

Preliminary Accumulative Report #2 - Printed: 07/31/07

(This report supersedes all previous reports for this accession)

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\* Emailed Copy. \*  
\* A signed original is on file. \*  
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California Animal Health & Food Safety  
Laboratory System (CAHFS) - Davis  
PO Box 1770  
Davis, CA 95617  
(530) 752-8700

ACCESSION#:D0708591  
District: 1  
County: PLACER  
Case Coordinator: BBARR

Submitter

Owner:

Agent or Collector:  
Reference Number:

Species: OTHER MAMMAL  
Herd/Flock ID: BELLAMIA  
Date Taken:  
Date Received: 07/24/07

1 Specimens submitted: carcass

Approved by: Bradd C. Barr, DVM PhD

L A B O R A T O R Y F I N D I N G S / D I A G N O S I S

1. Severe, diffuse, thymic lymphoid hypoplasia.
2. Severe, diffuse, lymphoid hypoplasia, lymph node and spleen.
3. Miscellaneous findings:
  - A. Minimal focal neutrophilic colitis.

A C C E S S I O N S U M M A R Y

7/31/07:

The significant findings in this newborn cria are the absence of any appreciable lymphocytes in the thymus, lymph node, and spleen. Given these findings I suspect that this animal was severely immunocompromised at birth. The precise cause for death, however, remains undetermined as there were no significant bacteria isolated from the lung, liver, brain, or feces and additional tests for enteric viruses, parasites, as well as PCR for BVD and a heavy metal screen on the liver are unremarkable. Further, there are no significant findings noted histologically in the brain to suggest West Nile Virus infection. However, the histologic findings certainly would suggest this animal was immunodeficient and possibly fits within the nebulous

reports of "ill-thrift, wasting, or immunodeficiency" syndromes reported for young llamoids.

7/24/07:

There are very few, if any, significant findings which were limited largely to the markedly congested brain. I have no idea at this time as for the cause for the clinical signs of death, but additional tests are pending and an updated report will follow. Please note: you requested West Nile Virus testing by phone after the necropsy. There was no fresh brain available at that time to run WNV PCR. Serology for WNV has been requested. Further, I will be examining brain sections histologically and this will be able to rule out any possible WNV-related encephalitis. It would seem very unlikely for clinical West Nile Virus encephalitis in a 4 dya old animal.

#### G R O S S   P A T H O L O G Y

A single cria is submitted. There is an indwelling catheter in the right jugular furrow. The animal is otherwise unremarkable externally. It is in good postmortem condition. In the thoracic cavity, the thymus in the anterior mediastinum is very small in size and dark red/brown in color. The lungs are dark red/pink in color with a soft soggy texture and there is a very small amount of froth in the trachea and mainstem bronchi which have a light tan mucosa. The heart is unremarkable. In the abdominal cavity, the liver, kidneys, and spleen are all unremarkable. The uterus is juvenile in development. The first two stomach compartments are empty and there is a very small amount of soft curdled milk in the third stomach compartment. The mucosa of the entire third stomach compartment is congested and the remaining stomach compartments have a light tan/brown mucosa. The intestines contain a moderate amount of postmortem with a light tan/brown color to the wall. There is a modest amount of formed soft light yellow/green feces in the cecum, spiral colon, and distal colon. The select muscles and joints examined are unremarkable. The umbilicus is unremarkable. The brain is markedly congested with a prominent meningeal vessel as well as a diffuse dark pink color to the parenchyma on cut surface. There also appears to be a very slight excess of CSF. The nasal cavities are examined closely. They are both patent (complete). Urine is light yellow and clear in appearance and on dipstick examination has a pH of 6.0 with 3+ protein, a trace of ketones, and 2+ positive glucose (probably reflecting fluid therapy).

#### H I S T O P A T H O L O G Y

T16:

Sections of liver, kidney, heart, lung, spleen, skeletal muscle, thymus, lymph node, joint capsule, peripheral nerve, trachea, multiple sections of gastrointestinal tract and brain are examined with findings greatly summarized.

In the lung, the parenchyma is congested and partially collapsed with small amounts of pink proteinaceous material in alveoli compatible with edema fluid. In the thymus, there are very small numbers of lymphocytes within the thymic lobules. Each lobule consists of a collapsed bed of loose connective tissue stroma in which there are visible epithelial cells in the medullary regions and cortical regions consist of loose stroma with a very sparse population of lymphocytes and macrophages. The parenchyma is congested with mild focal hemorrhage. Fat depots adjacent to the stifle joint capsule are mildly atrophied. In the liver, there is a very mild fatty change within central lobular hepatocytes. Rare bile canaliculi are seen in central lobular regions which contain yellow bile pigment. In the spleen, the white pulp is difficult to identify. There are essentially no appreciable lymphocytes seen either in periarteriolar lymphoid sheaths or recognizable lymphoid follicles. The red pulp is largely contracted and the white pulp contains a modest population of mononuclear cells. In the third stomach compartment, the superficial mucosa is mildly congested within the glandular portion. Sections of intestine are moderately autolyzed with postmortem sloughing and loss of superficial mucosal epithelium. The sections of small and large intestine are otherwise relatively unremarkable. There is a very modest population of mixed mononuclear inflammatory cells in the small and large intestinal mucosa. Within one section of colon, there is a single small focal discreet mucosal infiltrate of neutrophils which extends from the superficial submucosa and mucosa into the lumen. Extending out from this focus within the superficial submucosa, there is a mild infiltrate of apparent lymphocytes. A single section of mesenteric lymph node is examined. There are no appreciable lymphocytes within the cortex. The entire cortex consists of a loose spindle cell stroma that appears edematous in which there are infrequent small islands of lymphocytes (possible vestigial lymphoid follicles). The sinuses contain a modest population of macrophages. There is mild focal hemorrhage. Sections of brain are relatively unremarkable aside from diffuse parenchymal congestion.

I M M U N O L O G Y

WEST NILE VIRUS PRNT (CORNELL)

Specimen Information

ID	Type	
BELLAMIA	SERA-BLOOD	Pending

\*\*\* CAMALID ABORTION PANEL

Specimen Type: SERA-BLOOD

SPECIMEN ID	L.CANICOLA	L.GRYPPO.	L.HARDJO	L.ICTERO.	L.POMONA
BELLAMIA	Pending	Pending	Pending	Pending	Pending

SPECIMEN ID	ERP - SVN	TOXO - LAT	BTV - ELISA	CARD
BELLAMIA	Tox@1:8, Neg@1	1:16	Neg	Neg

SPECIMEN ID	BVD-1 SVN	BVD2-BD SVN
BELLAMIA	Tox@1:8, Neg@1	Tox@1:8, Neg@1

V I R O L O G Y

\*\*\* DIRECT ELECTRON MICROSCOPY (EM)  
Specimen Information Results  
ID Type  
BELLAMIA FECES negative  
  
ROTAVIRUS - ELISA  
Specimen Information Results  
ID Type  
BELLAMIA FECES Neg

T O X I C O L O G Y

The detected liver mineral concentrations are within acceptable or non-diagnostic ranges for neonatal alpacas.

MDL = method detection limit (lowest concentration detectable by our test method).

\*\*\* HEAVY METAL SCREEN

Specimen Type LIVER

Metal	Arsenic	Cadmium	Copper	Iron	Lead
MDL	1 PPM	0.3 PPM	0.1 PPM	0.2 PPM	1 PPM
BELLAMIA	< 1 PPM	< 0.3 PPM	47.7 PPM	157 PPM	< 1 PPM

  

Metal	Manganese	Mercury	Molybdenum	Zinc
MDL	0.04 PPM	1 PPM	0.4 PPM	0.1 PPM
BELLAMIA	1.63 PPM	< 1 PPM	< 0.4 PPM	30.3 PPM

\*\*\* SELENIUM - TISSUE/OTHER  
Specimen Information Result MDL  
Id Type  
BELLAMIA LIVER 1.46 ppm Wet Weight 0.020ppm

P A R A S I T O L O G Y

\*\*\* FECAL EXAM - DIRECT WET SMEAR  
Specimen Information Results  
ID Type  
BELLAMIA FECES No parasites seen

B A C T E R I O L O G Y

\*\*\* BACTERIAL AEROBIC CULTURE

Specimen Information		Results
ID	Type	
BELLAMIA	LUNG	No growth - In 48 Hrs.
BELLAMIA	LIVER	No growth - In 48 Hrs.
BELLAMIA	BRAIN	No growth - In 48 Hrs.
BELLAMIA	FECES	Escherichia coli Lge# other Coliform Mixed flora

\*\*\* SALMONELLA CULTURE - MAMMALIAN

Specimen Information		Results
ID	Type	
BELLAMIA	FECES	No Salmonella sp. detected

B I O T E C H

\*\*\* BVD QRT PCR

Specimen Information		Results
ID	Type	
BELLAMIA	SPLEEN	Neg

C L I N I C A L H I S T O R Y

Born 4 days ago. Referred by Dr. Skillman difficult birth in distress post birthing. Transfused prior to arrival and on was given 1/2 cc BoSE by RDVM along with other vitamins, antibiotics, and dexamethasone and Benadryl. Treatments: Antibiotics, fluid therapy, supportive care.

C O N T A C T L O G S U M M A R Y

Report	Date Reported	Phoned	Contacted	About
Preliminary 1	07/25/07-FAX	07/24/07	VET	WEST NILE

S P E C I M E N S U M M A R Y

Specimen Type	Breed	ID	Age	Sex	Qty
CARCASS	ALPACA	BELLAMIA	4 DAYS	FEMALE	1