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May 5, 2021

Office of Pesticide Programs
Environmental Protection Agency, (28221T),
1200 Pennsylvania Ave., NW
Washington, DC 20460-0001

Re: Pesticide Registration Review: Proposed Interim Decision for Creosote, Case 0139 [EPA-HQ-OPP-2014-0823]; Chromated Arsenicals, Case 0132 [EPA-HQ-OPP-2015-0349]; and Dichromic Acid, Case 5012 [EPA-HQ-OPP-2010-0243]

Dear Madam/Sir,

Thank you for the opportunity to comment on the Proposed Interim Decisions (PID) for creosote, chromated arsenicals, and dichromic acid. These comments are submitted on behalf of Beyond Pesticides. Founded in 1981 as a national, grassroots, membership organization that represents community-based organizations and a range of people seeking to bridge the interests of consumers, farmers and farmworkers, Beyond Pesticides advances improved protections from pesticides and alternative pest management strategies that reduce or eliminate a reliance on pesticides. Our membership and network span the 50 states and the world.

The Proposed Interim Decisions for these wood preservative chemicals are flawed and fail to recognize that the proponents for the continued registration of these chemicals have not met their burden to satisfactorily demonstrate these chemicals and wood preservative uses will not pose an unreasonable risk of adverse effects to human health and the environment. Due to the serious human health and ecological risks identified by the agency and replete in the scientific literature, numerous existing data gaps documented, and ample availability of alternatives, we recommend that the agency suspend the registrations of creosote, chromated copper arsenate type C (CCA-C), and dichromic acid until the outstanding ecological effects and exposure monitoring data requirements identified have been submitted and fully assessed. Without these, additional data the agency cannot rightly conclude these chemicals pose no unreasonable risks. Further, we urge the agency to immediately cancel the registrations of the

two chromated arsenicals ammoniacal copper zinc arsenate (ACZA), and acid copper chromate (ACC). Available usage data provided in the PID indicate almost no use of ACZA, and ACC was recently withdrawn from the American Wood Protection Association (AWPA) Book of Standards for use as a preservative and has no reported use in best available usage data. The risk of adverse effects for these compounds were also not considered in the PID. It is therefore unreasonable under the statutory requirements of FIFRA to continue the registrations of ACZA and ACC. Likewise, the agency should cancel creosote oil (PC code 025003), and coal tar (PC code 022003) registrations because these active ingredients were not assessed in the creosote PID and there are no active product registrations containing these ingredients.

Beyond Pesticides has for decades identified the extensive environmental and health risks of wood preservatives and advocated for their cancellation. Notable documentation on the risks and history of wood preservatives regulation including creosote, chromated arsenicals, and dichromic acid can be found in the following links:

- **Poison Poles** (1997)
- **Pole Pollution** (1999)
- **Beyond Pesticides comments to EPA on Wood Preservatives** (2008)
- **Beyond Poison Poles: Elected officials say no to toxic utility poles in their communities** (2014)
- **United Nations Committee Recommends Global Elimination of Toxic Wood Preservative** (2014)

There are several conflicting statements in the benefits assessment sections of these wood preservative PIDs that raise questions with the adequacy of the alternatives assessments as well as the risk assessments. In the chromated arsenicals benefits assessment, the agency states "CCA-C-treated utility poles are selected over creosote-treated poles in environments with chronically wet soil or areas with a high water table because CCA-C is fixed or bonded to wood resulting in less leaching." However, in the creosote benefits assessment, the agency states that creosote-treated poles are uniquely specified for use where there is a high water table or soil moisture environment because it maintains its effectiveness even when kept wet. This contradiction between the two PID benefits assessments needs to be reconciled. The CCA-C PID further states that chromated arsenicals and dichromic acid are irreplaceable in marine environments in the southern United States, where the predominant end use is the protection of pilings. The creosote PID states in contrast, poles preserved with creosote have a benefit along marine coastal areas because creosote imparts resistance to decay and is more tolerant of saltwater spray or splash than other preservatives. The benefits assessment for CCA-C specifies that waterborne preservatives such as CCA-C have an important benefit over the oil borne creosote in areas with more people because oil borne chemicals can provide greater dermal exposure due to having wood surfaces that are sticky or "bleed". Creosote also typically causes treated wood to have an odor because of the type of oil carrier used during pressure

treatment, indicating the release and inhalation exposure to toxic polycyclic aromatic hydrocarbons (PAHs). In addition, the PID further states that wood treated with CCA-C does not leave an oily sheen on the surface of water after prolonged immersion in water like creosote treated wood, thus acknowledging that creosote treated wood leaches oily pollutants such as PAHs.

The benefits for CCA-C are overestimated. The benefits of alternative waterborne preservatives with newer chemistries that are also fixed to wood like CCA-C are discounted because they are relatively new and therefore lack a proven record of service. This is not evidence of reduced durability, but even so, a consideration of reduced risk in these alternative chemistries should influence the agency's risk-benefit assessment. The consideration of non-chemical alternatives like steel, concrete, composites, and fiberglass recycled materials is also absent in the benefits assessments of CCA-C and creosote. Availability of many alternatives should be fully addressed in weighing the serious risks posed by CCA-C and creosote compared to their lower benefits with abundant alternatives.

The draft risk assessments (DRAs) for these wood preservatives are also flawed by ignoring the full scope of potential exposures and the absence of relevant toxicity data. The human health and ecological risk assessments for CCA-C assessed acute and chronic risks separately for copper, arsenic acid, and chromic acid. The additive or enhanced toxicity of the combination or complex exposures for these compounds is not considered. The agency in its human health assessment asserts the toxicological data base for inorganic arsenic and chromium compounds found in the CCA-A wood treatment solution is adequate, but finds the form of copper in this treatment solution is outside the scope of the human health assessment. In the PID, the agency states it does not anticipate any further human health data needs or any further ecological or environmental fate data needs in order to complete the registration review of chromated arsenicals and dichromic acid, but the agency then indicates additional studies (OCSPP 875.1600 & 875.2900) are needed to confirm that the mitigation measures proposed in this PID are sufficient to protect occupational handlers. Similarly, the agency identified the need for aquatic monitoring data for wood installed in aquatic environments (e.g., pilings, marine bulkheads) to support future refinement to the ecological risks. This indicates that the agency is not confident in its risk assessments and cannot support the claim that continued use of CCA-C will not pose an unreasonable human health or ecological risk.

Human health risk assessments were not conducted in the creosote DRA for dietary (food) exposures, drinking water exposures, or incidental oral exposures to creosote because the agency asserts as a restricted use product both residential handler and residential post-

application exposures are not anticipated. Therefore, the agency states in the PID that it does not anticipate any further human health data needs in order to complete the registration review of creosote. However, as with the CCA-C PID, the agency subsequently indicates additional studies (OCSPP 875.1600 & 875.2900) are needed to confirm that the mitigation measures proposed in the creosote PID are sufficient to protect occupational handlers. The agency reports no additional ecological risk information has become available since the 2008 RED[1] was completed and depends on the uses and risk findings from this RED for the PID. Additional data have been identified as needed and previously required in data call-in notices issued in 2011 and 2017. These data include:

- Special Study: Leaching Study
- Special Study: Sediment Concentration, Aquatic Structures
- Aquatic Invertebrate Acute Toxicity Test, freshwater daphnids [OCSPP 850.1010]
- Oyster acute toxicity test (shell deposition) [OCSPP 850.1025]
- Mysid acute toxicity test [OCSPP 850.1035]
- Fish acute toxicity test, freshwater and marine [OCSPP 850.1075]
- Daphnid chronic toxicity test [OCSPP 850.1300]
- Mysid chronic toxicity test [OCSPP 850.1350]
- Fish early-life stage toxicity test [OCSPP 850.1400]
- Whole Sediment chronic toxicity (Freshwater) [OCSPP 850.1735]
- Whole sediment chronic toxicity (Estuarine) [OCSPP 850.1740]
- Honey bee acute contact toxicity [OCSPP 850.3020]
- Seedling emergence, Tier II [OCSPP 850.4225]
- Aquatic Plant Toxicity using Lemna spp [OCSPP 850.4400]
- Algal toxicity [OCSPP 850.4500]
- Cyanobacteria (Anabaena flos-aquae) toxicity [OCSPP 850.4550]

These data gaps that remain outstanding indicate that the agency cannot complete or be confident in its risk assessments and cannot support the claim that continued use of creosote will not pose an unreasonable human health or ecological risk.

The single-dock and six-dock exposure scenarios do not adequately represent worst-case CCA-C aquatic exposures as may occur in areas with a greater number of docks, pilings, and bulkheads such as marinas and coastal canals. The ecological risk assessment uses a fish early life stage (ELS) test to estimate chronic fish toxicity. This is inappropriate. The fish ELS is a sub-chronic test of sensitive life stages. Although it is often used as a surrogate or predictor of chronic toxicity, it does not adequately address potential adverse effects on reproduction or

[1] EPA. 2008. Reregistration Eligibility Decision for Creosote (Case 0139). EPA 739-R-08- 007, United States Environmental Protection Agency Prevention, Pesticides and Toxic Substances.

transfer of test chemical to eggs/offspring from parental exposure. Only a complete life-cycle test can satisfy the requirements of a chronic toxicity test. An early life-stage test cannot be appropriately substituted.[2,3,4] A full life cycle test (OSCPP 850.1500) or medaka extended one-generation test (OSCPP 890.2200) is needed to correctly assess reproduction impairment and chronic toxicity from long term exposures.

The agency fails to consider the amplified toxicity of compound exposures to multiple chemicals in combination that may react synergistically and intensify toxicity beyond that of an individual chemical. The human health for CCA-C were assessed independently for arsenic acid and chromic acid, but copper risks were neglected. The combined toxicity of the CCA-C chemical mixture was not addressed. The ecological risk assessment considered acute and chronic risks separately for copper, arsenic acid, and chromic acid and likewise, combined toxicities were not considered. Coal-tar creosote is a complex mixture obtained as a by-product of the destructive and fractional distillation of coal, and contains approximately 150 to 200 chemicals.[5] Chemical analysis of creosotes and field samples obtained from creosote-contaminated soil and water show that it is composed of approximately 85 percent polycyclic aromatic hydrocarbons (PAHs), 10 percent phenolic compounds, and 5 percent nitrogen-, sulfur-, or oxygen- containing heterocyclic compounds.[6,7] PAHs are hazardous environmental pollutants and are well known carcinogens and mutagens with endocrine disrupting properties that pose a serious threat to human health.[8,9]

Creosote is a difficult-to test substance and made more problematic because chemical moieties and proportions vary from batch to batch of the technical product. Further, the combined toxicities in the dual treatment of wood with borate and creosote or creosote and

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[2] Woltering, D. M. (1984). The growth response in fish chronic and early life stage toxicity tests: a critical review. *Aquatic Toxicology*, *5*(1), 1-21.

[3] Suter, G. W., Rosen, A. E., Linder, E., & Parkhurst, D. F. (1987). Endpoints for responses of fish to chronic toxic exposures. *Environmental Toxicology and Chemistry*, *6*(10), 793-809.

[4] Nagel R., Isberner K. (1998) Testing of chemicals with fish — a critical evaluation of tests with special regard to zebrafish. In: Braunbeck T., Hinton D.E., Streit B. (eds) Fish Ecotoxicology. EXS, vol 86. Birkhäuser, Basel.

[5] Fielden, M.R., Wu, Z.F., Sinal, C.J., Jury, H.H., Bend, J.R., Hammond, G.L. and Zacharewski, T.R., 2000. Estrogen receptor-and aryl hydrocarbon receptor-mediated activities of a coal-tar creosote. *Environmental Toxicology and Chemistry: An International Journal*, *19*(5), pp.1262-1271.

[6] Mueller, J.G., P.J. Chapman, and P.H. Pritchard. 1989. Creosote-contaminated sites: their potential for bioremediation. Environmental Science and Technology. 23: 1197-1201.

[7] Mattraw HC, Franks BJ., 1986. Description of hazardous-waste research at a creosote works, Pensacola, Florida. In H Mattraw, BJ Franks, eds, Description of Hazardous-Waste Research at a Creosote Works, Pensacola, Florida. U.S. Government Printing Office, Washington, DC, pp 1– 8.

[8] Boström, C.-E., Gerde, P., Hanberg, A., Jernström, B., Johansson, C., Kyrklund, T., Rannug, A., Törnqvist, M., Victorin, K., Westerholm, R., 2002. Cancer risk assessment, indicators, and guidelines for polycyclic aromatic hydrocarbons in the ambient air. Environ. Health Perspect. 110, 451–489.

[9] Zhang, Y., Dong, S., Wang, H., Tao, S., Kiyama, R., 2016. Biological impact of environmental polycyclic aromatic hydrocarbons (ePAHs) as endocrine disruptors. Environ. Pollut. 213, 809–824.

CCA-C has not been assessed. The dual treatment of borate and creosote is common and extends the service life of railroad ties on average 35 to 40 years. This potential for long term exposures and the toxicity of the combined chemicals has not been evaluated. Likewise, creosote and CCA-C are used in a dual treatment for broader protection against borers in marine uses. Marine borers are the biggest threat to marine pilings and there is no wood preservative effective against all borers. Creosote and CCA-C in a dual treatment provide the best protection against the many target invertebrate species of marine borers, but the combined toxicity to non-target estuarine and marine invertebrates and fish has not been assessed. Without data specific to the toxicity of these combined treatments and complex mixtures, the agency cannot affirm that the registrants have met their burden to demonstrate use of these wood preservatives will not generally cause unreasonable adverse effects on the environment. Nonetheless, the DRA ecological risk assessment found that one or more components in CCA-C treated wood pose acute and chronic risks to listed and non-listed fish, aquatic invertebrates, and/or aquatic plants. Undoubtedly, combined exposures of these complex mixtures would magnify the compound toxicity and further exceed identified Risk Quotients and Levels of Concern.

No risks of concern for terrestrial organisms, including pollinators (i.e., honey bees), were identified by the agency in the creosote or CCA-C PIDs because the agency asserts exposure to terrestrial organisms is not expected for the current restricted uses. This overlooks an additional route of long-term and continuing exposures to these persistent chemicals to birds by the propensity for many species to ingest clay or other soil particles likely contaminated with PAHs from creosote or toxic metals from CCA-C in the near vicinity of treated posts and poles. Birds ingesting clay particles as dietary grit or when attached to soil invertebrates, like earthworms, may result in toxic exposure (acute and chronic) that have not been considered. Also, woodpeckers and other cavity nesting birds that utilize treated poles may also be chronically exposed through dermal and inhalation routes. The agency also ignores potential exposure to children, adults, and wildlife exposed to contaminated soil near treated posts, poles, and pilings from digging, playing, foraging, and similar activities. Treated poles lining the streets of many urban and suburban areas are also frequently encountered by people leaning against and standing next to these poles under street lights or near bus stops. Additionally, utility poles, fence posts, and railroad ties have also been recycled and used in various outdoor structures with potential for broader human and environmental exposures to

toxic residues.[10] In fact, Home Depot, for instance, currently lists used creosote treated railroad ties available for landscape use.[11] Such recycling of wood treated with these long-lived preservatives should be prohibited.

No human health or environmental safety findings associated with the Endocrine Disruptor Screening Program (EDSP) or an endangered species assessment were made in the creosote, chromated arsenicals, and dichromic acid PIDs. A final decision on the creosote, chromated arsenicals, and dichromic acid registration review cases will occur after: (1) EDSP FFDCA § 408(p) determination and (2) endangered species determination under the ESA and any needed Section 7 consultation with the Services. However, given the many serious risks of concern already identified, EDSP and ESA determinations would only add to these existing risk concern exceedances.

In summary, we recommend that the agency immediately suspend the registrations of creosote, CCA-C, and dichromic acid until the numerous ecological effects and exposure monitoring data requirements identified have been submitted and fully assessed. Without these additional data, the agency cannot justifiably conclude the risks posed by these chemicals weighed against the purported benefits are reasonable given the many existing alternatives. Further, as previously stated, we urge the agency to immediately cancel the registrations of the two chromated arsenicals ACZA and ACC. Available usage data provided in the PID indicate almost no use of ACZA and ACC was recently withdrawn from the American Wood Protection Association (AWPA) Book of Standards for use as a preservative and has no reported use in best available usage data. The risk of adverse effects for these compounds were also not considered in the PID. It is therefore unreasonable under the statutory requirements of FIFRA to continue the registrations of ACZA and ACC. Likewise, the agency should cancel creosote oil and coal tar registrations because these active ingredients were not assessed in the creosote PID and there are no currently active product registrations containing these ingredients.

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[10] Feldman, J., G. Kidd. 1999. Pole Pollution: New Utility Pole Chemical Risk Identified by EPA While Survey Show Widespread Contamination; Beyond Pesticides/ National Coalition Against the Misuse of Pesticides.

[11] https://www.homedepot.com/p/Used-Railroad-Tie-Cresote-Treated-Common-7-in-x-9-in-x-8-ft-Actual-96-in-5100000070908000/100023488?NCNI5&searchRedirect=used%20railroad%20ties&semanticToken=300r10r00122000000_20210505140356840212487315 7_useast44l0k%20300r10r00122000000%20>%20%20st%3A%7Bused%20railroad%20ties%7D%3Ast%20tgr%3A%7BNo%20stage%20info%7D%20qu%3A%7Bused%20railroad%20ties%7D%3Aqu

Respectfully,

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