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June 7, 2019

Robert M. Gibbens, DVM Director, Western Region USDA, APHIS, Animal Care 2150 Centre Ave. Bldg B Mailstop 3W11 Fort Collins, CO 80526

RE: 35-R-003 Site 008 Response to the Routine Inspection on 09-APR-2019

Dear Dr. Gibbens:

In compliance set forth by your office with reference to the inspection conducted at the facility on April 9, 2019, the following findings and corrective actions are listed below:

2.31(c)(7)

INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE (IACUC).

In a protocol involving pigs that was approved by the IACUC, the Principal Investigator described the treatment of 40 sites with a dermal resurfacing procedure on the dorsal area (back) and included a diagram of these location of these sites. The study was conducted on one pig with a total of 72 sites, split between left and right areas of the back and sides. While the treatment sites were described as smaller than those originally in the protocol, the study was not conducted according to the approved protocol.

By not following the approved protocol, a research animal may experience greater pain or distress than was justified to or approved by the IACUC.

A Principal Investigator must submit all proposed modifications to the protocol and the IACUC must review and approve such modifications prior to their implementation.

Correct by: This date forward.

Covance Response – Deviation was issued to document the extra treatment sites. The reason for this change in treatment sites was to create a larger sample size to test the various compounds in several body locations to attempt to minimize the variability seen in the initial study which seemed to correlate with different locations on the animal. The AV recognizes

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a potential impact on pain or distress is possible in this case. However, the Veterinary staff and the PI agreed to an aggressive pre-emptive and post-procedural pain management consisting of both NSAID (Carprofen) and opioid therapy (Buprenorphine) in the original protocol. This included elevated doses and frequency of each with the provision to increase as deemed necessary by veterinary staff. In evaluating the therapy for the alleviation for pain as it relates to the increase in test sites, the veterinary staff would not have adjusted the pain management in this case. Based on observation for the single animal outlined, this was not necessary as this animal displayed no signs of pain or discomfort over the time on study.

2.31(d)(1)

INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE (IACUC).

In a holding protocol involving pigs that were approved by the IACUC, the Principal Investigator indicated that there were procedures that were classified as potentially causing pain or distress that was to be relieved. However, these procedures were not fully described in the protocol and the Principal Investigator did not adequately assure that there were no suitable alternatives, as the literature search did not include any of these terms in the search.

Without a full description of the procedures and an adequate consideration of alternatives for these procedures by the Principal Investigator, neither the IACUC nor the Principal Investigator can assure that pain or distress will be minimized.

The referenced protocol must be revised to include a full description of these procedures and include a relevant consideration of alternatives to procedures that potentially any cause pain or distress. All other protocols that have been approved by the IACUC and any future protocols prior to approval must also contain this information.

Correct by: This date forward for future protocols or prior to use of any previously-approved protocols.

Covance Response – An amendment is issued to address the finding. All pre-study procedures which may be classified as a category "D" will be addressed in the study specific protocol, not the animal holding protocol. The updated amendment will include non-invasive procedures such as ultrasound or blood collection only in addition to housing.

Furthermore, the above responses were discussed with the IACUC during the convened meeting.

