with a single negative herd blood test.

D. Animal Infection Rates

There must be no evidence of field strain *Brucella abortus* infection in individual animals within the herd at the time the herd is initially certified or re-certified.

E. Suspects

When suspects are found, an individual herd plan must be developed for testing the suspect(s) in the future and for handling the herd as described in chapter 1, part II, section 7C. This plan may range from a quarantine of the entire herd to a single retest of the suspect(s) using the appropriate tests described in chapter 1, part II, sections 4 and 7.

F. Herd Status If Infection Occurs

When one or more reactors are found in a Certified Brucellosis-Free Herd or in a herd being tested for initial certification, the herd is considered affected and the quarantine and retest provisions in chapter 1, part II, sections 3 and 6, will apply.*Initial certification:* A herd qualifies for initial Certified Brucellosis-Free Herd status when it is free of infection, when all provisions for release of quarantine have been met, and when the additional provisions required under sections 1A or 1B of this part have been met. In qualifying a herd, a negative herd blood test and a complete epidemiologic investigation may be used to determine if a suspicious BMST indicates the presence of brucellosis.

Recertification: If a retest of a Certified Brucellosis-Free Herd or of animals from the herd reveals one or more reactors, the herd certification will be terminated until all provisions for release of quarantine have been met and the additional provisions for initial Certified Brucellosis-Free Herd status required under sections 1A or 1B of this part have been met. Herd retests for release of quarantine may also be used to fulfill the provisions required under sections 1A or 1B. Herd certification may be reinstated without meeting the above provisions if there is epidemiologic and bacteriologic culture evidence to show that reactor(s) were not infected with field-strain *Brucella abortus*.

G. Movement of Cattle or Bison Into a Certified Brucellosis-Free Herd

The following rules apply when moving cattle or bison *into* Certified Brucellosis-Free Herds:

1. From quarantined feedlots—Animals from quarantined feedlots may not be moved into Certified Brucellosis-Free Herds.

2. From Certified Brucellosis-Free Herds or Class Free States or areas—Breeding cattle and bison originating from Certified Brucellosis-Free Herds or Class Free States or areas do not need to be tested before being moved. However, when these cattle or bison are added to a Certified Brucellosis-Free Herd, they must be tested within 60 and 120 days after being added in order to qualify for Certified Brucellosis-Free status for sale purposes.

3. Class A or B Areas or States—Test-eligible cattle and bison from herds not under quarantine must have a negative blood test for brucellosis within 30 days before being moved. In addition, all other requirements for interstate or intrastate movement must be met. All test-eligible cattle or bison purchased from herds that are not Certified Brucellosis-Free must have a blood test between 60 and 120 days after being added. Animals added to a Certified Brucellosis-Free Herd under this provision will not receive new herd status for sale purposes until they have passed a test 60 to 120 days after being added and have been included in the herd blood test on the next anniversary of the re-certification test.

H. Movement of Cattle or Bison Onto Premises With a Certified Brucellosis-Free Herd

The following rules apply when moving cattle or bison onto premises occupied by a Certified Brucellosis-Free Herd:

1. Animals originating from a quarantined feedlot must not be maintained in association with a Certified Brucellosis-Free Herd.

2. Animals originating from feedlots other than quarantined feedlots may be held on premises with a Certified Brucellosis-Free Herd, provided that these cattle and bison meet the blood testing requirements before being moved into the feedlot and provided there is no contact with the Certified Brucellosis-Free Herd.

I. Recognition of Certified Brucellosis-Free Herds

The State animal health official and the APHIS AVIC will issue a Brucellosis-Free Herd certificate when the herd first qualifies for this status.

When the herd qualifies for recertification, the State animal health official will issue a certification renewal form showing

the herd certification number, the number of animals, and the owner.

Part II. Class Free Status

A State or area that achieves Class Free status is officially recognized as being free of brucellosis in cattle and bison. This part of the UM&R covers the requirements for establishing and maintaining Class Free status in a State or an area. It also covers the requirements for moving cattle and bison from and within Class Free States and areas.

1. Size of Area

Class Free status usually applies to an entire State. However, a State may request a two-area classification.

A State must meet all of the following specific criteria to receive approval of a two-area classification:

A. Legislative Authority:

Legislative authority must exist for maintaining separate areas within the State.

B. Regulatory Authority:

Regulatory authority must exist for maintaining separate areas within the State.

C. Resources:

Resources must exist and must be committed to maintaining separate areas within the State.

D. Method:

A credible method must exist for monitoring and controlling the movement of animals across the area boundary; and its effectiveness must be demonstrated. APHIS will review the procedures with the requesting State.

2. Duration of Status

A State or area will retain its Class Free status indefinitely, provided that it continues to meet the requirements for Class Free status. If a single affected herd is found in a Class Free State, the State may retain its Class Free status if it meets the following conditions, which must be satisfied within 60 days of the identification of the affected animal: (1) The affected herd must be immediately quarantined, tested for brucellosis, and depopulated; and (2) an epidemiologic investigation must be performed, and the investigation must confirm that brucellosis has

not spread from the affected herd. All adjacent herds, source herds, and contact herds must be epidemiologically investigated, and each of those herds must receive a complete herd test with negative results.

A review will be conducted to determine that all of the provisions as outlined above have been satisfied. If the above conditions are not met, Class Free status is automatically suspended if field-strain *Brucella abortus* infection is found, except when the field-strain infection is found to be imported and brucellosis has not spread to other herds before the exposed animals have been returned to the State of origin or slaughtered.

Every 12 months, all States must prepare an annual report summarizing their brucellosis program activities for the previous 12 months. The annual report must include the following information:

A. Herd and cattle/bison population and the source of this information;

B. The dates of the reporting period;

C. The number of BMST rounds completed during the reporting period;

D. The number of MCI tests (slaughter MCI and all other MCI tests are to be reported separately);

E. The number of MCI reactors;

F. The number of MCI reactors traced by category, such as those traced to:

   1. A herd of origin in which reactors were found on the herd blood test,

   2. A herd of origin that had negative results on the herd blood test,

   3. Out-of-State origins, or

   4. Known infected herds.

G. The number of cows and bulls 2 years of age and older that were slaughtered and the number of blood samples that were collected from these animals;

H. The number of herds infected with field strains of *Brucella abortus* during the reporting period;

I. The number and results of blood tests of other species of domestic animals;

(Items A–I are to be reported on revised VS Form 4–1, Application for Status. Almost all of the information required is available on VS or Brucellosis Recording and Reporting Systems [BRRS] Forms 4–33D and 4–54D [Monthly Reports on Brucellosis Eradication Activities], which are kept on file in each State.)

J. A narrative description of:

1. Epidemiologic surveillance investigations and results;

2. MCI investigations and results, including the number of MCI reactors that cannot be traced because of a lack of applied identification;

3. MCI procedures and problems at each of the slaughter establishments that failed to collect blood samples from 95 percent of the cows and bulls 2 years of age and older during the reporting period;

4. Verification that other standards in this UM&R have been met.

Annual reports that disclose apparent deficiencies will be reviewed by VS and State officials to determine the correct status for the State. Annual reports may cover any 12 consecutive months; however, no months may be unreported. If at any time a State meets the requirements for Class Free status, a State may request that it be advanced to that status and submit an annual report for the previous 12 months as evidence of qualification.

All cattle and bison herds in which brucellosis has been known to exist must be legally released from quarantine before a State is eligible for Class Free status. In addition, all herds of other species of domestic livestock in which brucellosis has been found or suspected must be tested negative, be destroyed, or be quarantined, leaving no known uncontrolled foci of *Brucella abortus* infection in any species at the time of classification.

3. Standards To Attain and Maintain Class Free Status

A. Surveillance

1. Brucellosis milk surveillance test (BMST)—The BMST must be conducted at least two times per year at approximately 6-month intervals. A State may increase the frequency of BMSTs to achieve more effective surveillance. An epidemiologic investigation of all herds with suspicious BMST results must be conducted and an approved action plan must be developed within 15 days of the laboratory test date. If a herd blood test is necessary, it should be performed within 30 days of the laboratory test date. A State or area may not lose Class

Free status for failing to complete the herd blood test if the State has taken legal action to obtain the test and active legal proceedings are in progress.

Patron lists must be reviewed to ensure that all dairy herds producing commercial milk have been included in at least two BMST rounds per year. The quality of the samples used for the BMST will be monitored at the time the samples are collected. The BMST procedure will be adjusted for the size of the herd. (See chapter 1, part II, section 4C3.)

2. Market Cattle and Bison Identification (MCI) program

   a. Participation

      (1) All State-inspected or federally inspected establishments slaughtering cattle or bison must participate in the MCI program. At least 95 percent of the cows and bulls 2 years of age and older must be sampled at each recognized slaughter establishment. In cases where sampling over the 12-month period falls below 95 percent for specific plants, the actions taken to correct this deficiency will be evaluated in determining status. All applied identification (except brands and tattoos) on the cows and bulls 2 years of age and older at the time of slaughter is to be collected, and identification from each animal must accompany its blood sample to the laboratory. Failing to collect this identification makes it difficult to positively identify many market cattle or bison reactors. If the failure to trace reactors to the herd of origin is related to the failure to collect applied identification properly, the MCI program will be considered deficient in the State where the blood is collected.

      (2) First-point testing is required in States when they are making their initial efforts toward achieving Class Free status. Once Class Free is obtained, it is recommended that first-point testing continue for at least an additional 2 years. If a State is subsequently downgraded from Class Free to Class A status, it is not required that first-point testing be reinitiated unless the State has not successfuly regained Class Free status within 2 years of the date of the downgrade.

   b. Reactors—At least 90 percent of the MCI reactors during each 12-month period must be traced to the herd of origin. An investigation must be conducted as outlined in chapter 1, part II, section 7D, within 15 days of the time that the MCI test is performed or within 15 days of

the time that the results are reported to the State animal health official or the APHIS AVIC from the area involved. If States with 20 or fewer MCI reactors do not trace at least 90 percent of reactors to the herd of origin, an explanatory statement and a request for exemption from this standard may be prepared and submitted with the 12-month annual report. When a herd blood test is indicated, it should be conducted within 30 days of the time the owner is officially notified of the MCI reactors. These herds are to be confined to the premises under quarantine until the herd blood test results are available and are negative. A State or area will lose status if the herds of origin of MCI reactors are considered suspicious after a complete epidemiologic investigation and are not tested within 6 months of the time the owner is officially notified of the MCI reactor.

c. Reporting results—To maintain status, all MCI reactors originating in the reporting State are to be reported in the 12-month report. The report must include the number of successful and unsuccessful tracebacks and the number of herds of origin that were tested. If the traceback percentage falls below 90 percent, a committee will be designated to review the circumstances and recommend action to the Deputy Administrator. The committee will be activated by the Director of the NCAHP and will consist of one APHIS, VS regional epidemiologist and a brucellosis designated epidemiologist from another State.

3. Epidemiologic surveillance

a. Adjacent herds—All adjacent herds or other herds having contact with imported cattle or bison from an affected herd containing a reactor(s) must have an approved action plan for testing or monitoring the herd(s). These plans must be in effect within 15 days of the time reactors are found in the first herd and must include at least two herd blood tests, with the last test approximately 6 months after the first herd is depopulated or freed of infection. (For exceptions, see chapter 1, part II, section 1H.) If there is disagreement about the necessity for testing a herd, the herd owner, the State animal health official or his or her representative, the designated brucellosis epidemiologist, and, if requested, the herd owner's veterinarian, will consult to resolve the situation.

b. Epidemiologically traced herds—All herds of origin of cattle and/or bison that have been sold into an affected herd and all herds receiving cattle or bison from an affected herd should be placed under quarantine. These herds must have an approved action plan for testing or monitoring the herd(s). The action plan must be in

effect within 15 days of locating the herd of origin or the recipient herd. If there is epidemiologic evidence that a herd blood test should be performed, the test should be done within 30 days. (For exceptions, see chapter 1, part II, section 1H.) If there is disagreement regarding the necessity for testing a herd, the herd owner, the State animal health official or his or her representative, the designated brucellosis epidemiologist, and, if requested, the herd owner's veterinarian will consult to resolve the situation.

B. Herd Infection Rate

1. States must remain free of brucellosis resulting from infections with field strains of *Brucella abortus* for 12 months or longer. However, if a single affected herd is found in a Class Free State, the State may retain its Class Free status if it meets the following conditions, which must be satisfied within 60 days of the identification of the affected animal: (1) The affected herd must be immediately quarantined, tested for brucellosis, and depopulated as soon as practicable; and (2) an epidemiologic investigation must be performed, and the investigation must confirm that brucellosis has not spread from the affected herd. All adjacent herds, source herds, and contact herds must be epidemiologically investigated, and each of those herds must receive a complete herd test with negative results.

   A review will be conducted to determine that all of the provisions as outlined above have been satisfied.

   If the above conditions are not met, Class Free status is automatically suspended if field-strain *Brucella abortus* infection is found, except when the field-strain infection is found to be imported and brucellosis has not spread to other herds before the exposed animals have been returned to the State of origin or slaughtered. If reactor animals are found in an imported lot of cattle or bison, the reactors must immediately be slaughtered. If brucellosis has not spread to other herds, the entire lot of exposed cattle and bison can be depopulated or returned to the State of origin without losing its status. Infections are assumed to be caused by a field strain until veterinary officials in the State show otherwise by culture or by a complete epidemiologic investigation that excludes field-strain infection. Herds proven to be infected with Strain 19 are not included in determining the herd infection rate, but the infected animals should be "S"-branded and sold for feeding or for immediate slaughter. 2. State or Federal representatives will conduct an epidemiologic investigation of each herd that has reactor cattle or bison within 15 days to identify the potential sources of infection. All potential sources must be contacted within 15 days to determine appropriate action. If

there are delays in contacting potential source herds, the State or Federal official must document any extenuating circumstances in the case report that is submitted to the Director of the NCAPH, VS, APHIS, USDA. If the source of infection for a reactor cannot be identified, a committee will be designated to review the circumstances and recommend actions to the Deputy Administrator. The committee will be activated by the Director of the NCAHP and will consist of the national brucellosis epidemiologist, a State veterinarian from the USAHA Brucellosis Committee, and an industry representative from the USAHA Brucellosis Committee.

C. MCI Reactor Cases Closed Successfully

Successfully closed cases (SCC) are cases completed on MCI reactors successfully traced to herds of origin. Once the *trace* is successful, the *case* must also be closed successfully. Here are some examples of SCC:

1. MCI reactor is traced to known reactor herds that are quarantined and tested in compliance with standards in this UM&R.

2. MCI reactor is traced to herds and a herd test is recommended and conducted in compliance with standards in this UM&R.

3. MCI reactor is traced to a sold-out herd and movements into and out of the sold-out herd are traced and epidemiologically evaluated for testing by a designated brucellosis epidemiologist.

4. MCI reactor is traced to an out-of-State herd of origin.

5. MCI reactor is traced to a herd and a herd test is not recommended because:

   a. MCI reactor was not test eligible and herd history did not indicate a herd infection exists;

   b. MCI reactor was recently vaccinated for brucellosis;

   c. MCI reactor was recently treated with deworming medicine or vaccines, such as leptospirosis vaccine, that are reported in the literature as causing potential cross-reacting titers.

Other reasons must be documented and approved by the designated brucellosis epidemiologist and concurred with by the VS regional epidemiologist. These reasons must be justified in writing and must accompany annual reports.

State or Federal representatives will conduct a complete epidemiologic investigation, with appropriate tests of adjacent and contact herds, of any herds-of-origin of MCI reactors in which all test-eligible cattle and bison and non-Strain 19-vaccinated heifers and bulls between 6 and 18 months of age have been eliminated by slaughter. Ninety-five percent of all MCI reactor tracebacks must be successfully closed.

D. Complying With This Uniform Methods and Rules

1. States must continuously comply with the requirements of this UM&R. A State's compliance will be judged by administrative review and epidemiologic evaluation.

2. If a Class Free State fails to maintain the minimum procedural standards set forth in this UM&R, the State may be reclassified to Class A status. Before its status is lowered, the State may request a peer-group review (chapter 1, part II, section 1I) at the State's expense. The State and Federal officials in charge of Program activities will be notified in writing of any apparent

deficiencies that may affect the status of the State's classification. In response, the State and Federal officials in charge of Program activities will determine and describe in writing the corrective actions the State will take. The response must include a schedule for taking any needed corrective actions. Herd infection from field strains of *Brucella abortus* in other than quarantined imported cattle and bison or failure to maintain an acceptable SCC percentage will be cause for the State to immediately lose Class Free status; the State will be reclassified to Class A status. A State may regain Class Free status by qualifying as for initial Class Free status. If appropriate, a State can regain Class Free status when it has corrected all procedural deficiencies causing the loss of status and a minimum of 6 months have elapsed, demonstrating the effectiveness of the corrective action(s).

4. Movement of Cattle and Bison on Change of Ownership Within and From Class Free States or Areas for Certain Purposes

A. Cattle and Bison Exempt From Testing Requirements

The following cattle and bison from nonquarantined herds are specifically exempt from test or certificate requirements to qualify for either interstate or intrastate movements. A certificate is required for the interstate movement of other cattle and bison and from Certified Brucellosis Free Herds.

1. Steers, spayed heifers, and bulls less than 18 months of age from herds not under quarantine;

2. Cattle and bison under 18 months of age as evidenced by the presence of the first pair of temporary incisor teeth;

3. Official Strain 19 calfhood vaccinates of the dairy breeds under 20 months of age, unless they are parturient or have calved;

4. Official Strain 19 calfhood vaccinates of the beef and bison breeds under 24 months of age as evidenced by the absence of the first pair of fully erupted permanent incisor teeth, unless they are parturient or have calved;

5. Other cattle and bison moving directly to slaughter from a herd of origin; and
6. Other cattle and bison moving directly from Certified Brucellosis-Free Herds. However, a certificate is required for interstate movement of cattle and/or bison from Certified Brucellosis-Free Herds that are moved for feeding or for breeding.

B. For Feeding

1. Movements to quarantined feedlots or quarantined pastures

   a. Quarantined pastures are not allowed in Certified Brucellosis-Free States or areas. Therefore, no cattle or bison feeding in quarantined pastures may move within or to Class-Free States or areas. The existence of quarantined feedlots in Free States is discouraged. However, a limited number of quarantined feedlots can be temporarily approved within Free States or areas for intrastate movements of cattle and/or bison only. Quarantined feedlots are needed in Class Free States to relieve a temporary problem of suspect disposal when the suspects and/or exposed animals are found but are not suitable for slaughter. Requests for approval must be jointly reviewed and approved prior to use by the State animal health official, the APHIS AVIC, and the Deputy Administrator of APHIS-VS. The approval in Class Free States is valid for 1 year.

   b. Exposed cattle and bison from quarantined herds, except steers and spayed heifers, must be "S"-branded with a hot iron before being moved intrastate or interstate to quarantined feedlots. An "S"-brand permit is required for this movement.

   c. Test-eligible cattle and bison from other herds, including Certified Brucellosis-Free Herds, may move to quarantined feedlots without test restrictions, but a certificate is required.

2. Movement to other feedlots—The testing and documentation requirements are the same as for breeding cattle and bison.

C. For Immediate Slaughter

1. Exposed animals from a quarantined herd must be "S"-branded with a hot iron or "B"-branded with a hot iron if the herd is being depopulated with indemnity and moved to slaughter. Such exposed animals may also be moved directly to slaughter in sealed vehicles without branding. Exposed animals moving to a quarantined feedlot must be "S"-branded with a hot iron. A VS Form 1-27 is required for each of these movements.

2. Other cattle and bison may move to slaughter establishments or to markets for sale for immediate slaughter or to approved intermediate handling facilities for movement to slaughter without being tested if the identity of their herd of origin is maintained.

D. For Breeding

1. A certificate is required for interstate movements of test-

eligible cattle and bison from nonquarantined herds, but there are no premovement test requirements. A voluntary blood test of the cattle and bison is recommended between 45 and 120 days after the interstate movement.

2. Female dairy cattle and/or bison that are 4 months of age or older must be official vaccinates if they are moved into a Class B State or area, unless they are moved directly to a recognized slaughter establishment or to a quarantined feedlot.

   Female cattle and/or bison that are eligible for official calfhood vaccination and that are required to be officially vaccinated may be moved interstate directly to a specifically approved stockyard and be officially vaccinated upon arrival.

   It is recommended that all female breeding stock moving to high-risk areas be calfhood vaccinated.

E. Calves From Affected Herds

All calves in an affected herd are included under the herd quarantine restrictions. If the heifer calves are retained in the herd, they should be calfhood-vaccinated. Calves may be moved only if they comply with the following requirements:

1. The calves must be "S"-branded or neutered, or

2. Sexually intact heifer calves must be quarantined and held separate and apart from the affected adult herd after weaning until they are negative on an official test no sooner than 30 days following completion of their first calving; or

3. Sexually intact heifer calves may remain in the affected adult herd, but the entire herd shall not be released from quarantine until all such heifer calves have matured and calved, after which the entire herd must be tested negative for brucellosis no sooner than 30 days after the last heifer has calved to qualify for quarantine release.

F. Rodeo Bulls

Rodeo bulls participating in recognized and organized performance groups may be moved without meeting other testing requirements, provided that:

1. The bulls originate from a herd not known to be affected with brucellosis.

2. If the rodeo bull is moving only between Class Free States, no test is required. However, if it is moving to lower class States, the bulls must have been subjected to an official test for brucellosis with negative results within the

previous 12 months (test conducted less than 365 days before the date of movement), and

3. Each bull is individually identified with official identification, and

4. There is no change of ownership since the date of the last official test, and

5. Proper health certificates accompany each movement, and

6. State officials were properly notified of all movements, and permits for entry were obtained if required.

Part III. Class A Status

This part covers the requirements for establishing and maintaining Class A status in a State or an area. It also covers the requirements for moving cattle and bison from and within Class A States and areas.

1. Size of Area

Class A status usually applies to an entire State. However, a State may request a two-area classification. In addition, this section (at chapter 1, part III, section 1E) provides for Federal quarantines of areas within a Class A State.

A State must meet all of the following specific criteria to receive approval of a two-area classification:

A. Legislative Authority: Legislative authority must exist for maintaining separate areas within the State.
B. Regulatory Authority: Regulatory authority must exist for maintaining separate areas within the State.

C. Resources: Resources must exist and must be committed to maintaining separate areas within the State.

D. Method: A credible method must exist for monitoring and controlling the movement of animals across the area boundary, and its effectiveness must be demonstrated. APHIS will review the procedures with the requesting State.

2. Duration of Status

A State or area will retain its Class A status indefinitely, provided that it continues to meet the requirements for Class A status. Every 12 months, each Class A State must prepare an annual report summarizing its brucellosis program activities for the previous 12 months. The annual report must include the following information:

A. Herd and cattle and/or bison population and the source of this information;

B. The dates of the reporting period;

C. The number of BMST rounds completed during the reporting period;

D. The number of MCI tests (slaughter MCI and all other MCI are to be reported separately);

E. The number of MCI reactors;

F. The number of MCI reactors traced by category, such as those

1. Traced to a herd of origin in which reactors were found on the herd blood test.

2. Traced to a herd of origin that had negative results on the herd blood test.

3. Traced to out-of-State origins.

4. Traced to known infected herds.

G. The number of cows and bulls 2 years of age and older that were slaughtered and the number of blood samples that were collected from these animals;

H. The number of herds infected with field strains of *Brucella abortus* during the reporting period;

I. The number and results of blood tests of other species of domestic animals;

(Items A–I are to be reported on revised VS Form 4–1, Application for Status. Almost all of the information required is available on VS or BRRS Forms 4–33D or 4–54D, the monthly reports on brucellosis eradication activities, on file in each State.)

J. A narrative description of:

1. Epidemiologic surveillance investigations and results;

2. MCI investigations and results, including the number of MCI reactors that cannot be traced because of a lack of applied identification;

3. MCI procedures and problems at each of the slaughter establishments that failed to collect blood samples from 95 percent of the cows and bulls 2 years of age and older during the reporting period; and

4. Verification that other standards in these UM&R have been met.

Annual reports that disclose apparent deficiencies will be reviewed by VS and State officials to determine the correct status for the State. Annual reports may cover any 12 consecutive months; however, no months may be unreported. If at any time a State meets the requirements for Class Free status, the State may request that it be advanced to that status. The State must submit an annual report for the previous 12 months as evidence that it qualifies.

3. Standards To Attain and Maintain Class A Status

A. Surveillance

1. Brucellosis milk surveillance test (BMST)—The BMST must be conducted at least four times per year at approximately equal intervals. A State may increase the frequency of BMSTs to achieve more effective surveillance. An epidemiologic investigation of all herds with suspicious BMST results must be conducted, and an approved action plan must be developed within 15 days of the laboratory test date. If a herd blood

test is necessary, it should be performed within 30 days of the laboratory test date. A State or area may not be reduced from Class A status to Class B status for failing to complete the herd blood test if the State has taken legal action to obtain the test and active legal proceedings are in progress.

Patron lists must be reviewed to ensure that all dairy herds producing commercial milk have been included in at least three of the four BMST rounds per year. The quality of the samples used for the BMST will be monitored at the time the samples are collected. The BMST procedure will be adjusted for the size of the herd (see chapter 1, part II, section 4C3).

2. Market Cattle Identification (MCI) program

a. Participation

(1) All State-inspected or federally inspected slaughter establishments must participate in the MCI program. At least 95 percent of the cows and bulls 2 years of age and older must be sampled at each recognized slaughter establishment. In cases where sampling over the 12-month period falls below 95 percent for specific plants, the actions taken to correct this deficiency will be evaluated in determining the State's brucellosis status. All applied identification (except brands and tattoos) on cows and bulls 2 years of age and older at the time of slaughter is to be collected, and individual identification from each animal must accompany its blood sample to the laboratory. Failing to collect this identification makes it difficult to positively identify many market cattle or bison reactors. If the failure to trace reactors to the herd of origin is related to the failure to properly collect applied identification, the MCI program will be considered deficient in the State where the blood is collected.

(2) First-point testing is required in States when they are making their initial efforts toward achieving Class Free status. All first points of concentration must have facilities to test all test-eligible cattle or bison received directly from a farm of origin. All test-eligible cattle or bison must be tested at their first point of concentration regardless of their final destination.

b. Reactors—At least 90 percent of the MCI reactors during each 12-month period must be traced to the herd of origin and an investigation must be conducted as outlined in chapter 1, part II, section 7D, within 15 days of the time that the MCI test is performed or within 15 days of the time that the test results are reported to the State animal health official or the APHIS AVIC. If States with 20 or fewer MCI reactors do not trace at least 90 percent of reactors to the herd of origin, an explanatory statement and a request for exemption from this standard may be prepared and submitted with the 12-month annual report. When a herd blood test is indicated, it should be conducted within 30 days of the time the owner is officially notified of the MCI reactors. These herds are to be confined to the premises under quarantine.

   All MCI reactor herds should be blood-tested within 30 days of the time the owner is officially notified of the reactor, unless an approved action plan is on file which provides for a herd test after a longer interval. (For exceptions, see chapter 1, part II, section 1H.) Class A status may be reduced to Class B status if the herds of origin of MCI reactors are considered suspicious after a complete epidemiologic investigation and are not tested within 6 months of the time the owner is officially notified of the MCI reactor. A State or area may not lose status if the State has taken legal action to obtain a test and active legal proceedings are in progress.

c. Reporting results—To maintain or to advance status, all MCI reactors originating in the reporting State are to be reported in the 12-month report. The report must include the number of successful and unsuccessful tracebacks and the number of herds of origin that were tested. If the traceback percentage falls below 90 percent, a committee will be designated to review the circumstances and recommend action to the Deputy Administrator. The committee will be activated by the Director of NCAHP and will consist of one APHIS, VS regional epidemiologist and a brucellosis designated epidemiologist from another State.

3. Epidemiologic surveillance

a. Adjacent herds—All adjacent herds or other herds having contact with cattle or bison from an affected herd must have an approved action plan for testing or monitoring the herd(s). These plans must be in effect within 15 days of the time infection is found. If there is disagreement about the necessity for testing a herd, the herd owner, the State animal health official or his or her representative, the designated brucellosis epidemiologist, and, if requested, the herd owner's

veterinarian will consult to resolve the situation. The initial herd test of those herds requiring a test should be conducted within 30 days of the time infection is found in the first herd. (For exceptions, see chapter 1, part II, section 1H.) A State or area may not be reduced from Class A to Class B status if the State has taken legal action to obtain a test and active legal proceedings are in progress.

b. Epidemiologically traced herds—All herds of origin of cattle and/or bison that have been sold into an affected herd and all herds receiving cattle or bison from an affected herd must have an approved action plan for testing or monitoring the herd(s). The approved action plan must be in effect within 15 days of locating the herd of origin or the recipient herd. If there is disagreement regarding the necessity for testing a herd, the herd owner, the State animal health official or his or her representative, the designated brucellosis epidemiologist, and, if requested, the herd owner's veterinarian will consult to resolve the situation. The initial herd test of those herds requiring a test should be conducted within 30 days of the time that association with the affected herd is discovered. (For exceptions, see chapter 1, part II, section 1H.) States or areas may not be reduced from Class A to Class B status if the State has taken legal action to obtain a test and active legal proceedings are in progress.

B. Herd Infection Rate

1. States must not have an accumulated 12-month herd infection rate from field strains of *Brucella abortus* of more than 0.10 percent (or 1.0 herd per 1,000) except in States with 10,000 or fewer herds. Infection with field strains must be assumed in each case until veterinary officials in the State show otherwise by culture or by complete epidemiologic investigation. Each infected herd must be enrolled in a program that results in eliminating *Brucella abortus* infection or in depopulating the herd. Herds proven to be infected with an approved *Brucella* vaccine are not included in determining the herd infection rate, but the infected animals should be S-branded and sold for feeding or for immediate slaughter. Representatives of the Director of NCAHP will conduct a special review to determine if a State with a herd infection rate of more than 0.10 percent but with less than 10,000 herds should qualify for Class A status. This evaluation will include, but not be limited to, the following factors:

a. The number of reactor herds assumed (or proven) to be due to field strains of *Brucella abortus*;

b. The location of the infected herds and the distances between them, i.e., clusters of infected herds or scattered infected herds;

c. Whether infections have a common source(s) or are separate outbreaks and whether secondary spread has occurred;

d. Whether State policies and authorities are adequate and are applied to control and eliminate the outbreak(s);

e. Whether the herd quarantine(s) and its enforcement are adequate;

f. Number of additional herds at risk of becoming infected;

g. Whether depopulation has been used to contain the outbreak(s); and

h. The effectiveness of herd management practices in the infected herds to control the spread of disease within the herd and to other herds at risk.

2. An epidemiologic investigation of each herd with reactor cattle and/or bison must be conducted within 15 days to identify the potential sources of infection. All such potential sources must be contacted within an additional 15 days to determine appropriate action. (For exceptions, see chapter 1, part II, section 1H.)

C. MCI Reactor Cases Closed Successfully

The percentage of MCI reactor cases successfully closed may not be less than 95 percent.

Market cattle and/or bison reactors that originate from known reactor herds, market cattle and/or bison reactors traced to out-of-State origins, and market cattle and/or bison reactors that originate from herds of origin that subsequently had a herd blood test and were found negative for brucellosis are considered successfully closed cases (SCCs). State and Federal personnel will conduct a complete epidemiologic investigation, with appropriate tests of adjacent and contact herds, on any herds of origin of MCI reactors in which all test-eligible cattle or bison and nonvaccinated heifers and bulls between 6 and 18 months of age have been eliminated by slaughter. If there are extenuating circumstances that cause the SCC percentage to be below 95 percent, they must be documented in the 12-month report. Special consideration will be given when a State or area is affected by unusual or extreme marketing conditions.

D. Complying With This Uniform Methods and Rules

1. States must continuously comply with the requirements of this UM&R. A State's compliance will be judged by administrative review and epidemiologic evaluation.

2. If a Class A State fails to maintain the minimum procedural standards set forth in this UM&R, this State may be reclassified to Class B status. Before its status is lowered, the State may request a peer group review (chapter 1, part II, section 1I) at the State's expense. The State and Federal officials in charge of program activities will be notified in writing of any apparent deficiencies that may affect the status of the State classification. In response, the State and Federal officials in charge of the program activities will determine and describe in writing the corrective actions that the State will take. The response must include a schedule for taking any needed corrective actions. An excessive herd infection rate due to field strains of *Brucella abortus* or failure to maintain an acceptable MCI reactor SCC percentage will be cause for the State to immediately lose Class A status and be reclassified to Class B status. A State may regain Class A status by qualifying as for initial Class A status. If appropriate, a State can regain Class A status when it has corrected all procedural deficiencies causing the loss of status and a minimum of 6 months has elapsed demonstrating the effectiveness of the corrective action(s).

4. Movement of Cattle and Bison Within and From Class A States or Areas for Certain Purposes

A. Cattle and Bison Exempt From Testing Requirements

The following cattle and bison from nonquarantined herds are specifically exempt from test or certificate requirements to qualify for either interstate or intrastate movements. A

certificate is required for the interstate movement of other cattle and bison and from Certified Brucellosis-Free Herds.

1. Steers, spayed heifers, and bulls less than 18 months of age from herds not under quarantine;

2. Cattle and bison under 18 months of age as evidenced by the presence of the first pair of temporary incisor teeth;

3. Official Strain 19 calfhood vaccinates of the dairy breeds under 20 months of age, unless they are parturient or have calved;

4. Official Strain 19 calfhood vaccinates of the beef and bison breeds under 24 months of age as evidenced by the absence of the first pair of fully erupted permanent incisor teeth, unless they are parturient or have calved;

5. Other cattle and bison moving directly to slaughter from a herd of origin; and

6. Other cattle and bison moving directly from Certified Brucellosis-Free Herds. However, a certificate is required for interstate movement of cattle and/or bison from Certified Brucellosis-Free Herds that are moved for feeding or for breeding.

B. For Feeding

1. Movements to quarantined feedlots or quarantined pastures

a. Movements of cattle or bison from Class A and B States to quarantined feedlots in a Class Free State are not allowed. A limited number of quarantined feedlots are allowed in Class-Free States or areas for intrastate movements only. Quarantined pastures are not allowed in Class Free States or areas. Therefore, no cattle or bison may move within or to Class Free States or areas for feeding in quarantined pastures.

b. Exposed cattle and bison from quarantined herds, except steers and spayed heifers, must be hot-iron branded with "S" before being moved interstate to quarantined feedlots. An "S"-brand permit is required for this movement.

c. Except as specified in section 4B above and the paragraph that follows this one, untested test-eligible cattle and bison from nonquarantined herds may move intrastate to

quarantined feedlots or quarantined pastures, and interstate to quarantined feedlots or to an approved intermediate handling facility for movement to a quarantined feedlot, without test restrictions if the herd of origin can be identified by means of identification tags, backtags, or brands. A certificate is required for interstate movement.

d. All test-eligible cattle and bison must be tested for brucellosis either upon entry into a quarantined feedlot or within 30 days prior to entry into a quarantined feedlot.

2. Movement to other feedlots—The testing and documentation requirements are the same as for breeding cattle and bison.

C. For Immediate Slaughter

1. Exposed animals from quarantined herds must be hot-iron branded with an "S" and moved under an "S"-brand permit to recognized slaughter establishments or to specifically approved stockyards or State-approved stockyards to be sold for immediate slaughter or to an approved intermediate handling facility for movement directly to a recognized slaughter establishment. Instead of "S"-branding, cattle and bison may move directly to slaughter from a specifically approved stockyard or a State-approved stockyard or from a herd of origin in sealed vehicles accompanied by an "S"-brand permit. Exceptions to the "S"-branding and "S"-brand permits are allowed for finished fed heifers moving directly to immediate slaughter at recognized slaughter establishments and for exposed cattle and/or bison in cases where moving them to slaughter does not require rail or motor carrier transportation.

2. Cattle and bison from Certified Brucellosis-Free Herds may move to recognized slaughter establishments or to specifically approved stockyards or State-approved stockyards to be sold for immediate slaughter without being tested if the identity of the herd of origin is maintained.

3. Cattle and bison from other non-quarantined herds may move to recognized slaughter establishments or to specifically approved stockyards or State-approved stockyards to be sold for immediate slaughter without being tested if the identity of the non-quarantined herd is maintained.

D. For Breeding

1. Test-eligible cattle and bison from Certified Brucellosis-Free Herds may move without testing if the identity of the herd of origin is maintained. A certificate is required for interstate movement. A voluntary test is recommended 45–120 days after interstate movement.

2. Test-eligible cattle and bison from other non-quarantined herds may move intrastate without being tested. A voluntary test is recommended 45–120 days after movement.

3. Test-eligible cattle and bison originating in other non-quarantined herds may move interstate from a farm of origin directly to a farm of destination if they have a negative test within 30 days before interstate movement and are accompanied by a certificate. Cattle and bison may be moved interstate from a farm of origin without a certificate directly to a specifically approved stockyard for the required negative test. A certificate is required for those test-negative cattle and bison that subsequently move interstate from a specifically approved stockyard. A post-movement test at 45–120 days is strongly recommended.

4. The testing requirements of section 4, paragraphs D1 and D3, for interstate movements are not required if all of the following conditions apply:

   a. The cattle or bison being moved are from a herd that is not known to be affected, and

   b. The cattle or bison being moved have not changed ownership and are not changing ownership, and

   c. The cattle or bison are from herds that have had a complete negative herd blood test within 12 months, and

   d. Any cattle or bison that were added to the herd after the herd test were also tested negative, and

   e. The cattle or bison being moved have not come in contact with cattle or bison not meeting these requirements.

   The requirement for a complete herd blood test, including additions, within the previous 12 months, may be waived if officials in each State concur in writing.

The intent of this exception is to allow grazing associations, farmers, and ranchers to follow normal ranching operations when crossing jurisdictional boundaries during these movements, without subjecting their cattle or bison to unnecessary handling and testing.

5. Female dairy cattle and/or bison that are 4 months of age and older must be official vaccinates if they are moved into a Class B State or area unless they are moved directly to a recognized slaughter establishment or to a quarantined feedlot.

   Female cattle and/or bison that are eligible for official calfhood vaccination and that are required to be officially vaccinated may be moved interstate directly to a specifically approved stockyard and be officially vaccinated upon arrival.

   It is recommended that all female breeding stock moving to high-risk areas be calfhood vaccinated.

E. Calves From Affected Herds

All calves in an affected herd are included under the herd quarantine restrictions. If the heifer calves are retained in the herd, they should be calfhood-vaccinated. Calves may be moved only if they comply with the following requirements:

1. The calves must be "S"-branded or neutered, or

2. Sexually intact heifer calves must be quarantined and held separate and apart from the affected adult herd after weaning until they are negative on an official test no sooner than 30 days following completion of their first calving; or

3. Sexually intact heifer calves may remain in the affected adult herd, but the entire herd shall not be released from quarantine until all such heifer calves have matured and calved, after which the entire herd must be tested negative for brucellosis no sooner than 30 days after the last heifer has calved to qualify for quarantine release.

F. Rodeo Bulls

Rodeo bulls participating in recognized and organized performance groups may be moved without meeting other testing requirements, provided that:

1. The bulls originate from a herd not known to be affected with brucellosis.

2. The bulls have been subjected to an official negative test for brucellosis within the previous 12 months (test conducted less than 365 days before the date of movement), and

3. Each bull is individually identified with official identification, and

4. There is no change of ownership since the date of the last official test, and

5. Proper health certificates accompany each movement, and

6. State officials were notified in advance of all movements and permits for entry were obtained if required.

Part IV. Class B Status

This part covers the requirements for establishing and maintaining Class B status in a State or an area. It also covers the requirements for moving cattle and bison from within Class B States and areas.

1. Size of Area

Class B status usually applies to an entire State. However, a State may request a two-area classification.

A State must meet all of the following specific criteria to receive approval of a two-area classification:

A. Legislative Authority: Legislative authority must exist for maintaining separate areas within the State.

B. Regulatory Authority: Regulatory authority must exist for maintaining separate areas within the State.

C. Resources: Resources must exist and must be committed to maintaining separate areas within the State.

D. Method: A credible method must exist for monitoring and controlling the movement of animals across the area boundary, and its effectiveness must be demonstrated. APHIS will review the procedures with the requesting State.

2. Duration of Status

A State or area will retain its Class B status indefinitely, provided that it continues to meet the requirements for Class B status.

Every 12 months, the States must prepare an annual report summarizing their brucellosis program activities for the previous 12 months. The annual report must include the following information:

A. Number of herds and the cattle and/or bison population and the source of this information;

B. The dates of the reporting period;

C. The number of BMST rounds completed during the reporting period;

D. The number of MCI tests (slaughter MCI and all other MCI tests are to be reported separately);

E. The number of MCI reactors;

F. The number of MCI reactors traced by category, such as those

   1. Traced to a herd of origin in which reactors were found on the herd blood test.

   2. Traced to a herd of origin that had negative results on the herd blood test.

   3. Traced to out-of-State origins.

   4. Traced to known infected herds.

G. The number of cows and bulls 2 years of age and older that were slaughtered and the number of blood samples that were collected from these animals;

H. The number of herds infected with field strains of *Brucella* during the reporting period;

I. The number and results of blood tests of other species of domestic animals;

(Items A–I are to be reported on revised VS Form 4–1, Application for Status. Almost all of the information required is available on

VS or BRRS Forms 4-33D and 4-54D, the monthly reports on brucellosis eradication activities, on file in each State.)

J. A narrative description of:

1. Epidemiologic surveillance investigations and results;

2. MCI investigations and results, including the number of MCI reactors that cannot be traced because of a lack of applied identification;

3. MCI procedures and problems at each of the slaughter establishments that failed to collect blood samples from 95 percent of the cows and bulls 2 years of age and older during the reporting period; and

4. Verification that other standards of this UM&R have been met.

Annual reports that disclose apparent deficiencies will be reviewed by VS and State officials to determine the correct status for the State. Annual reports may cover any 12 consecutive months; however, no months may be unreported. If, at any time, a State meets the requirements for Class A or higher status, the State may request that it be advanced to that status. The State must submit an annual report for the previous 12 months as evidence that it qualifies.

3. Standards To Attain and Maintain Class B Status

A. Surveillance

1. Brucellosis milk surveillance test (BMST)—The BMST must be conducted at least four times per year at approximately equal intervals. A State may increase the frequency of BMSTs to achieve more effective surveillance. An epidemiologic investigation of all herds with suspicious BMST results must be conducted and an approved action plan must be developed within 30 days of the laboratory test date. If a herd blood test is necessary, it should be performed within 30 days after the approved action plan is prepared. A State or area may not be reduced from Class B status for failure to complete the herd blood test if the State has taken legal action to obtain the test and active legal proceedings are in progress.

   Patron lists must be reviewed to ensure that all dairy herds producing commercial milk have been included in at least three of the four BMST rounds per year. The quality of the samples used for the BMST will be monitored at the time the samples are collected. The BMST procedure will be adjusted for the size of the herd. (See chapter 1, part II, section 4C3.)

2. Market Cattle Identification (MCI) program

a. Participation

(1) All recognized slaughter establishments must participate in the MCI program. At least 95 percent of the cows and bulls 2 years of age and older must be sampled at each recognized slaughter establishment. In cases where sampling over the 12-month period falls below 95 percent for specific plants, the actions taken to correct this deficiency will be evaluated in determining the State's brucellosis status. All applied identification (except brands and tattoos) on cows and bulls 2 years of age and older at the time of slaughter is to be collected, and individual identification from each animal must accompany its blood sample to the laboratory. Failing to collect this identification makes it difficult to positively identify many market cattle or bison reactors. If the failure to trace reactors to the herd of origin is related to the failure to collect applied identification properly, the MCI program will be considered deficient in the State where the blood is collected.

(2) All other first points of concentration must have facilities to test all test-eligible cattle or bison received directly from a farm of origin. All test-eligible cattle or bison must be tested at their first point of concentration regardless of their final destination.

b. Reactors—At least 80 percent of MCI reactors during each 12-month period must be traced to the herd of origin, and an investigation must be conducted as outlined in chapter 1, part II, section 7D, within 30 days of the time that the MCI test is performed or within 30 days of the time that the test results are reported to the State animal health official or APHIS AVIC. If States with 20 or fewer MCI reactors cannot trace at least 80 percent of reactors to their herds of origin, an explanatory statement and a request for exemption from this standard

may be prepared and submitted with the 12-month annual report.

When a herd blood test is indicated, the MCI reactor herd shall be blood-tested within 45 days from the time the owner is officially notified of the reactor unless an approved action plan is on file that provides for a herd test after a longer interval. However, if the herd blood test is not conducted within the first 30 days from the time the owner is officially notified of the MCI reactor, the herd must be confined to the premises under quarantine. (For exceptions, see chapter 1, part II, section 1H.)

Class B States will be placed under Federal quarantine if the herds of origin of MCI cattle and/or bison reactors are considered suspicious after a complete epidemiologic investigation and are not tested within 6 months of the time the owner is officially notified of the MCI reactor. A State or area may not lose status if the State has taken legal action to obtain test and active legal proceedings are in progress.

c. Reporting results—To maintain or to advance status, all MCI reactors originating in the reporting State are to be reported in the 12-month report. The report must include the number of successful and unsuccessful tracebacks and the number of herds of origin that were tested. If the traceback percentage falls below 90 percent, a committee will be designated to review the circumstances and recommend action to the Deputy Administrator. The committee will be activated by the Director, National Center for Animal Health Programs, and will consist of one USDA, APHIS, VS regional epidemiologist and a brucellosis designated epidemiologist from another State.

3. Epidemiologic surveillance

a. Adjacent herds—All adjacent herds or other herds having contact with cattle or bison from the affected herd must have an approved action plan for testing or monitoring the herd(s). These plans must be in effect within 45 days of the time infection is found. If there is disagreement about the necessity for testing a herd, the herd owner, the State animal health official or his or her representative, the designated brucellosis epidemiologist, and, if requested, the herd owner's veterinarian will consult to resolve the situation. The initial herd blood test of those herds requiring a test should be conducted within 45 days of the time infection is found in the first herd. (For exceptions, see chapter 1, part II, section 1H.) A State or area may not be reduced from Class B status if the State has taken legal

action to obtain a test and active legal proceedings are in progress.

b. Epidemiologically traced herds—All herds of origin of cattle and/or bison that have been sold into an affected herd and all herds receiving cattle or bison from an affected herd must have an approved action plan for testing or monitoring the herd(s). The approved action plan must be in effect within 45 days of locating the herd of origin or the recipient herd. If there is disagreement regarding the necessity for testing a herd, the herd owner, the State animal health official or his or her representative, the designated brucellosis epidemiologist, and, if requested, the herd owner's veterinarian will consult to resolve the situation. The initial herd blood test of those herds requiring a test should be conducted within 60 days of the time that association with the infected herd is discovered. (For exceptions, see chapter 1, part II, section 1H.) States or areas may not be reduced from Class B status if the State has taken legal action to obtain a test and active legal proceedings are in progress.

B. Herd Infection Rate

1. States must not have an accumulated 12-month herd infection rate from field strains of *Brucella abortus* of more than 1.0 percent (or 10 herds per 1,000), except in States with 10,000 or fewer herds. Infection with field strains must be assumed in each case until veterinary officials in the State show otherwise by culture or by complete epidemiologic investigation. Representatives of the Director, National Center for Animal Health Programs, VS, will conduct a special review to determine if a State with a herd infection rate of more than 1.0 percent but with fewer than 10,000 herds should qualify for Class B status. This evaluation will include, but not be limited to, the following factors:

a. The number of reactor herds assumed (or proven) to be due to field strains of *Brucella abortus;*

b. The location of the infected herds and the distances between them, i.e., clusters of infected herds or scattered infected herds;

c. Whether infections have a common source(s) or are separate outbreaks and whether secondary spread has occurred;

d. Whether State policies and authorities are adequate and are applied to control and eliminate the outbreak(s);

e. Whether the herd quarantine(s) and its enforcement are adequate;

f. The number of additional herds at risk of becoming infected;

g. Whether depopulation has been used to contain the outbreak(s); and

h. The effectiveness of herd management practices in the infected herds to control the spread of disease within the herd and to other herds at risk.

2. An epidemiologic investigation of each herd with reactor cattle and/or bison must be conducted within 45 days to identify the potential sources of infection. All such potential sources must be contacted within an additional 30 days to determine appropriate action. (For exceptions, see chapter 1, part II, section 1H.)

C. MCI Reactor Cases Closed Successfully

The percentage of successfully closed cases (SCCs) may not be less than 90 percent.

Market cattle and/or bison reactors that originate from known reactor herds, market cattle and/or bison reactors traced to out-of-State origins, and market cattle and/or bison reactors that originate from herds of origin that subsequently had a herd blood test and were found negative for brucellosis are considered successfully closed cases.

State or Federal representatives will conduct a complete epidemiologic investigation, with appropriate tests of adjacent and contact herds, on any herds of origin of MCI reactors in which all test-eligible cattle or bison and non-vaccinated heifers and bulls between 6 and 18 months of age have been eliminated by slaughter. Special consideration will be allowed when the status of a State or area is affected by unusual or extreme marketing conditions.

D. Complying With This Uniform Methods and Rules

1. States must continuously comply with the requirements of this UM&R. A State's compliance will be judged by administrative review and epidemiologic evaluation.

2. A State must make continued progress in reducing the prevalence of brucellosis as determined by epidemiologic evaluation covering a 2-year period of program operation.

3. If a Class B State fails to maintain the minimum procedural standards set forth in this UM&R, the State will be placed under Federal quarantine. Before its status is lowered, the State may request a peer group review (chapter 1, part II, section 1I) at the State's expense. The State and Federal officials in charge of program activities will be notified in writing of any apparent deficiencies that may affect the status of the State classification. In response, the State and Federal officials in charge of the program activities will determine and describe in writing the corrective actions that the State will take. The response must include a schedule for making any needed corrective actions. An excessive herd infection rate due to field strains of *Brucella abortus* or failure to maintain an acceptable MCI reactor SCC percentage will be cause for the State to immediately lose Class B status and be reclassified. A State may regain Class B status by qualifying as for initial Class B status. If appropriate, a State can regain Class B status when it has corrected all procedural deficiencies causing the loss of status and a minimum of 6 months has elapsed demonstrating the effectiveness of the corrective action(s).

4. Movement of Cattle and Bison Within and From Class B States or Areas for Certain Purposes

A. Cattle and Bison Exempt From Testing Requirements

The following cattle and bison from non-quarantined herds are specifically exempt from test or certificate requirements to qualify for either interstate or intrastate movements. A certificate is required for the interstate movement of other cattle or bison and from Certified Brucellosis-Free Herds:

1. Steers, spayed heifers, and bulls less than 18 months of age from herds not under quarantine;

2. Cattle and bison under 18 months of age as evidenced by the presence of the first pair of temporary incisor teeth;

3. Official Strain 19 calfhood vaccinates of the dairy breeds under 20 months of age, unless they are parturient or have calved;

4. Official Strain 19 calfhood vaccinates of the beef and bison breeds under 24 months of age as evidenced by the absence of the first pair of fully erupted permanent incisor teeth, unless they are parturient or have calved;

5. Other cattle and bison moving directly to slaughter from the herd of origin; and

6. Other cattle and bison moving directly from Certified Brucellosis-Free Herds. However, a certificate is required for interstate movement of cattle and/or bison from Certified Brucellosis-Free Herds that are moved for feeding or for breeding.

B. For Feeding

1. Movements to quarantined feedlots or quarantined pastures

a. Movement of cattle or bison from Class B States to quarantined feedlots in a Class Free State is not allowed.

b. Exposed cattle and bison from quarantined herds, except steers and spayed heifers, must be hot-iron branded with an "S" before being moved interstate to quarantined feedlots. An "S"-brand permit is required for this movement.

c. Test-eligible cattle and bison from non-quarantined herds (excluding Certified Brucellosis-Free Herds) must be tested within 30 days before movement, or be hot-iron branded with an "S" and be accompanied by an "S"-brand permit. These cattle or bison may be moved from a herd of origin directly to a quarantined feedlot or to an approved intermediate handling facility for movement directly to a quarantined feedlot without being accompanied by an "S"-brand permit if they are "S"-branded upon arrival at the quarantined feedlot. They may be moved directly from a herd of origin to a specifically approved stockyard to be sold to a quarantined feedlot without being "S"-branded and without being accompanied by an "S"-brand permit. Test-eligible cattle or bison moving interstate on an official negative test must have a certificate.

d. All test-eligible cattle and bison must be officially tested for brucellosis either upon entry into a quarantined feedlot or within 30 days prior to entry into a quarantined feedlot.

2. Movement to other feedlots

The testing and documentation requirements are the same as for breeding cattle and bison.

C. For Immediate Slaughter

1. Exposed animals from quarantined herds must be hot-iron branded with an "S" and be moved with "S"-brand permit to recognized slaughter establishments or to specifically approved stockyards or State-approved stockyards to be sold for immediate slaughter or to an approved intermediate handling facility for movement directly to a recognized slaughter establishment. Instead of "S"-branding, cattle or bison may move directly to slaughter from either a specifically approved stockyard or a State-approved stockyard or from a herd of origin in sealed vehicles accompanied by an "S"-brand permit. Exceptions to the "S"-branding and "S"-brand permit requirements are allowed for finished fed heifers moving directly to immediate slaughter at recognized slaughter establishments and for exposed cattle and/or bison in cases where moving them to slaughter does not require rail or motor carrier transportation.

2. Cattle and bison from Certified Brucellosis-Free Herds may move to recognized slaughter establishments or to specifically approved stockyards or State-approved stockyards to be sold for immediate slaughter or to an approved intermediate handling facility for movement directly to a recognized slaughter establishment without being tested if the identity of the herd of origin is maintained.

3. Test-eligible cattle and bison originating in other non-quarantined herds may move directly to recognized slaughter establishments or to specifically approved stockyards or State-approved livestock markets to be sold for immediate slaughter without "S" hot-iron brand or "S"-brand permit. To move from either the specifically approved stockyards or State-approved stockyard to slaughter or to an approved intermediate handling facility for movement directly to a recognized slaughter facility, the cattle or bison must be "S"-branded and must be accompanied by "S"-brand permits. Instead of "S"-branding, cattle or bison may move directly to slaughter from either a specifically approved stockyard or State-approved stockyard in sealed vehicles accompanied by an "S"-brand permit, or they may be tested negative within 30 days before movement.

4. Test-eligible cattle and bison originating from dealers' concentration points for slaughter must be hot-iron branded with an "S" and must move with "S"-brand permit to a recognized slaughter establishment or through a specifically approved stockyard or State-approved livestock market to be sold for slaughter. Instead of "S"-branding, cattle and bison may move directly to slaughter from those livestock markets in sealed vehicles accompanied by an "S"-brand permit or they may be tested negative within 30 days before movement. An exception to the "S"-branding and "S"-brand permit is allowed for test-eligible untested cattle and bison in cases where moving them to slaughter does not involve transportation by rail or motor carrier.

D. For Breeding

1. Test-eligible cattle and bison from Certified Brucellosis-Free Herds may move without testing if the identity of the herd of origin is maintained. A certificate is required for interstate movement. It is recommended that the cattle and bison be tested at the destination 45–120 days after movement. Animals cannot move into Class Free states.

2. Test-eligible cattle and bison from other nonquarantined herds may move intrastate if they have a negative test within 30 days before movement. The negative test may be performed at specifically approved stockyards or State-approved livestock markets that have approved laboratory facilities for testing. A retest at the destination 45–120 days after movement is strongly recommended. No certificate is required.

3. Test-eligible cattle and bison from other non-quarantined herds may move interstate if they have had two negative whole-herd tests within 10–14 months apart. In addition, every animal must have a negative test within 30 days before interstate movement and be accompanied by a certificate that includes the test dates and test results. A permit for entry is required from the receiving State before movement if the animals are moved from the non-quarantined herd directly to a herd of destination. Cattle and bison may be moved interstate from a herd of origin without a certificate and permit for entry if they go directly to a specifically approved stockyard for the required negative test. A certificate is required for those test-negative cattle and bison that subsequently move interstate from a specifically approved stockyard. A permit for entry is required from the receiving State before movement from the stockyard. Animals cannot move into Class Free States.

4. The testing requirements of section 4, paragraphs D2 and D3, for intrastate and interstate movements are not required if all of the following conditions are met.

a. The cattle or bison being moved are from a herd that is not known to be affected by brucellosis, and

b. The cattle or bison being moved have not changed ownership and are not changing ownership, and

c. The cattle or bison are from the farm of origin and are negative to a herd blood test within 12 months of movement, and

d. Any cattle or bison that were added to the herd after the herd test were also tested negative within 30 days prior

   to the date the cattle or bison were added to the herd, and

e. The cattle or bison being moved have not come in contact with cattle or bison not meeting these requirements, and

f. The cattle or bison are accompanied by a document that shows the dates and results of the herd blood tests and the name of the laboratory that conducted the tests.

   The requirement for a complete herd blood test, including additions, within the previous 12 months, may be waived if officials in the origin and destination States concur in writing.

The intent of this exception is to allow grazing associations, farmers, and ranchers to follow normal ranching operations when crossing jurisdictional boundaries during these movements, without subjecting their cattle or bison to unnecessary handling and testing.

5. Female dairy cattle and/or bison that are 4 months of age or older must be official vaccinates if they are moved into or out of a Class B State or area unless they are moved directly to a recognized slaughter establishment or to a quarantined feedlot.

Female cattle and/or bison that are eligible for official calfhood vaccination and required to be officially vaccinated may be moved interstate directly to a specifically approved stockyard and officially vaccinated upon arrival at the specifically approved stockyard.

It is recommended that all female breeding stock moving to high-risk areas be calfhood vaccinated.

E. Calves from Affected Herds

All calves in an affected herd are included under the herd quarantine restrictions. If the heifer calves are retained in the herd, they should be calfhood-vaccinated. Calves may be moved only if they comply with the requirements of subparagraphs 1–3 below. As of October 1, 1988, the movement of calves from affected herds in Class B States was terminated.
As of October 1, 1990, no cattle or bison may be moved from Class B States that are not meeting the standards for progress except steers, spayed heifers, bulls less than 18 months of age out of any herd not known to be affected by brucellosis, "S"-branded cattle or bison, or cattle or bison from Certified Brucellosis-Free Herds.

1. The calves must be "S"-branded or neutered, or

2. Sexually intact heifer calves must be quarantined and held separate and apart from the brucellosis-affected adult herd after weaning until they are negative on an official test no sooner than 30 days following the completion of their first calving, or

3. Sexually intact heifer calves may remain in the affected adult herd, but the entire herd shall not be released from quarantine until all such heifer calves have matured and calved, after which the entire herd must be tested negative for brucellosis no sooner than 30 days after the last heifer has calved to qualify for quarantine release.

F. Testing at First Point of Concentration

All test-eligible cattle and bison must be tested at their first point of concentration regardless of their final destination.

G. Rodeo Bulls

Rodeo bulls participating in recognized and organized performance groups may be moved without meeting other testing requirements provided that:

1. The bulls originate from a herd not known to be affected with brucellosis.

2. The bulls have been subjected to an official negative test for brucellosis within the previous 12 months (test conducted less than 365 days before the date of movement), and

3. Each bull is individually identified with official identification, and

4. There is no change of ownership since the date of the last official test, and

5. Proper health certificates accompany each movement, and

6. State officials were notified in advance of all movements, and permits for entry were obtained if required.

Part V. States or Areas not having at least Class B status (No Status)

1. Cattle and bison from states or areas not having at least Class B status(no status) can not move into a Class Free State; and

2. Cattle and bison from a state or area not having at least Class B status can be moved only directly to slaughter, or to a quarantined feedlot in a Class A or Class B state after being permanently marked, for later shipment to slaughter; or

3. Cattle and bison from a state or area not having at least Class B status can be moved directly to an APHIS approved research facility after the shipper receives written permission from the VS Deputy Administrator and the State animal health official.