DEPARTMENT OF ECOLOGY
State of Washington

Response to Comments

Feasibility Study
Georgia Pacific West Site,
Chlor-Alkali Area
Bellingham, WA

Facility Site ID: 14
Cleanup Site ID: 2279

June 2018
Publication 18-09-169

Publication and Contact Information

This document is available on the Department of Ecology's GP West website at: https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=2279

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Response to Comments

Feasibility Study

Georgia Pacific West Site, Chlor-Alkali Area
Bellingham, WA

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Washington State Department of Ecology

Northwest Regional Office

Toxics Cleanup Program

Bellevue, Washington

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Public Outreach

From March 12, 2018 to April 10, 2018, the Department of Ecology (Ecology) solicited public comments on a Feasibility Study for the Chlor-Alkali area of the Georgia Pacific West cleanup site (GP West site), on the Bellingham waterfront.

Our public involvement activities related to this 30-day comment period included:

- **Fact Sheet:** US mail distribution of a Fact Sheet providing information about the Feasibility Study, public comment period, and public meeting to approximately 2,500 people including neighboring businesses and other interested parties. Email distribution of Fact Sheet to approximately 120 people, including interested individuals, local/county/state/federal agencies, and interested community groups.
- **Legal Notice:** Publication of one paid legal ad in *The Bellingham Herald*, dated March 5, 2018.
- **Site Register:** Publication of a notice in Ecology's Toxics Cleanup Site Register on March 1, 12 & 29, 2018. Visit the register website here: https://fortress.wa.gov/ecy/publications/UIPages/PublicationList.aspx?IndexTypeName=Program&NameValue=Toxics+Cleanup&DocumentTypeName=Newsletter
- **Website**: Announcement of the public comment period and public meeting and posting of the Fact Sheet and Feasibility Study on Ecology's GP West website: https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=2279
- **Document Repositories:** Provided copies of the document for public review through three information repositories: Ecology's Bellingham Field Office and Northwest Regional Office in Bellevue, and the Bellingham Public Library Central Branch.
- **Public Meeting:** Hosted an informational public meeting at Ecology's Bellingham Field Office on March 15, 2018 from 6-8 p.m.

Comment Summary

Ecology received comments from seven individuals and organizations during the comment period.

Table 1: List of Commenters

	First Name	Last Name	Submitted By
1	Anonymous	Anonymous	Individual
2	Randall	Potts	Individual
3	Judith	Akins	Individual
4	Liz	Marshall	Individual
5	Judith	Akins	Mt Baker Group WA State Chapter Sierra Club
6	Eleanor	Hines	RE Sources for Sustainable Communities
7	c/o Salish Sea	Defense Council	Jointly by Numerous Organizations & Individuals

Next Steps

Later this year, Ecology expects to issue a draft cleanup action plan (CAP) for the Chlor-Alkali area of the GP West site for public review. We will develop the plan based on the information in the Feasibility Study. The plan will be part of a legal agreement that requires the Port, and possibly others, to design the cleanup action described in the plan.

We expect to complete design activities by the end of 2019.

Comments and Responses

Ecology has reviewed and considered all comments received on the Feasibility Study. Based on Ecology's evaluation of the comments, no changes were made to the document. The comments are presented below, along with Ecology's responses.

Appendix A, page 22, contains the comments in their original format.

Comment from: Anonymous

Having been involved with some of the previous cleanup projects on this site, I have concern that the preferred cleanup alternative will be more challenging and therefor cost considerably more than identified in the report (more than the $18M figure).

The foundation structures, piling, pile caps, grade beams, tank pads, etc are extensive. All these concrete structures and piling would need to be demolished and removed from the site prior to any in-situ treatment. The demolition would require extensive excavation in order to access the structures to be demolished as some of the large pile caps are several feet below existing grade. Many structures are not well documented (some not being documented at all) and without performing a full excavation, there would be a great risk of sending an in-situ treatment auger into a legacy foundation or piling and damaging the specialty auger, or at best delaying the project while the obstruction is cleared. In either instance, the project would likely be riddled with expensive change orders due to unforeseen conditions encountered while auguring, thus driving the price much higher than advertised.

Since many of the concrete foundations and pilings must be excavated down to the aquatard in order to be demolished and removed, it makes sense to treat the already excavated soil and place the treated soil back on the site. Placing contaminated soil (that has been previously excavated during the demolition phase) back into the excavation seems risky as the contaminant of concern, mercury, will migrate downward as the soil is being excavated and backfilled. It would be far less risky to excavate the site in a conventional manner in order to perform the demolition, send soil through an on-site treatment plant and place the treated soil back into the ground (since the excavated soil will be considered "generated" while performing the excavations required for demolition). [...]

Response:

Ecology shares the concern regarding challenging conditions and the potential for rising costs. The Feasibility Study cost estimates were developed by consultants experienced with the design, implementation, and oversight of previous mercury cleanup projects on this site. These estimates have an accuracy of +50% to -30% with a 15% contingency and are adequate for evaluating remedial alternatives. The cost estimate will be refined through the design process. We anticipate the demolition would excavate down to the aquitard, thus exposing previously unseen obstructions and avoiding damage to equipment, including the auger. Ecology evaluated the feasibility of excavating the contaminated soils, treating it ex-situ, then placing the treated soils back into the ground. However, the dangerous waste

regulations prohibit generating contaminated materials, treating it ex-situ, and then placing it back into the excavation.

[...] If the aquatard must be protected to contain the contaminants, the auguring / in-situ treatment method seems to have the highest risk of accidentally breaching the aquatard. There will be no way to see what material is being augured through and the operation will have to rely on approximated depths deduced from bore logs, which can be inaccurate. [...]

Response:
Ecology shares the concern for protecting the aquitard and depths will be confirmed visually during excavation to remove the piles.

[...] Again, the concern is that the preferred alternative will cost far more than anticipated due to complications / challenges presented by this site.

Response:
Comment noted.

Comment from: Randall Potts

I am concerned about the clean up plan for GP West Chlor-Alkali. Specifically, I am worried that binding elemental mercury with concrete and leaving it onsite is not a viable longterm remediation strategy. [...]

Response:
The solidification/stabilization technology involves adding sulfur to react with the mercury to form the compound mercury sulfide, a more stable and less volatile form of mercury that is not prone to leaching into groundwater or volatilizing into the air. Cement is also added to physically bind or enclose the mercury sulfide. Because mercury is an element, it cannot be destroyed, but the hazard potential is greatly reduced by converting the contaminants into a less soluble, mobile, or toxic form.

[...] The mercury needs to be removed from the site not left to cause potential future harm. [...]

Response:
Ecology acknowledges the preference for complete removal and evaluated this in Alternative 8. Please note that every alternative evaluated in the Feasibility Study (FS) eliminates exposure to harmful levels of contamination. Each alternative prevents direct contact with contaminated soil, prevents the emission of unsafe vapors and protects surface water and sediment from contaminated groundwater. Moreover, Ecology must operate within the scope of its authority, as defined by the Model Toxics Control Act (chapter 70.105D RCW; MTCA), and in accordance with the dictates of the accompanying MTCA regulations WAC 173-340. Per MTCA, the selected cleanup action must meet a

number of requirements, including the requirement to be "permanent to the maximum extent practicable" WAC 173-340-360(2)(a)-(b). To make this determination, we employ the disproportionate cost analysis (DCA) WAC 173-340-360(3). For the GP West site, the DCA (Section 8.3 of the FS) identified Alternative 4 as the remedy that is permanent to the maximum extent practicable.

[...] Given the extreme weather that our region can expect as the new normal, it just makes sense to remove this deadly chemical rather than leave it vulnerable to unintended consequences that may occur in the future. [...]

Response:
Please see previous response regarding the evaluation of the complete removal alternative.

[...] By removing the mercury, the site can be rendered safe for future economic development opportunities at that location.

Response:
Ecology's primary authority and responsibility under the Model Toxics Control Act (MTCA) is to implement cleanups that protect human health and the environment. Every alternative evaluated in the Feasibility Study (FS) eliminates exposure to harmful levels of contamination and meets our regulatory requirements. The integrity of all of the containment remedies must be maintained in perpetuity. Routine inspection, repair, and maintenance will be required. Any future development would have to be constructed in a manner that maintains that integrity. Any modifications to the containment remedy would require the review and approval of Ecology.

Please see previous response regarding the evaluation of the complete removal alternative.

Comment from: Judith Akins

Thank you for all your efforts to inform the public on the continued cleanup and improvement to our waterfront and the Georgia Pacific sites. Your public information sessions and website have been very informative.

I am a resident of Bellingham and am very interested in the continued development of the area. The GP West site is vital to growth, sustainability and jobs that are needed for our residents of Bellingham and Whatcom County. [...]

Response:
Thank you for participating in Ecology's public comment period. We appreciate your time, and we welcome your participation in future public outreach.

[...] I do not agree with the preferred selection of Alternative 4. I don't think you have given adequate weight, on the pie chart displayed on the website, to overall protection (30%) and long term effectiveness (20%). I am very concerned that a true accounting of the hazardous mercury and chlorine will be left behind and believe that there will be leaching in the future. How effective and long term are these solutions you will be implementing and are we just asking the future generations to cover the cost of further removal after this site has been developed? [...]

Response:
The weighting factors used for this Site are consistent with those evaluated and developed for all Ecology cleanup sites in Bellingham. The first three criteria, overall protectiveness (30%), permanence (20%), and long-term effectiveness (20%) represent the most important criteria for a successful cleanup and are collectively weighted to capture 70% of the available 100% weighted distribution. In order to increase the weighting factors for overall protectiveness and long-term effectiveness, the weighting factors would need to be reduced elsewhere to maintain the 100% total distribution. Ecology does not agree with reducing the weighting factors elsewhere, to increase them for overall protectiveness and long-term effectiveness. However, as an academic exercise, we evaluated the effect of adjusting the weighting factors. We:

- increased overall protectiveness from 30% to 35%
- increased long-term effectiveness from 20% to 25%
- decreased short-term risk management from 10% to 5%
- decreased implementability from 10% to 5%
- did not change the weighting factors for the remaining criterion

This slightly changed the benefit/cost ratio for Alternatives 1, 2, 3, 6, 7, & 8, but did not change the overall outcome of the analysis. In other words, the DCA still found Alternative 4 to be permanent to the maximum extent practicable.

[...] I believe the only adequate alternatives are #'s 6,7,8 and understand that these carry their own risks. However, these alternatives while incurring additional costs and hazards now will allow for greater use and development of the land, strengthen the environment and allowing less risk of problems to be taken care of by future generations.

I think we all want a waterfront that we can be proud of.

Response:
Ecology acknowledges your preferences, but must operate within the scope of its authority, as defined by the Model Toxics Control Act (chapter 70.105D RCW; MTCA), and in accordance with the dictates of the accompanying MTCA regulations WAC 173-340. Per MTCA, the selected cleanup action must meet a number of requirements, including the requirement to be "permanent to the maximum extent practicable" WAC 173-340-360(2)(a)-(b). To make this determination, we employ the disproportionate cost analysis

WAC 173-340-360(3). For the GP West site, the DCA (Section 8.3 of the FS) identified Alternative 4 as the remedy that is permanent to the maximum extent practicable.

Comment from: Liz Marshall

I am hugely in favor of attempts to remediate brownfields. It boggles my mind however that people are converting contaminated acreage, whether GPWest or other of the 12 sites of Bellingham Bay, to public parks, residences, and business complexes. [...]

Response:
Ecology's primary authority and responsibility under MTCA is to implement cleanups that protect human health and the environment, given existing/future land uses. All of the alternatives eliminate exposure to harmful levels of contamination. Each alternative prevents direct contact with contaminated soil, prevents emission of unsafe vapors, and protects surface water and sediment from contaminated groundwater. Future activities on the site must maintain the integrity of the cleanup action and any modifications would require review and approval by Ecology.

[...] I don't even see the logic or safety in storing export logs on contaminated ground and shipping contaminant residue overseas. Why is altering the creek and bay, building concrete complexes, and inviting the public to tread on the shoreline considered beneficial to the public good while restoring habitat for trees, birds, invertebrates, fish and marine mammals is not? Nature gives life to people, not the other way around. [...]

Response:
Regarding log storage operations, a 2013 Remedial Investigation did not identify surface or below grade contaminated soil in the vicinity of the current log storing operations. In addition, this area is covered with asphalt.

Regarding land use, under the MTCA Ecology has no authority over land use decisions.

[...] Doing construction projects and building public parks on a brownfield site where the feasibility for cleanup isn't even done yet is playing Russian roulette.

Contaminants in the soil and groundwater, and vapor have been posing risk to cleanup activities, construction projects, and shipping activity (and probably to surrounding neighborhoods as well). Moreover, all this takes place at and under a major railway constantly carrying huge quantities of hazardous materials. These risks will continue. For all the years that cleanup and redevelopment (and railway) activities continue, the resultant air pollution also continues. [...]

Response:
Ecology assumes you are referring to the City's Granary Avenue/Laurel Street project and Waypoint Park project, located adjacent to the Granary Building. Both of these projects are taking place on the GP West Pulp & Tissue Mill Remedial Action Unit (RAU). The Feasibility Study for this RAU was completed in 2014, and the final cleanup was completed in 2016. The City's projects were designed to maintain the integrity of the final cleanup.

[...] I guess building housing in or around redeveloped brownfields is intended to be altruistic, [... see comment segment below for original sentence continuation. See also Appendix A for original comment. Ecology compiled and responded to the sentence that follows due to similar comment topics…] It could also be interpreted as political maneuvering. Building facilities to supposedly attract jobs is also an illogical premise since the town doesn't have enough affordable housing.

Even when choosing the most cost-effective Alternative presented, the costs are extremely high. I believe that maintaining the value of the cleanup investment once it is accomplished would best be ensured by restoring such sites to their natural purposes, such as estuaries, trees and critters. This would boost tourism for a number of reasons (tourists could stay in hotels, not backyards) and avoid the comparatively more astronomical costs associated with damage from pollution, as well as earthquakes and other catastrophic emergencies.

While the task at hand is to comment on the Preferred Cleanup Alternative for the Chlor-Alkali Area, I am emphasizing general related concerns since the decisions to impact the shoreline with more building seem to be ordained.

Response:
How the property is ultimately used/developed are land use decisions made by the property owner (Port). Ecology's primary authority and responsibility under MTCA is to implement cleanups that protect human health and the environment given the land use decisions.

[...] even though the sites are contaminated, in flood zones, in tsunami zones, and subject to sea level rise and train disasters. [...]

Response:
Ecology recognizes the significance of these environmental factors and will consider them during the future design phase of the cleanup process.

Regarding sea level rise, the Intergovernmental Panel on Climate Change (IPCC) (2007) estimates that the global average sea level will rise between 0.6 and 2 feet in the next century. Puget Sound is likely to experience sea level rise similar to the global average (University of Washington Climate Impacts Group and Ecology 2008). In the Waterfront District Environmental Impact Statement documents, a potential sea level rise in Bellingham Bay of 2.4 feet by 2100 was considered a reasonable estimate. Based upon this estimate, the current site grade elevation of 14-16 ft. will accommodate projected sea level rise.

However, due to the evolving science behind sea level rise estimates, we will revisit this issue during future remedial design activities.

Comment from: Mt Baker Group WA State Chapter Sierra Club

Mt Baker Group

Washington State Chapter Sierra Club

MtBaker@washington.sierraclub.org

To: WA Department of Ecology

Ecology-Bellingham Office

Brian Sato, Site Manager Georgia Pacific West Site

Re: GP West Cleanup: Pulp and Tissue Mill and Chlor-Alkali Area

Date: April 9, 2018

The Mt Baker Group Sierra Club is very concerned about the planned cleanup of the GP West Site. The preferred plan #4 does not adequately address the containment of the mercury and phosphorus levels. [...]

Response:
The alternatives evaluated in the FS eliminate exposure to harmful levels of contamination. Each alternative prevents direct contact with contaminated soil, prevents emission of unsafe vapors, and protects surface water and sediment from contaminated groundwater. Ecology must operate within the scope of its authority, as defined by the Model Toxics Control Act (chapter 70.105D RCW; MTCA), and in accordance with the dictates of the accompanying MTCA regulations WAC 173-340. Per MTCA, the selected cleanup action must meet a number of requirements, including the requirement to be "permanent to the maximum extent practicable" WAC 173-340-360(2)(a)-(b). To make this determination, we employ the disproportionate cost analysis WAC 173-340-360(3). For the GP West site, the DCA (Section 8.3 of the FS) identified Alternative 4 as the remedy that is permanent to the maximum extent practicable.

Please note that phosphorus is not a chemical of concern for this site.

[...] In fact in reading from other comments that the cost of securing the pilings etc. has been severely underestimated. [...]

Response:
The Feasibility Study cost estimates were developed by consultants experienced with the design, implementation, and oversight of previous mercury cleanup

projects on this site. These estimates have an accuracy of +50% to -30% with a 15% contingency and are adequate for evaluating remedial alternatives. The cost estimate will be refined through the design process. We anticipate the demolition would excavate down to the aquitard, thus exposing previously unseen obstructions and avoiding damage to equipment, including the auger.

[...] We are concerned that this level of cleanup does not address the severity of the environmental impacts of the mercury and phosphorus which if continued leaching occurs into the ground and water can be most detrimental to the habitat and severely limits the type of building and use of this area for future generations. [...]

Response:
Mercury contaminated groundwater is not currently impacting surface water or sediment (Bellingham Bay). The remedial action is designed to address the source of groundwater impacts and meet cleanup levels. Any future development must maintain the integrity of the cleanup action and would require review and approval by Ecology.

As stated previously, phosphorus is not a chemical of concern for this site.

[...] In studying the other alternatives, alternative #6 would bring us much closer to broader cleanup. The advantage of 6 is that it removes mercury for groundwater protection, full removal of chlorine and neutralizes ground water to 8.5 While this alternative does not remove all contamination it does address the piling removal and contamination. [...]

Response:
Ecology acknowledges this preference, but the DCA (see previous response above for DCA explanation) shows that the incremental cost of Alternative 6 is disproportionate to the incremental benefit. Ecology must operate within the scope of its authority, and in accordance with the MTCA regulations the DCA (Section 8.3 of the FS) found Alternative 4 to be permanent to the maximum extent practicable. Please note that Alternative 4 also addresses the piling removal.

[...] The cost of alternative #6, could almost double (if projected costs stay on target) the chosen alternative #4, however would enhance the effectiveness of cleanup by 30%. The cost could be recovered from Georgia Pacific since they did not fully disclose the level of contamination. We feel all avenues need to be pursued to cover the cost of a more thorough cleanup. While no plan is perfect since the extent of the contamination from all the waterfront areas is so great we feel that we need to protect our environment and the bay to the greatest extent possible.

Response:
Please see the previous response addressing remedy selection and the disproportionate costs analysis.

The state's MTCA law (Chapter 90.105D RCW) addresses cleanup responsibility and provides standards for cleanup liability at contaminated sites. Ecology has identified and named Georgia Pacific (GP), the Port of Bellingham (Port), and BNSF Railway as potentially liable persons (PLPs) for the contamination at the GP West site. Other PLPs may be identified and named in the future.

In 2005, the Port purchased over 100-acres of waterfront property from GP (including property within the GP West site). Ecology understands that the Port acquired the property in exchange for the responsibility of completing environmental cleanup, but they did not release or indemnify GP from liability.

With regard to cost recovery, we understand that the Port intends to recover costs through property sales and leases. In addition, we understand that GP has an insurance policy that covers cost over-runs associated with environmental cleanup. The Port will return to negotiations with GP to recover costs if the insurance policy is exhausted.

Comment from: RE Sources for Sustainable Communities

On behalf of RE Sources, please find our comment letter attached. Thank you for this public comment opportunity.

To: Brian Sato, Site Manager

WA Department of Ecology

3190 160 th Avenue SE

Bellevue, WA 98008

April 10, 2018

RE: Comments on GP West Feasibility Study Including Chlor-Alkali Area

Dear Brian,

Thank-you for the opportunity to comment on the feasibility study that evaluates clean up alternatives at the Georgia-Pacific West (GP West) site including the Chlor-Alkali area. We greatly appreciate your efforts in the Bellingham Bay waterfront cleanup including addressing public comments. As the Clean Water Team at RE Sources for Sustainable Communities, we represent almost 20,000 supporters in Whatcom and Skagit Counties. Our comments on the cleanup alternatives are as follows: [...]

Response:
Thank you for participating in Ecology's public comment period. We appreciate your time, and we welcome your participation in future public outreach.

[...] 1. We encourage the Port of Bellingham and Department of Ecology to continue cleanup plans at the GP West site along compliance with either Alternative 6, 7, or 8; with our preferred Alternative being 8, followed by 7 if Alternative 8 is unfeasible. These alternatives have a MTCA Benefits Ranking of above 7 therefore protecting future human and ecosystem health. Alternative 4, the preferred alternative, is insufficient at protecting water quality, human health, and the health of the ecosystem. Alternative 4 focuses on cleaning up only the "caustic core", visible mercury, and removal of soil near the Log Pond, therefore leaving behind contaminants that have the potential of continued environmental degradation.[1] [...]

Response:

Ecology acknowledges the preference for complete removal, however all of the alternatives eliminate exposure to harmful levels of contamination and protect surface water and sediment from contaminated groundwater. Contaminated groundwater is not currently impacting surface water or sediment (Bellingham Bay), and the remedial action is designed to address the source of groundwater impacts at the caustic core and meet cleanup levels over time.

Ecology must operate within the scope of its authority, as defined by the Model Toxics Control Act (chapter 70.105D RCW; MTCA), and in accordance with the dictates of the accompanying MTCA regulations WAC 173-340. Per MTCA, the selected cleanup action must meet a number of requirements, including the requirement to be "permanent to the maximum extent practicable" WAC 173-340-360(2)(a)-(b). To make this determination, we employ the disproportionate cost analysis WAC 173-340-360(3). For the GP West site, the DCA (Section 8.3 of the FS) found Alternative 4 to be permanent to the maximum extent practicable.

[...] Bellingham is a fortunate city because it is able to clean up old industrial sites and redevelop the waterfront to meet the City' s 21st century needs; long-term public health and safety should be at the top of the Port of Bellingham's and WA State Department of Ecology's priorities. [...]

Response:

Ecology's mandate under MTCA is to implement cleanups that protect human health and the environment in perpetuity.

[...] 2. With the proximity of the GP West site to city parks, new development, and our current vibrant downtown, as well as the waterfront cleanup projects being zoned for mixed-use, we would like to see an alternative that is more aggressive in removing the toxics from the site beyond the MTCA requirements for industrial zoning. We would like to see a removal of all soils exceeding cleanup levels such as Alternative 7 or 8. Alternative 7 and 8 cleanup plans would protect children, families, and the environment and not have potential economic impacts of restricted land use in the future. [...]

Response:
Although portions of the site continue with industrial activities, the most stringent cleanup levels (unrestricted land use) were used for the GP West site.

With regard to Alternatives 7 and 8, Ecology acknowledges this preference, but must operate within the scope of its authority, as defined by the Model Toxics Control Act (chapter 70.105D RCW; MTCA), and in accordance with the dictates of the accompanying MTCA regulations WAC 173-340. Per MTCA, the selected cleanup action must meet a number of requirements, including the requirement to be "permanent to the maximum extent practicable" WAC 173-340-360(2)(a)-(b). To make this determination, we employ the disproportionate cost analysis WAC 173-340-360(3). For the GP West site, the DCA (Section 8.3 of the FS) found Alternative 4 to be permanent to the maximum extent practicable. Alternative 4 will protect children and families.

Pertaining to land use restrictions, environmental covenants will be required with Alternative 4 and this is a land use decision made by the property owner. The covenants will contain specific restrictions and prohibitions to maintain the integrity of the cleanup action. However, modifications to the cleanup action can be made with Ecology review and approval to ensure continued protection of human health and the environment.

[...] 3. Again, with the proximity of the GP West site to downtown Bellingham, the fact that our weather often comes from the south and west, and the toxics associated with this site are volatile, we are concerned about dust and vapors blowing from the site into heavily populated areas. [...]

Response:
Construction of the final cleanup will include air monitoring and establish action levels that trigger work stoppage.

Note that two previously completed mercury removal interim actions conducted air monitoring during construction activities. Neither interim action found mercury concentrations above action levels.

[...] We would like to see wind restrictions on when cleanup can take place to reduce the amount of potentially toxic wind going into town. [...]

Response:
See previous response.

[...] 4. With this site being zoned as mixed use, including industrial, the capping method might not accommodate construction of buildings appropriate for industry without demolition of part of the cap. Alternatives 1, 2, 3, 4, 5, and 6 all utilize capping as a form of containment. Larger buildings and/or industries that have heavy equipment and equipment that must be stabilized

use pilings for stability, these pilings would need to go into the ground therefore through the capping layer. [...]

Response:
Environmental covenants placed on the property will contain specific restrictions and prohibitions to maintain the integrity of the cleanup action. However, the covenant will allow modifications to the cleanup action subject to Ecology review and approval. It is unlikely that Ecology would approve deep (pile) foundations in the vicinity of the former Chlorine Plant Area due to elevated concentrations of mercury in soil.

[...] 5. The toxics associated with the GP West site are harmful to human health and the environment. Mercury is a neurotoxin that affects humans of all ages, but while in fetus can have even more harmful effects;[2] even if the GP West site is zoned for industry, children could be exposed to the heavy metal while their mother is pregnant and have teratogenic effects. Without extreme measures to remove soil contaminated with mercury, the mercury still can leach into the environment and accumulate in nearby shellfish beds, thus impacting those that eat local shellfish. Polycyclic aromatic hydrocarbons and petroleum hydrocarbons are known to exist on the GP West site at potentially harmful levels including Naphthalene. Naphthalene is "reasonably anticipated to be a human carcinogen and may be associated with an increased risk of developing laryngeal and colorectal cancer."[3] [...]

Response:
Ecology agrees that there are potentially harmful levels of contamination at the GP West site. All of the alternatives evaluated in the FS eliminate exposure to these contaminants. Each alternative prevents direct contact with contaminated soil, prevents emission of unsafe vapors, and protects surface water and sediment from contaminated groundwater.

Note that the site is currently zoned industrial, but the most stringent cleanup levels (unrestricted land use) were used to develop cleanup alternatives in anticipation of zoning changes to accommodate mixed uses.

[...] 6. Alternatives 1, 2, 3, and 4 (the Preferred Alternative) do not address caustic groundwater. We are concerned with the fate and transport of contaminants from the site by this caustic groundwater leaching into the water of Bellingham Bay with increasing the mobility of contaminants such as mercury. [...]

Response:
Alternatives 1 through 3 do not address the caustic groundwater. Alternative 4 neutralizes the caustic groundwater with trenches containing permeable reactive material excavated perpendicular to the groundwater flow direction. The goal of neutralization is to reduce groundwater pH to below 8.5 and induce precipitation of dissolved mercury. Under current site conditions, the groundwater pH is attenuating to below 8.5 more than 200 feet upgradient from the Bellingham Bay shoreline.

[...] 7. As the cleanup process for this remedial action unit continues, careful consideration should be taken to coordinate cleanup efforts with the adjacent cleanup sites, such as the Whatcom Waterway and the rest of the GP West site, and ensure the best potential future uses for these sites. [...]

Response:
The cleanup teams for the various sites have been and will continue to coordinate closely to maximize efficiency and ensure comprehensive protection of human health and the environment.

[...] Thank you very much for considering our comments.

Eleanor Hines

Northsound Baykeeper, Lead Scientist

RE Sources for Sustainable Communities

Resources:

1. Feasibility Study Chlor-alkali Remedial Action Unit Vol. 2b of RI/FS, Georgia-Pacific West Site Bellingham, Washington. Aspect Consulting. February 2018. Table 8-1 Disproportionate Cost Analysis.

2. United States Environmental Protection Agency: Health Effects of Exposure to Mercury. April 2, 2018. https://www.epa.gov/mercury/health-effects-exposures-mercury

3. US National Library of Medicine: Naphthalene. April 2, 2018. https://pubchem.ncbi.nlm.nih.gov/compound/naphthalene#section=Top

Response:
Thank you again for commenting.

Comment from: Jointly by Numerous Organizations & Individuals

Public Comment re: Georgia-Pacific Chlor-Alkali Area

April 10, 2018

To: Washington State Department of Ecology ("DOE")

c/o Bellingham Office

Brian Sato, Site Manager, Georgia-Pacific West Site

From:

(in alphabetical order)

Bellingham Bay Marine Sanctuary & Coastal Trail

Citizens of Bellingham & Whatcom County

Douglas Tolchin

Friends of Whatcom County

Salish Sea Defense Council

Salish Sea Foundation

Salish Sea Land Trust

Salish Sea Marine Sanctuary & Coastal Trail

Salish Sea Whale Sanctuary

RE: Comments & Questions regarding

Georgia-Pacific West, Chlor-Alkali Area RI/FS et Al.

<u>Keystone Premise</u>

High levels of mercury contamination throughout much of the subject Chlor-Alkali Area are the result of knowing, intentional and illegal dumping of chlorinate mercury compounds (i.e. the notorious "Chem-Fix Project") by Georgia-Pacific Corporation, relative to which DOE subsequently, knowingly, intentionally and illegally authorized Georgia-Pacific to flimsily cap such in place and leave it there leaching into Bellingham Bay for the last several decades. FYI, we and others possess documents on both GP and DOE letterhead which confess and confirm the foregoing in writing.

Any scenario which sanctions anything other than full removal and lawful disposal of the subject illegal and intentional dumping of mercury (along with all relevant and reasonable Natural Resource Damage Assessment and Restitution) is certainly immoral, illegal and unjust, and may well be criminal.

Comment #1) After 17 years of unwarranted delay and obfuscation by Georgia-Pacific Corporation in tandem with local and state agencies (most of whom have major financial conflicts of interest all over the place), the time has come for all soils and other substances materially contaminated by Georgia-Pacific's multiple decades of illegal dumping of mercury in, on, under and surrounding the subject site to be thoroughly and lawfully removed, transported and disposed of in accordance with all applicable local, city, state, federal and tribal authorities.

In other words, a bona fide "clean-up," not just another "cover-up" aka " capping job." [...]

Response:

Ecology acknowledges the preference for complete removal and evaluated this as Alternative 8. However, Ecology must operate within the scope of its

authority, as defined by the Model Toxics Control Act (chapter 70.105D RCW; MTCA), and in accordance with the dictates of the accompanying MTCA regulations WAC 173-340. Per MTCA, the selected cleanup action must meet a number of requirements, including the requirement to be "permanent to the maximum extent practicable" WAC 173-340-360(2)(a)-(b). To make this determination, we employ the disproportionate cost analysis WAC 173-340-360(3). For the GP West site, the DCA (Section 8.3 of the FS) found Alternative 4 to be permanent to the maximum extent practicable.

[...] Note: "surrounding the subject site," referenced above, includes all adjacent lands surrounding the subject "Chlor-Alkali Area" within 20-feet above sea level, and all submerged aquatic lands throughout Bellingham Bay (especially in the vicinity of Whatcom Waterway, the Log Pond, the secondary treatment lagoon perimeter and NPDES-related outfall) as well as all uplands and waterways throughout Bellingham & Whatcom County which have been contaminated by Georgia-Pacific's several decades of truly massive and unlawful dumping (on-site & off-site) of elemental mercury and chlorinated mercury compounds to our community's Land, Air & Water. [...]

Response:
The boundary of the GP West Chlor-Alkali Remedial Action Unit is shown on Figure 1-1 of the FS and described further in Section 1. Please note that the boundary does not extend to the adjacent sediments and surface water of Bellingham Bay.

Sediment impacted by historic mercury releases from GP are part of the Whatcom Waterway site. Cleanup of Phase 1 areas of the Whatcom Waterway site was completed in 2016, and included removal of about 111,000 cubic yards of contaminated sediment. Cleanup design for the Phase 2 areas of the Whatcom Waterway site is expected to begin next year.

[...] Comment #2) Until such time as #1 above has been completed, there must be no further development or occupancy of buildings in or around the subject Chlor-Alkali Area and so-called GP Site as such will inevitably drive up the costs, logistical difficulties, human health detriments and human health risks associated with appropriate amounts and types of full removal and disposal of mercury-contaminated soils and sediments throughout and around the Chlor-Alkali Area (re: both upland and submerged aquatic lands specifically contaminated by leachate from the "Chem-Fix Project," and from GP-related unlawfull mercury emissions and dumping, in general). [...]

Response:
The alternatives evaluated in the FS eliminate exposure to harmful levels of contamination. Each alternative prevents direct contact with contaminated soil, prevents emission of unsafe vapors, and protects surface water and sediment from contaminated groundwater.

Environmental covenants will be placed on the property to ensure long-term protection of human health and the environment. The covenants will contain specific restrictions and prohibitions to maintain the integrity of the cleanup action. However, the covenants will allow modifications to the cleanup action subject to Ecology review and approval.

[...] Comment #3) Washington State Department of Ecology and The Port of Bellingham must publicly disclose in writing any and all financial conflicts of interest, potential financial conflicts of interest, and all appearances of financial conflicts of interest which they have (or may have) relative to financial liabilities and expenses (past, present and possible futures) associated with the subject Chlor-Alkali Area.

Ditto re: civil and criminal conflicts of interest, potential civil and criminal conflicts of interest and appearances of civil and criminal conflicts of interest.

Comment #4) Washington State Department of Ecology and The Port of Bellingham must immediatley recuse themselves as lead agencies regarding the subject GeorgiaPacific Chlor-Alkali Area RI/FS, and remand resolution of this matter to such competent authorities that do not possess such conflicts of interest, potential conflicts of interest or appearances of conflicts of interest.

Response:

Ecology's mandate is to enforce the state's cleanup law, the Model Toxics Control Act. We fulfill this mandate objectively, and are not aware of any conflicts of interest.

[...] Comment #5) The subject RI/FS and "preferred alternative" does not reasonably integrate best available science or the precautionary principle (both of which should and must be employed in tandem) regarding anticipated levels of sea level rise, site susceptibility to liquefaction in the event of earthquake, tsunami, severe windstorm events, so-called supertides, sea level rise and other such predictable adverse factors. According to one of the presenters at the related public hearing a few weeks ago at DOE Bellingham, the Chlor-Alkali Area proposed for "capping" by DOE and The Port of Bellingham is only about 4 to 6-feet above normal high-tide level. With anticipated sea level rise far in excess of that amount, and/or supertides, windstorms, tsunamis, or even just one sizable earthquake, this whole Chlor-Alkali area is likely to end up dissolving and dispersin underwater in Bellingham Bay within decades, if not years. [...]

Response:

Ecology recognizes the significance of these environmental factors and will consider them during the future design phase of the cleanup process.

Regarding sea level rise, the Intergovernmental Panel on Climate Change (IPCC) (2007) estimates that the global average sea level will rise between 0.6 and 2 feet in the next century. Puget Sound is likely to experience sea level rise similar to the global average (University of Washington Climate Impacts Group and Ecology 2008). In the Waterfront District Environmental Impact Statement

documents, a potential sea level rise in Bellingham Bay of 2.4 feet by 2100 was considered a reasonable estimate. Based upon this estimate, the current site grade elevation of 14-16 ft. will accommodate projected sea level rise. However, due to the evolving science behind sea level rise estimates, we will revisit this issue during future remedial design activities.

[...] Comment #6) A Natural Resources Damage Assessment and Restitution Process has never been initiated by Washington State DOE or The Port of Bellingham (which is highly illustrative of their very real financial and other conflicts of interest relative to the subject site). Such Natural Resources Damage Assessment and Restitution Process must commence to a timely conclusion as soon as possible. [...]

Response:

The Natural Resources Damage Assessment and Restoration (NRDAR) process evaluates impacts to natural resources from releases of oil and other hazardous substances to the aquatic environment. It also determines what activities will:

- Restore, replace, or acquire the equivalent of the natural resources injured.
- Compensate the public for the loss of the injured natural resources.

Compensation can be in the form of restoration projects performed by parties responsible for the natural resource injuries. Responsible parties can also pay monetary damages to be used for restoration projects.

The NRDAR process can be quite complex and time-consuming, and in Bellingham Bay restoration work is occurring without this process.

As part of the multi-agency Bellingham Bay Demonstration Pilot project, and with funding from Ecology, a number of habitat improvement projects have been completed, including:

- Squalicum Creek, estuary restoration design and construction
- Padden Creek, estuary restoration design and construction
- Little Squalicum beach shoreline, restoration design
- Multiple studies to help identify and prioritize restoration projects

Ecology is also partially funding 2019 construction of a new 2-acre estuary in Little Squalicum Creek. Other projects may be implemented in the future depending on funding availability.

In addition, the shoreline cleanup projects integrate habitat elements to the degree possible while still maintaining the integrity of the cleanup actions. Habitat elements include removal of vertical shoreline structures, gently sloping shorelines, and use of fish-friendly material on the surface of shoreline caps. Additional habitat elements may be added to the cleanup projects as they move forward through state and federal permitting processes.

Ecology is focused on completing on-the-ground cleanup and habitat restoration work in Bellingham Bay, rather than initiating an NRDAR process at this time. The parties responsible for the natural resource injuries are aware

that they have not resolved their NRDAR liability, and that state and federal agencies, and tribes can pursue this legal avenue at any time.

[...] QUESTION #1: Why did the Chlor-Alkali Mercury Facility "Cleanup" at Onondaga Lake cost the better part of $500 million, and is done, while DOE and The Port of Bellingham are advocating less than 5% of that amount to cover-up (aka capping-job) rather than "clean-up" Georgia-Pacific's mercury-laden Chlor-Alkali Area (which, not incidentally, is far too narrowly defined)?

Onondaga Lake cleanup, decades in the making, will be done this month
http://www.syracuse.com/news/index.ssf/2017/11/onondaga_lake_cleanup_decades_in_the_making_will_end_this_fall.html

The company finished dredging 2.2 million cubic yards of lake bottom in 2014, and capping 475 acres of the bottom last year. The final phase, restoring 90 acres of wetlands and adding underwater rock structures for fish habitat, is slated to be done this month. The cleanup terms were outlined in a 2006 federal court order; the lawsuit had been filed in 1989 Department of Environmental Conservation. The 2006 record of decision estimated the cost of cleanup at $451 million. [...]

Response:
Every cleanup site is different. With different types and levels of contamination, different exposure pathways, and different-sized areas of impact. Direct comparisons cannot be made.

[...] QUESTION #2: Why has neither DOE nor The Port of Bellingham publicly announced or pursued a Natural Resource Damage Assessment Claim against Georgia-Pacific relative to mercury contamination of Bellingham Bay relative to leachate and other emissions from the subject Chlor-Alkali Area throughout the past several decades?

Recent local example of NRDA re: Pulp Mill in Everett WA (not even a Chlor-Alkali Mercury Facility):

Thursday, February 8, 2018

Everett area could get nearly $4 million for habitat restoration

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On the other end of the spectrum (with many in between)…

Under the Consent Decree BP will pay a Clean Water Act civil penalty of $5.5 billion (plus interest), $8.1 billion in natural resource damages (this includes $1 billion BP already committed to pay for early restoration), up to an additional $700 million (some of which is in the form of accrued interest) for adaptive management or to address injuries to natural resources that are presently unknown but may come to light in the future, and $600 million for other claims, including claims under the False Claims Act, royalties, and reimbursement of

natural resource damage assessment costs and other expenses due to this incident. This settlement includes both the largest civil penalty ever paid by any defendant under any environmental statute, and the largest recovery of damages for injuries to natural resources.

https://www.justice.gov/enrd/deepwater-horizon

Response:
Please see previous response regarding NRDAR.

Appendices

Appendix A. Public Comments in Original Format

Anonymous Anonymous

Having been involved with some of the previous cleanup projects on this site, I have concern that the preferred cleanup alternative will be more challenging and therefor cost considerably more than identified in the report (more than the $18M figure).

The foundation structures, piling, pile caps, grade beams, tank pads, etc are extensive. All these concrete structures and piling would need to be demolished and removed from the site prior to any in-situ treatment. The demolition would require extensive excavation in order to access the structures to be demolished as some of the large pile caps are several feet below existing grade. Many structures are not well documented (some not being documented at all) and without performing a full excavation, there would be a great risk of sending an in-situ treatment auger into a legacy foundation or piling and damaging the specialty auger, or at best delaying the project while the obstruction is cleared. In either instance, the project would likely be riddled with expensive change orders due to unforeseen conditions encountered while auguring, thus driving the price much higher than advertised.

Since many of the concrete foundations and pilings must be excavated down to the aquatard in order to be demolished and removed, it makes sense to treat the already excavated soil and place the treated soil back on the site. Placing contaminated soil (that has been previously excavated during the demolition phase) back into the excavation seems risky as the contaminant of concern, mercury, will migrate downward as the soil is being excavated and backfilled. It would be far less risky to excavate the site in a conventional manner in order to perform the demolition, send soil through an on-site treatment plant and place the treated soil back into the ground (since the excavated soil will be considered "generated" while performing the excavations required for demolition).

If the aquatard must be protected to contain the contaminants, the auguring / in-situ treatment method seems to have the highest risk of accidentally breaching the aquatard. There will be no way to see what material is being augured through and the operation will have to rely on approximated depths deduced from bore logs, which can be inaccurate.

Again, the concern is that the preferred alternative will cost far more than anticipated due to complications / challenges presented by this site.

randall potts

I am concerned about the clean up plan for GP West Chlor-Alkali. Specifically, I am worried that binding elemental mercury with concrete and leaving it onsite is not a viable longterm remediation strategy. The mercury needs to be removed from the site not left to cause potential future harm. Given the extreme weather that our region can expect as the new normal, it just makes sense to remove this deadly chemical rather than leave it vulnerable to unintended consequences that may occur in the future. By removing the mercury, the site can be rendered safe for future economic development opportunities at that location.

Judith Akins

Thank you for all your efforts to inform the public on the continued cleanup and improvement to our waterfront and the Georgia Pacific sites. Your public information sessions and website have been very informative.

I am a resident of Bellingham and am very interested in the continued development of the area. The GP West site is vital to growth, sustainability and jobs that are needed for our residents of Bellingham and Whatcom County. I do not agree with the preferred selection of Alternative 4. I don't think you have given adequate weight, on the pie chart displayed on the website, to overall protection (30%) and long term effectiveness (20%). I am very concerned that a true accounting of the hazardous mercury and chlorine will be left behind and believe that there will be leaching in the future. How effective and long term are these solutions you will be implementing and are we just asking the future generations to cover the cost of further removal after this site has been developed?

I believe the only adequate alternatives are #'s 6,7,8 and understand that these carry their own risks. However, these alternatives while incurring additional costs and hazards now will allow for greater use and development of the land, strengthen the environment and allowing less risk of problems to be taken care of by future generations.

I think we all want a waterfront that we can be proud of.

Liz Marshall

I am hugely in favor of attempts to remediate brownfields. It boggles my mind however that people are converting contaminated acreage, whether GPWest or other of the 12 sites of Bellingham Bay, to public parks, residences, and business complexes. I don't even see the logic or safety in storing export logs on contaminated ground and shipping contaminant residue overseas. Why is altering the creek and bay, building concrete complexes, and inviting the public to tread on the shoreline considered beneficial to the public good while restoring habitat for trees, birds, invertebrates, fish and marine mammals is not? Nature gives life to people, not the other way around.

Doing construction projects and building public parks on a brownfield site where the feasibility for cleanup isn't even done yet is playing Russian roulette.

Contaminants in the soil and groundwater, and vapor have been posing risk to cleanup activities, construction projects, and shipping activity (and probably to surrounding neighborhoods as well). Moreover, all this takes place at and under a major railway constantly carrying huge quantities of hazardous materials. These risks will continue. For all the years that cleanup and redevelopment (and railway) activities continue, the resultant air pollution also continues.

I guess building housing in or around redeveloped brownfields is intended to be altruistic, even though the sites are contaminated, in flood zones, in tsunami zones, and subject to sea level rise and train disasters. It could also be interpreted as political maneuvering. Building facilities to supposedly attract jobs is also an illogical premise since the town doesn't have enough affordable housing.

Even when choosing the most cost-effective Alternative presented, the costs are extremely high. I believe that maintaining the value of the cleanup investment once it is accomplished would best be ensured by restoring such sites to their natural purposes, such as estuaries, trees and critters. This would boost tourism
for a number of reasons
(tourists could stay in hotels, not backyards) and avoid the comparatively more astronomical costs associated with damage from pollution, as well as earthquakes and other catastrophic emergencies.

While the task at hand is to comment on the Preferred Cleanup Alternative for the Chlor-Alkali Area, I am emphasizing general related concerns since the decisions to impact the shoreline with more building seem to be ordained.

Mt Baker Group WA State Chapter Sierra Club

Mt Baker Group
Washington State Chapter Sierra Club
MtBaker@washington.sierraclub.org

To: WA Department of Ecology
Ecology-Bellingham Office
Brian Sato, Site Manager Georgia Pacific West Site
Re: GP West Cleanup: Pulp and Tissue Mill and Chlor-Alkali Area
Date: April 9, 2018

The Mt Baker Group Sierra Club is very concerned about the planned cleanup of the GP West Site. The preferred plan #4 does not adequately address the containment of the mercury and phosphorus levels. In fact in reading from other comments that the cost of securing the pilings etc. has been severely underestimated.

We are concerned that this level of cleanup does not address the severity of the environmental impacts of the mercury and phosphorus which if continued leaching occurs into the ground and water can be most detrimental to the habitat and severely limits the type of building and use of this area for future generations.

In studying the other alternatives, alternative #6 would bring us much closer to broader cleanup. The advantage of 6 is that it removes mercury for groundwater protection, full removal of chlorine and neutralizes ground water to 8.5While this alternative does not remove all contamination it does address the piling removal and contamination.

The cost of alternative #6, could almost double (if projected costs stay on target) the chosen alternative #4, however would enhance the effectiveness of cleanup by 30%. The cost could be recovered from Georgia Pacific since they did not fully disclose the level of contamination. We feel all avenues need to be pursued to cover the cost of a more thorough cleanup. While no plan is perfect since the extent of the contamination from all the waterfront areas is so great we feel that we need to protect our environment and the bay to the greatest extent possible.

RE Sources for Sustainable Communities

On behalf of RE Sources, please find our comment letter attached. Thank you for this public comment opportunity.

RESOURCES FOR SUSTAINABLE COMMUNITIES
PROTECT. ACTIVATE. INNOVATE. THRIVE.

2309 Meridian Street
Bellingham, WA 98225
360.733.8307 • re-sources.org

To: Brian Sato, Site Manager
WA Department of Ecology
3190 160th Avenue SE
Bellevue, WA 98008

April 10, 2018

RE: Comments on GP West Feasibility Study Including Chlor-Alkali Area

Dear Brian,

Thank-you for the opportunity to comment on the feasibility study that evaluates clean up alternatives at the Georgia-Pacific West (GP West) site including the Chlor-Alkali area. We greatly appreciate your efforts in the Bellingham Bay waterfront cleanup including addressing public comments. As the Clean Water Team at RE Sources for Sustainable Communities, we represent almost 20,000 supporters in Whatcom and Skagit Counties. Our comments on the cleanup alternatives are as follows:

1. We encourage the Port of Bellingham and Department of Ecology to continue cleanup plans at the GP West site along compliance with either Alternative 6, 7, or 8; with our preferred Alternative being 8, followed by 7 if Alternative 8 is unfeasible. These alternatives have a MTCA Benefits Ranking of above 7 therefore protecting future human and ecosystem health. Alternative 4, the preferred alternative, is insufficient at protecting water quality, human health, and the health of the ecosystem. Alternative 4 focuses on cleaning up only the "caustic core", visible mercury, and removal of soil near the Log Pond, therefore leaving behind contaminants that have the potential of continued environmental degradation.[1] Bellingham is a fortunate city because it is able to clean up old industrial sites and redevelop the waterfront to meet the City's 21st century needs; long-term public health and safety should be at the top of the Port of Bellingham's and WA State Department of Ecology's priorities.
2. With the proximity of the GP West site to city parks, new development, and our current vibrant downtown, as well as the waterfront cleanup projects being zoned for mixed-use, we would like to see an alternative that is more aggressive in removing the toxics from the site beyond the MTCA requirements for *industrial zoning*. We would like to see a removal of all soils exceeding cleanup levels such as Alternative 7 or 8. Alternative 7 and 8 cleanup plans would protect children, families, and the environment and not have potential economic impacts of restricted land use in the future.
3. Again, with the proximity of the GP West site to downtown Bellingham, the fact that our weather often comes from the south and west, and the toxics associated with this site are volatile, we are concerned about dust and vapors blowing from the site into heavily populated areas. We would like to see wind restrictions on when cleanup can take place to reduce the amount of potentially toxic wind going into town.
4. With this site being zoned as mixed use, including industrial, the capping method might not accommodate construction of buildings appropriate for industry without demolition of part of the cap. Alternatives 1, 2, 3, 4, 5, and 6 all utilize capping as a form of containment. Larger buildings

and/or industries that have heavy equipment and equipment that must be stabilized use pilings for stability, these pilings would need to go into the ground therefore through the capping layer.

5. The toxics associated with the GP West site are harmful to human health and the environment. Mercury is a neurotoxin that affects humans of all ages, but while in fetus can have even more harmful effects;[2] even if the GP West site is zoned for industry, children could be exposed to the heavy metal while their mother is pregnant and have teratogenic effects. Without extreme measures to remove soil contaminated with mercury, the mercury still can leach into the environment and accumulate in nearby shellfish beds, thus impacting those that eat local shellfish. Polycyclic aromatic hydrocarbons and petroleum hydrocarbons are known to exist on the GP West site at potentially harmful levels including Naphthalene. Naphthalene is "reasonably anticipated to be a human carcinogen and may be associated with an increased risk of developing laryngeal and colorectal cancer."[3]
6. Alternatives 1, 2, 3, and 4 (the Preferred Alternative) do not address caustic groundwater. We are concerned with the fate and transport of contaminants from the site by this caustic groundwater leaching into the water of Bellingham Bay with increasing the mobility of contaminants such as mercury.
7. As the cleanup process for this remedial action unit continues, careful consideration should be taken to coordinate cleanup efforts with the adjacent cleanup sites, such as the Whatcom Waterway and the rest of the GP West site, and ensure the best potential future uses for these sites.

Thank you very much for considering our comments.

Eleanor Hines
Northsound Baykeeper, Lead Scientist
RE Sources for Sustainable Communities

Resources:

1. Feasibility Study Chlor-alkali Remedial Action Unit Vol. 2b of RI/FS, Georgia-Pacific West Site Bellingham, Washington. Aspect Consulting. February 2018. Table 8-1 Disproportionate Cost Analysis.
2. United States Environmental Protection Agency: Health Effects of Exposure to Mercury. April 2, 2018. https://www.epa.gov/mercury/health-effects-exposures-mercury
3. US National Library of Medicine: Naphthalene. April 2, 2018. https://pubchem.ncbi.nlm.nih.gov/compound/naphthalene#section=Top

Jointly by Numerous Organizations & Individuals

Public Comment re: Georgia-Pacific Chlor-Alkali Area

April 10, 2018

To: Washington State Department of Ecology ("DOE")
% Bellingham Office
Brian Sato, Site Manager, Georgia-Pacific West Site

From:
(in alphabetical order)

Bellingham Bay Marine Sanctuary & Coastal Trail
Citizens of Bellingham & Whatcom County
Douglas Tolchin
Friends of Whatcom County
Salish Sea Defense Council
Salish Sea Foundation
Salish Sea Land Trust
Salish Sea Marine Sanctuary & Coastal Trail
Salish Sea Whale Sanctuary

RE: Comments & Questions regarding
Georgia-Pacific West, Chlor-Alkali Area RI/FS et Al.

Keystone Premise

High levels of mercury contamination throughout much of the subject Chlor-Alkali Area are the result of knowing, intentional and illegal dumping of chlorinate mercury compounds (i.e. the notorious "Chem-Fix Project") by Georgia-Pacific Corporation, relative to which DOE subsequently, knowingly, intentionally and illegally authorized Georgia-Pacific to flimsily cap such in place and leave it there leaching into Bellingham Bay for the last several decades. FYI, we and others possess documents on both GP and DOE letterhead which confess and confirm the foregoing in writing.

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