

USFWS-Wildlife Health Office carcass body fat evaluation for body condition scoring

*Always take photos of the fat stores so you can review and revise at the end of the necropsy or sampling event.

Kistner et al. 1980 has good photos for fat *quantity* to score “poor”, “fair”, “good” or “excellent”, and this scoring system is statistically validated in Cook et al. 2005. Review this publication carefully before applying the Wildlife Health Office body condition score refinements.

USFWS-Wildlife Health Office also uses fat *quality* to fine-tune the Kistner score:

- High quality fat feels firm, is completely opaque, and is bright white, cream-colored, pale tan or even pinkish tan.
- Fat that is starting to be used (catabolic) is opaque and yellow but still feels mostly firm.
- Fat that is actively being used is semi-opaque, orange and feels semi-gelatinous.
- Fat that has been aggressively used is mostly translucent and feels very gelatinous. If fat stores were never built up much, the color may be completely clear. If fat stores have been nearly depleted, the color may have an orange tint.

This photo-based training packet first describes how to evaluate fat for a single organ, and then continues to describe how to combine and adjust fat scores across multiple organs in the same animal.

Photo #1: Omental fat is abundant in quantity, firm and bright white in quality. Fat has not completely surrounded or covered the abomasum (4th L-shaped stomach in bottom left of the photo), and you can actually see through portions of the omentum to underlying GI, making the omental fat score somewhere between excellent and very good. Pericardial fat is partially visible in this photo below the lungs, and you can see a couple of folds of firm, white fat; however, you can still see partially through the pericardium to the underlying dark purple heart, which makes the pericardial fat score between good and very good, bringing the overall carcass condition score to very good.

Photo #2: Omental fat is not quite as Crisco white as in photo #1, but it literally drapes around the stomach in folds. Without anything to contradict this abundant quantity of cream-colored, firm fat, body condition score is excellent.

Photo #3: Omental fat is still cream-colored to bright white, and there is still a good amount of it, but the width and thickness of the fat bands that create the spider-web like appearance of the omentum just aren't quite as thick as in photos 1 and 2. You can actually see loops of intestine through the omentum in this photo. Omental fat in this photo is good.

Photo #4: Omental fat is still pale tan and opaque, but there isn't very much at all. This animal likely did not start the year out with very good fat stores, and you can see lots of loops of intestines through the fat. The fat texture isn't firm, but is not gelatinous either, so it is semi-firm. This omental fat is in fair plus condition. Be sure to consider pericardial fat, heart fat and kidney fat in a final score for this animal. If those fat stores are lower, the animal would be rated as only in fair condition.

Photo #5: The amount of omental fat in this photo is nearly the same as in photo 4, but it is a bright orange color. The amount suggests a fair plus condition, but the orange color tells you that the fat is being used up. Use the fat stores on the pericardium, heart and kidney to decide whether or not the animal is fair or fair plus.

Photo #6: The omental fat is scant to non-existent in this animal and it is completely gelatinous and nearly transparent. The omental fat score is emaciated to poor. Use the pericardial, heart and kidney fat to finalize, increasing the score to poor if fat stores in these organs is better.

Photo #7: Heart fat in this photo is abundant in quantity, suggesting a very good to excellent score. However, it is orange and has a semi-gelatinous texture. Heart fat score is good to very good condition due to the lower quality, but consider pericardial, renal and omental fat to finalize the overall body condition score.

Photo #8: Heart fat is moderate to abundant, is cream-colored to pale tan and is firm, scoring as very good. Use pericardial, renal and omental fat to finalize.

Photo #9: Kidney fat is laying on the cutting board underneath the kidney, as well as inside the kidney when butterflied. The fat on the cutting board compares to Kistner quantity photo for a 10 point score (“good” with enough volume to cover portions of the kidney), but this fat is semi-to mostly gelatinous and is orange. Kidney fat score is lowered to a fair plus in this case.

Photo #10: This is another photo of a kidney that has been butterflied, zoomed in to see fat texture. This fat looks and feels like a bit of lemon or orange jello inside the kidney, and is mostly transparent such that you can see through the fat to the underlying structure of the organ. This kidney fat is poor, and if no other fat stores are present in the body, overall score would be emaciated.

Photo #11: Pericardial fat in this photo allows you to see through the pericardium in some places to the heart. The fat is good to very good in quantity, and is firm but is yellow in color. The pericardial fat score is good to very good, and final overall body condition score will depend on other fat stores.

Photo #12: This heart is actually in the same animal as the pericardial fat from photo #11. Notice that the heart fat is cream-colored, in moderate to abundant quantity and is firm. The heart fat scores very good in this animal, making the overall body condition score between photos #11 and #12 very good.

Questions? Contact USFWS-Wildlife Health Office at 406-587-2169 or lee_c_jones@fws.gov



Photo # 1

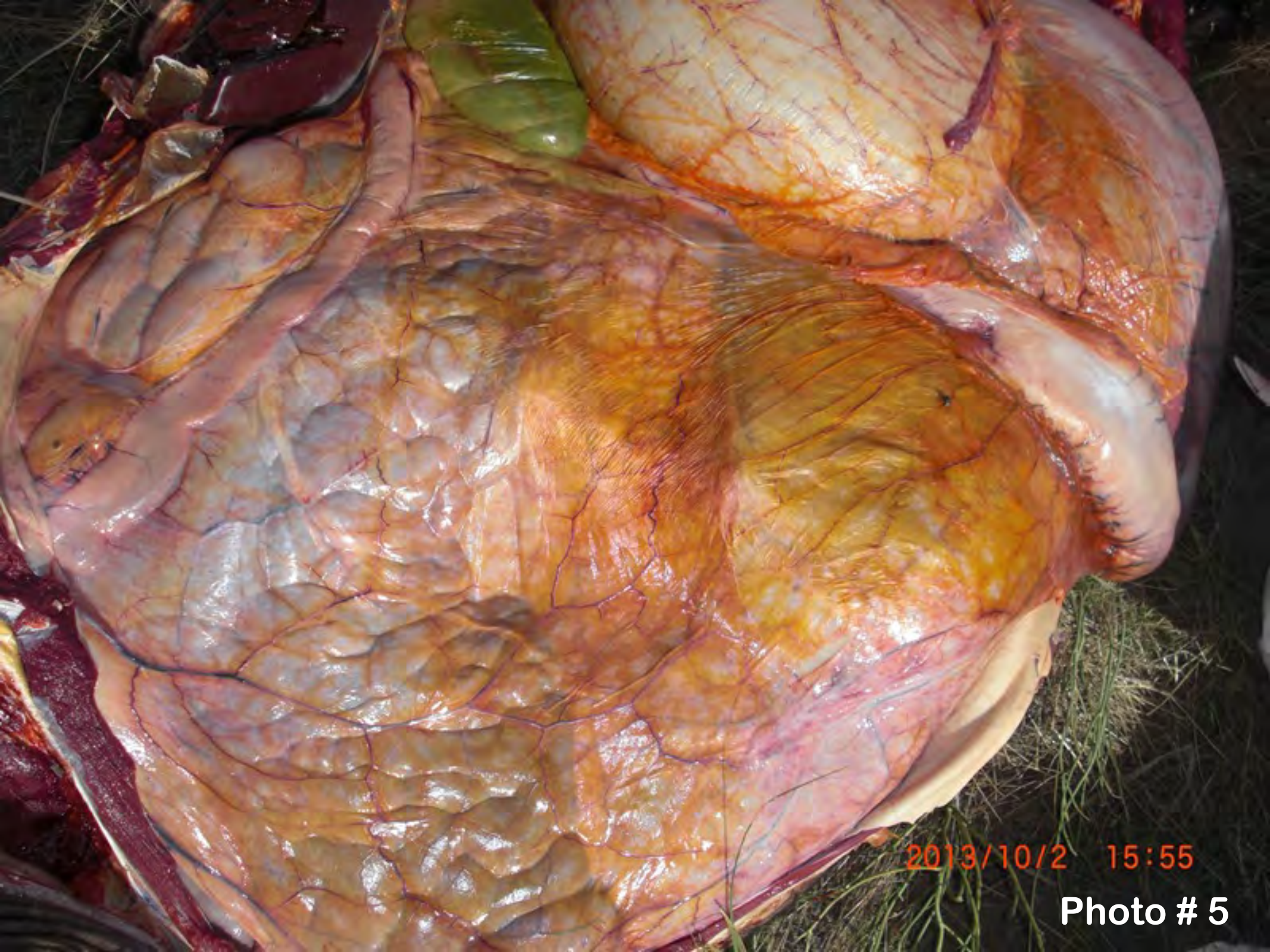


Photo # 2





Photo # 4



2013/10/2 15:55

Photo # 5



Photo # 6

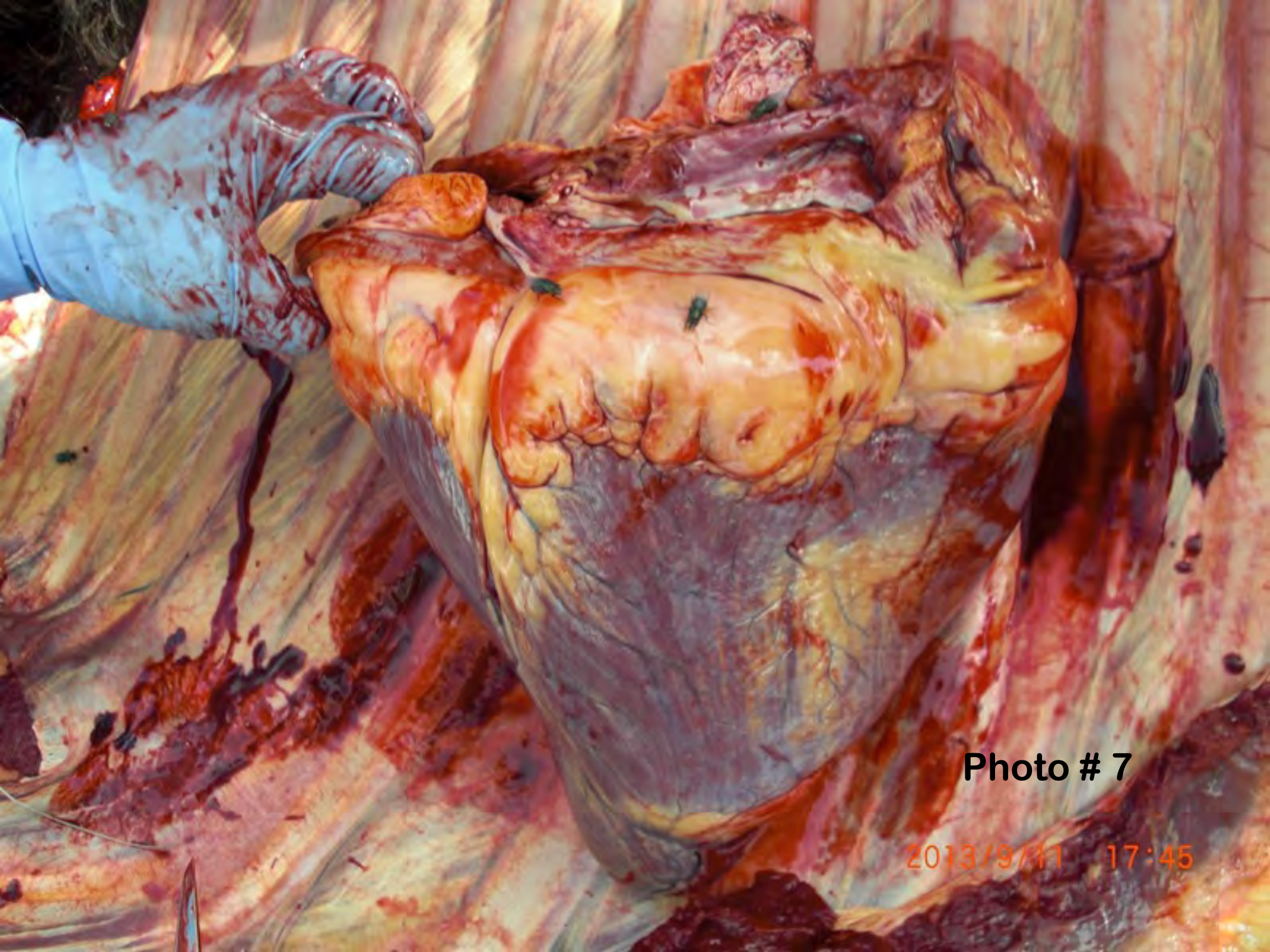
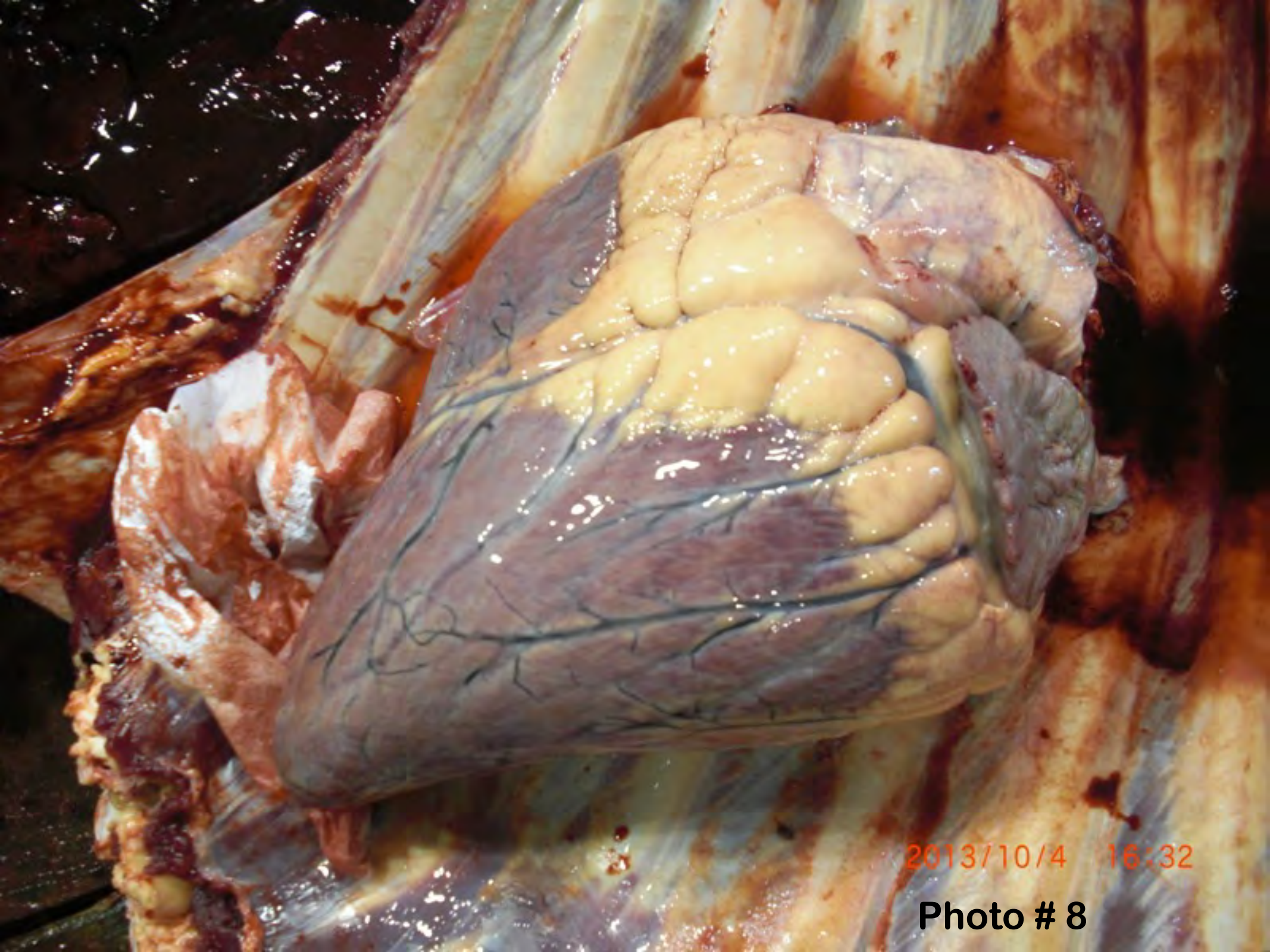


Photo # 7

2013/9/11 17:45



2013/10/4 16:32

Photo # 8



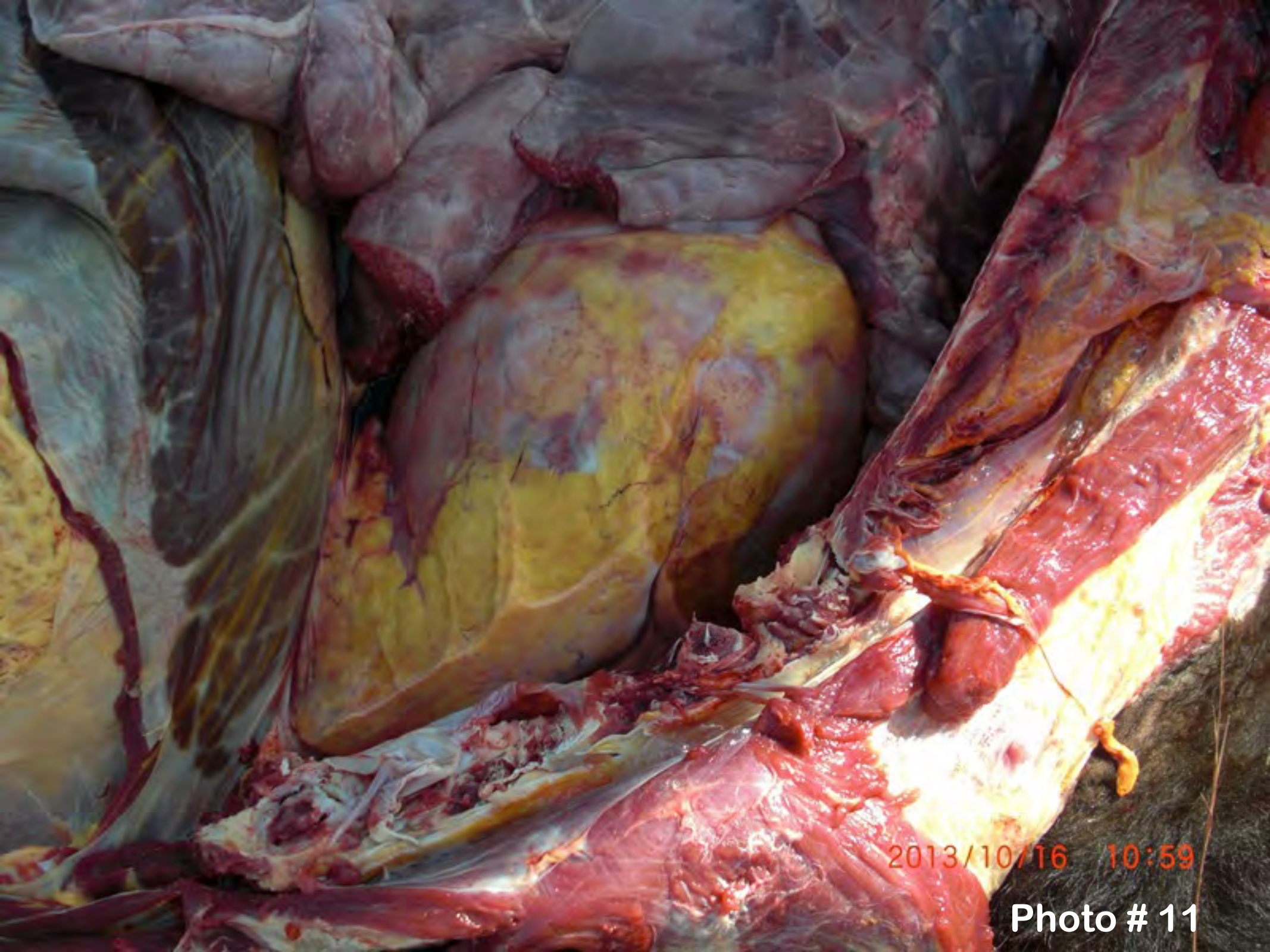
2013/10/4 16:51

Photo # 9



2013/9/18 17:02

Photo # 10



2013/10/16 10:59

Photo # 11

2013/10/16 11:03

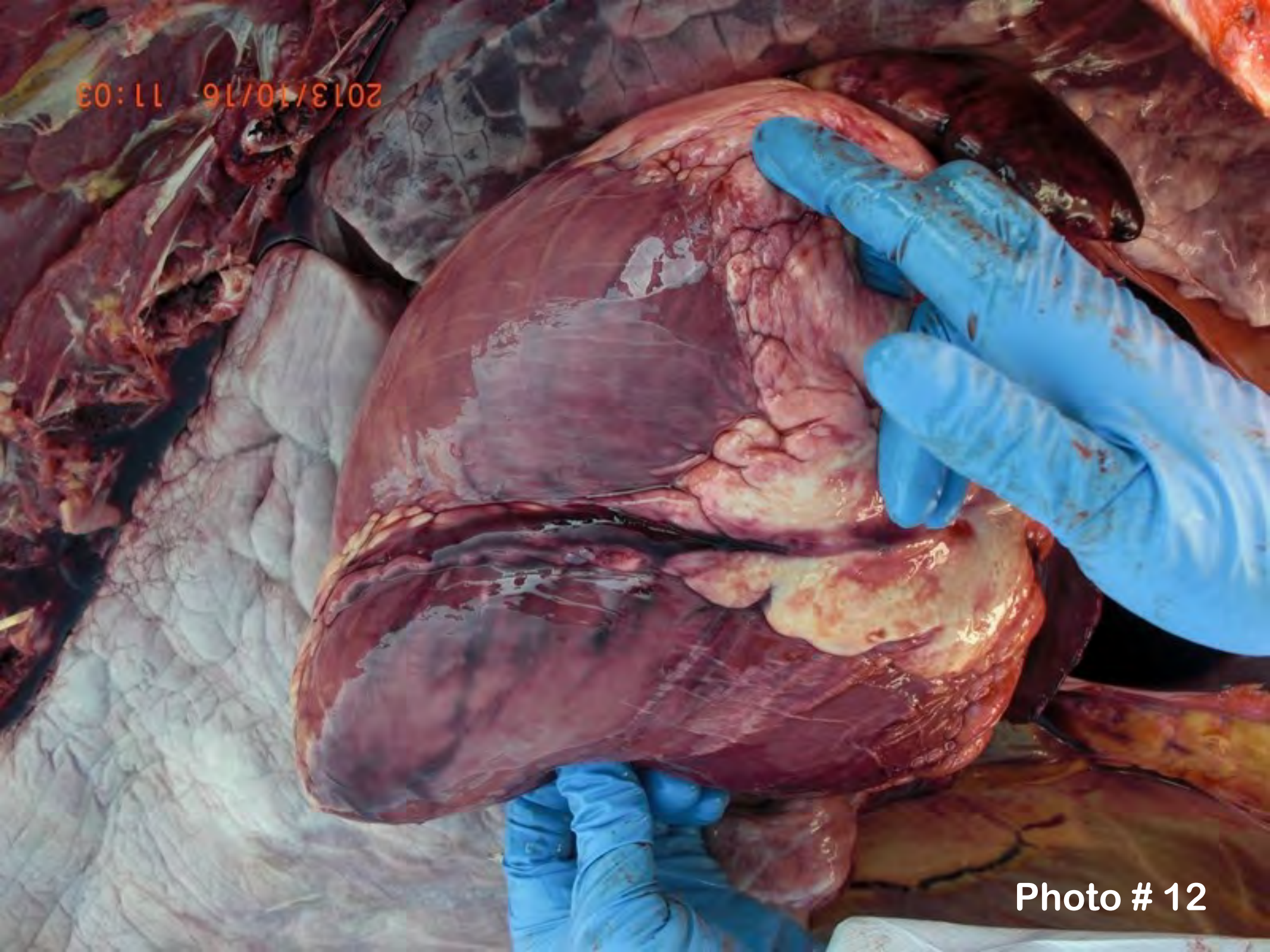


Photo # 12