



PUBLIC WORKS

September 6, 2012

Dr. Holly Davies
Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7706

RE: Comments on PAH Chemical Action Plan

Dear Dr. Davies:

Thank you for the opportunity to comment on the draft PAH CAP. These comments were prepared in consultation with Mr. Lincoln Loehr of Stoehl Rives.

1. On page 51 it notes that B(a)P is often used as the index PAH to which the carcinogenicity of other PAHs is compared. It notes that B(a)P is not on the PBT list because it does not meet the criterion for bioaccumulation. It also notes that compared to B(a)P, one of the PAH PBTs appears to have greater cancer potency while ten others have less.

This is an important point. Ecology should provide an example of B(a)P potency equivalent factors in the CAP and provide the source. The MTCA regulations at WAC 173-340-708(8)(e) and Table 708-2 provide potency equivalent factors for some of the carcinogenic PAHs as follows;

Benzo(a)anthracene (0.1)

Benzo(a)pyrene (1)

Benzo(b)fluoranthene (0.1)

Benzo(k)fluoranthene (0.1)

Chrysene (0.01)

Dibenzo(a,h)anthracene (0.1)

Indeno(1,2,3-cd)pyrene (0.1)

Potency equivalent factors for these, and for any other carcinogenic PAHs should be identified in the CAP. Furthermore, the potency equivalent factors should be used to adjust the Figures B20B through B34B.

2. On page 53, the draft CAP notes that:

“Food is the largest exposure source for most people, **but food-related health effects from PAHs have not been adequately investigated and the true health hazard, if any, is not understood.** On the other hand, particulate matter from common sources such as diesel exhaust and wood smoke is known to be harmful, reducing lung function and increasing the risk of cardiovascular disease and lung cancer.” **(Emphasis added)**

This is an important statement that needs to be much more prominent. It is good that this statement appears in the Summary section, under the heading of,

“Would controlling PAH releases benefit human health?”

However, the statement should also be up front in the Summary of Findings. Recognize that figures B20B to B34B present apparently very significant cancer risks from food-related exposures to shellfish, fish and other invertebrates for different lifetime consumption rates, and the element of doubt of such risk assignments is nowhere to be seen.

3. On page 65 in a section specifically referring to the Puget Sound Toxic Loading Studies, the draft CAP states that

“Limited data suggest that typical freshwater concentrations for total PAHs are in the 0.1 – 1.0 ug/l range, with marine water column concentrations slightly lower.”

Data from the Puget Sound Toxic Loadings Studies do not support values that high.

Figure 24 in Ecology's 2011 report *Control of Toxic Chemicals in Puget Sound Phase 3 Data and Load Estimates* indicates much lower values for base flow and for storm-event flows in freshwater streams flowing from agricultural, forest/field/other, and residential land uses, and these were actually in the range of reporting limits, and perhaps were even counted as present at 1/2 the reporting limit in cases of non-detect. Streams from predominantly commercial/industrial land uses had similarly low “non-detect” PAH values for baseflows, but during storm events had total PAH concentrations in the 0.1 to 0.6 ug/l range.

Tables G-6, G-7 and G-8 in Ecology's 2011 report *Control of Toxic Chemicals in Puget Sound Characterization of Toxic Chemicals in Puget Sound and Major Tributaries, 2009-2010* indicate almost all of the PAH measurements at the mouths of the five major rivers (upstream of salt water influence) were non-detect with detection limits in the 0.01 to 0.001 ug/L range.

Tables E-8 through E-13 in Ecology's 2011 report *Control of Toxic Chemicals in Puget Sound Characterization of Toxic Chemicals in Puget Sound and Major Tributaries, 2009-2010* indicate all PAH measurements were non-detects with detection limits in the 0.01 to 0.001 ug/L range for surface and deep marine samples from Hood Canal, Whidbey Basin, main Basin, South Sound, Haro Strait and the Strait of Juan de Fuca.

It would be more accurate to re-word the statement on page 65 as follows:

"Recent studies by Ecology suggest that typical freshwater and marine water measurements for PAHs are non-detect and therefore less than 0.01 ug/l, except for storm-event flows from streams from predominantly commercial/industrial land uses where the total PAHs are in the 0.1 to 0.6 ug/l range."

The above paragraph could also cite to the figures and tables in the specific Ecology documents.

4. On page 74, there is a brief discussion on human health, referring to box plots in Appendix B. On pages 200-207, Appendix B figures are presented illustrating the range of concentrations for specific carcinogenic PAHs found in bivalves, fish, and other invertebrates in freshwater, nearshore marine, and offshore marine organisms. The figures in Appendix B, and the text on page 74 also say that they compare the tissue results to 5 different human consumption scenarios derived from the National Toxics Rule.

On page 74 it notes that:

"The box plots show levels of some PAHs in seafood tissue above threshold effects for human health. As discussed in the earlier section on human health, seafood consumption is not generally a major pathway of PAH exposure for people."

While the final statement on page 74 is reassuring, the data presented in the box plots for bivalves and other invertebrates is not reassuring. The data in the box plots do illustrate how PAHs do not concentrate in fish (which can metabolize the PAHs) but do concentrate in bivalves and other invertebrates.

The 5 different human consumption scenarios shown are not appropriate in the case of PAHs because the scenarios are for total fish and shellfish consumption. It would be more useful to compare to NTR¹ like calculated values specific to shellfish consumption rates for bivalves. I think that the invertebrate data also included concentrations in crab hepatopancreas which is a relatively small part of the invertebrate consumption and should not be compared to consumption rates for fish and shellfish. As noted above in comment 1, PAHs should be couched in terms of B(a)P potency equivalent factors so as to not overstate the risks. As noted above in comment 2, inhalation of particulate PAHs is the main concern and the food-related health effects from PAHs have not been adequately investigated and the true health hazard, if any, is not understood.

The human health section on page 74 should emphasize that the apparent risks portrayed in the plots in Appendix B are based on one in a million lifetime carcinogen risks for different consumption rates, and are substantially overstated because of 1) treating all carcinogenic PAHs as equal to B(a)P when they are not, 2) presenting consumption rates based on total fish and shellfish, instead of just shellfish (since fish metabolize PAHs instead of concentrating them), 3) including crab hepatopancreas data in the invertebrate concentrations, and 4) the uncertainty of a health hazard from ingestion of PAHs.

Since woodstoves and fireplaces represent the biggest PAH releases to air, and current woodstove replacement programs are restricted to air quality non-attainment areas, perhaps a larger program of replacement would be in order. The suggestion in the document to include fireplaces in the replacement program may have a negative effect. People do not typically use fireplaces every day. They may use a retrofit woodstove every day.

The Department of Ecology deserves credit for the actions undertaken in previous CAPs. The Mercury and Lead CAPs have shown definitive results in removing these elements from the environment via collection programs and legislation phasing out or restricting usage. We believe CAPs are an effective, flexible tool to achieve reductions in pollutants, and think that additional CAPs at an accelerated pace may be a better option than standards set within a constrictive CWA structure that has little flexibility for innovation.

¹ National Toxics Rule, in which EPA adopted human health surface water quality criteria for the state of Washington in 1992.

Thank you for this opportunity to comment on the PAH CAP. Please contact me at hkibbey@ci.everett.wa.us or 425-257-8889 if you have questions.

Sincerely,

A handwritten signature in purple ink that reads "Heather Kibbey". The signature is fluid and cursive, with the first name and last name clearly distinguishable.

Heather Kibbey
Surface Water Manager



City of Tacoma
Public Works Department

September 11, 2012

Holly Davies
Waste 2 Resources Program
Department of Ecology
PO BOX 47600
Olympia, WA 98504-7600

Subject: Draft Chemical Action Plan for PAHs

Dear Ms. Davies:

The City of Tacoma has reviewed the Draft Chemical Action Plan (CAP) for PAHs that was published for public review in July 2012. We understand that the purpose of this document is to identify, characterize and evaluate uses and releases of PAHs and to recommend actions to protect human health and the environment. Based on our review, the City is submitting the following comments:

- In general, the document would benefit from a clear description of the existing and planned regulatory framework for how the current or recommended regulations involved in PAH control interact and are coordinated. The *Current Regulatory Approaches for PAHs* section describes the existing regulations relevant to PAHs, but does not clearly explain how the regulations are managed, implemented and coordinated. For example, how are non-point atmospheric discharges such as residential wood smoke and vehicle emissions regulated when they settle out and are carried via stormwater through a public drainage system to a water body? The regulatory framework needs to be laid out and considered in order to clarify roles and responsibilities to ensure that there are not gaps or overlapping regulations.
- It is difficult to find the basis or underlying study information to ground truth some of the findings that do not seem logical to us. Specifically, on Table 1, Creosote Treated Wood is assigned 50% of total releases to the environment, with railroad ties by themselves contributing 32% (and marine piling 10% and utility poles 8%). In contrast, on-road vehicle emissions are assigned 16% of the total emissions (half of that from railroad ties). The study information does subsequently take into account ease of transport to environmental receptors, but it seems to us from a logical perspective that the quantified source loading distribution could be off fairly significantly. Please review the basis of the source loading distribution provided in the report to ensure their accuracy, completeness, and applicability in this analysis.
- The City performed a source evaluation study of the Thea Foss Waterway (part of the Commencement Bay Superfund site remediated under CERCLA) as part of our Round 3 Data Evaluation in 1999. An evaluation of creosote treated piling was included in that study. Based on the exponential decline in PAH release in the years following installation, the relatively advanced age of the piling in the waterway, and the lack of

PAH enrichments in the sediments near areas with dense creosote piling arrays, the City concluded that the loading contribution from creosote marine piling in the waterway was negligible. Our analysis showed that PAH impact from the piling was found to be limited to a fairly small area around each piling. The loading basis for creosote piling should be reviewed for accuracy with age of the piling and area of impact taken into consideration.

- In the City's source loading evaluation of the Thea Foss Waterway under the CERCLA program, marinas were found to have a fairly significant source loading, with a direct environmental pathway. The marina loads originally used by the City in this analysis were based on in-water suspended sediment trap deployments in the Thea Foss Waterway by Ecology and in the Cap Sante and Port Townsend Marinas in northern Puget Sound by Battelle. Subsequently these loads were reduced due to improvements made at the marinas, but PAH contributions from marinas are still anticipated, and were therefore included in the source loading analysis. From the notes, it appears that marinas were discussed in the Advisory Committee meetings but they are not mentioned in the loading distribution. Figure 1 in the *Summary of Findings* shows that 99% of the estimated annual releases to the water in Washington come from creosote treated marine pilings. Based on our comment in the previous bullet, this finding appears to overestimate the percent contribution of that load if other sources including marinas and other vessel-related direct contributions are taken into account.
- While many of the report's recommendations are, perhaps accurately, focused on atmospheric contributions, Tacoma has found that removal of historic sediments from drainage systems and other stormwater management program elements have had a significant effect on reducing PAH loadings. Specifically, as reported in the City's 2011 Source Control and Water Year 2011 Stormwater Monitoring Report (March 2012), basin-wide sewer line cleaning resulted in a 59 to 92 percent reduction in PAH concentrations, including both light and heavy fraction PAHs. Basin-wide cleaning of storm sewers under the NPDES program could be considered as a recommendation for reducing concentrations of PAHs entering water bodies.
- It does not appear that contributions from buried soil or groundwater contamination are taken into account. If present, contamination from these sources can infiltrate the storm system or discharge directly into a water body and may contribute significantly to the source loading pattern of PAHs in a water body.
- On Page 68, the Thea Foss Waterway is called out as the area with the highest PAH concentrations among 10 sampling stations in Puget Sound (samples taken between 1989 and 2000) without reference to the fact that it is part of the Commencement Bay Superfund Site, with significant sources of PAHs identified, which were subsequently controlled prior to cleanup. Sources of PAHs controlled prior to or as part of the cleanup of the sediments included a coal gasification site, point sources to the stormwater system, a buried reservoir of PAHs under the waterway and releases from marinas. An acknowledgment of the current condition of the waterway should be included in this section.

- In the report there is a reference to the Mussel Watch program, including a discussion of the finding that Puget Sound has PAH concentrations that are among the highest in the nation. It is stated in the report that it is unclear why concentrations in the mussels are so high in Puget Sound. Anecdotal information indicates that some of the Puget Sound mussel cages evaluated in the study may have been hung from creosote treated piling. Please clarify the results of this study and whether this is a factor to be considered in evaluation of the results.
- The Pathways of PAHs and Source Apportionment section ends with the following statement regarding the chemical mass balance model:

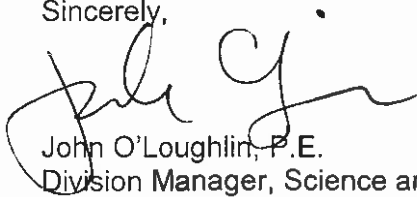
"We have not been able to get the model to work well without using the coal tar sealant profiles. When coal tar sealants are considered as a possible source, the model predicts that they are a major source. This does not agree with what we know about the limited use of coal tar sealants in Washington."

This statement is concerning and seems to indicate that a/some major source(s) of PAHs in the system are missing and that the overall source loading distribution may be off. Please clarify whether additional work is being done to more accurately model and balance source contributions so that the next steps in control and management of PAHs can be best prioritized.

We appreciate the efforts of the Department of Ecology, its partners, and the members of the Advisory Committee in developing the Chemical Action Plan for PAHs. This is a challenging but important environmental issue that requires a comprehensive and multi-faceted approach to address. The conclusions and recommendations contained in the draft report appear to be based on significant discrepancies in the source loading distribution. We urge a closer look and reevaluation prior to releasing the final document.

Thank you for the opportunity to review the subject document. If you have any questions or concerns regarding these comments, please do not hesitate to contact me at 253-502-2175.

Sincerely,



John O'Loughlin, P.E.
Division Manager, Science and Engineering

JO:MLH:sh (PAH Comment Letter)

File: Ecology - PAHs



September 4, 2012

Holly Davies, Ph.D.
Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

RE: Comments on the draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan (CAP)

Dear Ms. Davies:

Hearth & Home Technologies, the largest hearth products manufacturer, builds and designs an industry leading EPA certified line of Quadrafire wood and pellet heaters at its plant located in Colville Washington. Hearth & Home Technologies strongly objects to the Department of Ecology's draft Chemical Action Plan for PAH as it relates to wood heaters. We have reviewed the draft language and the comments from the Northwest Hearth Patio & Barbeque Association regarding this proposal and fully agree with the comments and agree that the CAP and PAH's should not be adopted by the Department with respect to wood heaters.

The proposal by the Washington Department of Ecology is unrealistic and unworkable for many reasons, such as:

- The concept of an ultra-low emission high technology wood stove is unrealistic as proposed on pg. 17 for the reasons cited by the NWHPBA.
- Most wood heat users will be unwilling to change out to another fuel source as the reports states on pg. 17 due to both appliance cost and fuel cost, making this proposal unworkable.
- The key to a cleaner burning stove is using properly seasoned wood and an operator that knows how to burn clean. Education is where you need to focus more attention, not replacing stoves.
- The draft CAP for wood stoves removal is based on total speculation and without any data indicating it might succeed and thus lacks any justification to be adopted.



For these reasons, and others, Hearth & Home Technologies implores the Washington Department of Ecology to not adopt this new Chemical Action Plan as proposed for woodstoves.

Regards,

A handwritten signature in black ink, appearing to read "Gregg Achman". The signature is fluid and cursive, with a long horizontal stroke at the end.

Gregg Achman
VP Product Engineering and Standards
Hearth & Home Technologies

From: [Michelle Gaither](#)
To: [Davies, Holly \(ECY\)](#)
Cc: [Paula Del Giudice](#); [Brian Penttila](#)
Subject: PAH Chemical Action Plan - A Few Comments
Date: Tuesday, August 21, 2012 1:05:16 PM

Hello Holly.

I presume I can just submit comments directly to you since you are listed on the public comment webpage for the Draft PAH Plan. If I need to submit this to someone else, please let me know.

Not being an expert in PAH chemistry and impacts, I have not reviewed the report from that perspective. However, a few thoughts came to mind as opportunities for potential inclusion in the vehicle emissions reduction efforts.

1. It sounds like the state has addressed school buses (anti-idling programs and installation of emissions control devices). However, in elementary and middle schools, I am appalled to see the parents (idling, in cars) in the drop-off and pick-up lines. (My children normally walk or ride to school, so we are not doing this). But, I see maybe 30-40 cars in line in the afternoon, and I would say 50%+ are idling, sometimes for 20 minutes or more (*in the case of Gatewood - where they try to get in the line early*). Possibly there is some opportunity to include in the state anti-idling rule, that school districts implement some action to reduce, or even prohibit, passenger car idling near schools. (Specific ideas could be to post signs in areas where parents/guardians (in cars) line up to pick them up, make it part of school policy that is provided to parents).
2. PPRC has been the fiscal agent for a grant for the Diesel Emissions Reduction Act (DERA). We worked in partnership with Tacoma-based trucking fleet [Interstate Distributor Co.](#) and Seattle's [Freight Wing Inc.](#), a manufacturer of aerodynamic side "skirts" for tractor trailers to have the skirts installed on trailers. This should be included as an option for diesel emission reductions, possibly in section 9 of the plan? [Excerpt](#) from our website,

For this project, we predict up to a seven percent reduction of diesel fuel consumption and emissions for over 2,000 trailers in the Interstate fleet, resulting in estimated annual savings of 1.1 million gallons of diesel. Over the product life-span, this will result a total savings of approximately 16 million gallons of fuel, \$45 million, and prevent 182,633 tons of greenhouse gas emissions, significantly improving the air quality in Puget Sound communities by minimizing the toxins found in diesel emissions that are associated with cancer, asthma, and other pulmonary and cardiovascular health issues.

Thanks for allowing me to provide these comments.

Best Regards,

Michelle Gaither | industrial engineer
1402 Third Ave, Suite 1420 | Seattle, WA 98101
T 206-352.2050 | C 206-300-6475 | www.pprc.org

Pacific Northwest Pollution Prevention Resource Center

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E3, Green Chemistry, and Chemicals of Concern to Puget Sound"
Regional Roundtable, October 23-24, 2012
Clearwater Resort, Suquamish, WA



September 7, 2012

Holly Davies
Department of Ecology
PO Box 47600
Olympia, WA 98504-7706

Re: Draft Chemical Action Plan (CAP) for PAHs

Dear Ms. Davies:

The Port of Bellingham has reviewed the draft CAP for PAHs in coordination with WPPA and other Puget Sound Ports. While we are in support of the overall effort to reduce exposure to this group of compounds in the environment, we recommend certain changes regarding the relative risk and proposed response actions for creosote-treated pilings.

For the past several years the Port of Bellingham has worked in partnership with Ecology, DNR and the City of Bellingham to remove creosote-treated timbers from the marine environment in circumstances where the timbers are associated with derelict structures, part of a MTCA cleanup, and/or entrained as debris on local shorelines. These programs are effective and supported by legislative funding. Additional information is available through the multi-agency Bellingham Bay Demonstration Pilot, co-managed by Ecology and the Port of Bellingham.

In contrast, the draft CAP for PAHs seems to assign an inappropriately high risk factor to all creosote-treated pilings and therefore proposes an inappropriately aggressive and costly response action the burden of which would apparently fall on local ports.

Specifically, we are concerned that Ecology is relying on a limited dataset and incomplete analysis to characterize the health risks associated with creosote-treated pilings. Windward Environmental has provided a summary of extensive and available scientific analysis that must be considered and incorporated in the final CAP for PAHs. The cited studies differentiate between LPAHs and HPAHs, describe decreased releases from pilings over time, especially in colder marine waters, and show that the effect of each piling is very limited spatially.

Once the relative risk of creosote-treated pilings is put in proper relationship with other sources (e.g., wood stoves, vehicles, etc.) an appropriate response plan can be developed. We believe that the

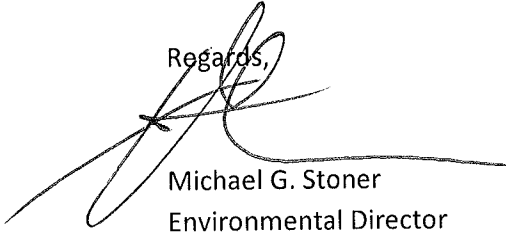
Page 2

majority of creosote-treated timbers will be removed from port infrastructure and facilities over time through routine maintenance and property redevelopment. Puget Sound Ports are constantly on the forward edge of improving our facilities to maintain Washington State as a leader in US exports and a critical part of local, regional and national economic recovery.

A gradual approach to the creosote-treated timber issues, incorporated with existing facility maintenance and operations programs, is appropriate to the risk, cost effective to local government, and avoids another unnecessary regulatory burden on our marine trades sector during a still fragile period of economic recovery.

Thank you for your serious consideration of our comments on your draft plan.

Regards,



Michael G. Stoner
Environmental Director
Port of Bellingham

Cc: Johan Hellman, Washington Public Ports Association
Lucy McInerney, Department of Ecology

September 11, 2012

Holly Davies
Department of Ecology
P.O. Box 47600
Olympia, WA 98504-6102

Re: Comments on Draft PAH Chemical Action Plan

Dear Ms. Davies:

Thank you for the opportunity to comment on Ecology's Draft PAH Chemical Action Plan (the "Plan"). The Port of Seattle ("Port") appreciates Ecology's efforts to identify significant sources of persistent, bioaccumulative, and toxic substances ("PBTs") and exposures that can be addressed in order to reduce risks to human health and the environment. An accurate assessment of sources and exposures, and their likely effects, is necessary in order to take actions that effectively, and cost-effectively, reduce exposures and risks.

The Port is concerned that the Plan does not provide an accurate portrayal of the relative mass of PAHs entering the environment from certain sources. In particular, the Plan's estimate of current loadings of PAHs from the creosote treated pilings that remain in the aquatic environment appear to be far in excess of what is currently occurring. Although a highly accurate determination of loadings from various sources is not possible given the limits of the available data, Ecology should modify the Plan so that it no longer presents assessments that are far off the mark due to misapplications of the existing studies and data. Assessments of current loadings that are inaccurate by a wide margin will lead to regulatory efforts that are not effective at reducing risks and will also burden Washington citizens with costs for actions that do not result in hoped-for improvements.

We have asked Windward Environmental to provide an analysis of the Plan's estimates of PAH loadings to the environment from creosote treated pilings. Their analysis, which forms the basis for many of our specific comments on the Plan, is attached for your consideration. Our specific comments follow:

1. The PAH release rate estimate for creosote treated wood marine piling should be revised to be consistent with the studies cited and additional information provided in the attached Windward Environmental analysis.

The Plan estimates that PAHs are released from marine pilings at a rate of 54,400 kilograms per year. This makes marine pilings one of the largest PAH sources identified in the report, only slightly behind the combined releases from the combustion engines used in the millions of vehicles driven in the state (estimated as the source of 66,629 kg/yr). According to the Plan's

estimates, marine pilings outstrip the combined releases from all motor oil leaks and improper oil disposal, vehicle tire wear, recreational equipment (including lawn and garden equipment and recreational vessels), silvicultural burning, commercial equipment and non-road mobile sources by a wide margin. They even exceed all industrial point sources by a factor of about two.

If, as assumed by the Plan, PAHs were actually being released from marine pilings at a rate of over 80% of the combined release rate for all combustion engines used for transportation (and at a rate of over one pound of pure PAHs every year for each piling), one would expect the scientific literature to be peppered with studies showing that dead zones with extremely high PAH concentrations exist around marine terminals and other locations where creosote treated piling numbering in the hundreds or even thousands have been clustered together for many decades. Instead, the literature cited in the Plan, and the Port's own experience with sediments in the vicinity of its terminals, strongly suggests the opposite.

The attached Windward analysis clearly shows that the Plan has misapplied the scientific studies it cites in coming up with loadings estimates. For instance, all of the studies done to date conclude that although leaching from newly installed piling occurs at a significant rate initially, the leaching rate decreases exponentially over the time period immediately after installation. For example the 1998 Bestari et al. study cited in the Plan found that leaching resulted in no detectable difference in water concentrations from the controls after 84 days. Similar results have been found in other studies, including studies both in the laboratory and in the field. No study has found ongoing significant releases over the course of years.

Despite this clear conclusion from the studies cited, the Plan arrives at its loading estimate for creosote treated piling by assuming that those piling each continue to steadily release a large mass of PAHs (0.5134 kg) every year for their entire 30 year estimated life span. The combination of this large assumed annual release rate for each piling, and the location of an estimated 100,000 piling in marine waters, results in the extraordinarily high annual loading estimate included in the Plan.

In reality, any loadings from the creosote treated marine piling that remain in the environment as a component of operational structures would have occurred within weeks or months after their installation. Since Ecology and other agencies have not generally authorized the use of creosote treated piling for many years, those now remaining in the marine environment would have ceased leaching significant masses of PAHs to the water and to sediment long ago. The LPAHs released when those piling were initially installed would have been broken down or biodegraded within a short period of time, and the small amount of HPAHs that moved from the piles to surrounding sediments would be partially broken down and partially sequestered through burial from newly deposited sediments. The current loadings from creosote treated piles used at port facilities and other similar locations should be considered minimal, and the Plan should conclude

that intact and in-place marine piling are not creating significant risks that need to be addressed through regulatory action.¹

2. The Plan should distinguish LPAH from HPAH where it is possible to do so.

The Plan should distinguish between LPAHs and HPAHs where possible. LPAHs are readily broken down in the environment and do not bioaccumulate. LPAHs are also not generally considered to be as toxic or carcinogenic as HPAHs. They are combined with HPAHs in the Plan because of Ecology's policy decision to treat classes of chemicals as one contaminant in performing risk assessments and setting cleanup levels under the Model Toxics Control Act. However, for purposes of planning state-wide efforts to reduce PBT contamination and directing resources towards actions that will effectively reduce risks, HPAH and LPAH sources should be distinguished and evaluated separately where reasonably possible.

3. The Plan should provide information on additional sources of human exposures to PAHs to give additional context and assist in prioritizing efforts at risk reduction.

The Plan provides a great deal of information on the sources of PAHs that are released into the environment and on PAH exposure risks for humans. What is missing is information concerning the magnitude of human PAH exposures from sources other than releases to the environment, such as exposures resulting from food preparation choices and smoking. Information of this type would provide valuable context for discussions concerning the most effective means of reducing human health risks from PAH exposures. The document should include a section that addresses the major sources of PAH exposures for people, and an estimate of the relative role each of those sources plays in human exposures.

4. The Plan should recognize the value of transitioning to newer, cleaner diesel engines and more accurately describe diesel particulate matter reduction efforts by ports.

The Plan's discussion of PAH anthropogenic sources includes a discussion concerning potential reductions of PAH emissions from vehicles. The discussion notes that "[v]ehicles with better gas mileage will use less fuel and emit fewer PAHS." Although fuel economy is important, the Plan fails to note that newer diesel vehicles are much cleaner than older vehicles. Applicable emission standards have become more stringent over time, resulting in fewer emissions as vehicle fleets turn over. For example, a heavy duty diesel-powered truck that meets 1994

¹ The Port is not advocating a return to the extensive use of new creosote piling for marine structures. In fact, the change in products from creosote treated wood for support piling to steel and concrete demonstrates the value of product switching in reducing exposures to PBTs and toxic compounds generally. New creosote piling present a *short term* problem due to the releases that occur on installation. Product switching has avoided those releases for newly installed piling. However, creosote treated wood piling that are already in place and operating effectively in structures need not be replaced in order to avoid significant ongoing releases.

emission standards for particulate matter is 2.5 to 6 times cleaner than a truck built before 1994. A truck that meets 2007 emission standards is 10 times cleaner than a truck built between 1994 and 2006, and 60 times cleaner than a truck built before 1994.

Reducing emissions of diesel particulate matter -- not fuel efficiency, as stated on page 86 of the Plan -- was the primary impetus for the Port of Seattle's and Port of Tacoma's clean truck programs. That was also the basis for the Port of Seattle/Puget Sound Clean Air Agency Scrappage and Retrofits for Air in Puget Sound (ScRAPs) program which removed 280² pre-1994 trucks from the drayage fleet, as well as the ban on pre-1994 truck engines accessing Port of Seattle container terminals as of January 1, 2011.

5. The Plan can include additional information concerning shore power costs.

As additional information for the Plan's estimates of costs for providing shore power to vessels in port (page 158), the Port and Seattle City Light have estimated the cost of providing shore power at the Bell Street Pier Cruise Terminal (Pier 66) at \$15 million.

Thank you for considering the Port's comments on the Plan. The Port appreciates and supports Ecology's efforts to reduce risks to human health and the environment by addressing releases of PBTs to the environment and reducing exposures. A Plan that is based on accurate assessments of the major current sources of those exposures and risks is essential for optimizing Ecology's risk reduction and environmental enhancement efforts.

Very truly yours,



Stephanie Jones Stebbins
Director, Seaport Environmental & Planning

Enclosure

² The correct number of pre-1994 trucks removed through the ScRAPs program is 280, rather than the 180 figure found on Page 87 of the Plan.



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Phone: 206.378.1364 • Fax: 206.973.3048 • www.windwardenv.com

MEMORANDUM

To: Jon Sloan, Port of Seattle

From: Susan McGroddy, Windward Environmental

Subject: Review of analysis of creosote-pilings as a source of PAH to marine waters as presented in the *Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan*

Date: September 7, 2012

1 INTRODUCTION

A review was conducted of the analysis of polycyclic aromatic hydrocarbons (PAHs) leaching from marine pilings provided in the Production and Uses Section of the *Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan* (Ecology and WDOH 2012). The PAH leaching analysis was based on work summarized in an earlier document for New York and New Jersey Harbors (Valle et al. 2007). The Valle et al. (2007) analysis of PAH leaching from marine pilings was based on two studies, Ingram et al. (1982) and Bestari et al. (1998), which were summarized in a report prepared by Stratus for the National Oceanic and Atmospheric Administration (NOAA) (Stratus 2006).

The PAH leaching rate used by the Washington State Department of Ecology (Ecology) in the analysis of the impacts of marine pilings was 23% of the total creosote PAH concentration within the exposed portion of the pile over the 30-year lifespan of the marine piling, which resulted in an estimated annual loss of 0.5134 kg PAH per piling over the 30 yr lifespan of the piling. The assumptions and uncertainties associated with the calculation of this PAH loss rate are summarized in Section 2 below. The PAH loss rate calculated by Ecology greatly overestimates the loss of PAHs by marine pilings based on physical conditions in Washington State waters (i.e., temperature and salinity) and the fact that in both laboratory and *in situ* experiments, the leaching of PAHs from pilings has occurred very rapidly following the placement of pilings, with evidence that aqueous PAH concentrations reached background concentrations after 84 days (Bestari et al. 1998) and remained very low over the course of 4 years (Goyette and Brooks 1998).

An alternative PAH loss rate was calculated based on measured PAH flux rates corrected for salinity and temperature ranges consistent with Washington State marine waters. This alternative PAH loss rate was approximately 0.1 kg PAH per piling, with essentially all of that loss occurring in the first three months after piling installation (Section 3).

Finally, the results of a number of studies that have been conducted to quantify the impacts of creosote pilings in terms of the release of PAHs, changes in sediment chemistry and toxicity, and bioaccumulation are summarized in Section 4. The results of these investigations have consistently shown that the impacts associated with marine pilings are limited and are not consistent with the conclusion that marine pilings are a predominant source of PAH contamination to marine waters as presented in the *Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan* (Ecology and WDOH 2012).

2 ASSUMPTIONS AND UNCERTAINTIES IN THE PAH LEACHING RATE USED BY ECOLOGY

The leaching rate used by Ecology to characterize the loss of PAHs from marine pilings into the water column is 23%, which is the rate calculated by Valle et al. (2007) based on work by Ingram et al. (1982) and Bestari et al. (1998). In their work, the authors provided empirical observations on variables that control the rate at which PAHs leach from creosoted pilings. Although these uncertainties were noted by Valle et al. (2007) and Ecology (2012), they were not taken into account when site-specific release rates were calculated. Instead, Ecology (2012) and Valle et al. (2007) used a release rate based on freshwater releases at elevated temperatures to characterize the contribution of PAHs from pilings in the colder, marine waters of Puget Sound and other marine water of Washington State (Ecology and WDOH 2012) and the more temperate marine waters of New York and New Jersey Harbors (Valle et al. 2007). Based on the controlling factors identified by Ingram et al. (1982) and Bestari et al. (1998), a reliance on release rates obtained from warm freshwater greatly overestimates the contribution from creosote pilings to the marine waters in both Washington State and New York and New Jersey Harbors. The primary uncertainties associated with the PAH leaching rate are:

- ◆ The desorption rate is based on freshwater exposure. Results by Ingram et al. (1982) indicated that PAH release rates in salt water are half the rates reported in Bestari et al. (1998).
- ◆ The desorption rate of PAHs from pilings has been shown to be strongly temperature dependent. The laboratory experiments carried out by Ingram et al. (1982) were conducted at temperatures from 20 to 40 °C, and the mesocosm experiments carried out by Bestari et al. (1998) were conducted outdoors in August with a water depth of 1 m. The temperature data were not reported, but the shallow water depth likely resulted in temperatures higher than the cooler water temperatures found in Puget Sound and other Washington State marine waters. Based on the analysis of temperature presented in Xiao et al. (2002), it

appears that the PAH release rate at 20 °C is approximately twice the PAH release rate at 10 °C.

- ◆ The leaching of PAHs has been observed only at the surface (1 mm) of the treated piling; no loss was observed from the deeper regions of the piling (Bestari et al. 1998). Therefore only a small volume of creosote is available to function as a source of PAHs due to leaching.
- ◆ PAH desorption rates decline exponentially following the placement of freshly treated wood. The rate calculated by Bestari et al. (1998) was based on the placement of treated wood in a mesocosm for 84 days, during which an exponential decline in PAH releases was measured.

“In this study, total water column PAHs increased steadily to a maximum concentration at 7 d post-treatment, followed by an exponential decline to approximately background levels by 84 d” Bestari et al. (1998).

The application of this rate to the 30-year lifespan of a piling is not supported by the research because it does not represent the fact that significant releases of PAHs only occur following the installation of the piling.

- ◆ Other important variables that have been shown to affect the release of PAHs that have not been accounted for in this analysis include creosote composition, the type of wood, the method of creosote application, water temperature, and flow rates.

3 CALCULATION OF AN ALTERNATE RATE OF PAH LEACHING

An alternative method of calculating the PAH contribution from marine pilings is based on the reported total PAH leaching rate of 50 µg/cm²/day reported by Bestari et al. (1998) with additional corrections to account for the differences in salinity and temperature. The parameters used to calculate the alternative PAH loss rate are provided in Table 1.

Table 1. Parameters used to calculate alternative PAH loss rate

Parameter	Value	Assumptions	Source/Equation
PAH flux	4,200 µg/cm ²	measured a rate of 50 µg/cm ² over 84 days of experiment	Bestari et al (1998)
Piling surface area	11,310 cm ² /m	piling diameter of 14 in. (36 cm)	Surface area = 2 × πrh
Length of piling exposed to water column	6.1 m (20 ft)	Assumed as an average piling length. Actual lengths will vary with water depth.	

Parameter	Value	Assumptions	Source/Equation
PAH loss rate	0.29 kg per piling	based on freshwater desorption and elevated temperatures	PAH flux \times piling surface area \times length of piling in water column
PAH loss rate corrected for salinity	0.14 kg per piling	based on observed desorption in seawater, which was half the desorption observed for freshwater	Ingram et al. (1982)
PAH loss rate corrected for temperature	0.07 kg per piling	based on temperature dependence of PAH desorption; assume reduction of 50% from 20 to 10 °C	Xiao et al. (2002)

C – Celsius

LDW – Lower Duwamish Waterway

PAH – polycyclic aromatic hydrocarbon

rh – radius \times height

The PAH loss rate is calculated as the PAH flux multiplied by the piling area and length of exposed pile with a calculated loss of 0.29 kg per piling, which can be corrected for the salinity and temperatures of marine waters to an estimated loss rate of 0.07 kg per piling. There have been very few measured observations of PAH leaching rates at lower temperatures so there is greater uncertainty associated with the temperature correction as compared with the salinity correction. This estimated loss rate represents the loss of PAH in the first 2 months following the placement of the piling. At the end of the experiment, the water column PAH concentrations were indistinguishable from background concentrations (Bestari et al. 1998).

This is consistent with laboratory experiments (Ingram et al. 1982) and field observations (Bestari et al. 1998; Goyette and Brooks 1998) that have shown that the loss of PAH from creosoted pilings decreases exponentially with time. This is an important factor to consider in light of the age of marine pilings in place throughout Washington State marine waters. The loss of PAHs from these pilings would have occurred in the first year of placement, and there is no evidence of substantial ongoing releases of PAHs from these pilings. Therefore, the annual release of PAHs from pilings will be dependent on the number of new creosote-treated pilings placed within a year.

4 FATE AND TRANSPORT OF PAHS RELEASED FROM PILINGS

There are two mechanisms by which PAHs appear to be released from pilings. The first is the release of small droplets of creosote, which was observed by Goyette and Brooks (1998). The PAH distribution in creosote droplets is similar to the distribution in creosote, with a preponderance of high-molecular-weight PAH compounds. Creosote droplets will settle out of the water column rapidly and will ultimately be deposited in the sediment near the piling. The creosote droplets were observed to remain intact within the sediment and therefore, would be expected to be not particularly bioavailable due to the strong association of the HPAH compounds and the creosote.

The second mechanism is the desorption of PAH from creosote into aqueous solution, which was observed by Ingram (1982). In this case, the mobilities of the individual PAH compounds will be dependent on the molecular weight and solubility of the individual

compounds. The low-molecular-weight PAH compounds, with their relatively high solubilities, would be expected to represent a greater proportion of the total PAH in the aqueous phase relative to the creosote. For example, 2-methyl naphthalene contributed 6% of the total PAH in the creosote-treated wood and 10% of the total PAH in the aqueous phase (Ingram et al. 1982).

Low-molecular-weight PAHs are more volatile and more easily biodegraded than are the high-molecular-weight compounds. The biodegradation of naphthalene, creosote, and naphthalene-enriched creosote were studied by Colwell (1977; cited in Ingram et al. 1982). Naphthalene-degrading bacteria were observed on new wood pilings within hours following installation in the coastal waters of Puerto Rico.

5 IMPACTS ASSOCIATED WITH PAH LEACHING FROM PILINGS

Numerous studies have been conducted in an effort to quantify the effects of PAHs released from creosote-treated pilings in terms of increased PAH concentrations in the water column, sediment, and biota in the vicinity of these pilings. The conclusions from a variety of studies are summarized below. Very few impacts have been observed in the immediate vicinity of the pilings during the time period that immediately follows the placement of the pilings.

Ingram et al. (1982) conducted laboratory desorption experiments and concluded that:

"The amount of creosote that migrates from creosote-treated marine piling is extremely small.... This small annual loss, plus the fact that PAHs apparently are rapidly broken down in sea water, indicates that the PAHs that migrate from creosote piling should have a negligible effect on the environment."

Bestari et al. (1998) conducted mesocosm studies in which changes in water column and sediment PAH concentrations were monitored over a period of months and concluded that there were no significant impacts resulting from the leaching of PAHs from creosote from pilings:

"The loss of PAHs from the water was not reflected as an increase in the sediments although an increase in PVC-bound PAHs was observed. Thus, it appears that the majority of PAHs leached into the water from the pilings is lost via natural physical (volatility, photodegradation) and biological (microbial degradation) pathways. In this sense, environmental impacts associated with loss of creosote from impregnated wood structures are most likely to occur during the initial periods following their placement in aquatic environments. Further, relatively low concentrations were recorded in this study so any impacts that do occur may be chronic, rather than acute, in nature."

A long-term *in situ* study carried out by Goyette and Brooks (1998) was conducted in Sooke Bay on Vancouver Island, British Columbia, Canada. This study is particularly

relevant to Washington State marine waters because of the similarity in the conditions of exposure. This study included the placement of creosoted pilings and 4 years of monitoring of the chemical and biological impacts of the pilings. According to Goyette and Brooks (1998):

"This study has shown that under worst case conditions, significant PAH contamination was restricted to an area within 7.5 meters from the perimeter of a significant structure. The response of an extensive infaunal community analysis and laboratory bioassays indicates that significant adverse biological effects were found within a distance of approximately 0.65 meters from the perimeter of the structure. Slight adverse effects were observed to a distance of 2.0m."

Finally, the Stratus report prepared for NOAA (Stratus 2006) is a compilation and critical review of the available literature that describes the release of PAHs from creosote-treated wood structures. The authors concluded that the impacts associated with PAHs released from pilings are likely to be small in both temporal and spatial scales.

"Overall, the laboratory and field studies described above indicate that treated wood structures can leach PAHs and other toxic compounds into the environment. However, the degree of PAH accumulation to sediment associated with these structures appears to be relatively minor in many settings, particularly in well-circulated waters and over time. PAH accumulation also appears to be relatively limited spatially (within approximately 10 m of the structure) and has not generally been associated with measured, significant, biological effects except in close proximity to the structures. The duration of any biological effects also appears to become attenuated within several months of construction (the time period when leaching rates are likely to be highest)."

6 CONCLUSION

In conclusion, the analysis proposed by Ecology greatly overestimates the release of PAHs from marine pilings. In addition, there is no evidence from the literature that was reviewed that there are long-term deleterious impacts associated with pilings. Furthermore, there is a large body of sediment and water quality data associated with pilings in Washington State facilities such as port and refinery facilities that should be reviewed to determine the extent of apparent impacts associated with existing pilings.

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September 6, 2012

Holly Davies
Department of Ecology
PO Box 47600
Olympia, WA 98504-7706

Dear Ms. Davies,

Thank you for this opportunity to comment on the draft Chemical Action Plan for PBT PAHs. This document represents a tremendous amount of research and data synthesis, in an effort to place sources and impacts into perspective. For this, the Port commends Ecology.

As expressed informally to you earlier, we have identified several issues that we believe will improve the document in several ways so that it can best serve its purposes as a scientific analysis of PAH sources and impacts, as an educational tool for the public, and as a basis for well informed decisions when actions to reduce PAH exposures are under consideration. We present these again for Ecology consideration during the formal public comment period.

Most significant issues:

1. **Human Health.** From our quick review of the 2008 EFSA Journal article cited in the document, it appears that for all humans:
 - Food (particularly grains and seafood) is the overwhelmingly dominant source (from 50-70%).
 - Exposures for smokers are roughly 35% higher than for non-smokers,
 - Frequent exposure to second hand smoke can raise PAH exposures for non-smokers by 18%,
 - Airborne PAH and drinking water have been estimated to contribute only approximately 10% each to human exposures, and
 - Airborne PAH exposures are expected to be higher for those that use wood as a primary heat source or live in areas where a majority of residents do so.

Given this information, we recommend modifying the title of "Major Sources" in the Summary of Findings section to "Major Sources to the Environment" and adding a similar section titled "Major Sources to Humans" that discusses cigarette smoke and food sources and puts them in perspective with other sources (e.g., drinking water and air). In conjunction with this change, it would be advisable to modify the titles for Figures 1 and 2 and Table 1 to clarify that with the exception of cigarette smoke, they indicate major direct sources to the environment only.

By making this suggested change, the document will be clearer as to the relative risks of exposure due to different sources of PAH and will set the stage for the emphasis on sources to humans that currently appears in the later Major Sources of Concern and Recommendations sections.

2. **Environment.** Table 1 identifies annual estimated quantities of PAHs released to the environment in Washington and Figures 1 and 2 provide insight into the relative impact of those sources to individual environmental media. However, a major source of PAHs to water and to land (deposition of PAHs from the air) appears to have been left out of Figures 1 and 2.

Deposition rates for particulates vary by particle size, but even the smallest particles experience high levels of re-deposition via rainfall, which in WA accompanies the seasonal increase in residential wood burning. If only 40% of the estimated PAH inputs to air were assumed to be re-deposited to land within WA (likely conservatively low for wood smoke in the rainy months), this category would represent the overwhelmingly major source (over 60%) of PAHs to land. Going further, with a

conservative estimate that 20% of the air emissions re-deposit on water and 15% of the land-deposited air emissions are picked up by stormwater, the re-deposition of air PAH emissions accounts for over 50% of all sources to water.

Although the partitioning percentages may bear adjustment, the end result is that considering media-to-media impacts results in a huge shift in our understanding of the relative impacts of several emissions categories. Modifying Figures 1 and 2 to account for re-deposition to land and water from the air will provide a better understanding of sources of PBT PAHs, allowing a better context for decision makers that want to address the greatest sources of PBT PAHs with limited resources.

Other Issues

We request that Ecology also consider the following additional observations towards improving the estimates of PBT PAH sources. Again, by increasing the accuracy of the estimates, Ecology will increase the chances that subsequent decisions on where to spend public dollars to achieve the greatest improvement for human health and the environment will be most impactful.

3. **LPAHs vs. HPAHs.** When Ecology passed the PBT regulation Chapter 173-333 WAC, they identified not only individual PAHs as PBTs (all of which are HPAHs) but also PAHs as a class of chemicals. Because of the designation of PAHs as a class, this draft Chemical Action Plan treats LPAHs as equivalent to HPAHs. The intent behind Ecology's original identification of both individual PAHs as PBTs and the additional identification of PAHs as a class of chemicals as PBTs is not totally clear. However, given Ecology's responses to public comments during promulgation of the regulation¹ it appears that the listing of PAHs as a class of PBTs is not due to an intent to include LPAHs, none of which meet even one of the PBT criteria (persistence, bioaccumulation, or toxicity) but rather due to the large number of additional HPAHs for which persistence, bioaccumulation, and toxicity data are lacking, but by virtue of their chemical similarities to the listed HPAHs, would likely qualify as PBTs. The importance of understanding whether LPAHs underlie why PAHs as a class are designated as PBTs is in the impact of counting LPAHs in PBT emission rates upon which policy and monetary decisions will be made.

The PAH emissions in the draft Chemical Action Plan were calculated using total PAH data (the sum of LPAHs and HPAHs). We acknowledge that many LPAHs are toxic, and we do not advocate overlooking their impacts in Washington State nor overlooking their toxicity under other regulatory programs. However, by including LPAHs in PBT emissions calculations, the accuracy of the resulting conclusions regarding relative contributions of PBT sources is compromised. Admittedly, for many emission sources, data to distinguish emission rates/loadings of HPAHs from those of LPAHs may not exist. However, we strongly advocate that a PBT document should not, when it can avoid it, include in its underlying calculations non-PBT chemical inputs if they skew emissions estimates, and ultimately, the bases upon which decisions with major economic and environmental impact are made. By means of example, when emissions from creosote-treated wood are recalculated without the LPAH components, emission rates drop by roughly 75%.

For this reason, we urge Ecology to reconsider its treatment of LPAHs relative to HPAH PBTs so that subsequent programs to reduce PBT PAHs will be as targeted and as effective as possible. In the end, controlling sources of HPAHs will also reduce the presence of LPAHs in our environment. However, if we make choices for PBT control that are based predominantly on LPAHs, we may miss our PBT reduction goals.

¹ "Concise Explanatory Statement and Responsiveness Summary for the Adoption of Chapter 173-333 WAC, Persistent Bioaccumulative Toxins, January 2006, Ecology Publication Number 06-07-006, page 75

4. **Fresh versus Aged Creosote-Treated Wood.** The literature used to develop the draft Chemical Action Plan emission rates for creosote-treated wood (including Valle et al, 2007) is clear that there is a significant difference between the amount of PAHs released by newly placed treated wood products and treated wood products that have been in the environment for some time. The literature also notes significant differences between release rates in warm fresh water versus those in cold saltwater. These factors were not accounted for in the emissions calculations.

Looking only at the difference between fresh versus aged wood, and modeling an initial release rate (60% of the total) during the first 5 years after placement (literature suggests up to 80% in the first years would be more accurate) and the remaining loss for years 6+, we estimate that the draft Chemical Action Plan likely overestimates the contribution of creosote-treated wood as a source of PAHs to our environment by at least 50% (and if the LPAH/HPAH distinction noted above was also made, the overestimate would be roughly 80%). Accounting for environmental conditions of the Pacific Northwest (cold saltwater) would reduce the estimated rate of PBT PAH releases from creosote-treated pilings even further.

5. **Qualitative Observations.**

- a. Item 12 of the Recommendations section includes investigations into/monitoring of PAH releases from asphalt shingles. We judge that there is a low probability that such research would result in raising the emission rates of PBT PAHs from asphalt shingles from less than 1% into the range of a significant source. For this reason we recommend reconsidering the value of this action in reducing PBTs.
- b. The recommendations under creosote-treated wood address creosote-treated pilings, but make no mention of controlling emissions from railroad ties. While removing creosote-treated pilings undoubtedly removes a PAH source from the environment, as demonstrated above, creosote-treated pilings in the Pacific Northwest are releasing PBT PAHs to the environment at a significantly lower rate than the draft Chemical Action Plan emission calculations suggest. In addition, it is our understanding that very few new creosote-treated pilings are being allowed in Washington. Conversely, railroad ties, which exhibit release rates that Ecology estimates are triple those of marine pilings, are being replaced by freshly treated ties at an estimated rate of over 1 million per year. Additionally, unlike most marine pilings, removed railroad ties are not disposed, but rather are reused in settings that increase the opportunity for human contact. We suggest that the recommendations address PBT PAH emission rates from railroad ties. At a minimum, this should include steps to reduce reuse of railroad ties, and perhaps, a program to phase out creosote-treated replacements.

And lastly, although my first name was spelled correctly in the Acknowledgments Section, my last name was not. Correcting this error would be appreciated.

Thank you again for the opportunity to submit comments on the draft Chemical Action Plan.

Sincerely,

A handwritten signature in black ink, appearing to read 'Leslee Conner'.

Leslee Conner
Environmental Project Manager

September 11, 2012

Ms. Holly Davies
Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7706

Dear Ms. Davies:

I would like to express our support for the Wood Smoke and Vehicle Recommendations from Washington State Department of Ecology's Draft PAH Chemical Action Plan (July 2012). We join Ecology in recognizing the importance of reducing PAH emissions in our efforts to protect public health and improve regional air quality.

The plan's recommendations to reduce PAH emissions through reducing wood smoke emissions are practical, balanced, primarily voluntary, and are consistent with the values of our stakeholders and communities. They closely follow recommendations that the Tacoma-Pierce County Clean Air Task Force unanimously adopted in December 2012. While the Task Force was focused on reducing total fine particle emissions in the Tacoma-Pierce County area, the wood smoke emissions reductions strategies they considered would also be effective in reducing PAH emissions across the state. The Task Force included representatives from a full range of perspectives including community members and neighborhoods, health care, realtors and property management, businesses, energy utilities, the wood stove industry, construction, and state and local government. The Task Force's recommendations were approved by the Puget Sound Clean Air Agency's Board of Directors in February of 2012.

Highlights of the wood smoke plan include:

- Enhance, improve, and accelerate current programs to reduce wood smoke emissions rather than developing new programs.
- Increase education and outreach so that individuals will be motivated to a) use cleaner burning practices, b) switch to cleaner alternatives including certified devices or non-wood heating devices, and c) comply with existing restrictions on trash and non-cooking outdoor burning.
- If an area is in violation of federal air quality standards or is at risk for violating the standards, use existing authority to prohibit the use of uncertified wood stoves in those areas.
- Work with industry to encourage the development of the next generation of cleaner burning wood stoves and consider adopting lower emissions standards for stoves sold in the state.
- Increase voluntary incentive programs so that cleaner options are affordable.

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The plan's recommendations for vehicle PAH emissions are also practical, balanced, and cost-effective; they focus on continuing or expanding existing programs, and working to bring newer, cleaner technologies into wider use.

Highlights of the vehicle plan include:

- Expand outreach and education on reducing fuel consumption.
- Continue to incentivize lower fuel consumption with commute trip reduction tactics.
- Continue anti-idling education programs and implement an anti-idling rule.
- Continue current diesel emissions reductions strategy that includes helping retrofit and replace older diesel engines in public and private fleets.
- Support improved federal standards for vehicles and fuels.

We support the Department of Ecology in adopting the Draft PAH Chemical Action Plan and believe it will be effective in reducing emissions of PAHs into our environment, protecting public health, and improving the region's air quality.

Sincerely,

A handwritten signature in dark ink, appearing to read "Andrew Green", with a stylized, cursive script.

Andrew Green
Director, Air Quality Programs



Holly Davies
Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Ecology W2R-1

Re: Comments on The Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan (CAP)

Dear Ms. Davies and Department of Ecology Officials:

As professionals engaged in the wood heat industry, we find a number of areas of concern and a number of areas of agreement in your proposed draft polycyclic aromatic hydrocarbon (PAH) chemical action plan (CAP). Please consider our comments below.

Concerns

1. The Department states that ***The CAP found that wood burning stoves and fireplaces are the largest source of PAH's.*** This statement is patently false and highly misleading as the CAP actually finds that railroad ties release 173,103 kg/yr (page 78) of PAH's while the same report states that wood heat releases 148,266 kg/yr (page 76). In addition, the draft CAP is based on data about the amount of PAH's coming from wood stoves and fireplaces that the EPA rates as being highly questionable. The EPA gives ratings to emission factor reliability ranging from A to E with A being the most reliable data, to E being the most unreliable data. The EPA gave the PAH emissions data from wood stoves and fireplaces an emissions factor rating of E, the worst and least reliable data (see table one of <http://www.epa.gov/ttnchie1/conference/ei10/pm/houck.pdf>). Basing this CAP on suspect and unreliable data makes the entire CAP suspect and thus the CAP should be rewritten or not be adopted. In 2011, the EPA released the results of its 2005 national-scale assessment fireplaces an emissions factor rating of E on a scale of A – E with A being the best and most (NATA) of air toxic emissions (http://www.epa.gov/ttn/atw/nata2005/05pdf/sum_results.pdf). Contained in that EPA report were two maps showing the most problematic areas for health effects from air toxic emissions and included wood smoke and other sources for toxics in air emissions. Diesel was not included because, according to the EPA *"Note that in this assessment, the potential carcinogenic risk from diesel PM is not addressed because there currently is no unit risk estimate available. However, there are noncancerous results. Learn more about EPA's qualitative assessment of diesel PM."* Both maps show the air toxics risk from emissions to be far lower in the northern states of the USA where wood heat is used to a much greater extent, as compared to the southern states and other states where wood heaters are used far less but instead have high traffic congestion and states that are highly industrialized and where the risks to citizens from air toxics emission are many times greater (as much as 100 times greater) than the northern states where wood heaters are commonly used. This same phenomenon occurs in the Puget Sound area where there is high traffic congestion and where there is heavy industry. The Department's draft CAP fails to address the issue of charbroiled meat which has been shown to be one of the most dangerous sources of PAH's. Given the direct internal inconsistency in the report on the largest source of PAH's in Washington State, the use of questionable and unreliable data as the basis for this draft CAP along with the fact that there is no complete assessment of the risk from diesel exhaust, the lack of any consideration about the risks from charbroiled meats, and the failure to effectively address a known major source of PAH's (fireplaces – see 4 below) makes the entire CAP incomplete, misleading and misdirected and thus the draft CAP for PAH's should not be adopted as presented.

2. The Department does not provide a realistic plan for the requirement to remove uncertified and certified wood stoves. The wood heat industry was an active participant with the Puget Sound Clean Air Agency on its Tacoma-Pierce County Nonattainment Area Citizen Advisory Committee and this issue of mandatory removal of uncertified wood stoves in the non-attainment area was a major part of the work of that group. The Task Force recommended the replacement of uncertified wood stoves with certified wood stoves, thus any proposal requiring the removal of certified wood stoves is patently counterproductive, unacceptable, and misguided. Effective enforcement was not clearly defined by that group and the Puget Sound Clean Air Agency continues to work with stakeholders on how to effectively administer and enforce such a program. No reliable and workable solution has yet been achieved in the view of the wood heat industry. Thus, we believe that the concept of effectively removing uncertified wood stoves is yet indeterminate and that the draft polycyclic aromatic hydrocarbon (PAH) chemical action plan (CAP) proposal for removing uncertified wood stoves is unworkable as presented and should not be included in the final polycyclic aromatic hydrocarbon (PAH) chemical action plan (CAP).
3. The draft polycyclic aromatic hydrocarbon (PAH) chemical action plan (CAP) proposes to ban the use of uncertified stoves in either 2022 or 2032. While we do not oppose the banning of uncertified wood stoves, we do believe the Department's many assumptions for replacing those devices is faulty. For example, the Department states on page 144 of its draft polycyclic aromatic hydrocarbon (PAH) chemical action plan (CAP), *"Ecology assumed that natural gas heat would be the non-wood heating option chosen, as it has the lowest installed cost compared to other central heating."* This assumption is grossly in error as most homes in Washington State do not have access to natural gas and thus cannot access this alternative fuel source. Thus, this solution option is not available to most citizens in Washington State and thus should not be included in this draft CAP.
4. On page 145 of the draft polycyclic aromatic hydrocarbon (PAH) chemical action plan (CAP) it proposes the removal of certified stoves in 2022 and 2032 to a non-wood fueled heating system. The PAH Cap Advisory Committee did not recommend the replacement of certified stoves; they recommended the replacement of uncertified stoves with certified stoves. This proposal is in direct contradiction of the CAP's provision on page 17 where the CAP states that *"Switching to certified wood stoves or pellet stoves can reduce emissions by 50% to 90%."* As stated herein, the draft CAP fails to consider a large number of problematic issues with respect to replacing a wood heater with a non-wood fueled heating device. The CAP proposal requiring the removal of certified wood stoves is patently unacceptable, unworkable, unattainable, unaffordable, and misguided and should be removed from the CAP.
5. The Department inappropriately appears to dismiss fireplaces as a significant source of PAH's when it states on page 143 that, *"Ecology assumed that use of fireplaces was primarily aesthetic, as compared to the use of woodstoves for heat."* This is a direct contradiction of the Department's statement in the CAP that is found on page 76 that: *"Fireplaces should be included in these programs, since they emit more pollution than other wood burning devices and are inefficient for heating a house"* Yet there is no proposal in the CAP to remove or retrofit fireplaces as is the case for wood heaters. This apparent dismissal of fireplaces as a major source of PAH's is a gross error by the Department. Fireplace upgrades should definitely be part of the PAH reduction strategy. Fireplaces can be upgraded with gas fuel, electricity or certified wood fueled inserts to eliminate or greatly reduce the PAH's from fireplaces, a major source of PAH's. According to the Puget Sound Clean Air Agency, about 1/2 of the particulate emissions are from fireplaces. This gross omission of proposals to control fireplace emissions in the draft CAP makes this document highly suspect for accuracy and technical quality and completeness and justifies it being rewritten or not adopted. It appears that Ecology failed to include the significant cost of installing a gas line to a home if there is natural gas utility service available to that home. This oversight by the Department further understates the change out cost to a natural gas heat option and makes this draft CAP's economic analysis highly inaccurate and misleading and demands that the CAP be rewritten or not adopted.

6. The Department is proposing that it provide some special recognition and preference for an ultra-low emission certified wood heater. The industry has significant data that does not support this concept. While the concept of recognizing and providing a preference for an ultra-low-emission wood heater is alluring to regulators, the reality and projected emission reductions are unrealistic for the reasons stated below and should not be included in this draft CAP:
- a. First, it takes a great deal of engineering, development and testing to achieve a low emission wood heater. That engineering, development and testing costs money so the ultimate product is likely to be significantly higher in cost than other low emission but not ultra-low emission wood heaters. Higher cost reduces replacement of existing heater as is discussed below.
 - b. A majority of households who heat with wood do so due to the economics of heating with wood. It is their most affordable source of heat and most of them lack the financial resources to replace their heater with a significantly more costly heater or heating system. The higher cost of an ultra-low emission wood heater will discourage many uncertified wood stove users from changing out to a low emission heater as compared to keeping their existing uncertified wood heater. Failing to change out to a low emission heater will greatly reduce the success of the Department's draft polycyclic aromatic hydrocarbon (PAH) chemical action plan (CAP)
 - c. Government incentives to encourage that change-out to a higher cost ultra-low emission heater will significantly increase the estimated costs of such a change out program which is not reflected in the economic analysis of the draft polycyclic aromatic hydrocarbon (PAH) chemical action plan (CAP).
 - d. Providing a preference for an ultra-low emission wood heater will likely reduce the number of variety of low emission wood heaters available in the marketplace further eroding the change out of uncertified wood heaters to low emission heaters. This reduced rate of removal of uncertified wood heaters is not acknowledged or reflected in the emission reductions alluded to in the draft polycyclic aromatic hydrocarbon (PAH) chemical action plan (CAP).
 - e. The draft chemical action plan fails to recognize that the wood heater often is located in a prime spot in the wood heat user's home and the design and aesthetics of that device is like a piece of furniture that the owner selects very carefully, based on its appearance, from the options available. If there are too few options, fewer households will change out their uncertified wood stove to a lower emission certified wood stove. This will greatly reduce the change out of uncertified wood stoves and such reduced change-outs are not reflected in projected emission reductions alluded to in the draft polycyclic aromatic hydrocarbon (PAH) chemical action plan (CAP)
 - f. Wood heaters must come in a number of different sizes that produce different levels of heat. A wood heater must be sized correctly to the specific application of a specific homeowner for it to be useable. So, a very low emission stove must come in a variety of sizes to meet the different needs of consumers. As the size of a heater changes, the design of that heater must also change to achieve the lower emission levels. Thus, no one wood heater design will likely provide the variety of sizes needed to meet the wide range of applications needed by consumers. So the concept of a preferential stove is extremely complex technically to meet both the sizing and aesthetics demands of consumers. Not having a full range of heater sizes in a broad array of aesthetics will greatly reduce the change out of uncertified wood stoves and is not reflected in the draft polycyclic aromatic hydrocarbon (PAH) chemical action plan (CAP).
 - g. The test of emissions from a wood heater cannot be translated into everyday operations of that heater in any location in Washington State. It is totally unrealistic for the Department to assume that a heater that produces an ultra-low emission level in a laboratory test will perform the same when used by ordinary citizens in an in-home environment. This fact alone should eliminate any proposal to give a special recognition or preference to an ultra-low emission wood heater in the polycyclic aromatic hydrocarbon (PAH) chemical action plan (CAP).
 - h. Finally, we believe that the Department has grossly overstated the in-situ emission reductions that can be achieved from an ultra-low emission wood heater due to the facts that the emissions from a wood stove are greatly affected by many uncontrolled variability's including

but not limited to the fuel, weather, the operation, and the maintenance of the wood heater and the heater's chimney. Failure by the operator to use properly seasoned fuel can result in emissions up to 11 times that of properly seasoned fuel. An operator who fails to correctly operate a stove can increase the emissions from such a stove by many times. An operator who fails to maintain his or her stove and chimney can again have a significant increase in the emissions from that device due to poor maintenance. These uncontrollable variability's will negate any proposal to give a special recognition or preference to an ultra-low emission wood heater in the polycyclic aromatic hydrocarbon (PAH) chemical action plan (CAP) as these uncontrolled variables will generally exceed the reductions from an ultra-low emission wood heater and not achieve the PAH reductions projected in the CAP.

7. Lastly, besides being unworkable to implement as proposed, we believe the Department has failed to recognize the full economic realities of implementing this draft polycyclic aromatic hydrocarbon (PAH) chemical action plan (CAP). The Department's cost estimate of \$1.4 billion \$1.6 billion on pages 146 - 148 to implement this program is grossly understated as we have described above, and the likelihood of this program being funded at any time in the next 10 years is highly questionable at best. For this reason alone, the Department should not include any stove removal program in the polycyclic aromatic hydrocarbon (PAH) chemical action plan (CAP).

Areas of Agreement and Alternative Recommendations

The wood heat industry agrees with the Department on the following draft polycyclic aromatic hydrocarbon (PAH) chemical action plan (CAP) proposals:

- Instead of focusing on change out programs that are clearly unworkable and effectively impossible to implement, the wood heat industry strongly recommends that the CAP focus on improved public education on proper burning of residential wood heaters, a major cause of undue emissions. Such a program will achieve significant emission reductions far more quickly than the proposed change-out program. The wood hearth industry is ready to join with the Department of Ecology and air quality agencies to engage in such an effective education effort for the benefit of all citizens now instead of waiting to implement a plan that is highly unlikely to be funded and that lacks cogent implementation mechanisms. The wood heat industry estimates that a program to effectively educate wood heat users on how to properly use their wood heater will reduce total PAH emissions by up to 15,000 kg/yr at a cost of less than \$5 million/year over 3 years, about 0.1% of the cost of the draft PAH Cap.
- Fuel moisture content is likely the largest source of undue emissions from wood stoves and fireplaces. The wood heat industry is ready to work with the Department and interested stakeholders to develop and implement a program to improve the quality of fuel wood for wood stoves and fireplaces by reducing its moisture content. Better control of the moisture content of fuel wood used to fuel wood heaters can dramatically reduce total emissions from wood heaters and can be done far sooner than the proposed wood heater replacement program now proposed in the draft CAP. The replacement program proposed in the draft CAP is unlikely to ever be funded and lacks the essential elements needed to implement such a program. The wood heat industry is ready to work with the Department of Ecology and air quality agencies to develop a workable low-moisture wood heater fuel program. The wood heat industry estimates that a program to effectively reduce the moisture content of fuel for wood heaters will reduce total PAH emissions by up to 30,000 kg/yr. at a cost of less than \$3 million/yr., less than 0.07% of the draft PAH CAP. Together with the user education program, these two recommendations could reduce your PAH emissions by about 1/3 within the next 3 to 5 years at less than 0.2% of the cost proposed by the Department's draft PAH CAP.
- Encouraging the replacement of uncertified wood heaters and replacing them with gas or electricity fueled heaters or a certified wood stove or pellet stove needs to continue and be enhanced to the

greatest degree possible to reduce the number of uncertified wood stoves in the air shed. The wood heat industry sells and installs both gas and electrically fueled heaters so it is extremely eager to work with the Department of Ecology and local clean air agencies to improve these replacement programs and maximize their success within the available funding now available. This approach will result in far more success than waiting for decades for unlikely funding of a unworkable uncertified wood stove replacement program

- Maximize public incentives to change out uncertified wood heaters within available funding. The wood heat industry will continue to join the Department in such an effort.
- In addition, the wood heat industry recommends that any person who claims an exemption for burn bans for not having an adequate source of heat other than a wood heater, that the person must pass a wood heat operator test, certification or training to receive the benefits of that exemption. The wood heat industry is ready to work with the Department of Ecology and local clean air agencies to develop and implement such a program. This program will reduce emissions coming from those "adequate source of heat" appliances and benefit all citizens in that area.

Thank you for considering our comments,



Leah Hauer, Executive Director
Northwest Hearth, Patio & Barbecue Association
Spokane Valley, WA 99213

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From: [Ray Lam](#)
To: [Davies, Holly \(ECY\)](#)
Subject: Comments of draft PAH regulations
Date: Monday, July 09, 2012 9:05:05 AM

I suggest that under the Wood Smoke Recommendations, that under 1 (b)-Alternative heat sources, that solar thermal (hot water) systems be an viable alternative to reducing wood combustion, especially since the Hydronic heaters and solar hot water heaters are manufactured in Washington State.

Cheers

Ray Lam

Silk Road Environmental LLC/Silk Road Solar

509-460-3012



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SEP 06 2012

Caring for
your natural resources
... now and forever

ECOLOGY W2R

September 4, 2012

Holly Davies
Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7706

Re: Polycyclic Aromatic Hydrocarbon Chemical Action Plan

Dear Ms. Davies:

The Washington State Department of Natural Resources (DNR) would like to thank you for the opportunity to comment on the Chemical Action Plan (CAP) for polycyclic aromatic hydrocarbon.

DNR's comments are based on principles of stewardship and proprietary management derived from our legislative defined goals to protect State-Owned Aquatic Lands (SOAL) and preserve them for the public's benefit. We appreciate Ecology's consideration of these and any future comments related to the evaluation and reduction of chemical hazards to the environment.

Although stormwater is mentioned as a major transporter of PAHs to surface water and especially to sediments, no discussion is made of the importance of improved stormwater control. Sediments are the major source of ecological risk from PAHs, and sediments frequently contain the highest PAH concentrations. Development of more effective strategies for controlling stormwater is an important tool in limiting the impact of sources of PAHs that are unlikely to be eliminated, ie motor vehicle traffic. While the issue of stormwater control is likely too complex to be explored in detail in this CAP, this document is still a good opportunity to highlight the need for further discussion on the issue.

Sincerely,

Erika A Shaffer, MS
Sediment Specialist





September 11, 2012

Holly Davies
Department of Ecology
P.O. Box 47600
Olympia, WA 98504-6102

Submitted electronically to: hdav461@ecy.wa.gov

Dear Ms. Davies:

Thank you for the opportunity to comment on the Washington State Department of Ecology's recently published document entitled *Draft PAH Chemical Action Plan, July 2012* and thank you as well for honoring our request to extend the comment deadline.

The draft action plan represents a tremendous accumulation of research and data analysis, which Ecology should be commended for undertaking. However, the application of this research as applied in some aspects of the draft plan may lead to unnecessarily conservative conclusions which could negatively affect future policy decisions.

We are particularly concerned about sections of the action plan which address removal of creosote treated pilings. In partnership with Ecology and the Washington State Department of Natural Resources, ports around the Puget Sound have proactively removed tens of thousands of creosote treated pilings from nearshore areas and remain committed to further removal of legacy pilings as facilities are maintained, removed or replaced.

Our concern, however, is that the draft plan may present an incomplete and unnecessarily alarming image of the threat posed by creosote-treated pilings, nearly all of which have been present in the state's marine waters for many years or even decades. We are concerned that an overstatement of the problem could ultimately result in limited state and local resources being dedicated to resolving a situation which is actually less problematic than it may appear. As a result, limited resources would be drawn away from site cleanups, habitat restoration, stormwater upgrades and other environmental projects that may yield far better environmental benefit than a large-scale piling removal initiative.

How much PAH is attributable to legacy marine pilings?

The chart at the top of page 11 shows that marine pilings have a PAH release rate that is only slightly less than the combined release rate attributed to millions of internal combustion engines residing in automobiles driven in the state. Further, the draft contends that marine pilings contribute more PAH than the combined releases from all motor oil leaks, improper oil disposal, vehicle tire wear, lawn and garden equipment, off-road mobile sources, silvicultural burning and industrial point sources. This is an astonishing level of release that begs further review of the methodology used.

In discussing the draft plan's methodology with subject matter experts from the ports community, it appears that the assumptions made in the draft plan are inconsistent with the studies cited. For example, the draft plan arrives at its loading estimates for creosote treated pilings by assuming that each piling steadily releases a large amount of PAHs (0.5134 kg) over the entire 30-year lifespan of the piling. However, the studies show that releases into the aquatic environment occur immediately after installation and decline exponentially thereafter. These releases cease within a relatively brief time period and reach background levels within 84 days, according to *Bestari et al. (1998)*. Additional studies cited in the draft reach similar conclusions.

Furthermore, releases to the water column are primarily LPAH compounds, which break down quickly in the aquatic environment. HPAH releases tend to be in the form of small droplets of creosote which fall from the pilings and deposit in nearby sediments. Impacts are limited to the area immediately surrounding individual pilings and have never extended to the point where they appear as a discernible plume. Generally, these droplets are less bioavailable and are sequestered through the process of sediment deposition around the piling.

Including LPAHs in emission calculations compromises the resulting conclusions. For example, emissions from creosote-treated timbers drop approximately 75 percent when LPAH components are removed from the equation. While many LPAHs are toxic, these substances quickly break down in the

environment. HPAHs and LPAHs are also sufficiently dissimilar in character that it's appropriate to manage them differently through current regulatory programs. In order to keep these programs as targeted and effective as possible, Ecology should specifically focus on HPAHs when considering impacts from marine pilings. Although controlling sources of HPAHs will inevitably reduce the presence of LPAHs, the converse is not necessarily true and the skewing that occurs could divert finite resources into programs and projects that may result in comparatively limited environmental benefit.

Finally, the studies cited in the plan conclude that release rates in marine waters are approximately half as high as those in fresh water and that release rates in cold water are significantly less than in warmer water. This is important because the 23 percent leaching rate used by Ecology is the same as that calculated by *Valle et al. (2007)*, based on the work of *Ingram et al. (1982)* and *Bestari et al. (1998)*. Although the authors provided empirical data about variables that influence leach rates, these uncertainties were not incorporated into Ecology's site-specific release rates. Instead, Ecology used a release rate based on freshwater releases at elevated temperatures. However, the controlling factors identified by *Ingram et al. (1982)* and *Bestari et al. (1998)* illustrate how the use of release rates obtained in warm freshwater would significantly overinflate contribution rates when applied to marine waters in cool climates, such as Washington state. It is also worth noting that the leaching rate of PAHs has only been observed from the surface and that no loss was observed from areas of pilings deeper than 1m, per *Bestari et al. (1998)*.

For these reasons, we believe the release rates cited in the draft plan are overstated and should be revised to reflect the factors outlined herein.

What is the extent of HPAH contamination in the marine environment?

In situ studies observing the extent of HPAH contamination and harm to biota in the vicinity of pilings all conclude that resulting environmental degradation is limited. All of the studies cited in the draft plan conclude that PAH contamination from creosote treated pilings is limited spatially and occurs almost entirely during the time period immediately following installation.

Additionally, evidence from remedial investigations and sampling in urban harbors generally fails to consistently show high concentrations of PAH contamination in the vicinity of large pile groupings. What is often seen in areas near docks and piers with large numbers of creosote pilings is consistent with the usual multi-source urban background one expects to find in urban harbors. It stands to reason that if marine pilings were as significant a threat as the draft plan indicates, there would be extremely high concentrations of PAH at all docks and piers where creosote-treated timbers appear,

with a distinct contamination plume emanating from those facilities. That is not the case. Rather, it is relatively common to see slightly elevated concentrations directly underneath a pier, with no additional deposition in the surrounding waterway or bay.

Indeed, the extremely high concentrations one would expect to see at a major PAH source are found almost exclusively at the site of wood treatment plants where large quantities of creosote were released directly into the environment.

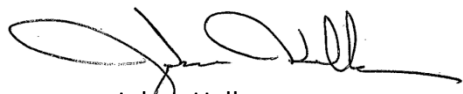
Conclusions

As previously stated, ports remain committed to removing creosote-treated pilings through regular maintenance and restoration of near-shore facilities. Regulatory agencies stopped approving large-scale installation of creosote treated timbers many years ago. The resulting change of products from treated wood to steel and concrete has effectively controlled PAH releases from marine pilings. It makes sense to remove or replace creosote treated pilings as facilities are updated, which is a relatively cost effective way of addressing this issue.

What concerns ports is the possibility that the draft plan may cast the potential threat of creosote-treated timbers at a crisis level when, in fact, the actual threat is considerably less than what may be inferred. For the reasons outlined in this letter, we believe the assumptions in the draft plan are unnecessarily conservative and require additional consideration. Since the draft plan is intended to help Ecology direct resources and focus efforts where the most environmental benefit may occur, we urge the department to reconsider the conclusions regarding creosote treated pilings in light of the information outlined herein.

We stand ready to work with the department to further revise the draft plan or provide additional information as required.

Sincerely,

A handwritten signature in black ink, appearing to read 'Johan Hellman', with a stylized, flowing script.

Johan Hellman
Assistant Director



September 11, 2012

Holly Davies
Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7706

Re: **Comment on Draft Chemical Action Plan (CAP) for PAHs**

Dear Ms. Davies,

WWPI would like to thank Ecology for the opportunity to comment on the draft Chemical Action Plan (CAP) for PAHs. We also appreciated the opportunity for members of our industry to participate in the PAH CAP Advisory Committee process.

The WWPI is a not for profit organization representing the interest of the pressure wood preserving industry in Washington State and western North America whose members have an invested interest in the draft PAH CAP, specifically to the use of creosote preserved wood products. Please accept the following comments of the Western Wood Preservers Institute.

WWPI SUGGESTED EDITS AND COMMENTS

Page 21 - Creosote Treated Wood and Other Products Recommendations

11. Map railroad tie locations

Ecology should use GIS mapping to locate creosote treated wood railroad ties near sensitive habitat such as salmon spawning streams and marine nearshore habitat. Creosote treated wood is still used for the majority of railroad ties and PAHs from creosote treated wood near aquatic environments may impact aquatic organisms. PAHs from uses of creosote-treated wood in other areas have less direct transport pathways to sediments and aquatic organisms and, therefore, we are not recommending additional actions to remove or replace them at this time. ~~In the future, Ecology should investigate the advantages and disadvantages of other wood treatment options and non wood options, especially for aquatic areas. Because the purpose of treating wood with creosote is to preserve the wood and~~

protect it from pests, many chemical alternatives will also be toxic and need to be reviewed carefully for impacts to the aquatic environment.

COMMENT ON STRIKED TEXT: WWPI believes such a recommendation is unwarranted and outside the scope of the PAH CAP. Such action is already being done through the normal permitting process and any further action by the state would only be duplicative in effort and cost. The permitting authorities have access to information concerning the use of preserved wood, especially in aquatic environments i.e., NOAA SW Region 2009 treated wood guidelines, and Forest Products Society 2011 – book on Managing Treated wood in Aquatic Environments that also include reference to numerous other scientific studies and reports. The wealth of information on preserved wood is overwhelming in comparison to the lack of information found on the environmental effects of use of non-preserved wood materials, especially in aquatic applications.

Page 77 - Creosote treated wood- Railroad ties

Coal tar is a by-product when coal is carbonized to make coke or gasified to make coal gas, and contains a complex mixture of PAHs (ATSDR, 2002). While creosote can be prepared from woods, creosote from coal tar is the most common form of creosote used in the US and the most widely used wood preservative (ATSDR, 2002). This CAP uses the term “creosote” to refer to coal tar creosote. About 300 chemicals have been identified in coal tar creosote, but as many as 10,000 other chemicals may be in this mixture (ATSDR, 2002). Creosote is an oil-borne coal tar distillate wood treatment and is regulated by the EPA as a restricted use pesticide (see section on regulations). Creosote is forced into wood *[Insert] 1-2 inches in depth* under pressure to treat the wood. *Some characteristics of creosote are that it has (a) high toxicity to wood-destroying organisms; (b) relative insolubility in water, (c) low volatility, and (d) lengthy record of good product performance.* PAHs are released from creosote treated wood through volatilization into the air and leaching migration into water.

COMMENT: Because creosote is relatively insoluble in water it does not leach from the wood in a dissolved state.

Page 78 (second paragraph)

There are 3,196 miles of freight rail lines in Washington (Blake 2007), with an average of 3,249 ties per mile of track (RTA, 2010), for a total of 10,384,129 ties.

COMMENT: The statistics used need to be revised. According to Association of American Railroads the total number of miles of freight railroad track in Washington State is 3,215 miles. According to Railway Tie Association approximately 6% of the existing railway ties in use are concrete or of another material. When adjusted for the other tie materials the total number of railway miles using treated wood ties is estimated to be 3,022. Multiplying by a revised 3,200 ties per mile the total number of existing ties in Washington is 9,670,000 instead of 10,384,129. This revision would reduce the estimated amount of PAH released (kg/yr) by 11,904 (Table 8).

Page 79 (second paragraph)

Table 9 lists alternatives to pressure-treated wood with advantages and disadvantages. There are additional products, such as TimberSIL, which combines wood with glass, and Kebony, which hardens soft wood using agricultural waste. Not all of these alternatives are appropriate for railroad ties. Compared to the initial costs, the advantages, disadvantages and environmental impacts of different materials are less agreed upon. In addition, they vary based on region and use. For example, the presence of natural resources, such as wood, and the need for transport will affect a life cycle analysis. The Dutch government submitted a life cycle analysis of creosote and alternatives for an EU consultation on including creosote as a wood preservative under their directive on biocides (Dutch Competent Authorities 2008). The Netherlands concluded there are alternatives for both railroad ties and utility poles that are less detrimental to human health and the environment. **[Insert]Recent life cycle assessments of various preserved wood products conducted in the United States have found that when compared to alternatives, such as concrete, steel and plastic, preserved wood products by far had the lesser overall environmental impact.**

COMMENT: *Link to pole life-cycle assessment can be found at <http://www.sciencedirect.com/science/article/pii/S1364032111000682> (The results of other preserved wood life cycle assessments are anticipated to be published in the near future, including one for creosote preserved railway ties and piling.)*

Page 80 (paragraph between tables)

There are **[Insert] other** chemical alternatives to creosote that are registered as **restricted** pesticides with the EPA, such as ~~Chemical alternatives include pentachlorophenol and chromate copper arsenate (CCA), which are restricted use pesticides due to human health concerns and are no longer produced for residential use.~~ Other chemical alternatives are ammoniacal copper zinc arsenate (ACZA), ammoniacal **alkaline** copper quaternary (ACQ), borates, copper azole, and **copper** naphthenates. Table 10 lists some chemical wood preservatives and their typical constituents and is adapted from Dickey (2003). **[Insert] The U.S. EPA considers each of these wood preservative systems as antimicrobial pesticides and requires:** *“These pesticides must be supported with complete scientific analysis and show that they can be used without causing unreasonable adverse effects to human health or the environment.”*

COMMENT: *Recommended Revisions to Table 10 - Alkaline Copper Quaternary (ACQ) needs to replace Ammoniacal Copper Quaternary; Acid Copper Chromate (ACC) is no longer produced and should be deleted. Zinc Naphthenate (ZnN) is not used in pressure treatment of western wood species and should be deleted.*

Page 81 - Creosote treated wood- Marine pilings

There is localized exposure to environment near creosote treated wood. Kenneth Brooks has conducted several biological studies for the Creosote Council, U.S. Western Wood Preservers Institute, Department of Agriculture, and other institutions that evaluate the organismal, population, and community effects associated with the use of creosote-treated wood.

Specifically, Goyette and Brooks (1998) prepared a report on a study sponsored by Environment Canada, Fisheries and Oceans, British Columbia, and the wood treatment industry on creosote pilings in Sooke Basin, Vancouver Island, Canada. They found locally increased levels of PAHs in sediment, with significant biological effects within 0.65 meters.

COMMENT: If you are going to key in on this one biological effect it is only fair to clarify that the study results were designed to represent a worst case condition involving a pristine environment with biologically active sediments, moderately low Total Organic Carbon (TOC) levels and very slow current speeds. Including the fact the preserved pilings used in the study were significantly over treated to a retention that exceeded the target by 159%, which further increased the worst case scenario. Under most water conditions found in the Puget Sound any observed environmental effects would be significantly less and the risks could be managed if the project site were properly assessed and the product material was preserved to the WWPI Best Management Practices.

Pages 149 &150 - Banning re-use of creosote-treated wood for certain applications

A ban on the re-use of creosote-treated wood would entail banning multiple residential and commercial uses of railway ties, including landscaping and farm (fence post, e.g.) uses. The EPA has recommendations on safer ways to use railway ties in these applications, but has not approved the uses as it has certain types of permitted landfilling, gasification, and cogeneration.

COMMENT: [Reference to Table 47]

According to the Railway Tie Association's (RTA) "~~Wood Crossties 2008 Benchmark Tie Disposal Survey,~~" as well as RTA and Association of American Railroads current replacement data, **approximately 241,750 ties are replaced** each year in Washington State with:

- Nearly ~~68~~ **35** thousand creosote-treated railroad ties ~~being~~ are re-used in commercial landscaping.
- Over-24 ~~12~~ thousand ties ~~being~~ are re-used in farm applications.
- **Nearly 35 thousand ties being used in commercial landscaping.**
- Over-67 **Nearly 35** thousand ties ~~being~~ are re-used in residential landscaping.

Page 151- Banning re-use of creosote-treated wood for certain applications (cont.)

[Reference to Table 49]

The Railway Tie Association cites the price of a new, treated tie as **\$95**.

COMMENT: \$95 is the installed rate of a Class 1 railway tie not the cost of an individual treated tie. According to RTA the correct rate of a single tie at the time of the analysis should have been \$35. Used ties may sometimes be provided for free by railroads or yards, but Ecology surveyed possible prices for used ties ranging up to \$56 (longer switch ties carried the highest prices). The costs of using cedar or redwood timbers would be mitigated by any expenditure a landscaper would make on railroad ties. For inexpensive or free ties (which Ecology could not determine the extent of), a landscaper would incur up to the full cost of banning the reuse of rail ties. In the case of the most

expensive used railway ties, Ecology believes landscapers would choose the lower cost equivalent of another type of timber in the first place, in which case a ban on re-use would have little or no cost impact.

COMMENT: Implying that landscapers will pay more for used railway ties than cedar or redwood timbers is not accurate. In searching cost of used railway ties from a number of sources I found the vast majority of prices ranged \$10-\$18 for landscape ties depending on length versus the cost of cedar and redwood timbers ranging \$60-\$80.) (The analogy Ecology is using is just the opposite regarding the cost between railway ties and cedar/redwood timber.)

Again, I would like to thank Ecology for the opportunity to respond on the draft CAP PAHs. Should you have any questions regarding our comments please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Ted LaDoux", written in a cursive style.

Ted LaDoux
Executive Director
Western Wood Preservers Institute

Re: Comments on The Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan (CAP)

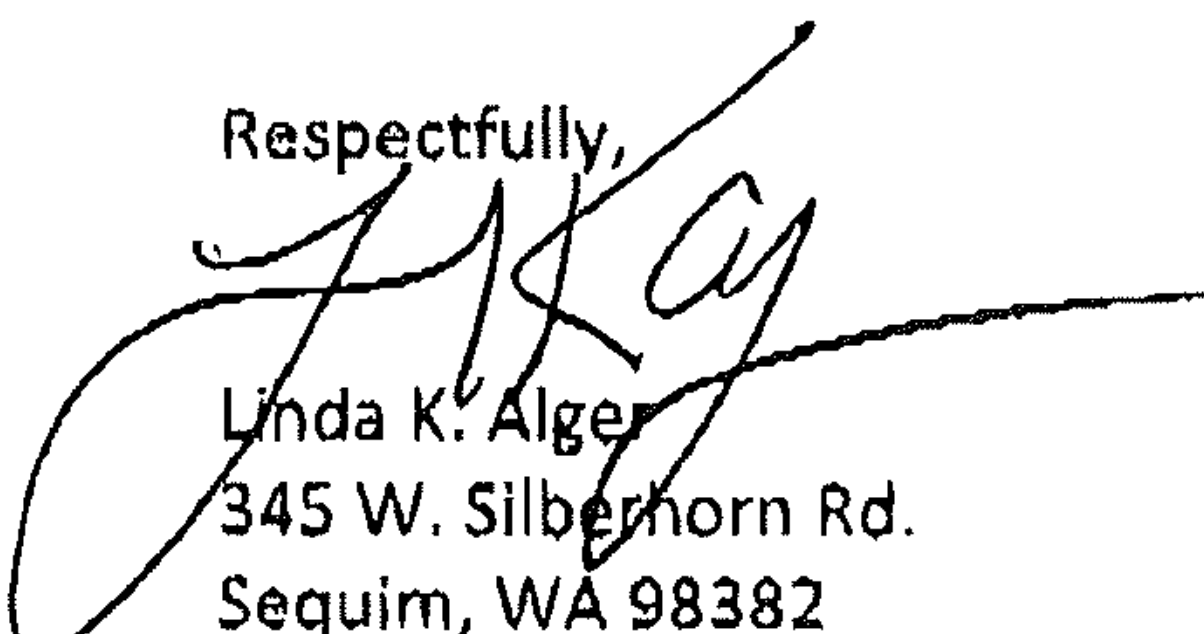
Dear Ms. Davies:

I strongly object to the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters. I have carefully reviewed the comments from the Northwest Hearth Patio & Barbecue Association regarding this proposal and fully agree with their comments and agree that the CAP for PAH's should not be adopted by the Department with respect to wood heaters.

As an individual in the wood heat industry and a wood heat user, I find your draft plan to be unrealistic and unworkable for many reasons including but not limited to the fact that there's no practical, legal way to remove uncertified wood appliances from people's homes. While you could copy the Department of Labor and Industries and require them to be removed at the time of sale of the home, people are not going to permit some government agency to come into their homes and remove their heat source, nor should they permit that. Rebates and incentives will work if people are thinking about replacing the appliance anyway, but many people who burn wood are doing so because it's the cheapest form of heat. They would only switch the appliance if it was totally free, and we can't afford to do that. A plan this unrealistic should be scrapped without wasting any more time on it.

For these reasons, I implore the Department to not adopt this CAP for PAH's as proposed for wood heaters.

Respectfully,



Linda K. Alger
345 W. Silberhorn Rd.
Sequim, WA 98382
(360) 775-0133

From: [Daniel S. R. Austen](#)
To: [Davies, Holly \(ECY\)](#)
Subject: PAHCAP
Date: Thursday, August 30, 2012 9:00:32 PM

The Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan will destroy some industries and hurt other that are essential for providing jobs and growing our struggling economy. Some of these industries that will be destroyed or hurt include the hearth industry and those that manufacture yard maintenance equipment. Please do not support the action plan.

--

SGT Daniel Clark S. R. Austen RT(R), EMT-B
dansrausten@gmail.com
daniel.c.austen@us.army.mil
(360) 609-8773
3320 L Street
Vancouver, WA 98663

From: [Lucy S. R. Austen](#)
To: [Davies, Holly \(ECY\)](#)
Subject: Comments on The Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan (CAP)
Date: Friday, August 31, 2012 7:52:56 AM

Holly Davies

Department of Ecology

P.O. Box 47600

Olympia, WA 98504-7600

Re: Comments on The Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan (CAP)

Dear Ms. Davies:

I strongly object to the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters. I have carefully reviewed the comments from the Northwest Hearth Patio & Barbecue Association regarding this proposal and fully agree with their comments and agree that the CAP for PAH's should not be adopted by the Department with respect to wood heaters.

As a wood heat user, I find your draft plan to be unrealistic and unworkable for **many** reasons including but not limited to a concern for users of wood stoves. A wood stove is often the only source of heat for a low income family. A wood stove is the only available source of heat and cooking during power outages for many more. And these are just a drop in the bucket of problems with the plan. I implore the Department to not adopt this CAP for PAH's as proposed for wood heaters.

Please respond at your earliest convenience.

Sincerely,

Lucy S. R. Austen

3320 L St.

Vancouver, WA 98663

360-608-5387

lucysrausten@gmail.com

From: [David Baye](#)
To: [Davies, Holly \(ECY\)](#)
Subject: Draft on PAH CAP
Date: Monday, September 03, 2012 5:04:14 PM

David L. & Karen L. Baye
10 NE 13037 Road
Lake, WA 98837 Moses
September
3, 2012
Re: Comments on the Draft Polycyclic Aromatic
Hydrocarbon Chemical Action Plan

Holly Davies
Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

We strongly object to the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters. We have read and reviewed the comments from the Northwest Hearth Patio & Barbecue Association regarding this proposal and fully agree with their comments and also agree that the CAP for PAH's should not be adopted by the Department with respect to wood heaters.

As a wood heat user we find your draft plan to be badly written, unrealistic, not well thought out and unworkable for many reasons, including, but not limited to;

1. if we have a power outage natural gas, oil and electric heaters do not function,
2. the fact that natural gas is not widely available as stated on page 17,
3. electricity is expensive and getting more so,
4. this plan places a greater burden on those least able to bear it,
5. there is no clear plan on where the monies are coming from to phase this in.

Again, let us say that this proposal is not reasonable or workable. Please acknowledge receipt of this email and we thank you for your time.

Sincerely,
David and Karen Baye

From: [Bill Boyes](#)
To: [Davies, Holly \(ECY\)](#)
Subject: Comments on The Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan (CAP)
Date: Monday, September 03, 2012 12:06:52 PM

Dear Ms. Davies:

I strongly object to the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters. I have carefully reviewed the comments from the Northwest Hearth Patio & Barbecue Association regarding this proposal and fully agree with their comments and agree that the CAP for PAH's should not be adopted by the Department with respect to wood heaters.

As a wood heat user , I find your draft plan to be unrealistic and unworkable for many reasons including but not limited to the high cost of installing a heat pump, natural gas not being available, the accelerating costs of using electric heat, and my desire to promote local forest industries as well as help reduce logging waste.

For these reasons, I implore the Department to not adopt this CAP for PAH's as proposed for wood heaters.

Respectfully,

Bill Boyes

483 W. Elma Hicklin Rd.

McCleary, WA 98557

Re: Comments on the Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan (CAP)

Dear Ms. Davies:

I strongly object to the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters. I have carefully reviewed the comments from the Northwest Hearth Patio & Barbecue Association regarding this proposal and fully agree with their comments and agree that the CAP for PAH's should not be adopted by the Department with respect to wood heaters.

As an individual in the wood heat industry, I find your draft plan to be unrealistic and unworkable for many reasons including but not limited to the fact it doesn't even talk about the main issue with wood stoves, fireplaces, and inserts, which is what people are burning. If people burn dry, seasoned cord wood, not wet or green wood, they don't create much smoke anyway. If people had a source of dry wood they would be way more likely to burn clean and green. That would be a more practical way of cutting down on emissions than threatening to ban them entirely.

For these reasons, I implore the Department to not adopt this CAP for PAH's as proposed for wood heaters.

Respectfully,



Shelby Dumas
1313 Finn Hall Rd
Port Angeles, WA 98362
(360) 452-3805

From: [Mike Duval](#)
To: [Davies, Holly \(ECY\)](#)
Subject: Wood burning proposal
Date: Wednesday, September 05, 2012 10:08:30 AM

Holly – in regard to the Chemical Action Plan for Polycyclic Aromatic Hydrocarbons drafted by DOE as it relates to wood heaters. The data that is being used to justify this draconian measure is highly speculative. While I don't deny that wood stoves contribute to PAH, their contribution is extremely small compared to automobiles and diesel combustion from trucks, trains & oceangoing vessels. As a former member of the Puget Sound Clean Air Agency advisory task force, I have participated in the learning curve for regulators and industry as we sought the most effective ways to enhance air quality through a combination of regulatory and incentive based programs.

The fact is, a certain portion of our population relies on wood heat to provide effective and low-cost warmth for their homes. The idea that this heat can be replaced with another "cleaner" form of energy is not possible given current alternatives. While it is worth pushing a goal of upgrading all existing wood burning equipment to meet existing Washington State standards, totally eliminating or mandating removal is unreasonable. For many who rely on wood heat it amounts to economic discrimination. A more reasoned approach would be to enhance the programs initiated by local regulators and develop a statewide plan to deal with virtually unrestricted fireplaces. Wood burning fireplaces have proven to be bigger polluters than certified wood stoves. They are frequently used for ambience and not effective for efficient heating. I ask that you consider the years of positive gains in the reduction of wood burning emissions and work to further that process as opposed to the draft measures that are currently being proposed.

From: [Joe Frawley](#)
To: [Davies, Holly \(ECY\)](#)
Subject: Comments on The Draft Polycyclic Aromatic Hydrocarbon (PAH)
Date: Tuesday, September 11, 2012 10:55:46 AM

Dear Ms. Davies:

I strongly object to the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters. I have reviewed the comments from the Northwest Hearth Patio & Barbecue Association regarding this proposal and fully agree with their comments and agree that the CAP for PAH's should not be adopted by the Department with respect to wood heaters.

As an a wood heat user, I find your draft plan to be unrealistic and unworkable for many reasons. For one, natural gas is not widely available, as the plan suggests (and is not available in my area). My home does have propane heating, which cost my family well over \$1,000 last winter alone. We use our heat sparingly, and do not run the furnace for the majority of the year due to the cost. Because propane is expensive and likely to become more so, we do burn seasoned wood in the winter to help minimize our heating costs. Forcing us to remove our wood stove would be very expensive to us. Our home is well insulated, we obey all burn bans, we burn only seasoned wood, we have an efficient stove that is certified, and we burn clean. We should not be penalized by this proposed policy.

Additionally, there are logical failures in the proposal. For one thing, wood stoves in this area are typically only used a few months out of the year, and then not daily, but the assumption in the report is that they are a daily PAH source. This is inaccurate. The proposal on page 147 to replace all *certified* stoves is ludicrous and burdensome, and additionally is in direct contradiction to the recommendations of the Tacoma SIP Advisory Committee that recommended the replacement of UNCERTIFIED stoves with certified stoves or pellet stoves. Also, there are many other sources that release more PAHs and toxins than clean wood heat - railroad ties, cigarette smoke, cars, trucks, trains, ships, even fireplaces. Why target wood stoves, especially certified ones?

For these reasons, I implore the Department to not adopt this CAP for PAH's as proposed for wood heaters.

Respectfully,

Joe Frawley
2830 85th Ave SW
Olympia, WA 98512

Holly Davies

Department of Ecology

P.O. Box 47600

Olympia, WA 98504-7600

Re: Comments on The Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan (CAP)

Dear Ms. Davies:

I strongly object to the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters. I have carefully reviewed the comments from the Northwest Hearth Patio & Barbecue Association regarding this proposal and fully agree with their comments and agree that the CAP for PAH's should not be adopted by the Department with respect to wood heaters.

As an individual in the wood heat industry, I find your draft plan to be unrealistic and unworkable for many reasons including but not limited to there is currently no workable strategy to effectively implement an uncertified wood stove removal program as discussed on page 18 of the proposal so the realities of even implanting this proposal are highly questionable and unrealistic.

For this reason, I implore the Department to not adopt this CAP for PAH's as proposed for wood heaters.

Respectfully,

Sean Hanley

PO Box 1292

Woodinville, WA 98072

From: [Don Hartman](#)
To: [Davies, Holly \(ECY\)](#)
Subject: Wood Stove ban
Date: Wednesday, September 05, 2012 7:47:20 AM

Holly Davies
Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Dear Ms. Davies:

I strongly object to the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters.

As a wood heat user, I find your draft plan to be unrealistic and unworkable for many reasons including but not limited to the fact that wood heat is the only heat source that does not affect my wife's health negatively. Also burning wood helps me to have enough money left over to pay my taxes so DOE can continued to be funded. Unless this plan includes the state reimbursing stove owners for their investments in wood heat (the state does not have the funds to do that) the plan needs to be rejected. Besides with the economy as unstable as it is this is the only heat source for many low income families. As well many unemployed individuals cut and sell firewood as a means to support their families if this plan is enacted these families would lose their source of income. For these reasons, I implore the Department to not adopt this CAP for PAH's as proposed for wood heaters.

Respectfully,

DON HARTMAN
GOVERNMENT ACCOUNTS MANAGER
Phone (360)491-6000
Fax (360)438-0969
email: dehartman@cbm-wa.com

**FOLLOWING THE FOLLOWING 2 RULES WILL REMOVE MANY OF
THE PROBLEMS WE HAVE IN OUR LIVES; DO ALL YOU AGREE TO DO**

and **DO NOT ENCROACH ON OTHER PERSONS OR THEIR PROPERTY**

Holly Davies

Department of Ecology

P.O. Box 47600

Olympia, WA 98504-7600

Re: Comments on The Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan (CAP)

Dear Ms. Davies:

I strongly object to your departments draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters. I have concerns with the Department finding with respect to wood heaters. The information is designed to support your preferred outcome and seems to be incomplete and lacking facts. If you truly feel this is a problem than spend some of the taxpayers money and get a true and fair assessment by a legitimate third party.

I use wood heat and also have wood heat in my rental property. As a wood heat user I find your draft plan to be unrealistic and unworkable for many reasons including but not limited to the true cost to the taxpayers for replacement, alternative fuel costs and effect on low income tax payers who use wood sales as one of their sources of income in the current state of the economy.

For these reason, I implore the Department to not adopt this CAP for PAH's as proposed for wood heaters.

Respectfully,

Stacey Hartman

3660 Pacific Ave.

Olympia, WA 98501

From: [Leah Hauer](#)
To: [Davies, Holly \(ECY\)](#)
Subject: Comment on PAH CAP
Date: Friday, August 31, 2012 12:23:05 PM

Holly Davies
Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Re: Comments on The Draft Polycyclic Aromatic Hydrocarbon (PAH)
Chemical Action Plan (CAP)

Dear Ms. Davies:

I strongly object to the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters. I have carefully reviewed the comments from the Northwest Hearth Patio & Barbecue Association regarding this proposal and fully agree with their comments and agree that the CAP for PAH's should not be adopted by the Department with respect to wood heaters.

As a wood heat user, I find your draft plan to be unrealistic and unworkable for many reasons including but not limited to the fact that the draft CAP for wood stove removal is based on total speculation and without any data indicating it might succeed. There is currently no workable strategy to effectively implement an uncertified wood stove removal program as discussed on page 18 of the proposal, so the realities of even implementing this proposal are highly questionable and unrealistic. Additionally, the cost of government incentives for this type of an uncertified wood stove removal and replacement program are far too low as estimated in the draft proposal on page 146. Therefore, I feel the CAP lacks any justification to be adopted. I implore the Department to not adopt this CAP for PAH's as proposed for wood heaters.

Respectfully,

Harold J Hauer, Jr
815 E Shelter Lane
Deer Park, WA 99006

From: [Leah Hauer](#)
To: [Davies, Holly \(ECY\)](#)
Subject: PAH CAP Comments
Date: Friday, August 31, 2012 11:25:01 AM

Holly Davies

Department of Ecology

P.O. Box 47600

Olympia, WA 98504-7600

Re: Comments on The Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan (CAP)

Dear Ms. Davies:

I strongly object to the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters. I have carefully reviewed the comments from the Northwest Hearth Patio & Barbecue Association regarding this proposal and fully agree with their comments and agree that the CAP for PAH's should not be adopted by the Department with respect to wood heaters.

As an individual in the wood heat industry and a wood heat user, I find your draft plan to be unrealistic and unworkable for many reasons including but not limited to the fact that the cost of installing a heat pump was grossly underestimated, and the cost of installing the duct work into an existing home for that heat pump was not included. Thus the cost estimates as presented on pages 146 and 147 are meaningless.

For these reasons, I implore the Department to not adopt this CAP for PAH's as proposed for wood heaters.

Respectfully,
Leah P Hauer
815 E Shelter Lane
Deer Park, WA 99006

Holly Davies

Department of Ecology

P.O. Box 47600

Olympia, WA 98504-7600

Re: Comments on The Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan (CAP)

Dear Ms. Davies:

I strongly object to the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters. I have carefully reviewed the comments from the Northwest Hearth Patio & Barbecue Association regarding this proposal and fully agree with their comments and agree that the CAP for PAH's should not be adopted by the Department with respect to wood heaters.

As a wood heat user, I find your draft plan to be unrealistic and unworkable for many reasons including but not limited the fact that I can heat my home economically as I have a high efficiency wood burning insert. I can also keep my family warm during a power outage.

For these reasons, I implore the Department to not adopt this CAP for PAH's as proposed for wood heaters.

Respectfully,

Jonathan Hayes

22023 1st Place W.

Bothell, WA. 98021

425-609-2515

From: [Dan Henry](#)
To: [Davies, Holly \(ECY\)](#)
Subject: PAH CAP Comments
Date: Friday, August 31, 2012 6:01:21 PM

Holly Davies
Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Re: Comments on The Draft Polycyclic Aromatic Hydrocarbon (PAH)
Chemical Action Plan (CAP)

Dear Ms. Davies:

I strongly object to the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters. I have carefully reviewed the comments from the Northwest Hearth Patio & Barbecue Association regarding this proposal and fully agree with their comments and agree that the CAP for PAH's should not be adopted by the Department with respect to wood heaters.

As an individual in the wood heat industry and a wood heat user, I find your draft plan to be unrealistic and unworkable for many reasons. Why is the Department unfairly identifying wood stoves and fireplaces as the largest source of PAH's when your own data does not support that? You are attacking wood stoves when cars, trucks, trains and ships produce more PAH's -- your report fails to address that. Cigarette smoke is far more hazardous than is wood smoke and your report does almost nothing about that. Charbroiled meats are one of the highest PAH sources and your report fails to even mention this. Railroad ties release 123% more PAH's than do wood stoves and fireplaces. So why do you say wood stoves and fireplaces are the largest source of PAH's -- a statement that is not true nor can it be substantiated? Why are you basing your wood stove plans on such shaky data?

It is for these reasons (and others) that I implore the Department to not adopt this CAP for PAH's as proposed for wood heaters.

Respectfully,

Daniel Henry
1662 Highway 25 S
Kettle Falls, WA 99141

From: [DANIEL HENRY](#)
To: [Davies, Holly \(ECY\)](#)
Subject: PAH CAP Comment
Date: Friday, August 31, 2012 6:14:08 PM

Holly Davies
Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Re: Comments on The Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan (CAP)

Dear Ms. Davies:

I strongly object to the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters. I have carefully reviewed the comments from the Northwest Hearth Patio & Barbecue Association regarding this proposal and fully agree with their comments and agree that the CAP for PAH's should not be adopted by the Department with respect to wood heaters.

As a wood heat user, I find your draft plan to be unrealistic and unworkable for many reasons including but not limited to the following. What do you have against low income people that you want to take away their only source of affordable heat -- their wood stove? This is a cruel and senseless proposal. And where are you going to get all of this money to replace the wood stoves you are proposing be removed? Higher taxes? Forget that! Think again!

These are just 2 reasons I ask the Department to not adopt this CAP for PAH's as proposed for wood heaters.

Respectfully,

Deborah Henry

1662 Highway 25 S

Kettle Falls, WA 99141

From: [pearl hewett](#)
To: [Davies, Holly \(ECY\)](#); jim.hargrove@leg.wa.gov; [Van De Wege, Rep. Kevin](#); [Tharinger, Steve](#)
Cc: [Karl Spees](#); [Lois Perry](#); [Sue Forde](#); yellowbanks@hotmail.com; [marv chastain](#); [Sandy Rains](#); judymiller173@frontier.com; [Vi](#); [Don](#); [Delane Hewett](#); [Tristin Hewett](#); [joni howard](#); [Windy Boulden](#); [Misty Rains](#); [Randy Dutton](#); [Keith Olson](#); [Frank M Penwell](#); [Dawn Rains](#); [Dick Pilling](#); [Jay Petersen](#); [harry bell](#); [connie beauvias](#)
Subject: MY COMMENT- DOE Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan
Date: Saturday, September 01, 2012 10:00:48 AM

Contact: Holly Davies
(360) 407-7398 / hdav461@ecy.wa.gov

This is my comment on **The DOE Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan.**

Our **ELECTED** WA State REPRESENTATIVES have **legislated** and continue to **LEGISLATE** more and more power to the APPOINTED WA State Department of Ecology.

The WAC'S being created by the WA State DOE THREATEN American citizens ability to survive in today economy.

Why are our **ELECTED** WA State REPRESENTATIVES legislating and empowering the **APPOINTED** WA State Department of Ecology to destroy and eliminate everything in Clallam County that constituted "Our Way of Life?"

Our jobs are gone, our businesses are gone, development is at a standstill, our dams are gone, our lakes are gone, our logging industry is over regulated, our mills are gone, and even our water rights are being denied to us.

STACKING FIREWOOD FOR WINTER HEAT (wood stoves, fire places and bonfires)

Winter is coming, from one end of Clallam County to the other, in one backyard after another, people are stacking their **free firewood**, from **their trees**, cut on **their private property**, to heat **their family homes**. A way of life for people in Clallam County?

A way of life for MANKIND, for up to 1.7 million years.

(Wikipedia) Claims for the earliest definitive evidence of control of fire by a member of *Homo* range from 0.2 to 1.7 million years ago ([Mya](#)).^[4]

FIREWOOD explained as a way of survival and quality of life

In the United States Of America, WA State, with no jobs, no mills, no dams, no inexpensive hydroelectric power, higher utility cost, higher food prices, more **American's** on food stamps, more food banks, low social security, lost value of IRA'S, AARP doubled cost of medical supplements, higher medical cost, higher prescription cost, higher and higher gas prices, higher tolls, higher fees, higher permitting, more **American's** living in poverty, more **American's** homeless, more natural disasters, more foreclosures of **American** homes and closures of **American** small businesses, more economic and mental depression, recession?

In America, in 2012, American Citizens are forced to make **real quality of life decisions**.

WOULD YOU RATHER BE HUNGRY? SICK? OR COLD?

Pearl Rains Hewett

FEDERAL EPA DOE Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan The recommendations in the CAP are a set of actions to reduce and phase out uses, releases, and exposures in Washington, in consideration of current management approaches. **The Departments of Ecology and Health have existing programs to reduce PAH releases from the major man-made sources of concern, such as wood smoke,** vehicle emissions, and creosote treated wood. These existing programs can be **enhanced to improve or speed up results,** but we did not find that major new programs are needed. Holly Davies, PhD, Senior Scientist, Reducing Toxic Threats, Waste 2 Resources

From: [Cathy Hitchman](#)
To: [Davies, Holly \(ECY\)](#)
Cc: cathy.hitchman@gmail.com
Subject: Re: Comments on The Draft Polycyclic Aromatic Hydrocarbon (PAH) =
Date: Friday, August 31, 2012 9:33:43 AM

Dear Ms. Davies:

I strongly object to the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters. I have carefully reviewed the comments from the Northwest Hearth Patio & Barbecue Association regarding this proposal and fully agree with their comments and agree that the CAP for PAH's should not be adopted by the Department with respect to wood heaters.

As an a wood heat user, I find your draft plan to be unrealistic and unworkable for many reasons. For one, natural gas is not widely available, as the plan suggests (and is not available in my area). My husband and I built a new home two years ago and included a highly efficient, certified wood stove to supplement our electric heat pump and furnace. Because electricity is expensive and likely to become more so, we do burn seasoned wood in the winter to help minimize our heating costs. Last winter during the January storm, we were without power for five days and were enormously grateful for our stove. Forcing us to remove our wood stove would be very expensive to us. Our home is well insulated, we obey all burn bans, we burn only seasoned wood, and we burn clean. We should not be penalized by this proposed policy.

Additionally, there are logical failures in the proposal. For one thing, wood stoves in this area are typically only used a few months out of the year, and then not daily, but the assumption in the report is that they are a daily PAH source. This is inaccurate. The proposal on page 147 to replace all *certified* stoves is ludicrous and burdensome, and additionally is in direct contradiction to the recommendations of the Tacoma SIP Advisory Committee that recommended the replacement of UNCERTIFIED stoves with certified stoves or pellet stoves. Also, there are many other sources that release more PAHs and toxins than clean wood heat - railroad ties, cigarette smoke, cars, trucks, trains, ships, even fireplaces. Why target wood stoves, especially certified ones?

For these reasons, I implore the Department to not adopt this CAP for PAH's as proposed for wood heaters.

Respectfully,

Cathy and Tom Hitchman
13711 Loreece Lane SW
Tenino, WA 98589
360-705-8872

From: [Melodie Kauf](#)
To: [Davies, Holly \(ECY\)](#)
Subject: Let me burn my woodstove!
Date: Friday, September 07, 2012 12:57:54 PM

Holly Davies
Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Re: Comments on The Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan (CAP)

Dear Ms. Davies:

I strongly object to the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters. I have carefully reviewed the comments from the Northwest Hearth Patio & Barbecue Association regarding this proposal and fully agree with their comments and agree that the CAP for PAH's should not be adopted by the Department with respect to wood heaters.

As an individual that uses wood heat I find your draft plan to be unrealistic and unfair. I do not have natural gas available to me and must rely on either wood or propane. I installed a propane tank and tried heating with gas at a terrible cost of \$300-\$400 a MONTH in the winter which our family cannot afford. I am a small business owner in the construction field for over 30 and for the past two years I can barely meet my monthly payments without this HIGH HEATING bills. I've converted to wood burning as I have fuel laying in my backyard from the last couple of years of windstorms blowing down trees on my property. I use a very efficient and environmentally friendly EPA Phase II wood stove that I invested in recently and want to continue using. I have many friends dealing with the same financial issues. Wood heat is a clean and green, renewal resource do not take it away.

For these reasons, I implore the Department to not adopt this CAP for PAH's as proposed for wood heaters.

Respectfully,

Paul Kauf
15130 127th Avenue SE
Snohomish, WA 98290

From: [Carolyn Logue](#)
To: [Davies, Holly \(ECY\)](#)
Subject: DRAFT PAH Chemical Action Plan
Date: Friday, August 31, 2012 9:05:38 PM

Holly Davies

Department of Ecology

P.O. Box 47600

Olympia, WA 98504-7600

Re: Comments on The Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan (CAP)

Dear Ms. Davies:

I can't even begin to tell you how much I, and my family, strongly object to the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters. I have carefully reviewed the comments from the Northwest Hearth Patio & Barbecue Association regarding this proposal and fully agree with their comments and agree that the CAP for PAH's should not be adopted by the Department with respect to wood heaters.

I have both a propane heater and a woodstove. During the long term power outages that I suffer frequently at my house, I find the propane heater does not heat the house -- only one room. We need the woodstove in order to heat the house and cook in the absence of electricity. To eliminate woodstoves in any house in a region that suffers from frequent windstorms and power outages is unrealistic, unworkable and could have significant negative consequences.

Please do not adopt this CAP for PAH's as proposed for wood heaters.

Thank you,

Carolyn Logue

6514 78th Ave NE

Olympia, WA 98516

carolyn.logue@comcast.net

360-789-3491

Re: Comments on The Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan (CAP)

Dear Ms. Davies:

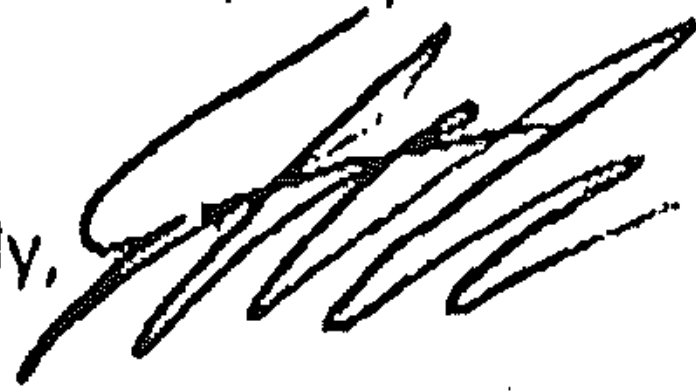
I strongly object to the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters. I have carefully reviewed the comments from the Northwest Hearth Patio & Barbecue Association regarding this proposal and fully agree with their comments and agree that the CAP for PAH's should not be adopted by the Department with respect to wood heaters.

As an individual in the wood heat industry and wood heat user, I find your draft plan to be unrealistic and unworkable for many reasons including but not limited to the following:

1. It doesn't even mention burning seasoned, dry wood. This eliminates most of the smoke. Without the smoke the whole problem goes away.
2. The area I live in has unstable power. When it goes out my wood stove keeps us warm and we can cook on it. An electric heating system goes out with the power.
3. You don't even mention other sources of PAH's like cars and trucks are worse than stoves. That makes it look like you're out to get wood stoves for some other reason.
4. This is a poor area. Lots of people can't afford to pay huge power bills.

For these reasons, I implore the Department to not adopt this CAP for PAH's as proposed for wood heaters.

Respectfully,



Ethan Lyon
160 El Camino Dr.
Sequim, WA 98382

From: [McCadam, Jerry](#)
To: [Davies, Holly \(ECY\)](#)
Subject: comments on the PAH CAP issue
Date: Wednesday, September 05, 2012 9:48:38 PM

Holly Davies

Department of Ecology

P.O. Box 47600

Olympia, WA 98504-7600

Re: Comments on The Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan (CAP)

Dear Ms. Davies:

I strongly object to the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters. I have carefully reviewed the comments from the Northwest Hearth Patio & Barbecue Association regarding this proposal and fully agree with their comments and agree that the CAP for PAH's should not be adopted by the Department with respect to wood heaters.

As an individual in the wood heat industry and a wood heat user, I find your draft plan to be unrealistic and unworkable for many reasons including but not limited to the report appears to assume that wood heaters emit PAH's everyday as stated on page 18 of the report but in fact they are only used 3 or 4 months per year and then on a sporadic basis if at all. The assumption that wood heaters are a daily PAH source is totally incorrect and discredits the underlying justification of this strategy for wood heaters.

For these reasons, I implore the Department to not adopt this CAP for PAH's as proposed for wood heaters.

Respectfully,

Jerry McCadam
28605 NE 150th St
Duvall, WA 98019

425.577.3217

Re: Comments on The Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan (CAP)

Dear Ms. Davies:

I strongly object to the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters. I have carefully reviewed the comments from the Northwest Hearth Patio & Barbecue Association regarding this proposal and fully agree with their comments and agree that the CAP for PAH's should not be adopted by the Department with respect to wood heaters.

As an individual in the wood heat industry and a wood heat user, I find your draft plan to be unrealistic and unworkable for many reasons including but not limited to the fact that electricity is extremely expensive already and is getting even more expensive as we have to buy so-called "green" power. This high cost and the associated price increases aren't taken into consideration in the analysis or shown in the recommendations. Without that the whole proposal is useless.

For these reasons, I implore the Department to not adopt this CAP for PAH's as proposed for wood heaters.

Respectfully,



Terry McCartney
104 W. 12th St.
Port Angeles, WA 98362

Re: Comments on The Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan (CAP)

Dear Ms. Davies:

I strongly object to the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters. I have carefully reviewed the comments from the Northwest Hearth Patio & Barbecue Association regarding this proposal and fully agree with their comments and agree that the CAP for PAH's should not be adopted by the Department with respect to wood heaters.

As a wood heat user, I find your draft plan to be unrealistic and unworkable for many reasons including but not limited to the fact that without being able to burn wood I can get for free I wouldn't be able to afford heat in the winter. Work in this area is hard to get, especially in the winter, and the \$260 electric bill is more than I can afford and still eat. There's no way I can afford to switch stoves unless you pay the whole thing for me.

For these reasons, I implore the Department to not adopt this CAP for PAH's as proposed for wood heaters.

Respectfully,

Nathan Parks

A large, stylized handwritten signature in black ink, appearing to read 'Nathan Parks', with a long horizontal flourish extending to the right.

152 BRAVO RD
PORT ANGELES, WA
98362

Holly Davies
Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Re: Comments on The Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan (CAP)

Dear Ms. Davies:

I strongly object to the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters. I have carefully reviewed the comments from the Northwest Hearth Patio & Barbecue Association regarding this proposal and fully agree with their comments and agree that the CAP for PAH's should not be adopted by the Department with respect to wood heaters.

As a wood heat user, I find your draft plan to be unrealistic and unworkable for many reasons. I question why the Department is unfairly identifying wood stoves and fireplaces as the largest source of PAH's when your own data does not support that. Railroad ties release 123% more PAH's than do wood stove and fireplaces. So why do you say wood stoves and fireplaces are the largest sources of PAH's? And why are you basing your wood stove plans on such shaky data?

These are just some of my reasons (questions) for asking the Department to not adopt this CAP for PAH's as proposed for wood heaters.

Respectfully,

Dean Parmelee

9407 E Mission

Spokane Valley, WA 99206

Holly Davies
Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Re: Comments on The Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan (CAP)

Dear Ms. Davies:

I strongly object to the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters. I have carefully reviewed the comments from the Northwest Hearth Patio & Barbecue Association regarding this proposal and fully agree with their comments and agree that the CAP for PAH's should not be adopted by the Department with respect to wood heaters.

As a wood heat user, I find your draft plan to be unrealistic and unworkable for many reasons including but not limited to the fact that natural gas is not widely available throughout Washington State as the proposed plan suggests on page 17. If there is an available natural gas main in the street, access to it and bringing the gas to the home is very expensive and that cost is not part of the economic analysis included on pages 146 and 147 of the proposal. Also, I and many wood heat users, would be unwilling to change out to gas as the costs of the appliance, getting the natural gas to my home and the cost of the gas to heat with would be extremely high.

For these reasons, I implore the Department to not adopt this CAP for PAH's as proposed for wood heaters.

Respectfully,

Dorothy Parmelee

9407 E Mission

Spokane Valley, WA 99206

Re: Comments on The Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan (CAP)

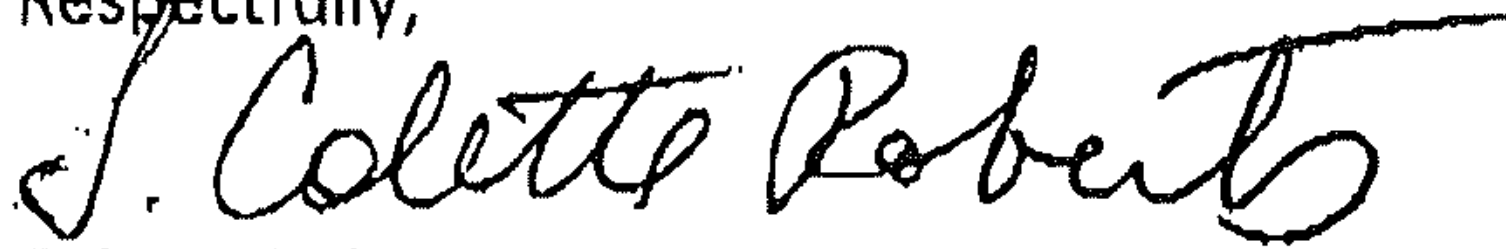
Dear Ms. Davies:

I strongly object to the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters. I have carefully reviewed the comments from the Northwest Hearth Patio & Barbecue Association regarding this proposal and fully agree with their comments and agree that the CAP for PAH's should not be adopted by the Department with respect to wood heaters.

As an individual in the wood heat industry, I find your draft plan to be unrealistic and unworkable for many reasons including but not limited to the fact that natural gas isn't even available on the Olympic Peninsula. People couldn't switch even if they wanted or could afford to do so. There are probably other communities in the state in this same situation, so the proposal is unworkable.

For these reasons, I implore the Department to not adopt this CAP for PAH's as proposed for wood heaters.

Respectfully,



Colette Roberts

1239 Campbell Ave Apt 2
Port Angeles, WA 98362

From: [Rumens, Karl](#)
To: [Davies, Holly \(ECY\)](#)
Subject: WOOD STOVE REPLACEMENT
Date: Wednesday, September 05, 2012 12:22:30 PM

Holly Davies

Department of Ecology

P.O. Box 47600

Olympia, WA 98504-7600

Re: Comments on The Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan (CAP)

Dear Ms. Davies:

I strongly object to the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters. I have carefully reviewed the comments from the Northwest Hearth Patio & Barbecue Association regarding this proposal and fully agree with their comments and agree that the CAP for PAH's should not be adopted by the Department with respect to wood heaters.

As an individual in the wood heat industry / a wood heat user), I find your draft plan to be unrealistic and unworkable for many reasons including but not limited to why the Department unfairly identifying wood stoves and fireplaces as the largest source of PAH's when your own data does not support that and why are you basing your wood stove plans on such shaky data. For these reasons, I implore the Department to not adopt this CAP for PAH's as proposed for wood heaters.

Respectfully,

Karl Rumens

15241 167th Ave. S.E.

Monroe, WA

98272

Karl Rumens

Shipping Manager

Travis Industries Inc.

4800 Harbour Pointe Blvd. S.W.

Mukilteo ,WA. 98275

E-MAIL : k.rumens@travis-inc.com

Ph: 425-609-2593

Fax: 425-609-2783

From: rschultzrathbun@aol.com
To: [Davies, Holly \(ECY\)](#)
Subject: Draft PAH CAP Comment
Date: Thursday, September 06, 2012 8:07:21 AM

Sept 6, 2012

Re: Comments on The Draft Polycyclic Aromatic Hydrocarbon (PAH)
Chemical Action Plan (CAP)

Dear Ms. Davies:

I recently became aware of the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters. After reviewing the comments from the Northwest Hearth Patio & Barbecue Association regarding this proposal, I fully agree with their comments and agree that the CAP for PAH's should not be adopted by the Department with respect to wood heaters. I strongly object to the Department's draft CAP for PAH's.

As a wood heat user, I find your draft plan to be unrealistic and unworkable for more reasons than a one-page letter has room for. For instance, the draft grossly overestimates the availability of natural gas, especially in rural areas like the one I live in. The cost of changing to another fuel source, between \$4,00 and \$10,000 for the appliance alone, is beyond the means of almost everyone I know. Yet you expect an incentive of \$407.50 to induce people to part with up to \$10,000? That is a ludicrous assumption. And after spending that kind of money on the appliance, they would then be forced to pay for much more expensive electricity or natural gas. My electric bill and propane bill have sky-rocketed in the last three years and that trend is forecast to continue.

And where does the \$407.50 for every wood stove owner in the state of Washington come from? The only way to pay for this is through a tax increase, which will hit the poorest residents of this state hardest.

For all these economic penalties you propose to inflict on the citizens of Washington, you are providing virtually no improvement to the environment or the health of our citizens. Railroad ties release 123% more PAH's than do wood stoves and fireplaces, yet you say wood stoves and fireplaces are the largest source of PAH's. Cigarette smoke is far more hazardous than is wood smoke and your report does almost nothing about cigarette smoke. Cars, trucks, trains and ships produce far more PAH's than do wood stoves and your report fails to address them. Fireplaces produce far more smoke than do wood stoves and produce no heat. Yet you propose to ban woodstoves, but take no action against fireplaces. This proposal attacks a small fraction of the source of PAH's, but ignores the major sources. For great cost, there is no benefit.

This CAP attacks our most vulnerable citizens, would destroy thousands of jobs in this state, raises taxes in a time of economic crisis, and provides no discernable benefit. This is a cruel and senseless proposal. For these reasons and many others, I implore the Department to not adopt this CAP for PAH's as proposed for wood heaters.

Respectfully,

Randall Schultz-Rathbun
24304 N.E. Elkhorn Rd
Brush Prairie, WA 98606
(360) 892-1178

September 10, 2012

Holly Davies
State of Washington
Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Dear Ms. Davies,

You'll elsewhere find my name submitting comments on the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as a Board member with the Northwest Hearth, Patio Barbecue Association. I stand by those. The following comments are my own.

It was some decades ago when I read my first Environmental Impact Statement (EIS). The Environmental Protection Agency was only a few years old. The governmental powers both state and federal were protecting us and safeguarding our safety and future then by busily building infrastructure in our behalf. The U.S. Army Corps of Engineers was building three dams in a watershed to control annual severe flooding. The best cost effectiveness proposal was just to buy out the people living in the flood plain, lease the farm land back, and let the river flood. However, by the time I came in contact with the project there were marina operators who foresaw profits to be made in tourism, state agencies who foresaw advantages to be had in cooling summer river flow and reducing sediment, sports fishermen who preferred fishing reservoirs, construction contractors wanting to build dam projects, and so on with the environmental groups coalescing to oppose it all. The usual suspects.

I was a young college freshman in a college symposium theoretically taught by the senior U.S. Senator who was successfully pushing the project. It was said of him that he never met a dam project he didn't like, though his last Senate effort turned out years later to be a grand compromise to add several thousand acres to wilderness areas as his memorial, and by God's sense of humor I ended up playing a small role in that, too.

The first dam had already been built. This EIS was for the second. As an introduction to the technology of efforts to do good through government it was very effective; I have never been the same since. What has stuck with me all these years were the comments of a family who lived in the flood plain at the center of the pool of the future dam. They told of the several generations of their family that had farmed there and how they valued their land and their life. They did not want to lose it all and leave. They did not attack, they did not hurl insults, they did not nitpick. The Corps of Engineers, legally charged to respond to every comment, had no way to quantify the destruction of these peoples' values and life, so they made the cogent and reasoned response that changed my life forever; the one word "Noted". There was no common ground between the world of the Corps of Engineers and the world of a family living on their own.

And now all these years later the ground has shifted. The governmental powers both state and federal are protecting us and safeguarding our safety and future by busily tearing down dams and finding new

things we have always done that we must be made to no longer do for our own sakes. Though we are taught to believe we are evolving we cannot bring ourselves to believe we might have made some adjustments to wood smoke over the eons, so we'll just make it go away. Or go broke trying.

I am going to respect you enough to assume that you do not really believe you have any idea what your latest crusade will cost us all. Government expenses have always far exceeded their own estimates, even when they get to do the accounting. Yours will, too. And I do not believe you really believe your own estimates of the value of your crusade to us, that we will benefit more from it than all the wine industry we have built or the tree fruit industry we have made. But I long ago learned that when the government crusades generated numbers, it was useless to argue numbers. The fight was about ideology. And frankly I see no difference between the government ideologies then and now; both have been about groups using governmental power to get what they want in the name of making everybody's lives better. You may get what you want but you won't make everybody's lives better. They'll all do the best they can (or not) and die in the end as they have always done. God has His own ideas of good.

So from out here in the woods, where we try to take care of ourselves, generate our own employment, make our own decisions, and heat ourselves with our own wood, I say to you today, "Life is good." We want to keep at it without any more interference. We do not really have any common ground and I don't believe in or want the future you offer me. We all know that captive animals live longer on the whole, but I'll happily trade the marginal extra life span for the joy of not being afraid to look, handle and touch. I do not expect you to say anything but "Noted". You can't. You currently represent all my neighbors who want to desperately hang on to those extra minutes of hoped for life at whatever cost. So write it all down in a book somewhere. We seem to move heaven and earth so that the fish and the animals can supposedly live wild and free but the same we cannot tolerate for our own species. Call it a governmental success for the humans and a failure for the animals, or vice versa as you wish.

Respectfully,

Timothy N. Seaton

Western Masonry Heater and Oven, LLC

P.S. By the way, the environmental groups won over that project eventually. The Corps and the proponents got the second dam built but were never allowed to complete the third. The legal argument was that wild fish were just so much more necessary and valuable that the dam could not be allowed to interfere, and the higher court bought in. Everybody enjoyed a good fight, everybody made some money. The environmental groups fighting the government became the government though they've about run through all our credit. The Corps gave up building dams and went into the business of permitting every little thing someone wanted to do; it has done very well. The dam building companies I'm sure are busily doing other government projects of public good and also doing very well. And the wild humans? By the end of that fight their land had been condemned and taken so that their way of life was gone one way or the other. But don't lose sleep, I suspect they found a way to reproduce. God seems to have a stake in keeping wild alive in spite of all our best efforts pushing either way.

From: [Jim VanNorman](#)
To: [Davies, Holly \(ECY\)](#)
Subject: Draft Polycyclic Aromatic Hydrocarbon Chemical Action Plan
Date: Monday, September 10, 2012 4:00:01 PM

Dear Ms. Davies

I am the general manager of Rich's for the Home with five locations in the Puget Sound Area. Our 96 employees and I strongly object to this proposal as it relates to wood stoves. I have carefully reviewed the comments from the Northwest Hearth Patio & Barbecue Association regarding this proposal and fully agree with their comments and agree that the CAP for PAH's should not be adopted by the Department with respect to wood heaters.

I respectfully request that your Department not adopt this proposal for wood heaters.

Sincerely
James VanNorman, GM
Rich's For The Home

Re: Comments on the Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan (CAP)

Dear Ms. Davies:

I strongly object to the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters. I have carefully reviewed the comments from the Northwest Hearth Patio & Barbecue Association regarding this proposal and fully agree with their comments and agree that the CAP for PAH's should not be adopted by the Department with respect to wood heaters.

As an individual in the wood heat industry and a wood heat user, I find your draft plan to be unrealistic and unworkable for many reasons. I'm only going to list a few of them because it quickly becomes obvious this plan is fatally flawed.

First, the basis for the entire proposal is questionable since the data does not support the argument that wood stoves are the major source of PAH's. Even if you buy that shaky premise, the details of the plan are unrealistic. Not everybody has natural gas as your plan implies, and many areas will never get it. When it is available it's prohibitively expensive so a large portion of the wood-burning public won't be able to afford heat if they were forced to switch. Forcing them to switch is its own nightmare. Enticing them to switch won't work because the plan ignores or grossly underestimates the costs of switching over.

For these reasons, I implore the Department to not adopt this CAP for PAH's as proposed for wood heaters.

Respectfully,



Dan Wilson
5105 S. Mount Angeles Rd
Port Angeles, WA 98362
(360) 477-8472

Re: Comments on The Draft Polycyclic Aromatic Hydrocarbon (PAH) Chemical Action Plan (CAP)

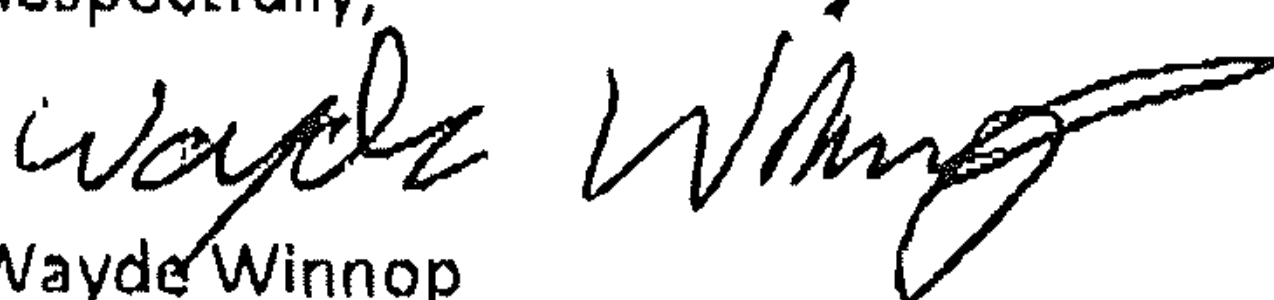
Dear Ms. Davies:

I strongly object to the Department of Ecology's draft Chemical Action Plan for Polycyclic Aromatic Hydrocarbons as proposed in July 2012 as it relates to wood heaters. I have carefully reviewed the comments from the Northwest Hearth Patio & Barbecue Association regarding this proposal and fully agree with their comments and agree that the CAP for PAH's should not be adopted by the Department with respect to wood heaters.

As a wood heat user, I find your draft plan to be unrealistic and unworkable for many reasons including but not limited to the fact that when the power goes out I can still use my wood stove. Electric heaters don't work unless you have a generator and those run on fossil fuels, which are not good for the environment either.

For these reasons, I implore the Department to not adopt this CAP for PAH's as proposed for wood heaters.

Respectfully,



Wayde Winnop
21 Cottonwood Ln
Sequim, WA 98382