



## California Animal Health & Food Safety Laboratory System

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Final  
Version 1

CAHFS Case #: T0702562  
Referral #:  
Case Coordinator: Moeller, Robert B.  
Date Received: 10/08/2007  
Date Collected:

Electronically signed and authorized by: Moeller, Robert B. on 10/12/2007 11:38:59AM

This report supersedes all previous reports for this Case.

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### Contacts:

Role	Full Name	Phone	Address
Submitter	DON WARDEN	805-528-0961	PO BOX 8367 2245 CIMARRON WAY LOS OSOS, CA 93412
Bill To	LARGE ANIMAL PRACTICE	805-528-0961	P O BOX 8367 LOS OSOS, CA 93412
Owner	ZACHARY, BARBARA		9480 SANTA CLARA RD ATASCADERO, CA 93422

### Collection Site:

ZACHARY, BARBARA  
9480 SANTA CLARA RD  
ATASCADERO, CA 93422

Specimens Received: 1. Tissue:

### Specimen Details:

ID	ID Type	Taxonomy	Gender	Age
T0702562-01	CAHFS Internal ID	Alpaca	Female	9 <sup>8</sup> Years

### Laboratory Findings/Diagnosis

- NINE*
1. Six year old female Alpaca:
- Lung: Pneumonia, histiocytic, with diffuse pulmonary edema. etiology undetermined
  - Liver: Portal fibrosis, bridging, moderate, possible sequela to previous toxic event
  - Elevated copper levels (223 ppm)

### Case Summary

In the lungs there is abundant pulmonary edema and histiocytic infiltrates. This does not appear to be an infectious cause. It is possible this may represent some sort of metabolic problem or possible anaphylactic-type reaction with survival of the animal long enough to allow for histiocytic infiltrates. No heart failure cells or cardiac necrosis or fibrosis are evident. In the liver there is mild to moderate portal fibrosis but no bile duct duplication. The cause of this is undetermined. This could represent a previous hepatotoxic insult. A fatty liver was not evident. Bacterial cultures of the lung failed to detect any pathogens. The heavy metal screen on the liver is pending.

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The copper levels were elevated in the animal. It is unclear if this had any effect on the liver lesions but it is doubtful that it did since the lesions in the liver are primarily portal. It might be wise to check the ration to be sure the animals are not receiving excessive copper.

### Clinical History

Six year old Alpaca female with onset of anorexia 7 days ago. At that time dam ~10 days from due date. Temp normal, increased heart rate, no abnormal lung sounds/coughing, etc. Concerned about pregnancy toxemia. Induced 10/3 - delivered healthy acting cria and dam acted much better. Dam ate and drank throughout day then found dead this a.m.

### Field Necropsy:

Dead Alpaca in excellent condition with normal body fat. Small amount of frothy exudate in nostrils. Thorax - lungs dark purple, heavy, dense texture, large airways frothy, no pink/normal lung. Heart no abnormal noted. Abdomen - 1st compartment full of fresh feed, 3rd

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surface. Spleen moderate size, very friable. Kidney - medulla/cortex both appear dark red. Uterus seems normal for 36 hours postpartum. Concern is GI sepsis and death, Flunixin treatment, and pregnancy toxemia or liver abnormality.

### Gross Observations

### Bacteriology

#### BACTERIAL AEROBIC CULTURE

Animal/Source	Specimen	Specimen Type	Date Tested	Result	Comments
T0702562-01	Champayne	Lung Tissue	10-Oct-2007	No growth after 48 hours	
T0702562-01	Champayne	Liver Tissue	10-Oct-2007	No growth after 48 hours	
T0702562-01	Champayne	Small Intestinal Tissue	10-Oct-2007	Mixed flora	

#### SALMONELLA CULTURE - MAMMALIAN

Animal/Source	Specimen	Specimen Type	Date Tested	Result	Comments
T0702562-01	Champayne	Small Intestinal Tissue	10-Oct-2007	No Salmonella detected	

### Histology

The following tissues were examined histologically: Lung, heart, liver, kidney, spleen, small and large intestine, and glandular stomach.

In the lungs, in both alveolar and bronchiolar spaces have variable numbers of macrophages containing abundant foamy cytoplasm. Intense pulmonary edema and fibrin is present diffusely throughout the tissues. Some areas demonstrate some type II pneumocyte hyperplasia in alveolar spaces with some debris. Organizing of fibrin along alveolar walls is present. In the liver, pronounced fibrosis of the portal regions which bridge from one portal area to the next is noted. Central vein regions appear to be unaffected but some congestion of the centrilobular region is noted. All other tissues are essentially normal.

### Toxicology

The detected liver copper concentration is high and is consistent with exposure to excessive copper. The clinical significance of this finding needs to be determined in conjunction with other clinical and postmortem findings. Evaluation of dietary copper intake is recommended if this animal is part of a larger group. The other detected liver mineral concentrations are within acceptable ranges for carnalids.

Reporting limit : The lowest routinely quantified concentration of an analyte in a sample. The analyte may be detected, but not quantified, at concentrations below the reporting limit.

#### SELENIUM - TISSUE/OTHER

Animal/Source	Specimen	Specimen Type	Date Tested	Result	Comments
T0702562-01	Champayne	Liver Tissue	11-Oct-2007	0.712	RL=0.020ppm

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**HEAVY METAL SCREEN**

Animal/Source	Specimen	Specimen Type	Date Tested			
T0702562-01	Champayne	Liver Tissue	11-Oct-2007			
Analyte	Result	Units	Rep. Limit	Comments	Reference Range	
Arsenic	Not Detected	PPM	1		<2.0	
Cadmium	Not Detected	ppm	0.3		<1.0	
Copper	223	PPM	0.100		25-100	
Iron	144	PPM	0.2		70-200	
Lead	Not Detected	PPM	1		<2.0	
Manganese	2	PPM	0.04		2.0-4.0	
Mercury	Not Detected	PPM	1		<1.0	
Molybdenum	Not Detected	PPM	0.4		<1.0	
Zinc	33	PPM	0.1		20-90	