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Petition For Suspension and Cancellation of Creosote

February 26, 2002

□INTRODUCTION

Beyond Pesticides/National Coalition Against the Misuse of Pesticides (NCAMP), Agricultural Resources Center, Center for Environmental Health, Clean Water Action, Farmworker Justice Fund Inc., GreenCAPE, Greenpeace U.S.A., Haverhill Environmental League, Learning Disabilities Association of America, MCS: Health & Environment, Northwest Coalition For Alternatives to Pesticides, Ohio Network for the Chemically Injured, Pesticide Action Network North America, U.S. PIRG, and Vermont PIRG hereby petition the Administrator of the Environmental Protection Agency (EPA) to issue a Notice of Intent to Cancel the registration of the wood preservative creosote pursuant to Section 6 of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). We further request that the Administrator immediately suspend the registration of creosote under FIFRA Section 6 (c) (1), on the ground that creosote-treated wood causes unreasonable adverse effects on public health and the environment that cannot be prevented in the time necessary to conduct cancellation proceedings.

As of 1987, EPA had instituted some mitigation measures governing creosote's use as a wood preservative. EPA allowed continued use of creosote as a wood preservative because of the lack of suitable alternatives. Now, however, economical alternatives, less toxic than creosote, but equally effective, are available. Accordingly, the suspension and subsequent cancellation of creosote will not create serious economic or social hardships. Ultimately, the risks presented by creosote's registration outweigh any potential benefits, both economic and social, associated with creosote's use.

Beyond Pesticides/NCAMP, the lead petitioner, is a non-profit, 501(c)(3), public interest organization incorporated in the District of Columbia. It was founded in 1981 and has a membership of approximately 1,200 organizations and persons from every state. Beyond Pesticides/NCAMP promotes pesticide safety and the adoption of alternative pest management strategies that reduce or eliminate dependency on toxic chemicals as a means of controlling pests such as insects, rodents, weeds, and fungi. Beyond Pesticides/NCAMP bases this petition on scientific evidence, including evidence compiled recently, demonstrating that creosote's continued registration will result in dramatic and dangerous consequences for public health and the environment.

Agricultural Resources Center is a private, nonprofit public interest organization which engages in research and public education on issues and policies related to safe food, family farm agriculture and preservation of natural resources with a special interest in pesticides. The Center for Environmental Health is a non-profit organization dedicated to protecting the public from environmental health hazards and toxic exposures by directly influencing corporate behavior. Center for Health, Environment and Justice seeks to help local citizens and organizations come together and take an organized, unified stand in order to hold industry and government

accountable and work toward a healthy, environmentally sustainable future. Clean Water Action (CWA) is a national organization working to ensure clean, safe and affordable water, prevention of health-threatening pollution and creation of environmentally safe jobs and businesses. CWA has more than 700,000 members nationwide. The Farmworker Justice Fund Inc. is a national advocacy organization founded in 1981 to improve the living and working conditions for migrant and seasonal farmworkers and their families. GreenCAPE encourages nontoxic methods of pest control, agriculture, home, garden, lawn and turf care to eliminate hazards from our air and water. Greenpeace U.S.A. works throughout the world to protect oceans and ancient forests, and to fight toxic pollution, genetic engineering, global warming, and nuclear threats. Haverhill Environmental League is a citizens' organization working on environmental and health issues in Massachusetts. Learning Disabilities Association of America is dedicated to identifying causes and promoting prevention of learning disabilities and to enhancing the quality of life for all individuals with learning disabilities and their families by encouraging effective identification and intervention, fostering research, and protecting their rights under the law. MCS: Health & Environment educates and supports people with chemical sensitivities. The Northwest Coalition for Alternatives to Pesticides works to protect people and the environment by advancing healthy solutions to pest problems. The Ohio Network for the Chemically Injured is a not-for-profit organization dedicated to education about and advocacy for those with Multiple Chemical Sensitivity and related disorders caused by unintentional exposures to chemicals and other toxins in the environment. Pesticide Action Network North America works to replace pesticide use with ecologically sound and socially just alternatives. The Sierra Club has over 700,000 members and works to promote the responsible use of the earth's ecosystems and resources, educate and enlist humanity to protect and restore the quality of the natural and human environment, and use all lawful means to carry out these objectives. U.S. Public Interest Research Group is the national lobby office for the State Public Interest Research Groups. The State PIRGs are non-profit, non-partisan public interest advocacy groups. Vermont Public Interest Research Group is the state's largest environmental and consumer watchdog organization that serves 20,000 members.

FACTUAL BACKGROUND AND EVIDENCE OF HARM

There are three kinds of creosote: coal-tar creosote, beechwood creosote, and creosote bush resin. The most common type is coal-tar creosote, which results from high-temperature treatment of coal. According to the Agency for Toxic Substances and Disease Registry (ATSDR), coal-tar creosote is the most widely used wood preservative in the United States. Over 97 percent of coal tar creosote is used for the preservation of wood. While creosote-treated wood is primarily used for railroad ties, it is also used to treat utility poles, pilings, lumber and timber, fence posts, and other wood products. The American Wood Preservers Institute estimates that each year about 1.1 billion pounds (124 million gallons) of creosote is used for wood preservatives.

I. THE HAZARDOUS NATURE OF CREOSOTE

Creosote is a complex mixture of many chemicals. About 300 chemicals have been identified in coal-tar creosote, but there

could be 10,000 other chemicals present in the mixture. Three of the classes of chemicals found in coal-tar creosote that are known to cause harmful health effects are polycyclic aromatic hydrocarbons (PAHs), phenol, and cresols. Coal-tar creosote is usually a thick, oily liquid and is typically amber to brown in color, burns easily, but does not dissolve readily in water. Some parts of the creosote mixture can enter groundwater or change into other substances while other parts persist in treated wood products for decades.

Creosote can enter the body through the lungs as a contaminant of air, through the stomach and intestines after eating contaminated food or drinking contaminated water, or through the skin after contact with treated wood. Many of the components of the creosote mixture, such as PAHs, are rapidly absorbed through the lungs, stomach and intestines. Eating soil contaminated with coal-tar creosote can also be a source of exposure. Chemicals in coal-tar creosote appear to accumulate in the body, particularly in fat tissue. The EPA has determined that cresols are possible human carcinogens. Phenols make up between 2-17 percent of coal tar creosote.

#### □A. PAHs in Creosote are Known Carcinogens

Creosote is made up of about 75-85 percent PAHs. According to ATSDR's Toxicological Profile on PAHs, "Studies of people show that individuals exposed by breathing or skin contact for long periods to mixtures that contain PAHs and other compounds can also develop cancer." Creosote contains several carcinogenic PAHs, including benz[a]anthracene, benzo[a]pyrene, and dibenz[a,h]anthracene. The Department of Health and Human Services has determined that these three PAHs are known animal carcinogens. The EPA and the International Agency for Research on Cancer (IARC) have determined they are probable human carcinogens.

In 1999, the Commission of the European Union (EU) banned the sale and use of creosote. The ban was promulgated by Germany in 1991 due to benzo[a]pyrene. In 1998, Germany submitted a study to a panel of scientists advising the EU, and the panel found there is sufficient evidence that creosote does cause cancer.

According to the National Institutes of Health (NIH), in animal studies, benzo[a]pyrene induced malignant and benign forestomach tumors, mammary tumors, lung adenomas, skin carcinomas and papillomas, tracheal papillomas and carcinomas, squamous cell carcinomas of the lung, lung tumors, tracheobronchial tumors, squamous carcinomas of the lung, local sarcomas, hepatomas and lung adenomas, abdominal fibrosarcomas, mammary and uterine carcinomas, mammary carcinomas, local tumors, and an increased the incidence of lung adenomas and initiated skin carcinogenesis in the offspring.

#### B. Acute Toxicity

Reports describing coal-tar creosote poisoning in workers or accidental or intentional ingestion of coal-tar creosote indicate that brief exposures to large amounts of coal-tar creosote can cause harmful effects on the skin, eyes, nervous system, and kidneys. Skin contact with a few drops of coal-tar creosote irritates and burns the skin and eyes. Coal-tar creosote also makes the skin more sensitive to the effects of the sun. These effects include burning, irritation and swelling. When heated

to decomposition it emits acrid smoke and fumes, which may cause irritation of eyes, nose, and throat.

Acute systemic poisoning causes salivation, vomiting, dyspnea, headache, dizziness, loss of pupillary reflexes, cyanosis, hypothermia, convulsions, and coma. Death can also occur as a result of multi-organ system failure, where creosote exposure causes shock, acidosis, respiratory depression, and anuric renal failure.

#### C. Chronic Health Effects

Short- and long-term animal studies show similar effects from exposure to cresols. Long-term exposure to lower levels of coal-tar creosote can also result in damage to skin, such as reddening, blistering or peeling. The major organs or systems affected by longer-term exposure to lower levels of coal-tar creosote in animals are the skin and lungs.

Experiments in rats and mice have shown creosote to be teratogenic. Birth defects have been seen in livestock exposed to wood treated with coal-tar creosote. An increased risk for cancer has been demonstrated in animals exposed to coal-tar creosote.

The EPA has determined that coal tar creosote is a probable human carcinogen. IARC has also determined that creosote is probably carcinogenic to humans (Group 2A). Animal studies show that cresols may increase the ability of some carcinogenic chemicals to cause tumors. Dermal exposure to creosote can increase the risk of cancer from other agents. □Creosote has been shown to be mutagenic in human studies. Creosote contains benzo[a]pyrene, which is considered to be an endocrine disruptor.

Prolonged skin exposure, such as those experienced by workers, may increase the amount of creosotes absorbed into the bloodstream. Studies have also indicated that creosotes can cross the placenta into the tissues of a developing fetus, and because coal tar products can be stored in body fat, they may also be found in breast milk.

#### D. Ecological Effects

Components in coal tar creosote may persist in groundwater, and breakdown may take years. Additionally, breakdown in soil can take months or much longer for some components of this pesticide. The ATSDR report stated, "Sometimes, the small amounts of chemical remaining in the soil or water that take a long time to break down are still toxic to some animals and possibly to humans."

The major source of creosote in surface and groundwater is waste water from wood preserving facilities. Some creosote components are taken up by plants to a limited extent. More commonly, they adsorb to plant roots. Both terrestrial and aquatic animals have been observed to bioconcentrate creosote components. Hepatic lesions and neoplasms in fish have been associated with exposure to creosote contaminated water.

Some components of creosote such as phenols and nitrogenous bases such as aniline, toluidines and xylidines, are water soluble. They migrate easily from contaminated soils or treated wood. Polycyclic aromatic hydrocarbons can

attach to soil particles and may move with sediments into streams or remain part of a tarlike mass, but they may also move into groundwater in sandy soils low in organic matter. The remaining phenolic and heterocyclic components, as well as lighter polycyclic aromatic hydrocarbons, near the soil surface are generally volatilized, oxidized, or biodegraded. While many components are biodegraded, the high molecular weight polycyclic aromatic hydrocarbons that remain are bioaccumulative and carcinogenic.

## II. EXPOSURE RISKS ASSOCIATED WITH CRESOSOTE

### A. Risks to Workers

Creosote is primarily used as a wood preservative for producing railroad ties. Those employed in the wood preserving industry make up the largest part of the population exposed to coal tar creosote.

Occupational exposure to coal products can increase the risk of lung and skin cancer in workers, according to the National Institute for Occupational Safety and Health (NIOSH). This group established a recommended occupational exposure limit, time-weighted average for coal tar products of 0.1 milligram of PAHs per cubic meter of air (0.1 mg/m<sup>3</sup>) for a 10-hour workday, within a 40-hour workweek. NIOSH reported the following occupational exposures to creosote in the air in U.S. wood preservative facilities: treating operator, 0.007-1.343 mg/m<sup>3</sup> and locomotive operator, 0.013-0.159 mg/m<sup>3</sup>. This shows that treating and locomotive operators exceed the recommended exposure limits.

Additionally, the U.S. Department of Agriculture estimates that about 4,000 commercial pressure-treatment workers have occasional high potential inhalation exposure to creosote, and approximately 100 commercial thermal and dip-treatment workers in wood preservative facilities have consistently high potential inhalation exposure to creosote.

According to an EPA funded publication entitled Recognition and Management of Pesticide Poisonings, "Workers in contact with technical creosote or with treated timbers sometimes develop skin irritation, vesicular or papular eruptions, dermal pigmentation, and occasionally gangrene and skin cancer." Additionally, there have been reports of photosensitization. Eye contamination results in conjunctivitis and keratitis, which sometimes causes corneal scarring. This document also states that absorption of ingested creosote occurs promptly, and significant lung absorption of vapor can also occur. The most common way creosote enters the body of individuals working in the wood preserving industry is through the lungs.

Workers who build fences, bridges, or railroad tracks, or those who install telephone poles made with creosote-treated wood may also be exposed. Additionally, workers who inspect or maintain these materials are at risk.

Several case reports describe the development of skin cancer in workers who were exposed to creosote. One study shows 35 cases of skin cancer that involved exposure to creosotes, 12 of which were of the scrotum. The majority of these cases involved workers handling creosotes or creosote-treated wood.

### B. Risks to Children

Children may also be exposed to creosote. For example, creosote can enter their bodies if they put their unwashed hands in their mouths after touching soil or wood that is contaminated with creosote. As 13 percent of utility poles are made with creosote, children that play near these poles are also at risk of exposure. Children may ingest the chemicals in soil that is contaminated by leaching from creosote utility poles. They may also be exposed due to playing near landscaping that is made with creosote ties, discarded creosote pools, or at abandoned hazardous waste sites.

Intentional or accidental eating of creosote has resulted in poisoning. Children are particularly vulnerable to chemical exposure, as their neurological systems are still developing. Studies with laboratory animals have shown birth defects, such as cleft palates, in the young of mothers exposed to high levels of creosote during pregnancy.

As mentioned above, absorption of creosote occurs quickly. This fact is significant because scientists have established that children often put their hands and other objects into their mouths. A recent study using video tape to monitor children found that children put their hands in their mouths an average of six times per hour, ranging up to 45 times per hour for some children. Daily estimates of soil ingestion by children average 179 mg/kg.

### C. Other Exposure Risks

Individuals living or working near wood preserving facilities may also be exposed to contaminated soil, surface water, or groundwater. Near facilities where the soil was not cleaned up, the most common way for creosote to enter the body exposure is through skin contact with the soil. According to the ATSDR Draft Toxicological Profile, "Hazardous waste sites are a major source of contamination with creosote."

Landscapers, homeowners, and farmers who apply coal tar creosote to wood in noncommercial settings by using a brush or dip procedure are also at risk. While these practices are no longer legal unless you are trained to use creosote as a wood preservative, they are difficult to enforce if this product is still available in the marketplace. Additional exposure occurs with individuals who use railroad ties or telephone poles in landscaping, or who use reclaimed scrap lumber from a creosote-treated structure. The practice of reusing poles taken out of service by utility companies is a widespread and common practice that presents a hazardous exposure pattern.

While the EPA prohibits the use of creosote products indoors, several cases of families living in such structures have been reported recently to Beyond Pesticides. People who live or work in houses or cabins made with creosote-treated wood may also be exposed through the air or by direct contact with the wood. This is of particular concern given that many used ties are given away to uninformed individuals or farmers who may use them for building purposes.

Lastly, individuals may come in contact through eating food or drinking water that is contaminated with creosote. According to ATSDR, "Intentional or accidental eating of coal tar creosote has resulted in poisoning." Shellfish has also been contaminated with creosote. Drinking water that is taken from

groundwater near wood treatment facilities, utility poles, or hazardous waste sites may also be contaminated with creosote. This is of particular concern where drinking water supplies are unregulated, such as in rural areas and where people have private wells.

### III. PRODUCTION, DISPOSAL, AND REUSE OF CREOSOTE TIES CREATES ADDITIONAL RISKS

#### A. Production Facilities Produce Largest Source of Coal Tar Creosote into the Environment

According to the ATSDR's public health statement on creosote, the wood preservative industry releases coal tar creosote into water and soil. Companies that produce creosote-treated wood may treat their water wastes in treatment plants or release the wastewater to the municipal water treatment system. While new EPA restrictions have decreased the amount of creosote available to move into soil from wastewater effluents, this represents the largest source of coal tar creosote in the environment.

Approximately 1,152,129 pounds of coal tar creosote (99.2 percent of the total environmental release) were discharged to air, while 8,039 pounds (0.7 percent) were discharged to water from manufacturing and processing facilities in the United States in 1993, according to the Toxics Release Inventory of 1995. The remaining 0.1 percent of total environmental release was creosote (1,528 pounds) discharged to water. However, it should be noted that only certain types of facilities were required to report. Wood preserving facilities that produce creosote-treated wood may treat aqueous wastes in on-site biological treatment plants or release the wastewater into a municipal water treatment system. □ □ B. Chemicals From Treated Timber Seep Into Soil, Surface Water, and Groundwater

According to ATSDR, "Coal tar creosote components may also be found in the soil as a result of leaking or seeping from treated timber." Some components of coal tar creosote can dissolve in water and may move through the soil to eventually reach and enter the groundwater, where they may persist. Breakdown may take years once it enters the groundwater. Breakdown of creosote in the soil can take months or much longer, depending on the components.

Leaching from creosote-contaminated soils or from treated wood products that come into contact with water may cause water-soluble creosote components, such as phenol, to be released into surface water or groundwater. Groundwater contamination from creosote waste waters and sludge stored in unlined surface water impoundments have been reported in Florida, Texas, and Minnesota.

#### C. Disposal

There are currently no national standards for disposing of creosote-treated wood. As the U.S. railroad system has about 175,000 miles of track, with approximately 542,500,000 creosote-treated railroad ties, safe disposal is a significant concern. Between 10-15 million ties are replaced annually by U.S. railroads, creating huge amounts of toxic wood waste. Fifteen million ties laid end-to-end would stretch approximately 24,000 miles.

The EPA says it is safe to dispose of treated wood through incineration or as regular, nonhazardous waste. Many railroad companies sell their used railroad ties to third party companies, which burn them in incinerators. Another common method of "disposal," while illegal, is to pile used ties along rights of way. A significant amount of used ties are also given away to avoid disposal costs, and usually private residents or farmers are left with disposal.

These dangerous practices are still occurring, despite the fact that the ATSDR states, "The potential for many types of hazardous pollutants to be included with creosote wastes seriously diminishes the potential for recycling or re-use." Wood Waste Energy, Inc., which was acquired by RailWorks, collects used ties along railroad rights of way for recycling. According to an article published by RailWorks, "Reusable ties are sold to a secondary market for landscaping and other construction uses." These individuals often use them for landscaping, and are unaware of the hazardous pollutants. Or, they are sawed by untrained individuals so they will be accepted by the garbage truck and delivered to the municipal dumpsite. The sawdust then ends up on their skin or is inhaled.

So far, disposal of creosote-treated wood as hazardous waste is an option that has been avoided. While this is an out-of-pocket savings for the railroad industry in the short-term, it represents a real hazard to communities with associated long-term cleanup costs.

### □ IV. CREOSOTE SUPERFUND AND OTHER HAZARDOUS WASTE SITES

#### A. Superfund Sites

Coal tar creosote, coal tar, and coal tar pitch have been found in at least 59 of the current or former sites on the EPA Superfund National Priorities List (NPL). The number of NPL sites with creosote may increase as more sites are evaluated. Creosote made from coal tar is the most common type of creosote that is found in hazardous waste sites.

Federal Creosote, located in Manville Borough, New Jersey is an NPL site. The 53-acre site was operated as a wood treatment facility from about 1910 to the mid-1950s. In August 2001, EPA estimated it would cost \$17.7 million for its plans to clean up the Federal Creosote superfund site. The proposed plan was the third phase of a hazardous waste cleanup of a former railroad tie creosoting facility. It involved shipping 38,000 cubic yards of excavated creosote-tainted soil off site for treatment and disposal. The soil cleanup was estimated to take two years to complete. The plan also included restrictions on well drilling "to prevent human consumption of the contaminated ground water."

The EPA's Persistent, Bioaccumulative and Toxic Pollutants Pesticides Work Group listed four other superfund sites that were wood treatment facilities primarily contaminated with creosote. One is the GCL Tie and Treating facility located in Sydney, New York. This site had a release of about 30,000 gallons of creosote. The second is the American Creosote Works in Jackson, Tennessee, which was used from the early 1930s-1981 for creosote wood preserving operations. At this site, there is contamination of sludges, site, structures, debris, and tanked liquids. The third site listed is the Utah Power &

Light/American Barrel in Salt Lake City, Utah. This is now an inactive coal gasification and wood treating plant where they conducted creosote pole treating operations during 1927-1958. The fourth site is the Wyckoff Co./Eagle Harbor facility located in Bainbridge Island, Washington. From 1905 to 1988 the facility conducted wood treating operations involving pressure treatment with creosote. There is now contamination of subtidal/intertidal sediment, soil, and groundwater.

□B. "The Blob"-Infamous Hazardous Waste Site

Located in Thunder Bay, Ontario, Canada, "The Blob" was a 13,000 cubic meter underwater dumpsite consisting mostly of creosote. A succession of facilities dripped creosote into the bay for over 50 years. While it is now owned by Northern Wood Preservers Inc., previous owners included Abitibi-Consolidated and CN Rail. After decades of fighting over who has responsibility, cleanup is finally two-thirds completed. The site is used to preserve wood for railroad ties and hydro poles.

V. PRIOR AGENCY ACTION REGARDING CREOSOTE

In 1978, EPA issued Notices of Rebuttable Presumption Against Registration (RPAR), now called Special Review, for pesticide products containing the three heavy-duty wood preservatives, namely creosote, pentachlorophenol, and inorganic arsenicals. Only chemicals that trigger serious health and environmental concern are subjected to this fast-track review. The rebuttable presumption for creosote was based on oncogenicity and mutagenicity.

In 1981, EPA published Position Document No. 2/3 on these wood preservatives, proposing action based on the agency's determination that uses of creosote wood preservatives could result in unreasonable adverse effects. In 1986, EPA cancelled all nonwood uses of liquid creosote and restricted the use of coal tar creosote to certified applicators.

A. Flaws of the Prior Review

One of the significant shortcomings of EPA's review of creosote was the failure to consider exposures to individuals at the end of treated wood's lifecycle. As discussed earlier, this includes: leaching into soil and water; disposal through incineration, which produces a tremendous amount of greenhouse gases; and the hazards of uninformed and unprotected individuals recycling or reusing creosote. When EPA issued another position document on wood preservatives in 1984, it again failed to address the issue of non-occupational exposure due to PAHs, cresols, and phenols leaching out of creosote-treated wood into the soil and groundwater.

In 1999, Beyond Pesticides conducted a survey of over 3,000 utility companies to analyze how the companies store, use, re-treat, and dispose of treated wood utility poles. Utilities from 24 states and Canada responded to the survey. Over 68 percent of the utilities that responded routinely give away or sell their used utility poles to the public. For example, the Western Resources utility company in Kansas actually received an award in 1999 from the Kansas Department of Health and Environment for donating and converting treated wood into bird houses and outdoor environmental classrooms.

The utility poles were milled into landscaping timbers and

other types of lumber. (One of the utilities required recipients of discarded poles to sign a form releasing the utility from any liability before taking possession of the poles.) Neither the mill operators nor the general public that receive discarded creosote-treated wood are provided information regarding the risks associated with the exposure to PAHs, phenols, and cresols.

B. Failure Of EPA's Consumer Awareness Program □□ One outcome of EPA's 1984 RPAR of creosote was a proposed mandatory Consumer Awareness Program (CAP). The program would have required members of the American Wood Preservers Institute (AWPI), wood treaters, and retailers to provide consumers with a Consumer Information Sheet at the point of purchase. AWPI immediately challenged the proposal and succeeded in convincing EPA to weaken the program. Thus, when EPA published a revised proposal in 1986, the mandatory CAP had been converted into a voluntary CAP, over which EPA had no enforcement authority. EPA stated that a voluntary CAP was "likely to meet the Agency's goal of providing users of pressure-treated wood with proper use and precautionary information." □□ EPA considered the CAP an integral part of its risk mitigation efforts to protect public health. The agency stated:

The Agency has every reason to believe that this voluntary Consumer Awareness Program will reach those members of the public using treated wood and alert those individuals to proper use and precautionary practices. Because this voluntary program is expected to satisfy the Agency's public health protection goals, the Agency has determined that the risk-benefit balance will not be affected by eliminating the mandatory Consumer Awareness Program for the labeling. Should the voluntary program fail to meet the Agency's expectations, the Agency is prepared to issue a rule pursuant to the Toxic Substances Control Act directed to alert all purchasers and users of treated wood to appropriate information about the use of such products. □□ By 1994, EPA had noted a lack of participation nationwide in the voluntary CAP. This year, EPA again stated, "the previous consumer awareness program was not adequately informing the public." In short, EPA's calculation of acceptable risk assumed that individuals who handle, use or dispose of wood treated with creosote would be provided with Consumer Information Sheets at the time of sale or delivery to end users, but the CAP is not serving that function. This failure adds to already excessive risks, and creosote's registration should be canceled.

EPA continues to "mitigate risks" through the use of the voluntary and unenforceable CAP program, which state enforcement agencies and EPA itself acknowledge has been a failure. Through a series of meetings, EPA negotiated alterations to the program in June, 2001 that addressed end-tag labeling of wood, in-store lumber bin stickers and signs, consumer information sheet redesign and other communication avenues. EPA decided not to institute a mandatory and enforceable program, despite the agency's earlier warning (cited above) in 1986 that a failure to conform to the voluntary agreement would result in the issuance of a rule resulting in a mandatory consumer and end-user awareness program. The failure of this program and EPA's continued reliance on an approach that has a proven track record of failure put the public and end-users at serious continued and unreasonable risk. After years of failure, the agency has no evidence that the continuation of an

unenforceable and voluntary program, albeit redesigned, will ensure that the information EPA deems necessary to protecting health and safety will actually get to the consumer and end-user. All evidence suggests that it will not.

VI. INCREASE IN AVAILABILITY OF ALTERNATIVE TECHNOLOGIES HAS SHIFTED RISK-BENEFIT ANALYSIS AWAY FROM CONTINUED CREOSOTE USE

In 1981, when EPA analyzed the heavy-duty wood preservatives as part of the RPAR process, it chose not to cancel creosote’s registration primarily because of a lack of available alternatives. The agency explained:

The Agency is very concerned about reducing the apparently high risks to treatment plant workers. However, canceling a specific use or uses for each one of the three wood preservative chemicals is unlikely to alter the overall risk picture for that chemical, since the treatment plant applicator is likely to apply the chemical to another end-use product. Thus, in order to appreciably lower the risks from exposure, we would have to cancel all uses of that pesticide [sic]. Due to the non-substitutability of the wood preservative compounds and the lack of acceptable non-wood or other chemical alternatives for many use situations, the economic impact which would result from an across-the-board cancellation would be immense. Moreover, the only wood preservative pesticides that are efficacious for a majority of the use sites are the inorganic arsenical compounds, which pose the highest level of estimated risk. □□The health and environmental risks discussed above must be evaluated against the availability of alternative materials and approaches that may be safer. Today, several alternative technologies are available to replace every use of creosote-treated wood. Below we provide a comparative analysis of these products along with the cost and life span differentials among them. It is also important to consider external pollution costs relating to chemical cleanup and health care associated with wood preservative-induced illnesses.

In EPA’s 1981 study of the economic impacts of canceling creosote and pentachlorophenol, they determined the following: canceling for the use of railroad ties, piling, and poles would cause a major impact; canceling for the use of lumber, timber, and plywood would cause a moderate impact. The economic impact descriptors were determined by evaluating the following factors: 1) dollar impact and 2) total market, 3) disruption due to change to alternatives (e.g. capital investment), 4) aesthetic considerations, 5) cost and availability of alternatives, and 6) other specific factors. Now, an economic analysis would be much different given today’s alternatives.

A. Alternatives to Creosote Railroad Ties

The majority of coal tar creosote production is used to preserve wood for railroad ties. In 1981, the available substitutes included only copper naphthenate-treated ties and concrete railroad ties, both of which would have increased the cost of the nation’s railroad tie system. This is primarily because concrete cannot be intermingled with existing wood-based railroads.

Over the past decade, composite railroad ties have become a viable and effective alternative to creosote ties. There are at

least a half-dozen companies that produce composite railroad ties, including PolySum Technologies, Polywood Inc., Primix, Inc TieTek, and U.S. Plastic Lumber. Polysum, TieTek, and U.S. Plastic Lumber, products have undergone extensive testing by the Transportation Technology Center, Incorporated (TTCI), which is a subsidiary of the Association of American Railroads, and other testing laboratories. They are considered viable alternatives by the railroad industry, and have been tested by TTCI to withstand over 500 million gross tons of traffic-which translates into many years of use. Based on lab tests, these companies are confident their composite ties will last much longer than creosote ties. Additionally, composite ties inherently resist insects and microorganisms, do not rot, splinter, or decompose, and are impervious to petroleum.

About 75 percent of the materials in TieTek’s railroad ties are made from recycled materials, including rubber, plastics, and fiberglass. U.S. Plastic Lumber’s ties are made with high-density polyethylene and reinforcement elements. Polysum’s ties are made with 100 percent recycled plastic and gypsum, which is another large waste product that can be recycled. Polysum has a patented trapezoid design that can eliminate up to 20 percent of the ties needed or carry heavier loads. All of these ties are in turn recyclable.

U.S. Plastic Lumber worked with Rutgers University, the Army Corps of Engineers, and several Class 1 railroad companies to determine the specifications of structural requirements for railroad ties. (Class 1 railroad companies are the largest U.S. line haul freight railroads.)

Concrete railroad ties are another alternative. However, they can only be used in new stretches of railroad since they cannot be intermingled with wooden railroad tracks. Recycled steel is another environmentally sound option.

Composite Ties are Less Expensive Over the Life Cycle

On average, creosote ties cost about \$30-35/unit and composite ties cost anywhere from \$58-\$85/unit. It is equally important to note that depending on location and environment, wood ties last 6-60 years, but manufacturers of composite ties are confident they will last 50 years in any environment. Wood ties in the southeast quadrant of the United States, where the climate is warm and moist, are particularly vulnerable to a shortened lifespan. While composite materials cost more initially, the lifetime costs are less expensive because less maintenance and labor is needed to replace the ties, and because railroad companies will no longer have to pay for disposal. Furthermore, due to economies of scale, prices for these alternatives should fall as demand increases. New plants to produce composite ties have been and could be set up in a matter of weeks to just a few months. Below is an example of the life-cycle costs of a composite tie versus a wood railroad tie.

Table 1 Life Cycle Analysis of Composite vs. Wood Railroad Tie

Life Cycle Analysis	Composite Railroad Tie	Wood Railroad Tie
Tie	Service Life 40 yrs	15 yrs
	Purchase Price	\$ 58.00
	\$ 30.00	Installation Cost (Est) \$ 87.00
	Recycle/Return credit @ \$0.05/lb	(\$ 15.00) \$ 0.00
	Tie Disposal Cost (Incineration)	\$ 0.00 \$ 10.00
	Unit Cost	\$130.00 \$ 127.00
	Annual Life-Cycle Cost/Unit	\$ 3.25 \$ 8.47
		□□40 Year

Life-Cycle Cost/Unit \$130.00 \$338.67 □ 40 Year Savings/Unit \$208.67 □ Ratio Life Cycle Cost 1.0 2.7 □ □ 40 Yr Savings in Current Dollars/Unit \$208.67 □ □ Source: Example provided by Polysum

### Significant Market Demand for Alternatives to Creosote Railroad Ties in U.S.

Several factors have influenced a growth in the market demand for alternatives. One major factor is an increase in the load capacity from 36 tons per axle to 39 tons per axle over the past several years, which accelerates the wear of wood ties. A second factor is that the railroad industry has been watchful of the environmental concerns over creosote, and is concerned that there may be future restrictions on the use of creosote. Three other drivers to alternatives include the lower quality of today's wood ties, the rising cost of wood, and the large number of trees required to meet the demand of wood ties.

Composite ties are now being used all over the country. For example, Union Pacific Railroad, the Chicago Transit Authority, the Washington DC Metro, Blue Mountain Energy, Mississippi Export Railroad, New Orleans Public Belt Railroad, New Orleans Regional Transit Authority, and BTI Railroad in Wyoming are all using composite ties. Recycled steel has also been performing well for the U.S. Army and U.S. Navy.

### EU Turns to Composite Ties after Banning Creosote

Polysum, a U.S.-based company, is now working with the United Kingdom to provide composite ties. The company will license their technology to a group in England that will produce about 12,000 ties per day, beginning as early as the summer of 2002. As the EU recently banned creosote, it is expected that Polysum's technology will be used in other European countries as well.

### Composite Ties are Environmentally-Friendly

As mentioned above, there is a significant amount of toxic wood waste generated each year. Conversely, as the market share of alternative ties increase, considerable amounts of recycled plastic would be diverted from landfills for reuse in durable composite railroad ties. The vast majority of about eight billion pounds of plastic containers, such as those used for milk, soda and detergent, now end up in landfills. The composite tie industry will in turn provide a market-based incentive for recycling as municipalities become more aware of the demands of recycled plastics and the lack of space in landfills.

Composite ties do not leach contaminants into soil or groundwater, and never require the maintenance that wood ties need, such as painting, sealing or treating. Another environmental benefit to this alternative is that composite ties prevent the annual consumption of about 100 million cubic feet of wood, including hardwoods, which in turn prevents the accumulation of greenhouse gases. Additionally, because plastic is more resilient than wood, composite ties dampen sound and vibrations. This is a particular advantage in urban areas.

### B. Viable Utility Pole Alternatives

Thirteen percent of utility poles are made with creosote. The utility industry expects 40 to 50 years of service for pressure-treated wood (although it has been found that a bad batch of wood can yield less than 35 years of service). The recycled steel, concrete, and fiberglass alternatives yield a lifespan of 80 to 100 years. There are differences in maintenance costs associated with different materials. Wood may require retreatment, which some utilities perform on a set cycle, while steel, concrete and fiberglass do not. In addition, disposal costs for chemicals used in wood treatment are high and growing, while steel is recycled. For the purposes of a comparative analysis, we use an average pole size of 40 feet, class 3 or 4. The Tillamook People's Utility District in Oregon pays \$271 for its wood poles and approximately \$70 more for steel poles. However, the utility believes that steel provides a long-term savings because its lifespan is nearly double that of wood and the use of steel eliminates the wood pole retreatment program that costs the utility \$30 to \$35 a pole.

Recycled steel has been cited as the most common alternative utility pole material in a Swedish report. The same is true in the United States, although steel alternatives represent a small but growing alternative when compared with the use of treated wood utility poles. There are a number of other materials that are also available for poles, such as fiberglass reinforced composite. Additional options include using wood treated with Alkaline Copper Quaternary or burying utility lines underground.

### C. Viable Alternatives to Creosote Marine Pilings

Composite materials can also be used in place of creosote-treated marine pilings. Several of the manufacturers that make composite railroad ties also make marine pilings. For example, U.S. Plastic Lumber produces structural plastic lumber made with recycled materials. They produce cost-effective, high-performance alternatives that have excellent resistance to marine borers, salt spray, termites, oils and fuels, corrosive substances, and other environmental stresses. Additionally, plastic pilings do not absorb moisture and will not rot, splinter or crack like wood pilings. Polysum creates "fender piles," that actually glow above water to help ship captains avoid hitting bridges, piers, or wharves.

## LEGAL STANDARDS

### I. CANCELLATION

FIFRA authorizes EPA to cancel a pesticide's registration if, "when used in accordance with widespread and commonly recognized practices, [the pesticide] generally causes unreasonable adverse effects on the environment." "Unreasonable adverse effects on the environment" include "any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide." As discussed in detail on pages 2 through 13, above, the evidence shows that continued registration of creosote results in serious adverse effects on public health—specifically, increased risk of cancer among those exposed to creosote-treated wood products. Furthermore, recently developed alternatives to creosote will alleviate adverse economic consequences of creosote's removal from the marketplace. In a cancellation proceeding, the registrants bear the burden of proving that the FIFRA cost-benefit standard has been met, and registrants will not be able

to meet that standard here. Thus, EPA should act expeditiously to issue a Notice of Intent to Cancel registration of creosote, and should set about preparing a comprehensive evidentiary record for cancellation proceedings.

## II. SUSPENSION

FIFRA authorizes the EPA to suspend a pesticide's registration when the pesticide presents an imminent hazard to public health and the environment. An "imminent hazard" is "a situation which exists when the continued use of a pesticide during the time required for cancellation proceeding would be likely to result in unreasonable adverse effects on the environment." On a daily basis, creosote's continued registration creates an imminent hazard because there is a virtual certainty that significant harm to public health and the environment will be experienced due to the seriousness and the immediacy of the consequences of exposure to creosote-treated wood. Furthermore, based on the nature and extent of the information presented in this petition, the risks to the public of continued use of creosote during the cancellation process far outweigh the benefits associated with its continued registration. In addition, for the reasons outlined above, EPA's conclusions in 1984 pose no impediment to suspension at this time. Consequently, FIFRA mandates that the EPA issue a suspension order to protect the public.

## CONCLUSION

FIFRA authorizes EPA to act as a regulatory gatekeeper for pesticides. Under FIFRA, EPA has the power to protect the public from creosote by issuing a Notice of Intent to Cancel registration of creosote. As the foregoing evidence demonstrates, the legal standards for immediate suspension and subsequent cancellation are met because creosote's continued registration causes unreasonable adverse effects on public health and the environment. Recent and reliable scientific evidence demonstrates that creosote presents an imminent hazard to public health. The toxic effects of creosote have been thoroughly documented and are virtually uncontested. Decades of extensive studies, performed by both government and private entities, reveal a positive correlation between public health risks, including an increased risk of cancer, and creosote exposure through contact with wood preservatives. In addition, any benefits created by creosote wood preservatives are drastically undercut by the impossibility of introducing creosote into the environment with adequate safety measures. For nearly two decades, the wood preservative industry has failed to comply with EPA's voluntary consumer awareness program designed to alert the public to the dangers of creosote-treated wood. As a result, consumers remain unaware of the hazards associated with exposure to creosote-treated wood, which include respiratory, dermatological, and neurological injuries. Moreover, the wood preservative industry has not developed a means to protect the public from PAHs, cresols, and phenol leached from creosote-treated wood.

The outcome of a creosote risk-benefit analysis, which is a necessary component of cancellation and suspension proceedings under FIFRA, is clear because the carcinogenic effects of creosote are likely, especially with regard to workers and children, who are most vulnerable to the risks associated with creosote-treated wood. Furthermore, given the availability of viable, competitively priced, alternatives

to creosote, the long-term economic and social impacts of cancellation are negligible and do not outweigh the well-documented public health and environmental harm of continued registration. Therefore, continued registration of creosote presents an imminent hazard that, at a minimum, warrants the expeditious initiation of cancellation proceedings.

## REQUEST FOR RELIEF

Beyond Pesticides/NCAMP requests that the EPA: □ □ (1) Determine that creosote, when used as a component of wood preservatives, causes unreasonable adverse effects on public health and the environment;

(2) Determine that creosote presents an imminent hazard to public health and the environment because the unreasonable adverse effects resulting from creosote's use cannot be avoided within the time necessary for cancellation hearings;

(3) Issue a Notice of Intent to Cancel the registration of all pesticide products containing creosote;

(4) Immediately suspend the registrations of all pesticide products containing creosote;

(5) Move as expeditiously as possible to complete the cancellation of all pesticide □ products containing creosote; and

□ (6) Create national standards for safely disposing of all used creosote-treated wood, including banning the recycling of used wood products containing creosote (e.g., giving away used creosote ties to the public for landscaping), and stricter enforcement for illegally dumping creosote ties.

□ Respectfully submitted,

Jay Feldman □ Executive Director □ Beyond Pesticides/NCAMP

cc: Frank Sanders, Connie Welch, Agricultural Resources Center, Center for Environmental Health, Clean Water Action, Farmworker Justice Fund Inc., GreenCAPE, Greenpeace U.S.A., Haverhill Environmental League, Learning Disabilities Association of America, MCS: Health & Environment, Northwest Coalition For Alternatives to Pesticides, Ohio Network for the Chemically Injured, Pesticide Action Network North America, U.S. PIRG, and Vermont PIRG