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MAILMAN SCHOOL OF PUBLIC HEALTH
Columbia University

Department of Health Policy & Management
600 West 168th Street – 6th Floor
New York, NY 10032
jms13@columbia.edu

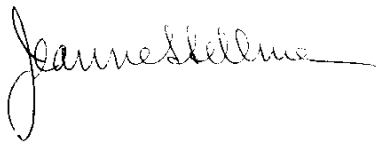
November 29, 2013

Brigadier General Allison Hickey, USAF (retired)
Undersecretary for Benefits
Department of Veterans Affairs
810 Vermont Avenue, NW
Washington, DC 20420

Dear Secretary Hickey,

I am pleased to transmit the attached letter on behalf of myself and colleagues who are concerned about the scientific basis for recent Department of Veterans Affairs decisions with regard to veteran exposure to military herbicides used in Vietnam. We have taken the liberty of providing copies of this correspondence to Congressional representatives. I am acting as the corresponding author for this transmittal.

Respectfully,



Jeanne Mager Stellman, PhD
Professor Emerita & Special Lecturer

cc
Senator Patty Murray, Chairman, Senate Veterans' Affairs Committee
Senator Richard Burr, Ranking Member, Senate Veterans' Affairs Committee
Representative Jeff Miller, Chairman, House Veterans' Affairs Committee
Representative Bob Filner, Ranking Member, House Veterans' Affairs Committee

November 29, 2013

Brigadier General Allison Hickey USAF (retired)
Undersecretary for Benefits
Department of Veterans Affairs
810 Vermont Avenue, NW
Washington, DC 20420

Dear Secretary Hickey,

We have been asked by Major Wesley T. Carter USAF (retired) to comment on the October 12 letter in which you state that "VA is unable to extend the presumption of Agent Orange exposure to crew members of post-Vietnam C-123s or acknowledge Agent Orange-related disabilities as a result of this service." You based this statement on information provided to you by the VA Office of Public Health. We have carefully examined that Office's "Scientific Review of Agent Orange in C-123 Aircraft,"[1] and find it seriously flawed. We feel obliged to point out the scientific shortcomings in the VA appraisal and hope that you take our comments into consideration in any future decision-making with respect to post-Vietnam exposures in the C-123s.

In your letter you state that "the potential for exposure to dioxin from flying or working in contaminated C-123 aircraft years after use in Vietnam, is unlikely to have occurred at levels that could affect health" and you base your statement on the VA Public Health Office conclusion that any dioxin present would be "biologically unavailable." Unfortunately, the Public Health Office, in turn, bases its conclusion on several erroneous assumptions about routes of entry of dioxin to the body, as well as other scientific misapprehensions.

The VA seems to dismiss skin absorption ("the skin would act as a barrier prohibiting further penetration of TCDD"). This is incorrect. Skin absorption is a primary occupational route of exposure for dioxin-contaminated pesticides. Both the Air Force and Army technical assessments use a dermal absorption model,[2][3] as do numerous other agencies and authorities. When the Air Force applied its skin absorption model to a 2009 assessment of contamination of the C-123s prior to their disposal, it found average concentrations in two of the aircraft to be "statistically near the risk-based screening level for dioxins/furans, based on a one-year industrial exposure scenario" (page 20). (A one-year industrial exposure scenario is probably reasonable for C-123 crew and maintenance personnel in the 1970's.) Please note that these measurements were taken nearly 40 years after spraying ended, and certainly represent a lower level than would have been present in the 1970s.

The levels measured in another Air Force assessment of the C-123s, in 1994,[4] were significantly in excess of the screening levels proposed by the Army for office workers. The Army office worker exposure scenario provides for far less opportunity for dermal contact than would have been likely for C-123 crew and maintenance personnel. Even with this very conservative exposure model, officials from ATSDR calculated "an average value of 6.36 ng/l00cm^2 for the three C-123 interior wipe samples collected on November 20, 1994", an average value that "exceeds the Army screening level by 182 times and is equivalent to a 200-fold greater cancer-risk than the screening value."[5] The 2009 Air Force reference levels would similarly have been exceeded.

There are additional difficulties with the VA's scientific appraisal. For example, the VA proposes, "Once TCDD dries on hard surfaces, such as on an aircraft, it does not readily cross through human skin." By contrast, Army technical guidance is specifically formulated for dioxin that is characterized as "dried-on surface" (p. 63). The VA minimizes the possibility of skin absorption "especially given that the sampling for TCDD on the aircraft surfaces required use of a solvent (hexane) to displace and dissolve any residue." Hexane-based wipe sampling is standard procedure. The VA seems to deride the notion of occupational exposure because "sophisticated laboratory techniques many years after its use" were used to detect dioxin. Dioxin is a tricky substance to measure and *only* expensive and sophisticated techniques are available for its detection.

We also think it important to note, as you do in your letter, "the 1991 Agent Orange Act ... provides a presumption of *herbicide* exposure" (emphasis added). This means exposure to 2,4,5-T, 2,4-D, picloram and dimethyl arsenic acid (another carcinogen), not just the notorious Agent Orange contaminant, TCDD (dioxin), are covered by the Act. Airborne phenoxyherbicides were measured in air samples taken in the C-123 aircraft in 1979, albeit at levels below

the occupational exposure limits.[6] It is difficult to extrapolate exposure levels back to 1972 because of an absence of data on applicable environmental temperatures and pressures, but it should be noted that there exists the likelihood of exposures to multiple environmental toxins in the C-123s, in addition to dioxin, and such multiple exposures generally require application of more conservative scenarios.

We hope that this letter may assist you in reconsidering your conclusion with regard to presumption of herbicide exposure for post-war C-123 crew and maintenance personnel. We would be particularly interested in learning the specific criteria used for determining that exposures to the dioxins were "unlikely to have occurred at levels that could affect health," since screening levels appear to have been exceeded and no safe level of dioxin exposure has as yet been agreed upon by regulatory authorities.

Please let us know if we may be of further assistance to you in your considerations.

Sincerely,

[SIGNATORY LIST ATTACHED]

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[1] http://www.publichealth.va.gov/exposures/agentorange/scientific-review-residue-c123.asp

[2]"Dioxin and Herbicide Characterization of UC-123K Aircraft – Phase I." Prepared for Director of Operations, 505 Aircraft Sustainment Squadron and Hazardous Waste Program Manager, 75CEG/CEVC, Hill AFB, UT (prepared by Select Engineering Services, Layton, UT); 2009.(http://foundationforworkerhealth.wikischolars.columbia.edu/file/view/Reference+2_Hill+AFB_2009.pdf)

[3]Technical Guide 312 -Health Risk Assessment Methods and Screening Levels for Evaluating Office Worker Exposures to Contaminants on Indoor Surfaces Using Surface Wipe Data (June 2009). (http://foundationforworkerhealth.wikischolars.columbia.edu/file/view/Reference+3_TG+312+%28Health+Risk+Assessment+Methods+and+Screening+Levels+for+Evaluating+Office+Worker+Exposures.pdf)

[4]Consultative Letter from Capt Wade Weisman & Ronald Porter; Department of Air Force Armstrong Laboratory Memorandum FOR 645 MedGrp/SGB Dated 19 Dec 94. (http://foundationforworkerhealth.wikischolars.columbia.edu/file/view/reference+4_Weisman_Porter_1994.pdf)

[5] Letter from Thomas Sinks, PhD, Deputy Director ATSDR to Maj. Wesley Carter (ret), Jan. 25, 2012. (http://foundationforworkerhealth.wikischolars.columbia.edu/file/view/reference+5_ATSDR+Letter+25+Jan+12.pdf)

[6]Conway, William, September 1979, Aircraft Sampling Westover AFB, MA, USAF OEHL Technical Report 79-59. (http://foundationforworkerhealth.wikischolars.columbia.edu/file/view/reference+6_Conway_1979.pdf)