DA NANG HARBOR EXPOSURE ANALYSIS

Introduction

There has never been a need to look into the various mechanisms of Agent Orange exposure anywhere in Vietnam, at any level of detail, for purposes of VA disability benefits for medical care and compensation. Because all veterans within all areas of Vietnam are given presumption of exposure to herbicide, a disability claim for herbicide exposure does not need to determine how exposure occurred or to look for further information regarding the conditions of the environment. If the veteran was in Vietnam, and they are later diagnosed with any of several serious medical conditions, they are 'automatically eligible' for those benefits. The single exception to that rule is for members of the Blue Water Navy who served within the ports and harbors and offshore Vietnam throughout the Theater of Combat.

In 2002, 11 years after the Agent Orange Act of 1991 was passed to provide presumption of exposure and the associated VA disability benefits to all Vietnam veterans of both land and sea, the VA changed a critical definition. They declared that Vietnam veterans were only those veterans who stood on the Mainland of Vietnam. They announced that any veteran who did not have boots-on-ground was not a Vietnam veteran as that term was used in the Agent Orange Act of 1991. Consequently, all veterans of any branch of service that provided direct combat or combat support from offshore, and who are later diagnosed with any of Agent Orange-associated medical conditions, are not eligible for the medical care and compensation given to veterans with boots-on-ground.

But if one were to look into details that describe the local environment of Da Nang during the Vietnam War, there is extremely compelling evidence, taken directly from primary source materials, that the unique toxic environment of that location reveals the need for a special examination of herbicide exposure claims, regardless of other categorizations or restrictions imposed by the VA. An examination into this detail has rarely if ever been done and it clearly shows how the current definitions of herbicide exposure are absolutely wrong when applied to the conditions in Da Nang Harbor.

There are a large number of ship-born veterans who are suffering and dying from the diseases that are acknowledged by the VA to be caused by exposure to Agent Orange. Blue Water Navy veteran exposure could have been caused by spray drift or airborne particle inhalation or by toxic water ingestion that occurred while their ships were on battle stations offshore Vietnam. Or their exposure could have come by whatever mysterious and unnamed means that Congress has already acknowledged to exist within the exception granted to offshore personnel under 38 CFR 3.313 for Non-Hodgkin's Lymphoma (NHL). But the one key thing these veterans nearly all have in common is that they were in Da Nang Harbor at some point in time, and did not have their boots-on-ground in Da Nang.

This analysis of the Da Nang area, encompassing the local hamlets, the Da Nang Airbase and the harbor itself, presents a picture of extremely heavy toxin migration, with airborne gases available for inhalation and skin absorption, in addition to the generally acknowledged presence of the herbicide following aerial spraying and aircraft release, and other types of dispersion. This documentation clearly shows it is at least as likely as not that all personnel that entered the harbor were potentially exposed to Agent Orange. And a potential of exposure is all that is necessary under the rules of presumption. But the type of exposure described in this report is also Direct Exposure, with the conditions of the harbor and the presence of toxic vapors a real and actual exposure, where no presumption is needed.

This analysis does not attempt address the scientific interests and evidence that would be useful to a quantitative analysis. The details provided here cannot be used to make inferences regarding any specific amount of toxins that were present in the Da Nang Harbor area. There are no definitive measurements given to the presence of herbicide. Those measurements were never made at the time and all chances to gather that data have passed. Rather, this is a look into the actual exposure that Blue Water Navy personnel experienced during a visit to Da Nang Harbor. It explores the concept of ‘presumptive exposure’ which has been applied in an inconsistent, unbalanced and prejudicial manner to Blue Water Navy veterans relative to how it is applied to veterans with boots-on-ground. The concept of presumption allows us to deal with data that are quite different than those of an epidemiological study. But with presumption, we are dealing in the realm of probability and possibility. Presumption is given because there was a likelihood of exposure without a requirement in measurable exposure limits. With direct exposure, one needs to show the actual presence of an herbicide, which is exactly what the written reports do when describing the environmental issues in and around Da Nang. There was herbicide in the air, and it was actually killing the local vegetation, but not by spraying. The toxins were so heavy in the air that the trees and other vegetation were dying. And this is directly documented by observation at the time. This primary source data should meet the requirement of direct exposure.

There is no "least amount of time" for awarding a disability claim under herbicide exposure in Vietnam. There is no "least amount" in quantity that defines exposure in any instance. In the case of TCDD/Dioxin, which was the toxic element in Agent Orange, there is actually no known "minimal" amount that a human body can safely tolerate, so exposure to a greater or lesser degree is not relevant for that specific toxin. Any amount, down to the single part per billion, can cause adverse health effects if that single particle attaches to just the right cell.

I. The Lack of Understanding

There is a rather common concept that Blue Water Navy veterans see in the explanations that accompany their denied claim for disability caused by Agent Orange exposure. This concept essentially states that, for example:

"There is no historical evidence of extensive Agent Orange aerial spraying in the Da Nang area, so the potential for Agent Orange exposure was minimal. See VA Adjudication Procedure Manual M21Â·1, pt. IV, subpt. ii, ch. 2, Â§ C.3.m. "

We will be using this statement from an actual BVA denial as an "example statement" to review the short-comings of a typical Blue Water Navy claim denial for exposure to herbicide while in Da Nang Harbor. Our challenge to this type of statement lies in four points:

1. This statement lacks a general knowledge of historical evidence.
2. This lacks specific knowledge of aerial spraying (and other methods of dispersion) in the Da Nang area.
3. This shows a misunderstanding of the basic tenants of presumptive vs direct exposure.
4. This references what I consider to be illegal addition to the M21-1 Manual of Feb. 5, 2016.

Such statements reflect serious misunderstandings regarding the history and use of Agent Orange in Vietnam that need to be addressed. These errors have persisted for decades and continue to live on as urban myth within the VA, VBA and BVA systems. Claim denials must be based on knowledge of the subject matter to support the decision. Merely repeating what is thought to be generally understood or what is directed to be said by others does not demonstrate that a rater or law judge understands the details involved in the usage, application and consequences of herbicide application in and around Da Nang or Da Nang Harbor. The rulings instead rely upon a 'boilerplate description of conditions in Vietnam' that has taken on the mantle of common knowledge. The example statement appears to be a boilerplate rationale that has become a mindless set of words that has never been challenged. That challenge is presented here.

These types of concepts deserve specific investigation in light of our evolving understanding of where and how herbicides were handled in Vietnam. The reported health conditions of the veteran deserve a fair assessment under the microscope of specific medical and scientific facts. Rather than succumbing to the trite and overused statements that reflect a biased treatment of Blue Water Navy claims for herbicide exposure, the information in this analysis offers a refutation and correction of these misunderstandings. The referenced example statement suggests that *"extensive Agent Orange aerial spraying"* is required for exposure, and if there was none, then (ergo) the veteran couldn't have been exposed to herbicides. Nothing could be further from the truth. We need to examine this statement as it specifically applies a veteran who was on board a ship tied to a pier or anchored in Da Nang Harbor.

Including a requirement for extensive aerial spraying to show a veteran's exposure to herbicide is a conceptual error. The presence of Agent Orange and its contaminant TCDD dioxin [1], no matter how it arrived at any location, posed a serious danger by means of three modes of exposure, as reported by the Air Force to the Department of Defense: absorption (in liquid or gas form) through unbroken skin, oral ingestion, and inhalation. (More details on this are provided later). Da Nang, Vietnam has proven to be a place where extremely heavy and extensive presence of Agent Orange/dioxin existed during the War years. In Da Nang Harbor itself, the danger of Agent Orange exposure did not come from aerial spraying alone and the presence of the herbicide was abundantly available through other methods that became part of the persistent toxins within the local environment.

Not only are there reports of aerial spraying in the Da Nang area, but:

- there is documentation of spraying directly onto the harbor water;
- there is documentation of long-term problems of spray equipment leakage onto the Harbor water as take-offs and landing routed the Ranch Hand planes over the entire 10-plus miles of the Harbor length;
- there is documentation of purposeful dumping of herbicide by the Air Force in the near-shore waters during emergency aborting of missions;
- there is documentation of dumping and rinsing of "not-empty barrels" in the harbor water;
- there was drainage of two rivers that brought in herbicide from areas further inland feeding directly into the harbor;
- there is the problem of herbicide on the harbor's bottom sediment being brought back up to the surface by the churning of water in the harbor.

II. Ranch Hand Operations

The Ranch Hand herbicide aerial spray project was carried out by the Air Force from their base of operations on the Da Nang Airbase at the north end of the runway, which was less than a mile from the harbor. Ranch Hand operations required daily wash-downs of the runway where the herbicide was mixed with fuel oil and the planes were loaded. Because of that, the undeveloped open area just off the north runway was later deemed to be one of the most highly dioxin-polluted areas in the entire country of Vietnam. This proclamation was first made nearly 30 years after the end of the War and after the last Ranch Hand spray flight took off from that location. That open area of the Da Nang Airbase was found, in 2009, to be more than 360 times higher than the internationally-recognized tolerance level for TCDD [2]. If that level of contamination existed in 2009, the level of pollution the Da Nang area experienced 50 years earlier must have been orders of magnitude higher. That exact area just off the north end of the runway is the location for the current extensive soil remediation project, which began in August, 2012, and is being carried out as a joint project of The Vietnamese Ministry of National Defense (MND) and the United States Agency for International Development (USAID). That activity is ongoing and just beginning its second phase of a two-phased project (as of December, 2016) [3].

The "Da Nang Harbor Report" [4] is a detailed investigation that presents a clear picture of Da Nang during the war years using only primary source documentation. It is an extensive presentation of historical notes and observations from individuals who were on-site in Vietnam between 1962 and 1975. Additionally, in a rare moment of common sense, the Institute of Medicine (IOM) discussed the general concept that 'if something is still contaminated now, there is no question of its prior contamination' when it presented the C-123 aircraft contamination report [5]. Both of these documents are incorporated by reference as evidence for the instant case.

To state that "extensive spraying" would be required for any level of "exposure potential" is to miss the point of how persistent some of the components of Agent Orange were and are. And this misunderstanding results in a further error regarding the extent of exposure that was experienced in both Da Nang Harbor and Da Nang City, where there are well-established records of extreme herbicide pollution such as "the [1969] Da Nang defoliation incident" [6] that actually occurred

over a period of several years. This incident of the destructive effects of herbicide vapors is also discussed in "The Da Nang Harbor Report." Missing this important historical fact leads to further misunderstanding of potential vs. direct exposure.

The closing portion of the erroneous hypothetical statement (*"So [as a result], the potential for Agent Orange exposure was minimal"*) is often presented as if it was a consequence solely of "aerial spraying", and thus it is logically as well as factually flawed. Confusion with the consequences of a potential "minimal" exposure as a different type of exposure than a potential "total and maximum" exposure is a misrepresentation of scientific and medical fact as well as a misapplication of the established principle of "presumption." Exposure is exposure, and the potential of minimal exposure harming ones health is equally concerning as is the potential of maximum exposure. The operative word is "potential," irrelevant of a greater or lesser degree of dosage or however a 'minimum and maximum' is perceived. There should be no distinction between "minimal and maximal" exposure. Without even knowing specific measurements, we still know that an extremely small amount of TCDD, absorbed by just the wrong cell, could result in catastrophic consequences. And just like any kind of 'bad luck,' bets of being able to beat the odds are too often lost. If there was an acknowledgment of "minimal exposure," there was actual, direct exposure sufficient to be a probable cause of later health effects.

Since it is the contention of many claim denials that a veteran had "minimal exposure" while in Da Nang Harbor, then that veteran should still be eligible for full benefits under direct exposure, to say nothing of the obvious presumption of exposure. Under the rules of presumption, all that is required is "the existence of a potential for exposure." Whether that exposure was minimal or otherwise is irrelevant. The mere possibility of exposure of any type, to any degree, for any length of time, satisfies the requirement for 'presumptive exposure.' Therefore, a ruling of "minimal exposure" should clearly establish the veteran's eligibility for an award for presumption of exposure. But since there is an admission of exposure, however minimal, the requirements of direct exposure have also been satisfied.

III. **TCDD/Dioxin In The Environment**

The spraying of herbicide took only moments; the residuals on the ground, in the air, in the water and elsewhere throughout the environment provided the various methods of exposure that have literally lasted decades. In September, 1979, the Department of Defense requested the Air Force to provide them with "criteria for exposure determinations" as a means "to satisfy a request of the Veterans Administration Advisory Committee on health-related effects of herbicide."

It is important to note that this 1979 Report contains a statement identical to what the IOM said in its 2011 Report for the VA entitled "Blue Water Navy Vietnam Veterans and Agent Orange Exposure."

"Since there were no routine occupational or environmental sampling programs associated with the handling or dissemination of the herbicides in South Vietnam, a quantitative determination of exposure can only be subject to speculation." [7]

So it was known beforehand that the IOM Study request for Blue Wter Navy Exposure cound never provide hard, quantitative results. The answer provided to the DoD by the Air Force read as follows:

"The exposure of personnel could have occurred by essentially three routes:

1. *Percutaneous absorption and inhalation of vapors/aerosols by direct exposure to sprays.*
2. *Percutaneous absorption and inhalation of vapors by exposure to treated areas following spray application, and*
3. *Ingestion of foods contaminated with the material.* [8]

Percutaneous absorption of the liquids/vapors/aerosols is absorption through unbroken, healthy skin. This method, along with inhalation of the toxic vapors, appears as two of the three methods of exposure and it can occur when dioxin is in the liquid or gaseous state. Additionally, we must assume "ingestion of foods" includes ingestion of any other contaminated matter including licking contaminated fingers as well as fine dirt blown by wind and harbor water spray that was swallowed after licking one's lips while standing on a deck or the forecastle of a ship.

This report, which points out a massive DoD oversight in the tracking of the herbicide dispersion program, had no negative impact on veterans with boots on ground for receiving VA benefits when it was made back in 1979 and it should not be allowed to negatively impact Blue Water Navy veterans today! However, that is not the way the VA has written their rules. The current instructions in the M21 Adjudications Manual authorize the following actions:

1. Veterans with boots on ground have no proof of their exposure. However, they should be given the presumption of exposure and provided all benefits when they present with a dioxin-related disease.
2. Veterans without boots on ground have no proof of their exposure. Therefore, they should not be given the presumption of exposure and should be denied all benefits when they present with a dioxin-related disease.

IV. A World of Constant Change

Dermal exposure to both liquid and vapor was possible after the aerial spraying; ingestion was possible after the spraying; inhalation of vapors was possible after the spraying. It is important to note that not a single location that was aerially (or otherwise) sprayed within the confines of Vietnam (or elsewhere) never remained static, because they were shedding their herbicidal content into the environment as a continuous chemical reaction. The result of this was, in many cases, that veterans did not have to be in, near or even visit an area that had been sprayed to become exposed; the contamination came to the veteran via transport through several methods within the environment! With a strong rebuke aimed at Alvin Young and his unfounded and unrealistic notions, a recent IOM Report emphasized the fact that the dioxin content in the herbicide continuously moved around:

"The committee notes emphatically: it is now accepted in the field of exposure science that the physicochemical properties of semi-volatile organic compounds (SVOCs) like TCDD keep them in

dynamic flux toward equilibrium [in enclosed spaces] among the various phases present (liquid, gas in air, airborne particles, dust on surfaces, residues or films on surfaces.) [9]"

This 'dynamic flux' (constantly changing condition) refers to a physicochemical property that is continuously sluffing off molecules into the air, in open spaces as well as enclosed spaces. And this change in condition did not occur over a matter of hours or days, but over a time-span of years and decades. It is a property of the TCDD molecules, not the initial physical location of the molecules, that creates the tremendous expansion outward and enlarging of the area of potential as well as direct exposure. It describes the activity of vapor migration no matter where the TCDD is, including floating on water or blowing around as particulate matter in the air or confined as dirt, dust and grime in a piece of military equipment.

At least some herbicide spillage that was hosed off the tarmac by Ranch Hand crews in Da Nang went straight to the harbor via a dedicated drainage ditch, as is testified to by a Navy Seabee who tells of a time when he was put in charge of cleaning out the ditch to keep it flowing from the north end of the airbase runway directly into the Harbor [10] . Any portion of the rinse-off that did not make it into the ditch to the harbor soaked into the ground and dried into contaminated dirt. It was contaminated dirt in 1965 and it was contaminated dirt in 2009. In the Da Nang area, the blowing dust from the area off the north runway was a huge exposure potential for at least 50 years! When the remediation crews began excavating the dirt area at the north end of the runway in 2012, respiratory masks and full-body hazmat suits were required of anyone on or near the job site [11]. But none of this protection was required, or even available, in the 1960s and 70s to keep individuals safe from the contaminated dust blowing around the Da Nang Airfield, to say nothing of every other random site where Herbicide Orange, or any other color, was ever released!

This photos show the extreme importance that the remediation workers wear air filter masks and hazmat suits while working with the dirt off the north runway at the Da Nang Airfield. Typical of toxic site remediation work such as was done at the Da Nang Airfield, workers are cautioned against inhaling any of the contaminated dirt and dust that gets kicked up or letting it contact their skin. Here we see workers wearing protective breathing and clothing apparatus. These workers in 2012 are required to wear full Haz-mat and respiratory protection as they work in the area just off the north end of the runway of what was once the Da Nang Airbase. Any contact with contaminated dirt or dust would result in certain potential for exposure to the cancer-causing herbicide that soaked into the ground almost 40 years earlier. If that exposure potential existed in 2012, how could anyone expect to have been protected from that potential of exposure in the years between 1962 and 1975, when the act of polluting that soil was underway?

This precaution would have been even more important during the 1960s and 1970s (and for all the years intervening) when the toxicity of the dirt and dust at the hot spots in Vietnam was far higher than they are today, and were much closer to the surface. Unfortunately, no one warned the military and civilian population because the danger of dioxin was not acknowledged in the 1960s and 70s.

Because of the large amounts of the herbicide that entered the harbor from Ranch Hand run-off, the chance that there was always fresh herbicide floating on a at least a portion of the water's

surface within Da Nang Harbor, attached to floating organic materials and oil slicks that were ever-present throughout the harbor, was high. Any ship that anchored in the Harbor or tied to a pier in Da Nang Harbor had the potential of being surrounded by floating herbicide that was constantly migrating into the air. The sailors on board ships were consequently surrounded by, and essentially imprisoned in, an area where simply breathing in the air or being out on deck with exposed skin was a danger unless they were provided with some respiratory and skin protection. None of them were because the danger was not even imagined at the time. The Navy did not possess such large quantities of respiratory gear for crew members even if it had been known. In addition, the herbicide vapors exposed the sailors to absorption through the skin, without the need to have inhaled those molecules. Because no measurements were ever taken, we will never be able to say to just what degree this danger existed and at what limits this danger might have been measured. But the mere existence of that potential should make every veteran who was located in and around Da Nang and who ever visited Da Nang Harbor eligible for presumption of exposure. And the evidence that there was in fact vapor in the environment strong enough to kill large trees indicates the existence of components required to claim direct exposure.

Here is a quick review of many of the avenues by which the herbicides could have had a physical presence in Da Nang Harbor:

1. the continuous runoff from the drainage ditch into the Harbor;
2. herbicides leaking from the spray booms of up to 4 aircraft per day every day for 11 years, passing over the entire 10+ mile length of the harbor at takeoff and/or landing;
3. runoff from the two rivers that empty into the harbor from areas sprayed further upstream and inland;
4. the rinsing of the barrels by the indigenous population to clear out “two to three gallons” of herbicide from at least some of the barrels in preparation for crafting;
5. hand spraying in the Tien Shaw Naval Activities Center and other areas around the edges of the harbor;
6. open-spray crossing of Ranch Hand planes over the harbor when spraying Monkey Mountain and the hillsides to the north [12];
7. runoff from Monkey Mountain and the hill to the harbor's north being washed back into the harbor;
8. herbicide from all the above sources having eventually sunk to the bottom of the harbor but then being brought back up anew to or very near the surface by the continuous stirrings of anchors and anchor chains being dropped and weighed; by the cavitation of ship propellers as they ran at varying speeds churning up the bottom; and generally from the continuous movement of ships in and out of the harbor, including hundreds of pole-driven sampans and fishing boats disturbing the bottom while moving within the harbor every day.

It is obvious that, on a typical day, there were at least these multiple sources replenishing fresh herbicide onto the harbor water. The chances of making it in or out of the harbor via surface travel without breathing contaminated air, or experiencing contact with bare skin, or being

splashed by the Harbor water are pretty slim under these circumstances, making it at least as likely as not that a visit to the harbor meant an undeniable probability of exposure.

This tends to place all servicemen and women as well as all civilians in and around Da Nang at risk for exposure to herbicide. That was in fact the case and that is exactly why all service members who were in and around Da Nang including in the area of the docks are currently assumed to have been exposure to the herbicide Agent Orange. Everyone, that is, except sailors of the Blue Water Navy who stayed on the water within a few feet of the land.

This is not saying that every individual actually experienced a reaction to their exposure. The human body has a number of defenses against exposures to toxins and the personal reactions to that exposure are countless. Each individual will respond differently to this attack on their system. Strong immune systems can fight off invasions of the worst type of chemicals or other pathogens. Weaker immune systems or open wounds would guarantee direct exposure.

The best way to define "exposure" is: being in the presence of something harmful or dangerous. A factor that plays heavily into this specific situation is that the dioxin component of Agent Orange that enters the body is known to lodge itself in the fatty tissues, usually those around the liver, and possibly lay dormant for at least 30 years or more before re-presenting itself to the body's internal operations. At that point, it is possible once again to fend off the harmful effects that can result. Additionally, the type of disease or cancer that dioxin is likely to cause may itself have a very slow development within a particular body. So, there is the fact that each individual will respond differently to this attack on their system. A body being affected by a disease from Agent Orange might die a natural death before ever discovering that a disease process was active and growing within their body.

So, it is not true that every individual who entered Da Nang Harbor or was around Da Nang city will get one of the diseases recognized to be associated with Agent Orange. But it is true that every one of those individuals was exposed to Agent Orange, potentially or directly. And that is the basic tenet for presumption of exposure: If the possibility for exposure existed, then any resulting associated pathology is presumed to be a result of that exposure. When dioxin and its vapor did exist, direct exposure was the result.

If runoff from the Ranch Hand site was substantial with significant levels of dioxin being transported by erosion/rains, with consistent flows entering the Harbour, there is some probability that dioxin vapors may have been taken in by navy personnel. [13]

Vapors Abound

As an example of showing just how heavily the presence of dioxin in Da Nang should be considered an imminent danger for exposure, we need only point to the Da Nang defoliation incidents, which actually occurred at least in both 1968 and 1969, according to the cited records. There is documentation from those two years, but there could have been other times when this occurred. But the written reports are proof that the vapors did exist and did cause environmental damage. This was a situation where trees and other plants in and around the Da Nang area actually or nearly died, not from being targeted and sprayed, but merely for trying to grow in an

area that had an ambient atmosphere that was thick and heavy with the migration of vaporized herbicide. In other words, the mere absorption of the air surrounding the plant leaves drew in enough migrating airborne herbicide to kill them! What did that air do to human lungs in the area? That scenario leaves no choice but to declare direct exposure. The dioxin was there and it was officially recorded. Exactly how much was there? Enough to kill a tree!

This is not as incredulous as it might at first seem. In these modern times, we would simply call this air pollution or smog. And there are abundant examples of how air pollution and smog have adversely affected plant life. And in the process of doing so, they have clearly become health risks for humans in the area. But the term air pollution was not widely used in the 1960s and early 70s.

A report written in October, 1968 by John Moran describes it thus:

Another factor which quite possibly is contributing to the vegetable damage is the disposition of empty herbicide drums. Numerous drums were noted throughout the areas of light damage north and west of the airbase. Although supposedly empty, these drums could contain small amounts of herbicide which, when vaporized, would be sufficient to cause damage to the highly susceptible vegetable plants. Those drums were noted in the hamlets being used for trash containers and water barrels. Since the herbicide is controlled by the ARVN [the South Vietnamese Army], they also control the disposition of empty drums. 2. Conclusions: A. It is possible that some of the vegetable damage in the vicinity of Da Nang Air Base was caused by herbicide leakage from Ranch Hand aircraft, especially in the Hoa Vang demonstration plot. b. Damage in other areas was not directly traceable to aircraft leakage, and in fact, it is highly probable that any herbicide damage there was due to vapors from empty drums." [14]

So, the barrels were found to have had as much as two or three gallons still inside once they were declared "empty" by the Agent Orange mixing and loading crews. [15] And just that amount of herbicide, spilled or emptied or left in the original barrels, and allowed to vaporize into the surrounding atmosphere of Da Nang, could kill a variety of plants and trees and directly expose personnel!

Although this discovery of the lethal toxin permeating the atmospheric environment of the entire Da Nang area was of extreme importance, these reports were not shared with the soldiers and sailors in the field. The word did not seem to get out to the general populace. And it didn't seem to stop the problems of herbicide damage emitted from partially empty 55-gallon barrels from continuing to be a problem in the immediate Da Nang area. From the following year, on 26 Sept 1969, we have another report:

"While surveying the compound a total of eight ORANGE herbicide barrels were found. Four of these were located in the POL yard; two of them had a strong odor of herbicide. The remaining four barrels were located near a signal van and were filled with gasoline. The gasoline was used to operate a power generator. It was explained to LCMDR James and Mr. Xuon that the gasoline in the barrels may contain small quantities of herbicide, and when burned in the generator engine the exhaust produced will contain vaporized herbicide capable of effecting vegetation in

the immediate area. It was also pointed out that vapors from residual herbicide left in empty barrels are a potential source of herbicide damage to nearby vegetation." [16]

To emphasize the wide-spread use of Agent Orange barrels for a multitude of things, it was not uncommon to see barrels with orange (and other colored) stripes used throughout the area as trash cans, water barrels, blockades for traffic control and more. A common sight was the Bar-B-Que grill made out of herbicide barrels cut on the bias to provide a windproof cooking grill just about everywhere. Beaches and common areas were strewn with that type of cooking apparatus, made from Agent Orange and other herbicide barrels. Whenever ships declared a party on the beach, and many did, they would usually always find an abundance of Agent Orange barrel Bar-B-Que grills available for use. Creating these items was an economic opportunity for the local people and competition for acquiring expended barrels was sometimes fierce. [17] These were not only sources of toxic vapors, but cooking any food where the coals rested on a surface that had been soaked in herbicide for several months or longer was a sure way to invite contaminated smoke and particulate matter containing dioxin to disburse directly into the air as well as directly into the food being cooked.

Perhaps even worse was the use of the "empty" barrels for storing gasoline. Recall that a barrel could have as much as 2 or 3 gallons of herbicide still inside when moved to the disposal piles. The "not-empty" barrels were taken by, sold or given to local entrepreneurs. Once filled with gasoline, a variety of motors would have used that contaminated gasoline. Motor bikes, jitneys, cars, other vehicles and generator motors burned the contaminated gasoline and released contaminated smoke and particles into the atmosphere as engine exhaust which added to the ever-present poor air quality throughout the country of Vietnam and other locations where that means of storage was prevalent. We know from the cited reports that their presence was at least wide spread around Da Nang.

The discovery in 1968 that vapor from expended Agent Orange barrels were the cause of dead and dying vegetation throughout Da Nang City and the surrounding countryside was monumental. But that discovery had surprisingly little impact on discontinuing the future use of the expended Agent Orange drums. Since the Agent Orange and their barrels became the property of the South Vietnamese Army as soon as they entered the country, the U.S. authorities had little control over the distribution and use of expended barrels because of the high market demand and money to be made from the empty barrels. Nonetheless, if there was enough contaminated vapor in the air in and around Da Nang and Da Nang Harbor to harm vegetation at a distance, there was surely enough contaminated vapor and particles in the air to harm humans by both inhalation and dermal contact. Over a continuous time frame measured in decades, there were certainly enough herbicide vapors to endanger humans and to be a high potential for human herbicide exposure, not just presumptively but directly.

Vaporized aerial toxic migration was an inescapable chemical property of the Herbicide Orange, and that danger cannot have been limited to Da Nang. It had to have occurred in every place where Agent Orange was open to the air. Since the vapors are known to have been in the air, it is only reasonable to assume that the air moved with the prevailing winds in Vietnam, which were primarily offshore toward the open sea and toward all the offshore ships of the Seventh Fleet.

All veteran who visited Da Nang Harbor should claim that inhalation of vaporized herbicide and contact of those vapors with his bare skin was a viable source of exposure during the time his ship was in Da Nang Harbor.

VI. Intentional Deceit and Misdirection

On the issue of looking to the "VA Adjudication Procedure Manual M21Â·1, pt. IV, subpt. ii, ch. 2, Â§ C.3.m." for any sort of guidance in determining Blue Water Navy exposure to herbicide, we need to understand that the current documentation is the result of the VA Central Office's blatant contempt for the CAVC's ruling in Grey v. McDonald [18] of April 23, 2015 in a number of ways, and does not at all address the "arbitrary and capricious" language pointed out by the CAVC:

1. The reference to the M21-1 Manual is to the changes made to the M21 Manual on 5 Feb 2016, 10 months following the Gray Ruling by CAVC. The implementation of that change ignored the CAVC's rather strong suggestion that the focus of the VA's re-assessment and refined definitions should include at least some acknowledgment of the underlying regulation defining "exposure." [As under 38 U.S.C. Â§ 1116(a) and 38 C.F.R. Â§ 3.307(a)(6)(iii))]. The VA was expected to consider locations where service members might have been likely subject to exposure to herbicides rather than maintain their focus on geophysical formations. No reference to probable exposure areas was made by the VA in their February 5th regulation changes.
2. The February 5th changes totally ignored CAVC's suggestions that herbicide sprayed upon the country's inner rivers might someday reasonably find itself exiting such river systems to flow into the sea. Instead, the VA chose to continue to use some unnamed and magical barrier that would stop the flow of herbicide by wind and water abruptly at the edge of the land boundaries of the country. This mythical barrier would, by virtue of this re-written regulation, stop any herbicide carried by river water from entering the Gulf of Tonkin and the South China Sea. No reasonable explanation of how this is physically possible is provided by the VA. It is worse than junk science; it is an insult to average intelligence.
3. The idea that the 5 Feb 2016 entries into the M21-1 Procedures Manual actually reflect the "full and considered judgment" by the best and brightest that the Department of Veterans Affairs has to offer, is nothing short of an insult to the trench-level workers who have to live with such absurd decisions and declarations from the Management-level SES. That "full and considered judgment" remains untapped and still needs to be applied to this problem of resolving the arbitrary and capricious definitions still in use by the VA for such things as 'harbor waters' and other bodies of 'inland waterways.'
4. The entries to the M21-1 Procedure Manual did not address the "arbitrary and capricious" nature of definitions for inland waters. Those definitions still exist as arbitrary and capricious. The ruling by the CAVC has yet to be acknowledged and there are currently no definitions of inland waters that can be relied upon to assist with determining what is and what is not inland water. There is no direction that the M21-1 Procedure Manual can provide to resolve the unreasonableness still existing in the definition of inland water and harbor water. The continued existence of these concepts is in the strongest possible contempt of the Court.

Summary

This essay clearly shows that presence in Da Nang Harbor does indeed subject those who entered the harbor to the dangers of herbicide exposure, by reference to documents that observed harmful conditions that were written on the scene by personal observations during the War. For these reasons and others, Blue Water Navy veteran should request a favorable ruling for service connection by presumptive and direct exposure to herbicide for any medical conditions that relate to herbicide (dioxin) exposure in Vietnam.

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REFERENCES

[1] Dioxins have been called the most toxic of all man-made chemicals. Environmental Health News February, 2014) http://www.environmentalhealthnews.org/ehs/news/2012/dioxins-report-revealed
Return to text

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[2] The Hatfield Consultants Report, "Comprehensive Assessment of Dioxin Contamination in Da Nang Airport, Viet Nam: Environmental Levels, Human Exposure and Options for Mitigating Impacts, Final Report," dated November 2009, located at http://www.hatfieldgroup.com/services/contaminant-monitoring-agent-orange/hatfield-agent-orange-reports-and-presentations/
Return to text

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[3] Environmental Remediation, https://www.usaid.gov/vietnam/environmental-remediation
Return to text

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[4] Da Nang Harbor Report, located at http://www.bluewaternavy.org/danangcombo2.pdf
Return to text

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[5] Post-Vietnam Dioxin Exposure in Agent Orange-Contaminated C-123 Aircraft, IOM, 2015, located at https://www.nap.edu/catalog/18848/post-vietnam-dioxin-exposure-in-agent-orange-contaminated-c-123-aircraft
Return to text

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[6] " The extent and patterns of usage of Agent Orange and other herbicides in Vietnam," Jeanne Stellman, et. al. NATURE, April, 2003. www.bluewaternavy.org/stellman pattern of usage.pdf ; ALSO found at http://www.nature.com/nature/journal/v422/n6933/abs/nature01537.html
Return to text

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[7] Document 01578, " Position Paper: Criteria for Estimating Exposure Levels of Military Personnel to Dioxin and Herbicide Orange during the Vietnam War,", Alvin Young, page 1. This document is available at http://bluewaternavy.org/01578%20position%20paper.pdf
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[8] ibid, page 8
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[9] " POST-VIETNAM DIOXIN EXPOSURE" IOM, ibid, Page 5. [Note: this 'dynamic flux' is a physicochemical property that occurs in open spaces as well as " enclosed spaces." It is a property of the chemistry of the molecules, irrespective of the physical location of the molecules.]
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[10] John Dennis Gibson was tasked in 1969 with clearing the ditch that ran from the Airbase's north runway to the Harbor itself. Document is available at www.bluewaternavy.org/Exhibits 9.pdf
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[11] USAID Flickr postings, available at
https://www.flickr.com/photos/usaid_vietnam/sets/72157633965230426/
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[12] Affidavit of James May, observing the spraying of Da Nang Harbor,
http://bluewaternavy.org/Exhibit_5.pdf
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[13] Letter from the senior scientist for Hatfield Associates, who was in charge of the crew that initially found and measured the soil contamination at the old U.S. Airbase in Da Nang. This letter was published as the forward to " Dr. Wayne Dwernychuk, Environmental Scientist, Introduction to "Da Nang Harbor Report." http://www.bluewaternavy.org/danangcombo2.pdf
Return to text

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[14] Item #00210, " Memorandum: Herbicide Damage to Vegetable Plots Vicinity Da Nang Air Base," Available at
http://www.bluewaternavy.org/harbors/00210AO%20DAMAGE%20DA%20NANG.pdf
Return to text

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[15] Document #00211, " Memorandum: Defoliant Damage in Da Nang, from Colonel Harold C. Kinne, Jr. to Brigadier General John G Wheelock III," March 29, 1969, Available at
http://bluewaternavy.org/harbors/00211 Damage_in_Danang_Kinne.pdf
Return to text

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[16] Item #00212, " Report of Investigation into possible herbicide damage at Vietnamese Naval Compound at Da Nang," Ray W. Bills, Available at
http://www.bluewaternavy.org/harbors/00212.pdf
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[17] Based on personal interviews done by John Rossie in the Da Nang area, 1996-1998
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[18] NO. 13-3339 No. 13-3339, Robert H. Gray, Appellant, v. Robert A. McDonald, Secretary of Veterans Affairs, Appellee, Decided April 23, 2015 http://bluewaternavy.org/Gray13-3339.pdf
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