

UNITED STATES DISTRICT COURT  
DISTRICT OF SOUTH DAKOTA  
WESTERN DIVISION

UNITED STATES OF AMERICA,	)	
	)	CIV02-5071
Plaintiff,	)	
	)	
v.	)	
	)	AFFIDAVIT OF
ALEXANDER “Alex” WHITE	)	DAVID P. WEST, Ph.D.
PLUME, PERCY WHITE PLUME,	)	
TIERRA MADRE LLC, MADISON	)	
HEMP AND FLAX COMPANY 1806,	)	
and all defendants’ agents, servants,	)	
assigns, attorneys, and all others acting	)	
in concert with the name Defendants,	)	
	)	
Defendants.	)	

State of \_\_\_\_\_ )  
) ss.  
County of \_\_\_\_\_ )

I, David P. West, being first duly sworn, depose and state as follows:

1. I make this affidavit in support of Defendants White Plume, Tierra Madre LLC, and Madison Hemp and Flax Company 1806, Inc. I am fully familiar with the facts stated in this affidavit, and where opinions are expressed, I am competent to state such opinions based on my training, knowledge, experience and expertise. If sworn as a witness, I am competent to testify to the contents of this affidavit.

2. I have a Ph.D. in Plant Breeding and Genetics from the University of Minnesota and over twenty years experience as a plant breeder. My *Curriculum Vitae* and a list of publications is attached as Exhibit 1.

3. I am a DEA licensed Cannabis researcher as the Principal Investigator for the Hawaii Industrial Hemp Research Project which is located in Wahiawa, Oahu, Hawaii on a 1/4 acre experimental plot. As such, I am legally authorized to import viable seeds of Cannabis sativa L. and to breed, grow and otherwise experiment with the Cannabis

plants therefrom within the secure experimental plot. I have conducted practical and academic research concerning Cannabis, including low THC non-drug, fiber-type Cannabis commonly known as “industrial hemp,” and have been conducting industrial hemp breeding experiments with a DEA permit since 1999.

4. Since 1993, I have researched the history of fiber-type Cannabis hemp agriculture and industry in the United States and the viability of industrial hemp as a modern renewable agricultural resource. I have also served as a consultant to the North American Industrial Hemp Council and, in that capacity, I authored Hemp and Marijuana: Myths & Realities (1998) (attached as Exhibit 2).

5. In my research, scholarship and experience, I have conducted my own empirical research including interviews and site inspections. I have also reviewed the available industrial hemp research studies, including the USDA Report: Industrial Hemp in the United States: Status and Market Potential, January 2000 (Exhibit 3 hereto), Thompson, Berger & Allen, Economic Impact of Industrial Hemp in Kentucky, Center for Business and Economic Research, University of Kentucky, July 1998 (Exhibit 4 hereto) and Kraenzel, et al., Industrial Hemp as an Alternative Crop in North Dakota: A White Paper Study of the Markets, Profitability, Processing, Agronomics and History, North Dakota State University, Institute for Natural Resources and Economic Development (July 1998) (Exhibit 5 hereto).

6. The USDA Study finds, among other things, that there exists a developing market for industrial hemp products and that industrial hemp grows well wherever corn yields are high. The University of Kentucky Study finds that: (a) a market for industrial hemp exists including specialty papers, animal bedding and hemp foods and oils and that emerging markets exist for industrial hemp include automobile parts, replacements for fiberglass, upholstery, and carpets; (b) growing industrial hemp would be profitable for Kentucky farmers; (c) industrial hemp, when grown in rotation, may reduce weeds and raise yields for other crops grown in following years and that industrial hemp has raised yields by improving soil ventilation and water balance; and (d) industrial hemp growing and processing implemented on a county by county basis could result in significant employment and economic redevelopment. The North Dakota State University Study finds, among other things, that **“[t]he sovereign Indian nations of North Dakota may have a competitive advantage in the production and cultivation of industrial hemp immediately.”** North Dakota State University Study at 11(emphasis added.)

7. In my opinion, the findings of the USDA, the University of Kentucky and the North Dakota State University Studies support the conclusion that industrial hemp grown at Pine Ridge Indian Reservation could be used on the Reservation and/or sold profitably as animal bedding, insulation, building materials, food, health oil, and other products to stimulate rural economic development in an environmentally sustainable way. The North Dakota State University Study, in particular, points to the competitive advantage that could be obtained by members of Indian nations such as the Oglala Sioux Tribe by commencing producing and cultivation of industrial hemp immediately.

8. In my opinion, the Cannabis grown by Defendants at Pine Ridge Indian Reservation is non-drug, fiber-type Cannabis with low levels of THC (delta-9 tetrahydrocannabinol) and high levels of CBD (cannabidiol), it is not usable or ingestible to cause a drug "high" and, therefore, does not have high (or any) potential for abuse as a drug. Furthermore, the Cannabis grown by Defendants White Plume is not "marijuana" (which is meant to refer only to drug type Cannabis) even if found to fit within the technical legal definition of "marihuana" in Section 802(16) of the Controlled Substances Act.

9. In my opinion, it is prohibitively expensive for any fiber-type Cannabis (i.e., "industrial hemp") grower to comply with the security requirements required by DEA regulations for a license to grow Cannabis. Such security requirements assume that the subject Cannabis will be diverted for use as a drug or in the drug trade. The application of drug related security requirements to fiber-type Cannabis agriculture constitutes the equivalent of a ban on fiber-type Cannabis by virtue of the prohibitive cost of such security mechanisms.

### **CLASSIFICATION OF CANNABIS: MARIJUANA; INDUSTRIAL HEMP**

10. Botanically, the genus Cannabis is composed of several variants. In 1753, Carolus Linnaeus officially designated the Cannabis genus. Modern botanists generally recognize a unique family of plants they call "Cannabaceae," under which are classified the genus Cannabis and its closest botanical relative, Humulus, which contains the beer flavoring, hops. The prevailing opinion currently recognizes three Cannabis species: *C. sativa*, *C. indica*, and *C. ruderalis*. This classification is not entirely relevant, however, as all materials of interest in this case are *Cannabis sativa*. The differences of note in this case relate to varietal distinctions, analogous to the distinction between sweet corn and field corn within *Zea mays*; Macintosh and Jonathan apples; or the breeds of domestic animals.

11. The term "HEMP" has been used historically to refer to a variety of plants that carry the name: Manila hemp (abacá, *Musa textilis*), sisal hemp (*Agave sisalana*), Mauritius hemp (*Furcraea gigantea*), New Zealand hemp (*Phormium tenax*), Sunn hemp (*Crotalaria juncea*), Indian hemp (jute, *Corchorus capsularis* or *C. clitorus*), Indian hemp (*Apocynum cannabinum*), bow-string hemp (*Sansevieria cylindrica*). Cannabis hemp is also known as "True Hemp," referring to *Cannabis sativa*.

12. Cannabis hemp, and fibers such as flax, kenaf, and jute, are "bast fibers." The fiber is in the plant's stem, in contrast to seed hair (cotton) or leaf (sisal, abacá). Bast fibers are derived from that portion of the dicotyledonous plant lying between the outer bark or epidermis and the woody central cylinder. The "woody central core," after being broken and separated from the fiber, is commonly called "hurds" in the case of hemp, and "shives" for flax.

13. In the 1890s, the term "MARIHUANA" (now commonly spelled "MARIJUANA") developed from a common Latin American (mainly, Mexican) slang

term “mariguango,” which was used to describe the state of being “high” or “altered” from ingesting a substance. The term “marihuana” or “marijuana” literally means “drug” and is uniformly used to refer to high-THC drug type Cannabis.

14. The Marihuana Tax Act of 1937 created the first legal definition of “marihuana” in the United States which is the same language now found in Section 802(16) of the Controlled Substances Act (21 USC Sec. 802(16)). The term “marijuana” is not found in the Marihuana Tax Act of 1937 or the Controlled Substances Act. The term “marihuana” or “marijuana” is not generally used in the international scientific or business communities to refer to non-drug, fiber-type, low-THC Cannabis. Furthering this confusion is the exclusion contained in the second sentence of the original definition of “marihuana” and carried over identically to Section 802(16) of the Controlled Substances Act, **“[s]uch term does not include the mature stalks of such plant, fiber produced from such stalks, oil or cake made from the seeds of such plant, any other compound, manufacture, salt, derivative, mixture, or preparation of such mature stalks (except the resin extracted therefrom), fiber, oil, or cake, or the sterilized seed of such plant which is incapable of germination.”** 21 USC Sec. 802(16) (emphasis added). In fact, the express exclusion of hemp oil, cake and sterilized seed was adopted by Congress in order to make clear that its intention was only to regulate drug type Cannabis and that it did not intend to interfere with legitimate hemp industry. See, e.g., 81 Cong. Rec. App. 1440 (1937); Taxation of Marihuana, Hearings before the Comm. on Ways and Means on H.R. 6385, 75<sup>th</sup> Cong., 1<sup>st</sup> Sess. 1, 43, 46-47, 53-54, 67-71 (1937). The Wisconsin hemp industry functioned lawfully under the Marihuana Tax Act from 1937 until 1957. Further, products of fiber-type Cannabis hemp plants are expressly excluded from the technical legal definition of the term “marihuana” except for resin extracted from hemp stalks and viable fiber-type Cannabis seeds which are not expressly excluded by such section.

15. Cannabis is the only plant genus in which can be found the unique class of molecules known as cannabinoids. Cannabis produces two major cannabinoids-THC (delta-9 tetrahydrocannabinol) and CBD (cannabidiol), and several other minor cannabinoid compounds. THC is responsible for the psychoactive effect as was demonstrated conclusively in the 1960s. CBD, on the other hand, has been shown to block the effect of THC in the nervous system. Smoking hemp, high in CBD and low in THC, actually has the effect of blocking the marijuana “high.” Even when the amount of THC in a sample is as high as 2 percent (2%), the psychological high is blocked by as little as 2 percent (2%) CBD. Cannabis with THC below 1.0 percent (1%) and a CBD/THC ratio greater than one (1.0) is therefore not capable of inducing a psychoactive effect. Low THC Cannabis hemp, it turns out, is not only very different from Cannabis marijuana, it could be called “anti-marijuana.”

16. Drug type Cannabis (marijuana) is high in the psychoactive cannabinoid, THC, and low to intermediate in the anti-psychoactive cannabinoid, CBD. The fiber type of Cannabis is high in CBD and low in THC and variants of this type are commonly called “industrial hemp” or “ditchweed” when found growing feral. Fiber type Cannabis has been cultivated throughout the World for thousands of years and is currently legally

cultivated throughout the World for seed and fiber uses including Australia, Canada, China, European Union (e.g, France, Germany), United Kingdom, Hungary, Romania, Russia and Switzerland.

17. The balance of cannabinoids is determined by the genetics of the plant and is a stable characteristic of a given genotype (i.e., the individual's specific genetic complement). Thus, using the chemotype approach, Cannabis variants can be classified on the basis of their THC-CBD balance as drug-type Cannabis and fiber-type Cannabis.

18. Currently fiber-type Cannabis hemp varieties grown in Canada and Europe for industrial purposes are certified to have THC levels below 0.2 percent and 0.3 percent, respectively - so low that no one could get high from smoking any part(s) of such plant. In such countries, there are easy simple and reliable testing and certification methods for monitoring a fiber-type Cannabis hemp crop's THC level limits within international regulatory standards of less than 0.2/0.3 percent. These testing and certification methods are available and adequate to regulate the growing of fiber-type Cannabis hemp at Pine Ridge Indian Reservation within the one percent (1%) THC levels set by the Oglala Sioux Tribe as the maximum for classification of Cannabis as "industrial hemp" (as distinguished from "marijuana") under the Oglala Sioux Tribe Ordinance 98-27. Similar testing can also determine a Cannabis crop's CBD levels to confirm that it is fiber-type Cannabis.

19. Based on the test results submitted by the United States in this case, the THC-CBD balance of the White Plume hemp was 0.19 %THC to 2.84 % CBD (which equals 0.067; <1) in 2000; and 0.77% THC to 4.49% CBD (which equals 0.171; <1) in 2001. These THC-CBD levels indicate clearly that the White Plume hemp is fiber-type Cannabis. It is not marijuana but is rather "anti-marijuana." Simply put, no one could possibly get "high" from smoking or otherwise ingesting the industrial hemp grown at Pine Ridge Indian Reservation by the Defendants.

### **CULTIVATION PRACTICES: HEMP AND MARIJUANA; HYBRIDIZATION**

20. Fiber-type Cannabis hemp is cultivated quite differently from drug-type Cannabis marijuana. Moreover, hemp is harvested at a different time than marijuana. Finally, cross-pollination between hemp and marijuana plants would significantly reduce the potency of the marijuana plants; i.e., hybridization would result in lower THC marijuana plants not in higher THC hemp plants.

21. Cannabis hemp grown for fiber is planted in narrow row spacing (4 inches apart). Branching is discouraged, and plants are not allowed to flower. The stems are kept small by the high density and foliage develops only on the top. Hemp plants crowd out weeds and other hemp plants not equal to the competition. Marijuana plants, on the contrary, are spaced widely to encourage branching, and the flower is the harvested product. Marijuana is a horticultural crop planted in wide spacing to minimize stand competition and promote flower production. It branches thickly like a Christmas tree. In contrast, hemp selected for long fiber has only a few branches.

22. Where seed is the harvested product, whether as reproduction seed or oilseed, purity is critical to marketability. The mixing of off-type genotypes would be scrupulously avoided in seed production fields. Breeders and producers of sweet corn, for example, go to great lengths to isolate their crops from the pollen of field corn. The same applies to hemp and marijuana. People who grow strains of drug-type Cannabis for smoking try to avoid pollination of the flowers and they often attempt to grow seedless plants, the so-called "sinsemilla."

23. Fiber-type Cannabis hemp agriculture could be a deterrent to marijuana growers. A strong case can be made that the best way to reduce the THC level of marijuana grown outdoors would be to grow industrial hemp fields near it. An experiment in Russia found that hemp pollen could travel 12 kilometers. This would mean that a hemp field would create a zone with a 12-kilometer radius within which no marijuana grower would want to establish a crop.

24. Where low-THC Cannabis hemp is cultivated, the preponderance by many orders of magnitude of the pollen in the surrounding 12 kilometers would come from the hemp. Marijuana growers typically remove the males, so the marijuana would not pollinate anything. But even if the males were not removed, the dilution of marijuana pollen by hemp pollen would be like a drop of water in the ocean. In subsequent generations one would have to assume that the seed planted was born on female plants which would be the marijuana plants but that is not the case since the hemp growers replant hemp seed and seed from the marijuana has typically gone with the marijuana to its end user.

25. Growers of hemp seed would, likewise, not want Cannabis of an "off type" (i.e., not the intended genetic type) mixing its pollen with their flowers. The isolation of genotypes is a common procedure used by the seed industry to preserve the genetic integrity of varieties. Valued strains are created by plant breeding, at substantial expense. Marijuana pollen would destroy this value.

#### **DEA LICENSING PROCEDURES FOR GROWING CANNABIS**

26. As a Cannabis researcher licensed by the DEA, I am familiar with the security regulations pertaining to the licensed growing of Cannabis. In the Hawaii Industrial Hemp Research Project, a secure compound has been constructed on the site as specified by the State of Hawaii Narcotics Enforcement Division of the Department of Public Safety following DEA regulations. The DEA regulations require the 1/4-acre experimental plot to have a 10 foot high barbed wire-topped fence, and an infrared security alarm system to detect unauthorized intrusions. All seeds for the project are housed in a metal safe which is also protected by a motion detector and alarm system. The cost of the security system for the 1/4-acre experimental plot was in excess of \$5,000 to install and is \$3,000 annually.

27. Under the 1937 Marihuana Tax Act, registration was required but the procedure was uncomplicated. The regulatory apparatus was not encumbering to, for instance, hemp farmers in Wisconsin (the Rens Hemp Company) who continued to grow the crop until as late as 1957. Wisconsin hemp farmers and processors paid a simple fee and obtained their registration by mail. No security measures were required as there is no danger of diversion of hemp into illicit markets because of the negligible content of THC in these varieties and the relatively high content of CBD. Thus, the expressed concern that measures be taken to prevent pilferage from the hemp crop are allayed. Pilferage, should it occur due to naivete or misinformation, would impact only the experiment and/or crop yield, not the pilferer. Hemp can be sold as marijuana to a naïve buyer as can oregano.

28. To my knowledge, none of the current hemp producing countries (e.g., Canada, China, or Europe) has reported any significant problems concerning industrial hemp pilferage or in the enforcement of marijuana laws despite lawful industrial hemp agriculture.

### **PUBLIC CONFUSION CONCERNING HEMP AND MARIJUANA**

29. DEA, other law enforcement officials, and those who follow DEA's lead (such as public watchdog groups like Drug Watch International and Family Research Council), often use the word "marijuana" and the word "hemp" interchangeably and often use of the word "marijuana" to refer to non-drug, low-THC Cannabis including industrial hemp products that are expressly excluded from the technical legal definition of "marihuana" under Section 802(16) of the Controlled Substances Act.

30. The conflation of terms by DEA has placed a heavy burden on public policymakers, law enforcement officials, and corporations. Many mistakenly believe that hemp and marijuana are the same and this misunderstanding is being reinforced by the DEA.

31. The government of the Oglala Sioux Tribe has followed the lead of several state governments, the National Conference of State Legislators, the European Union, and the governments of the United Kingdom, China, Canada, Hungary and Romania which have accepted the distinction between drug-type Cannabis marijuana and fiber-type Cannabis hemp, and while continuing to penalize the growing of drug-type Cannabis marijuana, have legalized the growing of fiber-type Cannabis hemp.

32. Advocates of the re-commercialization of non-drug, low-THC fiber-type Cannabis hemp, have been required to spend substantial amounts of time and money to correct the misunderstanding in the minds of legislators, law enforcement, businesses and the public concerning hemp and marijuana. Substantial public education and business marketing has been devoted to foster an understanding among lawmakers, industry and the public that industrial hemp is not equivalent to drug marijuana.

33. This confusion also plagues the emerging hemp industry because business partners and law enforcement officials are confused about the distinctions between drug Cannabis marijuana and non-drug Cannabis hemp. Suppliers and consumers of lawful industrial hemp products have been harassed by local law enforcement in cases of confusion between hemp and marijuana. For example, in December 2001, two Syracuse University students were falsely arrested by local police for possession of “marijuana foods”; the case was subsequently dropped by the prosecutor with prejudice for failure to state a case (see “Marijuana Charges Against Hemp Protesters Dismissed,” Associated Press, March 28, 2002, attached as Exhibit 6).

### HISTORICAL FACTS CONCERNING HEMP IN THE US

34. In America, hemp was so important to the infant colonies that Jamestown passed a hemp law in 1619 making it illegal *not* to grow hemp (followed by Massachusetts and Connecticut in 1631 and 1632). Hemp was at one time a commodity considered lawful for the payment of colonial taxes. The original drafts of the United States Constitution and Declaration of Independence were written on hemp paper. Thomas Jefferson and George Washington were hemp farmers and advocates of growing hemp “for the economic necessity of the state.” The U.S.S. Constitution was equipped with sixty tons of hemp rope and ship sails; the majority of all twine, rope, ship sails, rigging and nets up to the late 19th century were made from hemp. Hemp oil was used extensively for lighting oil, paints and varnishes.

35. Industrial hemp was a staple agricultural commodity throughout the United States in the 19th Century. It was grown by settlers on the Great Plains including Nebraska, Minnesota, Illinois and Colorado during the 1860s.

36. In 1937, the Marihuana Tax Act was proposed to Congress by the Treasury Department, a division of which was the Bureau of Narcotics. In support of the bill, Assistant General Counsel Clinton Hester testified: **“[t]he form of the bill is such . . . as not to interfere materially with any industrial, medical or scientific uses which the plant may have.** Since hemp fiber and articles manufactured therefrom are obtained from the harmless mature stalk of the plant, all such products have been completely eliminated from the purview of the bill by defining the term “marihuana” in the bill, so as to exclude from its provisions the mature stalk and its compounds or manufacturers.” Hester went on to add: “There are also some dealings in marihuana seeds for planting purposes and for use in the manufacture of oil which is ultimately employed by the paint and varnish industry. As the seeds, unlike the mature stalk, contain the drug, the same complete exemption could not be applied in this instance. But this type of transaction, as well as any transfer of completed paint or varnish products, has been exempted from transfer tax.” Taxation of Marihuana, Hearings Before the House Committee on Ways and Means on H.R. 6385, 75th Cong. 1st Sess. 8 (1937) (emphasis added).

37. Harry J. Anslinger, Commissioner of the Federal Bureau of Narcotics (the predecessor to the Drug Enforcement Administration (DEA)), told the Senate Committee that those in the domestic hemp industry “are not only amply protected under this act, but



**they can go ahead and raise hemp just as they have always done it.** Taxation of Marihuana, Hearings Before the House Committee on Ways and Means on H.R. 6385, 75th Cong. 1st Sess. 8 (1937) (emphasis added).

38. During World War II, the US federal government launched an aggressive "Hemp for Victory" campaign. United States armed forces had relied on abacá, Manila hemp, imported from the Philippines, for rope, canvas, uniforms, and other products. After the Philippines fell to Japanese forces in 1942, the Department of Agriculture and the U.S. Army urged farmers to grow hemp. Promotional materials such as the short film "Hemp for Victory" were developed to encourage farmers to grow hemp and licenses were issued. Without any change in federal law, more than 400,000 acres of hemp were cultivated in the United States between 1942 and 1945, aided by the War Hemp Industries Corporation, which built 42 hemp mills in the Midwest. The last commercial hemp fields were planted in Wisconsin in 1957; thereafter the Rens Hemp Company of Wisconsin ceased hemp production.

39. In 1961 the U.S. became a party to the United Nations Single Convention on Narcotic Drugs. That Convention expressly recognized the distinction between marijuana and industrial hemp, exempting the latter from coverage. "This Convention shall not apply to the cultivation of the Cannabis plant exclusively for industrial purposes (fiber and seed) or horticultural purposes." UN Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances, 1961. The United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances (1990, supplement to the UN Single Convention on Narcotic Drugs) did not concern itself with such botanical aspects of the Cannabis plant as THC. 18 U.S. T. 1408, Article 28(2). The terms of this treaty concerned the use to which the plant is put. As such, this treaty does not constrain its signatories' freedom to allow industrial hemp agriculture. Canada, Australia, the United Kingdom, Germany, Austria-all countries with expanding hemp acreage-are signatories to this convention.

40. In 1970, the Comprehensive Drug Abuse Prevention and Control Act repealed the Marihuana Tax Act but incorporated verbatim that Act's definition of "marihuana." The key difference was that, while the 1937 Act used a system of taxation and disclosure that allowed the government to penalize marijuana growers without punishing industrial hemp growers, the 1970 Act abolished the taxation approach and effectively made all Cannabis cultivation illegal, except where the DEA issued a limited-use permit, by setting zero tolerance for THC. There is no indication that, in the debate about the 1970 law, the implications of its passage on the future of industrial hemp were ever considered. By that time the domestic industrial hemp industry had disappeared, and there were no farmers to argue its case.

### **PUBLIC POLICY ISSUES CONCERNING HEMP**

41. The health, environmental and economic benefits of industrial hemp have attracted a loose coalition of environmentalists, rural labor, farmers, scientists, Indian

nations, traditional industries looking for “greener” alternatives, state lawmakers and officials and the international community who have spent substantial time and money to research, develop and commercialize hemp food, oil and fiber products, create markets for such products and correct misperceptions concerning industrial hemp.

42. A current statement of the progress of this loose coalition and the current market and uses for industrial hemp is in the Vote Hemp Report (September 2002), attached as Exhibit 7 (the “Vote Hemp Report”).

43. Hemp has demonstrated environmental benefits. For example, the ecological harm caused by home construction are reduced by using hemp building materials and insulation instead of wood, metal and fiberglass. Similarly, the ecological harm caused by automobile production has been reduced by using hemp/kenaf bio-composite panels instead of toxic fiberglass. Therefore, activities that promote industrial hemp and its markets can also promote ecological benefits and environmental sustainability. By restricting the use of industrial hemp, the DEA activities concerning hemp have the effect of undermining those ecological benefits and progress towards environmental sustainability. As a result, obstructions to the development and commercialization of industrial hemp could actually have the effect of harming the health, safety and well-being of the American people and their environment.

44. Farmers are concerned with industrial hemp because it fosters bioregional sustainability and the return to the possibility of a carbohydrate economy based on the notion that anything that can be made of a hydrocarbon (plastics, etc.) can be made from a carbohydrate. The bulkiness of hemp stalks and hemp fiber demands local processing which fosters local economies. Hemp’s leaves return nitrogen back to the soil, i.e. they convert nitrogen fertilizer into organically bound nitrogen, which improves soil fertility.

45. For many years, U.S. individuals and businesses have legally purchased, used, and traded in sterilized and non-psychoactive hempseeds, hempseed oil, hempseed cake, hemp fiber and products made therefrom. Hemp food, oil and fiber products are available throughout the U.S., Canada, the European Union and Asia.

46. In Europe, 95% of hemp seed is used for animal feed and 5% is used for health food and body care applications; and hemp hurds are used mainly for animal bedding (hemp hurds) and construction materials (hemp cement, etc.).

47. Established and emerging uses of natural fiber-based nonwovens (including hemp) include: baby diapers, wipes and feminine hygiene products, batting for the furniture industry to replace foam, geotextiles for use in road reinforcement and weed blockage, insulation and sound-absorbing pads, horticultural growth substrates, oil-absorbing products, and specialty paper pulps.

48. At least one company, FlexForm of Indiana, makes a nonwoven products from a hemp/kenaf/polypropylene composite (using imported Canadian hemp fiber). Many vehicles use these FlexForm products; the 2001 Sebring Convertible uses

FlexForm substrate material for the molding of door panels, and the 2001 Dodge Stratus uses FlexForm material for door inserts.

49. In Europe, the market for hemp fiber consists of specialty pulp (cigarette and other specialty papers), automobile biocomposites (like the FlexForm products), thermal insulation (replacing fiberglass materials which are environmentally hazardous), and agro-textiles: hemp-based nonwoven growth substrates for use in production of sprouts sold in retail grocery stores. Hemp fiber is also used in specialty textile markets.

50. According to the USDA Study, “Hemp seeds can be used as a food ingredient or crushed for oil and meal. The seed contains 20 percent high-quality digestible protein, which can be consumed by humans. . . The oil can be used both for human consumption and industrial applications.” USDA Study at 15. The oil content of hemp seeds varies from 30% to 40%. Hemp seed oil typically contains 75-80% of the poly-unsaturated essential fatty acids (EFA’s) that are needed by, but not naturally produced by, the human body.

51. Hemp seeds supply essential amino acids in an easily digestible form with a high protein efficiency ratio; the hemp oil offers a high concentration of the two essential fatty acids in an optimum ratio of the omega 3/omega 6 acids. (University of Kentucky Study at 7-8). Because of this nutritional profile, shelled hemp seed and oil are increasingly used in natural food products such as corn chips, nutrition bars, hummus, nondairy milks, breads and cereals. The companies currently selling hemp seed and oil food, beverage and nutritional products in the U.S. generally either import hemp seed and oil from Canada or Europe for use in manufacturing products in the U.S., or import already finished products from Canada or Europe. This market would be available to hemp grown at Pine Ridge Indian Reservation.

52. The basic reasons for use of hemp oil in foods are that hemp oil has a better profile of key nutrients, such as essential fatty acids and gamma-linolenic acid, than other oils, and a similar profile of other nutrients, such as sterols and tocopherols. Linoleic acid and alpha-linolenic acid are present in hemp oil in the ratio of 3:1, which is the optimal ratio for health benefits. Dr. Udo Erasmus, an internationally recognized nutritional authority on the subject of oils and fats, states: “Hemp seed oil may be nature's most perfectly balanced oil. It contains an ideal 3:1 ratio of omega-6s [linoleic acid] to omega-3s [alpha-linolenic acid] for long-term use, and provides the omega-6 derivative gamma-linolenic acid (GLA).” Udo Erasmus, Fats That Heal, Fats That Kill 127 (1999).

53. This superior nutritional profile makes hemp seed and oil ideal for a wide range of food applications – a consideration that is particularly important in places like Pine Ridge Indian Reservation that are facing diet-based health crises such as diabetes and heart disease. Hulled hemp seeds resemble sesame seeds in appearance and are comparable to sunflower seeds in taste. They may be incorporated in baking or simply added to foods such as soups or salads. Consumption of hulled hemp seed blended in shakes or drink mixes offers an alternative to meet both daily protein and EFA needs. Hemp nuts may be ground and turned into nut butter for spreads and sandwiches. The

USDA study identifies food products containing hemp ingredients to include roasted hulled seed, nutrition bars, tortilla chips, and pretzels. *Id.* Firms have also attempted to develop products including cheese, margarine and candy bars. Kentucky Study at 7. Because it is tasty and less sensitive to heat than other high omega-3 oils, particularly flax oil, hemp oil can be used for cold dishes like sauces, flavorings, and dressings, and for low-heat cooking.

### **ADDRESSING LAW ENFORCEMENT CONCERNS**

54. Legalizing hemp while continuing the prohibition on marijuana would not burden law enforcement. In countries where hemp is grown as an agricultural crop, the police have experienced no such burdens.

55. The key to a regulated hemp industry is seed certification, a common practice in the international seed industry. The burden for producing hemp varieties compliant with the prescribed THC threshold falls on the seed producer and breeding operation. As mentioned, THC content is genetically determined. Numerous low-THC varieties have been produced by European hemp breeders and these are certified by the appropriate government agency that publishes the approved list.

56. In countries that have recently re-legalized industrial hemp, individual farmers and manufacturers are licensed and registered. Field locations are recorded with local authorities. Only when there is probable cause does law enforcement need to concern itself with individual farmers.

57. It has been suggested that hemp cultivation should not be allowed because cultivated hemp will confuse law enforcement officials. There have not been any reports of problems enforcing marijuana laws by law enforcement officials of countries where fiber-type Cannabis is allowed.

58. It is extremely unlikely that hemp fields could be used to hide marijuana plants. Industrial hemp is grown quite differently from marijuana. Moreover, it is harvested at a different time than marijuana. Finally, cross-pollination between hemp plants and marijuana plants would significantly reduce the potency of the marijuana plants.

59. There is another reason that marijuana growers would be unlikely to plant their crop in a hemp field. Countries that allow fiber-type Cannabis hemp operate under a permit system whereby the farmer must let the local police know which field is being planted in hemp. It is reasonable to assume that no marijuana grower would decide to plant his or her crop in an area high on the police “radar screen” and subject to inspection without notice.

60. The former Director of the Office of National Drug Control Policy, Ret. General Barry R. McCaffrey, suggested that hemp foods and, possibly, cosmetics are confounding the integrity of the United States federal and corporate drug testing

programs. This argument derives from the possibility that trace elements of THC, known to be present in hemp seeds and oil, may show up in workplace drug tests. Research has shown that ingestion of hemp foods containing trace amounts of naturally occurring THC will not trigger false positive drug tests. Leson, Pless, Grotenhermen, Kalant and ElSohly, “Evaluating the Impact of Hemp Food Consumption on Workplace Drug Test,” 25 JOURNAL OF ANALYTICAL TOXICOLOGY 691, 692 (Nov./Dec. 2001). See also, [www.TestPledge.com](http://www.TestPledge.com) which is a program of producers of hemp food and oil products that are warranted to be in accordance with the Health Canada Protocols and so that false positives for marijuana should not be possible from ingesting such hemp foods or oils. A previous study also confirmed that hemp seed and oil food products are now highly unlikely to cause false positives in drug testing. T. Bosy & K. Cole, “Consumption and quantification of delta9-tetrahydrocannabinol available in hemp seed products,” 24 JOURNAL OF ANALYTICAL TOXICOLOGY 562 (2000). Due to the inefficient transfer of THC through the skin, the likelihood that users of hemp cosmetics may test positive is close to nil.

61. The former Director of the Office of National Drug Control Policy, Ret. General Barry R. McCaffrey has suggested that “hemp is a ‘Stalking Horse’ for the legalization of marijuana” and much of the current DEA policy towards industrial hemp seems to be based on that rhetoric. It is true that many of the first businesses were started by industrial-hemp advocates who also favored legalizing marijuana. After ten years, the hemp industry and movement has matured and the current hemp producers and advocates are a broadly composed loose coalition of farmers, rural labor, Indian nations, environmentalists, legislators and business people whose primary motivation is the reestablishment of a crop with great economic and environmental promise rather than the legalization of marijuana. Further, any effort to obtain the legalization of either hemp or marijuana would be entitled to First Amendment protections and should not therefore be held against industrial hemp as a policy consideration.

62. Just like every other social and political issue, the hemp issue involves a balancing of competing interests. In this case, the interests of environmental sustainability, bioregionalism and business must reconcile with the interests of law enforcement. However, rather than rationally weigh the competing interests, those facing the issue have been intimidated by law enforcement into over-regulating hemp for fear of being called “soft on drugs.”

63. Governments throughout the World, including the Oglala Sioux Tribe, have been able to deal with the hemp issue without being confused by the drug issue, notwithstanding DEA opposition.

64. Legalizing hemp may lead to changes in the Cannabis Eradication Program restricting it to illicit marijuana grows so that the eradication of wild growing “feral” low-THC “ditchweed” would no longer be subsidized by the program. Feral hemp, or ditchweed, is a remnant of the hemp once grown on more than 400,000 acres by U.S. farmers. It contains extremely low levels of THC, as low as .05 percent. It has no drug value, but does offer important environmental benefits as a nesting habitat for birds.

According to a Vermont State Auditor's Report on the Cannabis Eradication and Suppression Program (Exhibit 8 hereto), about ninety nine percent (99%) of the "marijuana" being eradicated at great public expense of millions of dollars per year under the Cannabis Eradication Program nationwide is harmless ditchweed.

65. We have no way of knowing whether feral hemp has been sold as marijuana. What we do know is that if this were done, it would be to fatten the profits of the drug dealer, not to increase his supply of drugs. Feral hemp, like oregano, parsley, and kenaf, has been used to dilute marijuana and defraud drug customers. That is no reason to outlaw hemp nor to burn down oregano and parsley patches. We don't make sugar illegal because it is used to cut cocaine.

66. In my opinion, there are no good reasons for law enforcement authorities to be eradicating ditchweed, especially at great time and expense when their focus could be devoted to protection of our communities.

67. The eradication of ditchweed United States represents a loss of the only germplasm remaining from the hemp bred over decades in this country to achieve high yields and other important performance characteristics. This breeding was done by the United States Department of Agriculture in a program directed by Dr. Lyster Dewey from 1912 to 1933. Another reason to reconsider our efforts to eradicate feral hemp is that hemp plays a role in supporting gamebird populations in Missouri and Nebraska. The ditchweed plants represent a unique and invaluable genetic resource that should be preserved, researched and developed; not eradicated.

#### **SUMMARY OF OPINIONS CONCERNING OGLALA SIOUX HEMP**

68. I have reviewed the findings of the Oglala Sioux Tribe in Oglala Sioux Tribal Ordinance No. 98-27, set forth below, and in my opinion such findings are well founded in fact and science (except for paragraph (g) below as to which I am unable to express any opinion):

(a) that industrial hemp is a safe and profitable commodity in the international marketplace and is grown in more than thirty countries including Canada, France, England, Russia, China, Germany and Australia, and

(b) treaties signed between the Oglala Sioux Tribe and the United States government acknowledge that the tribe retains the right to grow food and fiber crops from the soil, and

(c) industrial hemp was a viable and profitable crop grown in the Pine Ridge region when the treaties were entered between the United States and the Oglala Sioux Tribe, and

(d) the Oglala Sioux Tribe seeks to develop sustainable, land-based, economic opportunities for tribal members, and

(e) the Oglala Sioux Tribe recognizes that there is a consistent, predictable, genetically based difference between the varieties of *Cannabis sativa* that produce marijuana and those that produce industrial hemp and that the difference is based on the amount of tetrahydrocannabinol present in the plant, and

(f) law enforcement agents and farmers can learn to readily distinguish between the different varieties of *Cannabis sativa*, and

(g) the Oglala Sioux Tribe seeks to maintain its current policy of prohibiting the use and proliferation of marijuana on the reservation, and

(h) international treaties and trade agreements including the 1961 Single Convention on Narcotic Drugs, the North American Free Trade Agreement [NAFTA] and the General Agreement on Tariffs and Trade [GATT] specifically classify industrial hemp as a commodity that is separate and distinct from any narcotic, and

(i) the law enforcement policies of the United States Government are inconsistent, severely overburden industrial hemp agriculture, and do not adequately carry out the original intent of Congress regarding industrial hemp and marijuana.

69. In my opinion, industrial hemp has potential to be grown profitably at Pine Ridge Indian Reservation, Shannon County, South Dakota. Industrial hemp grown at Pine Ridge Indian Reservation would result in fiber (animal bedding, insulation and building materials) and in grain seed (for food and health oil). Such industrial hemp products could be used and/or sold to stimulate rural economic development at Pine Ridge Indian Reservation in an environmentally sustainable way. The Oglala Sioux Tribe and its members could obtain a competitive advantage by commencing cultivation and production of industrial hemp before state jurisdictions.

70. The Cannabis grown by Defendants at Pine Ridge Indian Reservation is non-drug, fiber-type Cannabis with low levels of THC (delta-9 tetrahydrocannabinol) and high levels of CBD (cannabidiol), it is not usable or ingestible to cause a drug “high” and, therefore, does not have high (or any) potential for abuse as a drug. Furthermore, the Cannabis grown by Defendants White Plume is not “marijuana” (which is meant to refer only to drug type Cannabis) even if found to fit within the technical legal definition of “marihuana” in Section 802(16) of the Controlled Substances Act.

71. It would have been prohibitively expensive and presumptively unfair for Defendants White Plume to have complied with the burdensome security requirements of the DEA for a license to grow Cannabis.

72. The proposed uses of the Pine Ridge hemp set forth in Sandy Sauser's Memorandum July 24, 2000 to the Oglala Sioux Tribe Land Committee et al. (Exhibit 8 to J. Salley Affidavit), namely weaving, basketry, raffia production and home construction with cement blocks, are reasonable, value added products from the fiber-type Cannabis hemp fiber raw material grown at Pine Ridge.

Executed on December \_\_\_\_\_, 2002.

\_\_\_\_\_  
David P. West, Ph.D.

**Subscribed and sworn to before me this \_\_\_ day of December, 2002.**

\_\_\_\_\_  
**Notary Public**

**My Commission Expires:** \_\_\_\_\_