DEPARTMENT OF ECOLOGY
State of Washington

Port Angeles Rayonier Mill Site
Interim Action Reports Volumes I, II, and III
Responsiveness Summary

Ecology's response to public comments

FSID: 19
CSID: 2270

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Document and Contact Information

This document is available on the Department of Ecology's website at:
http://www.ecology.wa.gov/Rayonier

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Toxics Cleanup Program

Washington State Department of Ecology

Olympia, Washington

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Table of Contents

Page

List of Figures and Tables vii

Figures vii

Tables vii

Acknowledgements viii

List of Abbreviations ix

Introduction 1

Background 3

Cleanup process for the Rayonier Mill Study Area 4

Documents reviewed during the public comment period 6

Upland Data Summary Report for the Study Area (Volume I) 6

Marine Data Summary Report for the Study Area (Volume II) 6

Cleanup Alternatives Evaluation Report for the Study Area (Volume III) 7

Contamination and Alternatives for Cleanup in the Study Area 8

Soil contamination 8

Groundwater contamination 9

Sediment contamination 9

Public Outreach and Involvement 11

Response to the Public's Topics of Concern 12

Major topics of concern 12

1. Cleanup is taking too long 13
2. Hold Rayonier accountable 14
3. Anything less than full removal of contamination is not protective of human health and the environment 15
4. Want full removal of contaminated soil 16
5. Want full removal of contaminated sediment 19
6. Full removal of contaminants is necessary to safeguard against effects of climate change and natural events 20
7. Cleanup levels and possible future mixed uses of the mill property 21
8. Anything less than full removal of contamination discourages future buyers 24

9. Proposed remedies should not rely on institutional controls 24
10. Proposed remedies should not rely on long-term monitoring..... 26
11. Give permanent solutions the highest priority..... 27
12. Concerns about the disproportionate cost analysis 28
13. Consider alternative cleanup methods..... 29
14. Groundwater needs chemical treatment to remove/break down contaminants .. 30
15. Removal of the dock, jetty, and creosote pilings, and recontouring the shoreline 31
16. Ennis Creek restoration..... 33
17. When the mill was operating, an employee observed an area with a heavy smell of flammable fumes and the ground was black and oily 34

Comments Reference Table..... 35

Comments Received 43

List of Figures and Tables

Page

Figures

Figure 1. The upland and marine portions of the Rayonier Mill Study Area. 1

Tables

Table 1. The contaminants found in soil, groundwater, and sediment at the Rayonier Mill Study Area. 8

Table 2. The maximum detected concentrations of contaminants found in the Study Area and the unrestricted (residential) use and industrial use cleanup levels. Concentrations are shown in parts per million (mg/kg). 23

Table 3. List of commenters in alphbetical order, topics of concern, and the page number where the comment can be found in this document. 36

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Contributors

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List of Abbreviations

DJS Project	Dock and Jetty Removal and Shoreline Recontouring Project
DNR	Washington Department of Natural Resources
DOH	Washington Department of Health
ENR	Enhanced Natural Recovery
MHHW	Mean higher high water
MTCA	Model Toxics Control Act
NRDA	Natural Resource Damage Assessment
PAHs	polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PLP	Potentially liable person
SMS	Sediment Management Standards
TPH	total petroleum hydrocarbons

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Introduction

The Washington Department of Ecology (Ecology) is supervising the cleanup of the Rayonier Mill site. The former Rayonier Mill is located at 700 North Ennis Street in Port Angeles, Washington. The property is on the eastern end of Port Angeles Harbor, bordering the Strait of Juan de Fuca. Techniques for making wood pulp, which were standard at the time, polluted the area on and near the former mill. Rayonier A.M. Properties LLC (Rayonier) is working under our oversight to characterize and clean up the contamination.

In 2010, we signed a legal agreement (Agreed Order DE6815) with Rayonier to study the extent of contamination and assess cleanup options for the upland (on land or in groundwater) and marine portions of the Study Area. The Study Area is located along the shore and in the eastern part of Port Angeles Harbor (see Figure 1).

Figure 1. The upland and marine portions of the Rayonier Mill Study Area.

The Upland Study Area is the 75-acre former mill property. Ennis Creek flows through the Upland Study Area into the harbor and divides the upland into the west mill and east mill areas. The Marine Study Area is about 1,300 acres of marine environment adjacent to the mill property on the southern shore of Port Angeles Harbor.

The remedial investigation and feasibility study for the Rayonier Mill Study Area are contained in the draft Interim Action Reports, Volumes I, II, and III. Ecology approved the draft reports and held a public comment period and an open house to provide people with an opportunity to review and comment on the reports.

The comment period ran from August 29 to November 26, 2019. During the public comment period, we received comments by email, postal service, and submission to Ecology's online comment application. We received 161 comments from individuals, organizations, businesses, tribes, and state and local governments.

We appreciate the thoughtful contributions of those who commented. We thoroughly considered the comments submitted. We found the advice and input helpful and informative.

In this Responsiveness Summary, we consolidated comments that either ask the same question or express the same or similar concerns. We tried to provide a complete and comprehensive response for each topic of concern.

Background

Rayonier ran a pulp mill on the property from 1930 to 1997 when the mill closed. From 1997 to 1999, Rayonier dismantled the mill.

When the mill operated, it used sulfite and acid to break down wood chips into cellulose fibers. It burned wood chips and sludge that created air emissions and ash that contained dioxins. Until the 1970s, the mill discharged untreated liquid wastes at shoreline outfalls. After 1972, wastewater was treated and discharged from a deep-water outfall. The mill stacks, fuel spills, electrical equipment, wastewater outfalls, and log storage pond released hazardous substances. This led to contamination of the property and nearby marine environment.

From 1989 to 2006, Rayonier cleaned up the hot spots of contamination located in the Upland Study Area by removing over 30,000 tons of contaminated soil. Sampling indicated these actions were successful in removing a substantial volume of contaminated soil from the areas of heaviest contamination.

In 2011, Rayonier sold a portion of the property to the City of Port Angeles for a combined sewer overflow tank. The Olympic Discovery Trail was constructed along a former railroad right-of-way that runs near the southern boundary of the former mill area.

There are cultural sites located on the Rayonier property. The east side of Ennis Creek was once home to the Klallam I'e'nis village. The Puget Sound Cooperative Colony developed the west side of Ennis Creek.

Cleanup process for the Rayonier Mill Study Area

The cleanup process for the Study Area is the same used for cleaning up other contaminated sites throughout the state. Ecology regulates and implements the cleanup of upland contaminated sites according to Washington's environment cleanup law, the Model Toxics Control Act (MTCA, 70A.305 RCW[1] and Regulation 173-340 WAC[2]). Washington's Sediment Management Standards (SMS, 173-204 WAC[3]) guide us through the process of cleaning up contaminated sediment in freshwater and marine environments.

Throughout the process, the Lower Elwha Klallam Tribe has provided advice, input, and comments to us in regular meetings and discussions.

The cleanup process has several steps. One step is a remedial investigation. The remedial investigation describes the contaminants and the extent of contamination in soil, groundwater, and sediment. The draft Upland Data Summary (Volume I) and the draft Marine Data Summary (Volume II) summarize the results of this process for the Rayonier Mill Study Area.

The next step is determining cleanup objectives and evaluating possible cleanup methods. The cleanup options are evaluated for effectiveness and cost. The draft Cleanup Alternatives Evaluation (Volume III) describes and evaluates several cleanup alternatives for soil, groundwater, and sediment.

Completion of these drafts is a milestone in the cleanup process. As required by MTCA, Ecology held a comment period for public review and comment on the reports.

To finalize Volumes I, II, and III, Rayonier will make some modifications to the drafts. The disproportionate cost analysis will be updated to reflect public concern in Volume III. In the draft Volume III, all the alternatives were scored equally for public concern. Based on public comment, we will adjust the scores for public concern for each alternative to reflect public preferences. In addition, Ecology has a few minor changes to the reports. Once Rayonier incorporates the changes, Ecology will accept the reports as finalized. The reports will be available at Ecology's Rayonier Mill webpage.[4]

Ecology has not yet selected a set of cleanup actions for the Study Area from the proposed cleanup alternatives identified in Volume III. All the cleanup alternatives evaluated in Volume III meet MTCA cleanup requirements. Ecology will use public comments and the information in Volumes I, II, and III to select cleanup actions. The selected actions may not be the same as the recommended alternatives in Volume III.

Ecology will draft an interim action plan for the Study Area. We will make the draft interim action plan and the legal agreement (to implement the plan) available for public comment

[1] https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305
[2] https://app.leg.wa.gov/wac/default.aspx?cite=173-340
[3] https://app.leg.wa.gov/wac/default.aspx?cite=173-204
[4] https://ecology.wa.gov/Spills-Cleanup/Contamination-cleanup/Cleanup-sites/Rayonier-Mill-cleanup

before they are finalized. After the interim action plan is finalized, the details of the cleanup action will be worked out in a design phase. The design will comply with relevant federal and state laws and permit requirements.

Rayonier is looking to address all their environmental liabilities, including natural resource damages. The Natural Resource Damage Assessment[5] (NRDA) process is separate from the MTCA cleanup. The settlement of NRDA claims could involve habitat restoration within the Study Area, such as restoring habitat at Ennis Creek. We recognize there are benefits of doing creek restoration and upland cleanup at the same time. A NRDA-led habitat restoration of Ennis Creek estuary depends on the NRDA Trustees (federal, state, tribes) reaching a settlement with Rayonier. The NRDA settlement discussion is ongoing.

In addition, we anticipate that Rayonier will remove the large in-water structures (dock and jetty) and recontour the shoreline as part of its duties under the aquatic lands lease agreement with the Washington State Department of Natural Resources[6] (DNR). The Dock and Jetty Removal and Shoreline Recontouring Project (DJS Project) is not part of Ecology's MTCA cleanup, but the construction required to remove these structures and reshape the shoreline will affect contaminated sediment near the structures and the shore. Therefore, Ecology is coordinating with Rayonier to remediate the sediment at the same time the DJS project is underway.

The agreed order requires an interim action plan for the Study Area referred to as Volume IV. It may be necessary to prepare an interim action plan focused just on the sediments in order to allow the DJS project to move forward on a faster timeline. The interim action plan for the Study Area (Volume IV) will include the sediment plan by reference. We will draft legal agreement(s) (agreed order or consent decree) to implement the draft interim action plan(s). The draft interim action plan(s) and legal agreement(s) will be available for public comment before they are finalized.

[5] https://ecology.wa.gov/Spills-Cleanup/Contamination-cleanup/Cleanup-sites/Toxic-cleanup-sites/Puget-Sound/Port-Angeles-Harbor/Port-Angeles-Harbor-NRDA/NRDA-site-overview
[6] https://www.dnr.wa.gov

Documents reviewed during the public comment period

Under Agreed Order No. DE6815 between Ecology and Rayonier, three public review drafts were prepared by Rayonier for the Study Area. These reports are the draft Upland Data Summary (Volume I), the draft Marine Data Summary (Volume II), and the draft Interim Action Alternatives Evaluation (Volume III). The objective of the upland and marine summary reports (Volumes I and II) is to collect information and characterize the contamination in the Study Area well enough to develop cleanup action alternatives. The objective of the alternatives evaluation report (Volume III) is to evaluate different cleanup action alternatives so Ecology can select a remedy.

Upland Data Summary Report for the Study Area (Volume I)

Rayonier prepared draft Volume I[7] that describes the contamination in the upland part of the Study Area occupied by the former Rayonier Mill. The report provides a comprehensive summary of the upland investigations and partial cleanups from the early 1990s through 2011. It evaluates soil contaminant pathways and potential risks to human health and the environment. It also presents the current understanding of conditions in the Upland Study Area. This information helps to develop cleanup action alternatives for soil and groundwater in the upland.

Marine Data Summary Report for the Study Area (Volume II)

Draft Volume II[8] describes the nature and extent of sediment contamination in the marine part of the Study Area. The report provides a full summary of sediment investigations in the Study Area against the background of natural and regional contamination in sediment in Port Angeles Harbor and the Strait of Juan de Fuca. The study is based on information collected from the late 1990s to 2008. Surface sediment samples, tissue samples from marine species, and observations of impact on benthic organisms were used to determine the nature and concentration of the contaminants. The information provides the background required to develop cleanup action alternatives for marine sediment.

[7] https://fortress.wa.gov/ecy/gsp/docviewer.ashx?did=10404
[8] https://fortress.wa.gov/ecy/gsp/docviewer.ashx?did=42416

Cleanup Alternatives Evaluation Report for the Study Area (Volume III)

Draft Volume III[9] describes alternatives for cleaning up contaminated soil, groundwater, and sediment in the upland and marine parts of the Study Area. The overall cleanup must meet MTCA requirements.

The state's cleanup law, MTCA, requires that several cleanup alternatives be presented. All alternatives must meet MTCA requirements. These alternatives must be evaluated and compared to each other based on the following requirements.

- Protect human health and the environment.
- Comply with cleanup standards.
- Comply with applicable state and federal regulations.
- Provide for compliance monitoring.
- Use permanent solutions to the maximum extent practicable.
- Provide a reasonable restoration timeframe.
- Consider public concerns.

[9] https://fortress.wa.gov/ecy/gsp/docviewer.ashx?did=85323

Contamination and Alternatives for Cleanup in the Study Area

Investigations of the upland (Volume I) and sediment (Volume II) found several contaminants of potential concern to human health and the environment (see Table 1). Metals include lead, arsenic, and mercury.

Table 1. The contaminants found in soil, groundwater, and sediment at the Rayonier Mill Study Area.

Contaminant	Where contaminants are found
polycyclic aromatic hydrocarbons (PAHs), metals, dioxins	surface soil 1 to 2 feet deep
PAHs, metals, dioxins, total petroleum hydrocarbons (TPH), polychlorinated biphenyls (PCBs)	subsurface soil
pH (acidity or alkalinity), ammonia, PAHs, metals	groundwater
metals, PAHs, PCBs, dioxins, phenols, phthalates, wood debris	sediment
metals, PAHs, PCBs, dioxins	crab and clam tissue

Soil contamination

Rayonier removed hot spots of soil contamination with partial cleanups in the 1990s and 2000s. Today, soil contamination is at lower levels (see Alternatives Evaluation Report Appendix A). Contaminated soil is found across much of the upland. Concentrations of contaminants are higher in the area west of Ennis Creek than in the area east of the creek.

All the cleanup alternatives being considered protect human health and the environment by reducing exposure from contaminants to plants, humans, and other animals. All alternatives meet MTCA requirements. The alternatives prevent exposure of people and wildlife to contaminated soil by eliminating the chance of physical contact or ingesting soil when they visit the upland.

The alternatives for cleanup of contaminated soil include excavating soil and either hauling it away or consolidating it on-site and covering it with an engineered cap. The cap will cover and isolate the contaminated soil, so people and wildlife will not be exposed to it. The alternatives vary in the size of the area to be excavated.

Groundwater contamination

Groundwater in the upland is not used for drinking water because it is made salty by contact with seawater. The groundwater moves beneath the surface, so people and wildlife do not have contact with it.

There are limited areas of groundwater with low and high pH (acidity or alkalinity). The pH affects some metals by causing them to detach from soil particles and move into the groundwater. The groundwater cleanup alternatives are designed to neutralize the pH of the groundwater, which will reduce the movement of metals. Treatments can also increase the rate soil microbes break down contaminants. The groundwater cleanup alternatives will prevent migration of contaminated groundwater to the marine environment and protect human health and marine life.

Possible groundwater treatment methods include air sparging, funnel-and-gate, and in-situ treatment.

- **Air sparging** injects air into the groundwater. The injection sites would be located near the shoreline.
- **A funnel and gate system** directs the groundwater towards a permeable barrier. The barrier is made of reactive materials that treat the groundwater as it passes through. The barriers would be placed near the shoreline.
- **In-situ Treatment** works by injecting amendments into the groundwater without the use of air. The amendments are injected at multiple points below the soil surface to treat contamination. Injection sites for in-situ treatment would be located throughout the upland.

Sediment contamination

Many of the same contaminants found in soil are also present in sediment. The highest levels of sediment contamination are in the eastern part of the log pond and near the mill dock. Also, there is wood debris on the bottom. Decomposition of wood debris removes oxygen from the water and produces ammonia and sulfides that can be harmful to sea life.

People can be exposed to contaminated sediment by direct skin contact or by consuming it. Eating fish and clams that have accumulated contaminants in their tissues may be harmful to people. Marine animals and birds can be exposed by direct contact or eating contaminated organisms. Cleanup alternatives protect human health and the environment by eliminating ways people and marine life might be exposed to the contamination.

Cleanup alternatives include enhanced natural recovery (ENR), dredging, fill, and capping.

- **Enhanced natural recovery** works by placing a thin layer of clean sand on top of the sediment. The layer of clean sand jump-starts the natural process of sediment

deposition. The clean sand mixes into the contaminated surface sediment reducing contaminant concentrations.

- **Dredging** scoops up and removes sediment. Earth-moving equipment is used to remove intertidal sediment along the shoreline. Barges dredge contaminated sediment in deeper water.
- **Fill** works by placing clean material on the sea bottom to smooth the bottom contour. The areas on both sides of the mill dock were previously dredged to deepen the water so ships could tie-up at the dock. These berth dredges would be filled to smooth the sea bottom.
- **Sediment cap** works by placing sand, gravel, and other materials that contains and isolates the contaminated sediment underneath the cap.

Public Outreach and Involvement

For public review and comment on draft Volumes I, II, and III, Ecology held a comment period that opened August 29, 2019 and ended November 26, 2019. We originally scheduled the comment period to last for 60 days, but extended it to 90 days due to the high level of public interest. We held an open house in Port Angeles on the evening of September 25, 2019, to answer questions and present information about the reports. Forty-five people attended the open house.

To inform the public about the comment period and the open house, we mailed a fact sheet[10] to residents that live nearby or have expressed interest in the cleanup. We also sent an email to people and organizations on our email notification list and posted a legal ad in the Peninsula Daily News. We placed information about the comment period and the open house in Ecology's Site Register, Public Events Calendar, and on Ecology's Rayonier Mill webpage.

We will continue to keep the public informed during major decision points and times of investigative or interim work at the site. All electronic documents and updated information are posted regularly to Ecology's Rayonier Mill webpage,[11] where you can also sign up for the Rayonier Mill—Port Angeles email notification list. If you want to learn more about the public outreach process, read the public participation plan[12] for the Rayonier Mill.

[10] https://fortress.wa.gov/ecy/publications/SummaryPages/1909094.html
[11] https://ecology.wa.gov/Spills-Cleanup/Contamination-cleanup/Cleanup-sites/Toxic-cleanup-sites/Rayonier-Mill-cleanup
[12] https://fortress.wa.gov/ecy/gsp/docviewer.ashx?did=2203

Response to the Public's Topics of Concern

Ecology appreciates the time people took to submit their thoughtful comments during the comment period. We carefully considered each comment and tried to provide a complete and comprehensive response to the concerns expressed.

The goal of our responses is to assist the public's understanding of the contaminant conditions in the Study Area and the cleanup alternatives that were developed based on those conditions. At this stage in the cleanup process, Ecology has not proposed the cleanup actions for cleanup of soil, groundwater, or sediment.

We consolidated our responses into major topics of concerns in the comments we received.

Major topics of concern.

1. Cleanup is taking too long.
2. Hold Rayonier accountable.
3. Anything less than full removal of contamination is not protective of human health and the environment.
4. Want full removal of contaminated soil.
5. Want full removal of contaminated sediment.
6. Full removal of contaminants is necessary to safeguard against effects of climate change and natural events.
7. Cleanup levels and possible future mixed uses of the mill property.
8. Anything less than full removal of contamination discourages future buyers.
9. Proposed remedies should not rely on institutional controls.
10. Proposed remedies should not rely on long-term monitoring.
11. Give permanent solutions the highest priority.
12. Concerns about the disproportionate cost analysis.
13. Consider alternative cleanup methods.
14. Groundwater needs chemical treatment to remove/break down contaminants.
15. Removal of the dock, jetty, and creosote pilings, and recontouring of the shoreline.
16. Ennis Creek restoration.
17. When the plant was operating, an employee observed an area with a heavy smell of flammable fumes and the ground was black and oily.

1. Cleanup is taking too long

Several commenters shared their concerns about the slow pace of the cleanup process at the former Rayonier Mill. The Rayonier Mill closed years ago in 1997, and the community feels frustrated that the property has sat idle for a long time and that the cleanup has not been completed.

Response

Ecology acknowledges that the cleanup has progressed slowly. Like the Port Angeles community, we are eager to complete planning and to start actively doing cleanup. We want to complete the cleanup to protect human health and the environment so the land can be returned to productive use.

The Rayonier Mill cleanup is a complex project. Several factors affect the pace of the cleanup:

- Contamination of soil, groundwater, and sediment.
- Coordination of three projects: the cleanup, the restoration for natural resource damages, and removal of in-water structures.
- Revision of the sediment cleanup rules during the investigation required additional studies to fill data gaps.

Three media — soil, groundwater, and sediment — are contaminated. A different cleanup alternative is required for each one. Coordinating cleanup of the different media adds complexity and time for planning cleanup.

Rayonier is looking to address all their environmental liabilities, including natural resource damages through the Natural Resource Damage Assessment[13] (NRDA) process. Separate from the MTCA cleanup, the settlement of NRDA claims could involve habitat restoration within the Study Area, such as restoring habitat at Ennis Creek. Cleanup will ensure the area around Ennis Creek is clean so that the creek can be restored to a more natural, meandering pathway and opening to the harbor. There are benefits of doing creek restoration and upland cleanup at the same time – which adds complexity in coordinating cleanup.

In addition, we anticipate that Rayonier will remove the large in-water structures (mill dock and jetty) and recontour the shoreline as part of its obligations under the aquatic lands lease agreement with the Washington State Department of Natural Resources[14] (DNR). The DJS Project is not part of Ecology's MTCA cleanup, but the construction required to remove these

[13] https://ecology.wa.gov/Spills-Cleanup/Contamination-cleanup/Cleanup-sites/Toxic-cleanup-sites/Puget-Sound/Port-Angeles-Harbor/Port-Angeles-Harbor-NRDA/NRDA-site-overview
[14] https://www.dnr.wa.gov

structures and access the shoreline will affect contaminated sediment nearby. Coordinating the DJS Project with the cleanup adds complexity and takes time.

In 2013, Ecology revised the statewide rule (Sediment Management Standards, WAC 173-204[15]) and guidance (Sediment Cleanup User's Manual[16]) for cleanup of contaminated sediment. Based on the rule revisions, we needed to collect additional information to address gaps in our understanding of the sediment contamination near the former mill. This information was also needed to determine appropriate background levels of contamination in the sediment.

In 2016, Ecology completed a study of background contaminant levels[17] in marine sediments of the North Olympic Peninsula. Wide-spread, non-point sources of contamination, like vehicle emissions and urban stormwater runoff, contribute to contamination in our harbors. This is called the "regional background concentration." If an area is cleaned up so that it is cleaner than the region's background concentration, it will likely return to that background level quickly. Because it is impossible to maintain a site that has been cleaned up to less than the regional background concentration, the regional background concentration becomes the cleanup goal. The regional background varies from place to place, so we needed to survey sediment conditions in Port Angeles Harbor and other bays.

Once we learned the background levels of sediment contamination around the former mill, we could set the sediment cleanup levels that were a key component of completing draft Volumes II and III. We want to be thorough in setting sediment cleanup levels that will protect human health and the state's valuable natural fish and shellfish resources.

Realistically, the cleanup will still take a number of years due to the time it takes to design and construct the soil, groundwater, and sediment remedies and, obtain permits. All in-water work must be coordinated with tides and the "work window." In-water work is not permitted during the early spring to early summer "fish window" that is set aside to protect fish, such as migrating juvenile salmon. The work window in Port Angeles Harbor is from about mid-July to mid-February, increasing the number of construction seasons it will take to complete any in-water work.

2. Hold Rayonier accountable

Many commenters expressed concern that Ecology should hold Rayonier accountable for the cleanup. People see Rayonier as having profited from the mill for many years and think that the company is obligated to pay for the cleanup. Comments expressed concern that citizens will end up paying for the cleanup, either with taxpayer money or by having a contaminated place

[15] https://apps.leg.wa.gov/wac/default.aspx?cite=173-204
[16] https://fortress.wa.gov/ecy/publications/documents/1209057.pdf
[17] https://fortress.wa.gov/ecy/publications/documents/1609142.pdf

left behind in the community. There was also concern about who will pay for monitoring and maintenance if Rayonier ceases to exist.

Response

Ecology is holding Rayonier accountable for the cleanup under the state's cleanup law (MTCA). We have the authority to ensure that Rayonier completes the cleanup to protect human health and the environment. We named Rayonier a potentially liable person (PLP), a legal term used in MTCA, for the contamination resulting from the operation of the former mill. Rayonier paid for the contamination investigation under a legal agreement with Ecology. Rayonier will pay to implement the cleanup under another legal agreement.

MTCA has provisions for financial assurance. At a site using an engineered containment system, like a cap, or institutional controls, Ecology may require the PLP to post a bond or other financial instrument that guarantees the maintenance of the containment system. The amount of the guarantee is enough to cover costs associated with the operation and maintenance of the cleanup action, including institutional controls, compliance monitoring, and corrective measures as long as contamination remains at the site.

3. Anything less than full removal of contamination is not protective of human health and the environment

Many comments expressed concern that leaving any contamination at the Rayonier Mill Study Area could harm people and the environment. There were concerns that any contamination left in the soil or sediment will continue to do damage to the shoreline, water, sea life, wildlife, and the people of Port Angeles.

Response

We appreciate the community's concern about leaving contamination at the Rayonier Study Area. We are committed to using cost effective permanent solutions to the maximum extent. We will carefully consider the best options for remediation when selecting the proposed cleanup action for the Study Area.

All the cleanup alternatives evaluated in Volume III protect human health and the environment. To ensure this protection, MTCA requires that all cleanups must meet all the following requirements:

- **Protect human health and the environment.**
- **Comply with cleanup standards.**
- **Comply with applicable state and federal laws.**
- **Provide for compliance monitoring.**

- **Use permanent solutions to the maximum extent practicable.**
  A practicable remedy is one that can be designed, constructed, and implemented in a reliable and effective way, including consideration of cost. Ecology is not required to pick the cheapest alternative, but we are required to consider whether an alternative is disproportionately more expensive compared to other alternatives of equal benefit.
- **Provide for a reasonable restoration time period.**
- **Consider public concerns.**
  We've heard the public's concern through comments and we are considering these concerns in the process of following MTCA's requirements.

All the soil cleanup alternatives meet these MTCA requirements and are protective of human health and the environment. Rayonier has already removed approximately 30,000 tons of the most contaminated soil. The remaining contaminated soil has fairly low amounts of contaminants, and it is not threatening to contaminate groundwater. The containment alternatives for soil contamination (SL-1, SL-2, SL-3) either cap the soil in place, or consolidate the soil into a smaller footprint, then cap it. The cap, about a 2-foot thick layer of clean soil, protects humans and wildlife by providing a physical barrier. Institutional controls will be required to protect the cap and to let future users of the property know that contaminated soil is beneath the cap.

All the groundwater cleanup alternatives meet the MTCA requirements. The alternatives treat contaminated groundwater so it will meet MTCA levels prior to entering the marine waters – protecting marine water and sediments.

All the sediment cleanup alternatives also meet the MTCA requirements and are protective of human health and aquatic life. A sediment cap provides a surface of clean sediments for animals to live on or burrow in. Enhanced natural recovery reduces the surface sediment contaminant concentration to safe levels for animals to live on or burrow in.

At this stage in the cleanup process, we have not selected the cleanup actions from among the alternatives described in Volume III. We are considering the alternatives and looking at public concerns before we select the proposed cleanup actions for soil, groundwater, and sediment. Once the actions are selected, we will issue for public comment a draft interim action plan describing the proposed cleanup actions. Although we name the cleanup plan for the Study Area an "interim plan," it will not be a temporary cleanup plan. The "interim" cleanup plan for the Study Area will be the final cleanup plan for the Study Area.

4. Want full removal of contaminated soil

Many comments expressed concerns about contaminated soil being left at Rayonier. Some comments suggested that a landfill or a brownfield would be created if contaminated soil were

left behind in the upland, stifling redevelopment of the property. There was concern about what would happen to the Discovery Trail during cleanup. Comments called for the removal of as much of the contamination as possible, using more aggressive methods than long-term containment.

Response

All the soil alternatives can be designed to support property redevelopment, including the containment alternatives. Containment does not leave the site a brownfield. Future redevelopment, consistent with local zoning, can proceed with engineering designs that account for capping the contaminated soil. For example, a mixed-use development with office buildings and parking lot can be designed to function as a cap on the contaminated soil.

Cleanup at the Asarco Superfund Site in Tacoma is an example of development on top of contaminated soil where the development structures function as the cap. The development includes residential units, shops, restaurants, and offices, which are designed to prevent contact with the contaminated soil.

Rayonier already removed the most contaminated soil for off-site disposal. Interim cleanup actions to remediate the hot spot areas of heaviest soil contamination started in the 1990s and continued through the 2010s. These actions removed a significant amount of contaminants from the upland area. Approximately 29,410 tons of contaminated soil/sediment and 2,700 cubic yards of contaminated wood waste were removed and disposed of off-site.

None of the soil was so contaminated that it was considered a hazardous waste. To determine appropriate disposal options, tests were run to determine if the soil was hazardous waste. Test results showed the soil did not classify as hazardous waste.

Several interim cleanup actions were completed in the upland Study Area.

- Finishing room/Ennis Creek (1991 to 2002) removed 10,150 tons of soil/sediment.
- Former fuel oil tank 2 (1993-2002) removed 5,400 tons of soil.
- Hog fuel pile (2001) removed 2,700 cubic yards of wood waste.
- Spent sulfite liquor lagoon (2001) removed 4,800 tons of soil.
- Former machine shop (2002) removed 970 tons of soil.
- Former fuel oil tank 1 and wood mill (2006) removed 7,980 tons of soil.
- City's combined sewer overflow project (2012 to 2013) removed approximately 110 tons of soil.

The remaining soil contamination in the upland part of the Study Area is widespread at low concentrations. The contaminant concentrations are above the unrestricted use cleanup levels.

And only a few contaminants – arsenic, lead, dioxins, and petroleum – are above the industrial use cleanup levels.

Industrial use soil cleanup levels are based on the protection of adult workers on the property during the work week, without much soil contact. Unrestricted use soil cleanup levels protect for *all* uses, including residential use and parks. Unrestricted use soil cleanup levels protect adults and children that may be on the property every day all year long, so we sometimes call them residential use cleanup levels. Unrestricted use soil cleanup levels are the most protective. As an example, for dioxin the unrestricted use soil cleanup level is 13 parts per trillion. The industrial use soil cleanup level is 1700 parts per trillion. One part per trillion is a very small number, try imagining 1 second in about 32,000 (actually 31,709) years.

The containment alternatives (SL-1, SL-2, SL-3) that cap contaminated soil in place, or consolidate and cap contaminated soil are not creating a landfill. The Solid Waste Handling Standards, WAC 173-350,[18] provides standards for the handling of solid waste including the use of landfills. This regulation defines a landfill as a disposal facility or part of a facility at which solid waste is permanently placed in or on land. This includes facilities that use solid waste as a component of fill. Contaminated soil is defined as solid waste. However, this regulation also specifically does not apply to the management of contaminated soils at cleanup sites. Therefore we do not consider containment of contaminated soils to be a landfill.

In addition, a capped area would not be constructed like a typical landfill. Landfills are designed to handle the movement of substances like gases and leachate out of the landfill. Leachate is the liquid that drains from a landfill and usually contains both dissolved and suspended material picked up as it drained through the buried material in the landfill. Landfill caps usually require collection pipes for venting of gases and collection of drainage water and treatment of leachate. These control devices are not required for options that consolidate and cover soil at Rayonier. The soil contamination is not a concern for contamination of groundwater. Instead, the soil cap forms a barrier, stabilizes the soil, and keeps people and wildlife from coming into contact with the contaminated soil and tracking it offsite.

During cleanup, it is possible that the Discovery Trail near the former mill will be temporarily closed. The appropriate authorities will make these types of decisions based on public safety considerations.

The public recognizes the Rayonier property provides a unique opportunity for a variety of future shoreline uses. The Port Angeles' Shoreline Management Plan designated the shoreline west of Ennis Creek at the former mill as High Intensity Mixed Use. All the alternatives will protect the shoreline west of Ennis Creek against adverse environmental effects and would not

[18] https://apps.leg.wa.gov/wac/default.aspx?cite=173-350

prevent using the upland and shoreline for a variety of uses including commercial, transportation, and recreational.

The shoreline east of Ennis Creek is designated Urban Conservancy – Recreation. All the alternatives will protect the shoreline east of Ennis Creek against adverse environmental effects and would not prevent using the upland and shoreline for uses including commercial, transportation, and recreational, consistent with the Urban Conservancy – Recreation designation.

5. Want full removal of contaminated sediment

Many comments expressed concerns about cleanup alternatives that left contamination in sediment, particularly in areas near the shoreline, mill dock, jetty, and in the log pond. Comments suggested complete removal of contaminated sediment was the only permanent solution.

Response

We share concerns about the potential effects of sediment contamination on people and aquatic life. We also recognize that the health of Port Angeles Harbor is a bigger issue than the Rayonier Study Area cleanup.

Since the mill was dismantled, material settling out from Rayonier smokestacks and outfalls is no longer a source of sediment contamination. All the upland cleanup alternatives are intended to stop contamination from moving to the marine waters and sediment. Contaminated soil will either be capped or excavated, preventing erosion of contaminated soil. Groundwater will be treated to reduce contaminants before reaching the marine waters and sediment.

The sediment cleanup alternatives are conceptual at this stage. The cleanup alternative will be described in the draft interim action plan, and it will be available for public review and comment before the plan is finalized. After the cleanup remedy is selected, more work will be needed to design and prepare pre-construction engineering plans. Whichever sediment remedy is selected, the engineering design will collect and include sufficient information for the development of construction plans.

The sediment cleanup alternatives in Volume III differ from one another in the combination of methods used to address contamination in the log pond, dock landing, mill dock, and the ship berths next to the dock that were dredged for ship access. The sediment cleanup methods include dredging/excavating, capping, filling, and applying enhanced natural recovery (ENR) to the sediment surface. All of the alternatives are considered protective of human health and the environment, and meet the requirements of MTCA and SMS.

Remedies that include a sediment cap and/or ENR require monitoring to verify the remedy remains effective over time. When functioning properly, a sediment cap protects against

exposure to contaminants like dioxin by creating a barrier between the contamination and humans, aquatic animals, or plants.

The ENR places a 6-inch layer of clean sand or gravel on top of contaminated sediments to jump-start the natural recovery process that occurs through the natural deposition of cleaner material. The clean sand layer mixes into the sediment reducing the levels of contamination in the surface sediment. If monitoring shows that the cap or ENR remedies are not effective, it will trigger additional cleanup actions.

Dredged/excavated material moved onto the upland will be handled so contamination will not leach back into the groundwater.

Throughout the cleanup process at Rayonier, the Lower Elwha Klallam Tribe has regularly discussed their concerns with us about the sediment contamination and all aspects of the cleanup. As described in our 1999 Deferral Agreement with the Tribe, we are dedicated to continue regular consultations with the Tribe and keep them informed about the cleanup process, particularly regarding cleanup of sediment in the log pond, under the mill dock, and shoreline areas.

Comments expressed the hope for future harvest of fish and shellfish from Port Angeles Harbor. Remediation of contaminated sediment and groundwater should improve water quality and habitat conditions near the former Rayonier Mill. But it is a challenge to link the Rayonier cleanup to future health advisories about seafood harvested from the harbor. The Washington Department of Health (DOH) determines and publicizes health advisories for harvest of marine life in Port Angeles Harbor and vicinity. Movement of some marine life may expose it to environments away from the former mill. The DOH health advisories consider conditions like water quality, bacteria, algal blooms, and accumulation of contaminants within harvested animals. Please consult the DOH website[19] for information on health advisories and to be kept up to date regarding healthy actions and consumption of seafood from Port Angeles Harbor.

6. Full removal of contaminants is necessary to safeguard against effects of climate change and natural events

Comments expressed concern that climate change, with associated sea level rise and increasing extreme weather, poses significant risk to remedies that contain contaminated soil and cover contaminated sediment at Rayonier. There were concerns that a cap could become unstable and wash away, increasing exposure of people and the environment to contamination. Natural events, such as earthquake and tsunami, could disrupt the location of contaminants and spread it around the area.

[19]https://www.doh.wa.gov/DataandStatisticalReports/HealthDataVisualization/MobileFishAdvisoriesMarineAreasMap

Response

We recognize that our ability to prepare for the impacts of climate change is critical. Cleanup sites such as Rayonier could be vulnerable to changing conditions from climate change. It is located along a marine shoreline with historically filled areas. Sea level rise, currents, wind and wave action, and extreme storm events could affect the cleanup remedy.

Planning for resiliency to climate change was an important part of developing the cleanup alternatives and this will continue in the remedy design phase. By improving the resilience of our cleanup remedies to climate impacts, we help ensure our efforts are effective in the long-term. Sediment cleanup alternatives that include capping or ENR must consider the type of material used to make sure it stays in place during major storm events. The choice of the correct size/weight of material is crucial to its success as a sediment remedy. To address these issues, hydrographic surveys, water current studies, and wave modeling were studied and summarized in Volume III. The studies showed coarse sand would remain in the remediation area for the long term following dock and jetty removal and under conditions of a 100-year storm.

Sea level rise will be factored into the DJS Project design. The DJS Project involves removing the dock and jetty and recontouring the shoreline. The shoreline will be recontoured to protect for erosion from sea level rise.

MTCA requires considering the permanence of cleanup options, including how the cleanup will withstand natural disasters. An earthquake and tsunami could substantially affect land elevation and flooding. We will work with Rayonier to design the different parts of the cleanup. We will require consideration of potential natural disasters and their impacts during the detailed design phase of the cleanup action.

Ecology has guidance on strategies to increase resilience of cleanup sites to climate change.[20] This guidance identifies site-specific climate change vulnerabilities and suggests ways to increase resilience in the cleanup process.

To learn more about how Ecology works with state and federal partners to coordinate improvements and leverage resources to better support communities from hazards, visit our shoreline and coastal management earthquake and tsunami webpage.[21]

7. Cleanup levels and possible future mixed uses of the mill property

Comments expressed concern that cleanup levels and remediation levels might affect options for future uses of the former Rayonier Mill property. There are expectations for future use of the land that might include multiple and mixed-use options, such as open green area, a nature

[20] https://fortress.wa.gov/ecy/publications/documents/1709052.pdf
[21] https://ecology.wa.gov/Water-Shorelines/Shoreline-coastal-management/Hazards/Earthquakes-tsunamis

center, retail, and recreation and community activities. Comments supported unrestricted use (residential) cleanup levels.

Response

We recognize that many in the Port Angeles community are eager to see the area of the former mill dedicated to new purposes. The cleanup alternatives all allow for development of the property. Buildings can be built on consolidated and capped contaminated soil, and open recreational areas can be developed.

Under MTCA, we consider the site's current uses, projected future uses, and local zoning designations in determining appropriate soil cleanup levels. We do not direct future land use at a site through the cleanup process.

The City of Port Angeles has land use jurisdiction over the property. Most of the former mill's upland area is zoned industrial, but it is not being used that way. Although the future use is not determined, there is a likelihood that it will not be industrial, but some other mixed use.

Most of the upland area is privately owned by Rayonier. Unless circumstances change in the future, the public cannot access the land without consent of the owner.

MTCA requires that we establish cleanup levels that protect human health and the environment. When contamination at a site is above the cleanup level, some cleanup action is needed. The cleanup action can be an active remedy like excavation or capping, and may include, for some areas, institutional controls like fencing and signs.

We set cleanup levels using science about how the contaminant affects humans and other living things. For soil cleanup levels, we protect for contamination getting into groundwater, and for humans, plants, and animals contacting the soil. Contacting the soil includes both ingesting small amounts of soil during work or play, and touching the soil with your skin. We select the most protective level for a soil cleanup level. Volume III proposed preliminary soil cleanup levels. For most contaminants, the most protective level protects humans contacting the soil.

For humans contacting the soil, we look at how the land will be used. We consider industrial use and unrestricted use. Industrial use soil cleanup levels are based on the protection of adult workers on the property during the work week, without much soil contact.

Unrestricted use soil cleanup levels protect for *all* uses, including residential use and parks. Unrestricted use soil cleanup levels protect adults and children that may be on the property every day all year long, so we sometimes call them residential use cleanup levels. Unrestricted use soil cleanup levels are the most protective. As an example, for dioxin the unrestricted use soil cleanup level is 13 parts per trillion. The industrial use soil cleanup level is 1700 parts per trillion. One part per trillion is a very small number, try imagining 1 second in about 32,000 (actually 31,709) years.

Most of the soil contamination that remains at Rayonier is widely dispersed in the upland Study Area, but at low concentrations. Several contaminants have concentrations above the unrestricted use cleanup levels, but less than the industrial use cleanup levels. A few contaminants (arsenic, lead, dioxins, and petroleum) are also above the industrial cleanup levels (see Table 2). For comparison, Table 2 shows the maximum detected concentrations of contaminants in the Study Area compared to the contaminant concentration of the industrial use and unrestricted use (residential) cleanup levels.

Table 2. The maximum detected concentrations of contaminants found in the Study Area and the unrestricted (residential) use and industrial use cleanup levels. Concentrations are shown in parts per million (mg/kg).

Contaminant	Maximum Detected (mg/kg)	Industrial Use Cleanup Level (mg/kg)	Unrestricted Use Cleanup Level (mg/kg)
Arsenic	260**	88	20
Iron	264,000*	2,500,000	56,000
Lead	8,610**	1000	250
Zinc	2,940*	1,100,000	302
Thallium	7*	35	0.8
cPAHs	4.94*	18	1
Pentachlorophenol	15*	328	2.5
Dioxin	0.00305**	0.0017	0.000013
PCBs - Total	4.8*	65.6	0.5
TPH – Diesel range	39,000**	2000	200
TPH – Heavy oil range	25,000**	2000	2,000

*Exceeds unrestricted use cleanup level

**Exceeds both unrestricted and industrial use cleanup levels

Two of the soil cleanup alternatives (SL-2 and SL-4) would use remediation levels in their design. Remediation levels are not cleanup levels: they are breakpoints used to identify where we'll switch from one cleanup method to another. For instance, if soil is highly contaminated it might be removed; if it is only slightly contaminated it might be left in place. The remediation level is where we draw the line between those methods. The remediation level may be set based on technology, risk, cost, or other factors.

Volume III considered remediation levels based on risk. The remediation levels were set to protect for occasional visitors. This is less protective than the unrestricted use cleanup level, but more protective than the industrial use cleanup level.

Alternative SL-2 or SL-4 would result in a smaller area of active soil remediation than the other alternatives that do not use a remediation level. For example, for alternatives using a remediation level, Rayonier would consolidate and cap soils with contaminant concentrations above the remediation level. Soils below the remediation level but above the unrestricted use soil cleanup level would remain in place. Any cleanup that uses remediation levels will also have institutional controls. Institutional controls help protect people by making sure the land is used in a way that is consistent with the cleanup and remediation levels.

Once we propose the cleanup action in the draft interim action plan, the public will have the opportunity to comment on the plan.

8. Anything less than full removal of contamination discourages future buyers

Comments expressed the view that removal of all contaminants is the only way a buyer would be interested in purchasing the Rayonier Mill property. There were suggestions that a buyer would have to take responsibility for long-term monitoring and other cleanup responsibilities at the site. If all the contamination was removed, the sale of the property would have fewer liability risks and ongoing costs for the new owner.

Response

A cleanup that leaves some contamination properly contained on the property does not limit future use or development of the site. As long as development of the site does not interfere with the integrity of the cleanup, like damaging a cap, then the property can be developed with approval from Ecology. There is continued responsibility for monitoring to ensure the remedy is performing as expected.

Ecology is not involved in the possible sale of property. It may be true that if all contamination above cleanup levels was removed from the former mill site, the sale of the property might have fewer liability risks and perhaps less monitoring costs for a new owner. We can't know what financial arrangements might make sense to a potential buyer.

9. Proposed remedies should not rely on institutional controls

We received several comments that the proposed remedies depend too much on institutional controls. Some comments expressed that institutional controls cannot be relied upon to maintain the cleanup over the years. Others mentioned that institutional controls rely on controlling people's behavior, but do nothing to treat or remove the contamination. Comments asserted that institutional controls do not protect wildlife from contaminant exposure because wildlife can move freely across the site.

Comments expressed the concern that institutional controls should not block future public access or use and should in no way limit tribal treaty rights or other tribal cultural uses or activities. There was a concern that cleanup alternatives requiring institutional controls could potentially affect future uses of state-owned aquatic lands, including shellfish harvest and recreational access.

Response

Institutional controls limit or prohibit activities that may interfere with the integrity of a cleanup, resulting in exposure to the contamination. Institutional controls include the following items:

- Physical measures like fences.
- Restrictions which limit the use of the property.
- Maintenance requirements for engineered controls.
- Educational programs, such as signs and postings.
- Financial assurances, such as bonds to ensure there are sufficient funds available to cover the costs of long-term monitoring and maintenance.

We agree that institutional controls alone are not a cleanup. MTCA states that cleanup actions shall not rely primarily on institutional controls where it is technically possible to do a more permanent cleanup for all or a portion of the site. All of the cleanup alternatives evaluated in Volume III include more permanent cleanup actions, such as excavation or capping, and do not rely on just institutional controls.

Interim actions in the 1990s through the 2010s removed hot spots of contamination in soil and sediment. The remaining soil contamination is widespread in the upland part of the Study Area at low levels of concentration. The contaminated soil is not a hazardous waste. Alternatives that completely remove contaminated soil and sediment may eliminate the need for institutional controls. But it is prohibitively expensive to remove and replace the large volume of contaminated soil and sediment.

Any engineered remedy that leaves contamination at the site above state cleanup levels will have institutional controls protecting human health and the environment, and the integrity of the cleanup. Appropriate administrative and legal institutional controls are a carefully considered part of remedial designs.

At Rayonier, soil cleanup alternatives that include capping contaminated soil would require institutional controls. The controls would include an environmental covenant that the property owner files with the county assessor and becomes legally attached to the property. The

covenant informs future property owners about contamination under the cap. The owner must contact Ecology for review and approval of any plans to develop on or to alter the cap.

A soil cap and environmental covenant would not prevent development of the property. Working with Ecology, the developer can design the development to protect the cap, or modify the cap including use of development structures (like a parking lot) as the cap. The Point Ruston development at the Asarco Superfund Site in Tacoma is a successful development over consolidated and capped contamination. Institutional controls at the former Asarco site protect the integrity of the cap. In this case, the cap design and development plans allowed for construction in such a way that it did not damage the cap.

Anytime there is an environmental covenant and contamination left at a site, we inspect the site about every five years to ensure the remedy continues to protect people and the environment. We make the periodic review available for public review and comment.

Institutional controls, such as fencing and signage, would not limit public or tribal access to the shoreline. Any institutional controls we consider will be consistent with the exercise of Tribal treaty rights and developed in consultation with the Lower Elwha Klallam Tribe.

Because institutional controls may prohibit certain activities and uses at Rayonier, we will discuss any necessary restrictions with the local land use planning staff. This discussion aims to prevent or avoid problems that can arise when contaminated sites are used in ways that are not compatible with the cleanup. We will coordinate with tribal and local government agencies and consult with the local community throughout the cleanup process. Maintaining any required institutional controls is crucial for long-term effectiveness of the cleanup and protection from residual contamination.

10. Proposed remedies should not rely on long-term monitoring

Comments expressed the opinion that the proposed remedies should not rely on long-term monitoring. There is concern that metals will be on the site forever and that it might not be possible to monitor the site indefinitely.

Monitoring requires a long-term commitment and comments relayed concerns about the cost and management of long-term monitoring. Complete removal and cleanup now would eliminate the cost of maintenance, long-term monitoring, and liability.

Response

We agree that long-term monitoring is essential for cleanup alternatives designed to leave contamination at Rayonier. Long-term monitoring is a check on whether the cleanup continues to protect human health and the environment from exposure to contamination. If contamination remains at the former mill, Rayonier will file an environmental covenant and must provide financial assurance ensuring sufficient funds are available to cover the costs of

long-term monitoring. If long-term monitoring shows cleanup standards are not met, this triggers more remedial actions until conditions are in compliance. Rayonier remains responsible for any additional remediation, if required.

Alternatives that completely remove contaminated soil and sediment eliminate the need for long-term monitoring. But it is prohibitively expensive to remove and replace this large volume of soil and sediment. The soil contamination in the upland area is widespread, though it is at low concentrations.

Methods for destroying the contamination without removing the soil or sediment only work on specific types of contamination. For example, high temperature combustion may destroy dioxins, but combustion will not eliminate metals, which would require additional treatment to remove them. Contaminants like metals and dioxins do not move in the soil or sediment because they tend to stick to soil particles. Containing the contaminated soil or sediment at the site in a manner that safeguards humans and the environment can be more cost effective than removing and replacing the soil. This may be true even when taking account of the added expense of long-term monitoring.

11. Give permanent solutions the highest priority

Several comments emphasized the importance of considering permanent solutions and supported a complete cleanup for the benefit of future generations. Comments observed that permanent solutions were best for a successful cleanup because if non-permanent solutions were used there will be unanticipated costs for more cleanup later on. There was a concern about people not wanting to be exposed to dioxins, arsenic, lead, and other toxins that endanger lives for decades to come.

Response

All the alternatives block exposure to hazardous substances and protect people and the environment. Volume III evaluated a range of cleanup alternatives for cleanup of soil, groundwater, and sediment. MTCA has a preference for permanent cleanup solutions to the maximum extent practicable. Practicable means we must consider the cost of the remedy. Some alternatives are more permanent than others, for example, complete removal. As a result, these alternatives are given higher benefit scores. But the cost of complete removal of all contaminated soil and sediment to an offsite location is substantial and disproportionate to the incremental benefit of doing this.

If a soil cap or sediment cap is part of the selected remedy, it will keep humans, plants, and animals from being exposed to contamination. It will be designed to be stable for future climatic changes, including sea level rise and increased storm surge. Engineering designs for remedies will consider natural disasters, such as earthquakes.

Once cleanup is completed, the site will be monitored, and the community will not be exposed to toxins from the former Rayonier Mill in the future. Anytime contamination above state cleanup levels remains at a site, an environmental covenant is recorded on the property. The liable party must maintain the cleanup. We will inspect and review the cleanup about every five years to ensure it continues to protect human health and the environment. Each review will be available for public review and comment.

12. Concerns about the disproportionate cost analysis

Some comments expressed concern about the value of benefits and costs in the disproportionate cost analysis (DCA). In particular, the benefits of remedial alternatives did not consider the high value of salmon and orcas and the other animals they depend upon for food. Another comment expressed concern about costs of clean raw materials needed for cleanup, such as sand, that might not have been anticipated in the DCA.

Response

Ecology has not selected the final remedy at this stage in the cleanup process. When Ecology accepts the draft Feasibility Study (Volume III), it means there is enough information compiled to select the remedial action, and not that we necessarily agree with all evaluations and conclusions in the report.

Under MTCA, when selecting a remedy, preference is given to those alternatives that are permanent to the maximum extent practicable. A practicable remedy is one that can be designed, constructed, and implemented in a reliable and effective manner including consideration of cost. The DCA is a way to compare cleanup alternatives on the basis of costs and benefits. Ecology is not required to pick the least expensive alternative, but to consider alternatives that are not disproportionately more expensive compared to other alternatives of similar benefit.

The total benefit of each alternative is compared with the estimated cost of each alternative. The value of benefits and the estimate of costs are based on reasonable assumptions and professional judgement, standard practices, and experience. Uncertainty in estimated costs may be as much as -30% to +50%, as outlined in EPA's guidance for developing cost estimates.[22] At the stage of the feasibility study, the cost is considered to be an "order-of-magnitude" estimate. Purchase and delivery of required materials, such as clean sand, are an anticipated cost and included with other assumptions of cost.

One criteria ranked in the DCA is protectiveness of human health and the environment. By protecting the wildlife and animals that live on and in the sediment, it also protects highly migratory animals that might move through the area like orca and salmon. The creatures that

[22] https://semspub.epa.gov/work/HQ/174890.pdf

live on and in the sediment are exposed their whole lives. Anything that protects them will also protect migratory animals.

Consideration of public concerns is another criteria used in the DCA. In the draft Feasibility Study (Volume III), public concerns were ranked equally among the cleanup alternatives. It is clear from the public comments we received that leaving behind contaminated soil and sediment after remediation is a public concern. When finalizing the Feasibility Study, the DCA will be updated with higher public concern scores for alternatives that remove more contamination. We will consider the results of the DCA when selecting the cleanup actions for the draft interim action plan.

The public will have an opportunity to comment on the draft interim action plan before it is finalized.

13. Consider alternative cleanup methods

Comments suggested we should consider other treatment technologies than those presented in Volume III. Some comments mentioned thermal desorption (using heat to remove contaminants) to treat PCBs, or burning toxic material in place. Other comments mentioned biological or chemical treatment, metal extraction, and pump and treat methods to break down contaminants. Mycoremediation, or digestion by fungus, was suggested as an alternative method to treat hydrocarbon contamination in the soil.

Response

We must use methods to achieve cleanup goals that are proven, reliable, and effective for site-specific conditions. The technology screening process examined several of the alternative methods suggested in the comments. But the alternative methods were rejected from final consideration because they did not meet three important criteria:

- Reliable and proven effectiveness in conditions similar to the Study Area.
- Applicable to site-specific conditions.
- Implementable within a reasonable time period.

The soil contamination is widespread in the upland part of the Study Area at low levels of concentration. The contaminants are a mixture of substances, and this situation does not lend itself well to in-situ treatment. A method that effectively treats one type of contaminant will not satisfactorily treat another type. For example, fungus treatment technology may work for digesting petroleum hydrocarbon contamination in soil. But this method is not effective for removal of dioxins or metals. It is technically difficult to effectively combine several treatments, each tailored to remove one type of contaminant.

The upland soil is not uniform. There is an assortment of structures and foundations buried in the area to be cleaned up. These structures make it difficult to apply in-situ treatment. In situ

treatment is treating the soil in place. In-situ treatment would not meet the cleanup objectives for the sizeable soil remediation area at Rayonier.

Dioxin is widespread in upland soil, limiting the effectiveness of in-situ treatments for soil. There is no proven practicable in-situ treatment option available for treating dioxin in large volumes of contaminated soil.

Many treatment technologies are more cost effective when used on more highly contaminated soil than is present in the upland. Rayonier removed many hotspots of highly contaminated soil in earlier interim actions. Some of these soils were treated prior to disposal.

All the soil alternatives involve treatment technologies that are suited to site specific conditions.

14. Groundwater needs chemical treatment to remove/break down contaminants

Some comments suggested that groundwater should be cleaned with in-situ chemical treatment or a combination of methods to achieve the most protective and permanent solution. There was a concern that without treatment of groundwater, leaching and groundwater movement will pull toxins into the harbor.

Comments recommend a conservative approach for the design of both the initial and expanded air sparging system to protect state-owned aquatic lands. A rigorous approach is needed to determine whether the groundwater meets cleanup criteria to protect marine sediment.

Response

We agree that the groundwater should be treated to meet cleanup levels before it reaches the marine environment. Volume III described three in-situ groundwater treatment alternatives. When implemented, all the alternatives will protect human health and the environment. At this stage in the cleanup process, Ecology has not selected the groundwater cleanup alternative. The draft interim action plan will describe our proposed cleanup actions, which will be available for public comment.

Each of the alternatives requires testing during the design phase to ensure the remedy will be effective. Compliance monitoring is a part of each alternative to make sure that the remedy performs up to standards. We will rigorously monitor the selected cleanup alternative. This will ensure that groundwater meets the cleanup level before entering the marine environment, and protect state-owned tidal and subtidal lands in the harbor. If compliance monitoring shows the remedy is no longer effective, then more cleanup will be required.

In the upland Study Area, groundwater moves toward the surface water in the harbor. All the alternatives protect against movement of contaminated groundwater into marine surface

water and sediment in the harbor. The upland groundwater is not suitable for drinking because it mixes with salt water and this condition will continue in the future. An environmental covenant will restrict using groundwater for drinking.

The air sparging alternative (G-1) is an in-situ treatment that does not require use of reactive media or industrial chemicals to remediate the groundwater. In-situ means the groundwater is treated where it is without pumping it to the surface for treatment. Air sparging injects air or other gases into the groundwater. Injection of air into the groundwater increases the rate soil microbes breakdown contaminants. Air sparging with carbon dioxide neutralizes the pH of the groundwater. Neutralizing the groundwater causes the metals to come out of solution in the groundwater and bind with the soil particles. When attached to the soil particles, the metals will tend to become stationary in the soil, rather than moving with the groundwater. The effectiveness of air sparging would be measured and, if needed, more locations added along the shoreline.

The funnel and gate alternative (G-2) includes installing sheet pile walls and gates. The walls guide water to underground gates, where it is treated as it passes through. During the design phase, chemicals for the gate material must be tested to find the combination needed to effectively remove or treat the contaminants. Inserting the funnel and gate system into the ground may be complicated by leftover subsurface structures from the mill.

The active in-situ treatment (G-3) would involve testing different biological or chemical amendments to identify effective groundwater treatments. Rather than addressing the contaminated groundwater at the shoreline, G-3 actively treats the full upland Study Area at many closely spaced injection points. This alternative requires injection of large quantities of amendments into the groundwater. Alternative G-3 is the most permanent of the three remedies. As the most permanent alternative, G3 offers a small benefit over the other alternatives. But the cost to implement alternative G3 is much greater than the small additional benefit expected from treating the groundwater throughout the upland rather than at the shoreline.

15. Removal of the dock, jetty, and creosote pilings, and recontouring the shoreline

Many comments supported the project to remove the mill dock and jetty and to recontour the shoreline. Comments also supported removal of the creosote pilings supporting the dock and jetty.

One comment observed that the dock sheltered wildlife, such as birds and seal pups, from people and dogs because it is off limits to people. The concern is that removal of the dock would eliminate this area for wildlife.

Another comment suggested that best management practices be followed during dredging operations so the organisms at the Feiro Marine Life Center would not be exposed to suspended sediment that might be brought into the aquarium by the seawater intake system.

Response

The former Rayonier Mill dock and jetty are no longer in use. Their condition is fair to poor and repairing them is impractical. The structures are now a safety hazard and removing them will decrease the risk of fire and collapse.

The project to remove the mill dock and jetty and recontour the shoreline is being planned through an agreement between Rayonier and Department of Natural Resources (DNR). The DNR is responsible for management of the state's aquatic lands where these structures are located. The Dock/Jetty/Shoreline (DJS) project is not part of Ecology's MTCA cleanup, but the construction required to remove these structures and reshape the shoreline will affect contaminated sediment near the structures and the shore. Therefore, Ecology is coordinating with Rayonier to remediate the sediment at the same time the DJS project is underway.

We will have oversight of the sediment remediation under a legal agreement with Rayonier. The current agreed order requires an interim action plan for the Study Area referred to as Volume IV. It may be necessary to prepare an interim action plan focused just on the sediments in order to allow the DJS project to move forward on a faster timeline. The interim action plan for the Study Area (Volume IV) will include the sediment plan by reference. We will draft legal agreement(s) (agreed order or consent decree) to implement the draft interim action plan(s). The draft interim action plan(s) and legal agreement(s) will be available for public comment before they are finalized.

We expect that during any dredging/excavating operations best management practices will be followed and sediment will not be unduly suspended. We will pass along the concerns of the Feiro Marine Life Center to Rayonier, so Rayonier will make the aquarium aware when these operations are conducted.

As part of the DJS Project, we anticipate Rayonier will remove the creosote pilings under the dock and supporting the jetty. Creosote was a commonly used wood preservative to treat pilings and docks. Pilings often act as habitat for a variety of sea life and birds, however creosote pilings can be a source of contamination.

Creosote contains PAHs that can pose a threat to human health through ingestion of seafood, exposure to vapors and by direct contact. Creosote can be harmful or even toxic to marine species. The PAHs in creosote may not show immediate health effects, but can have a cumulative effect on some animals.

The removal of creosote pilings from the dock and jetty will remove a PAH contaminant source, essential to prevent long-term impacts from this contaminant persisting in the environment and the food web.

16. Ennis Creek restoration

Many comments supported restoring Ennis Creek fish habitat and advocated for making this a priority for cleanup. Several observed that Ennis Creek could potentially be a significant habitat for spawning and production of salmon, steelhead, and trout. Cleanup of hazardous substances could help recovery of these fish. Comments mentioned that restoration should allow the stream to meander to provide good fish habitat, and not be constrained in its lowest reaches.

A comment said that a thorough cleanup is consistent with the significant investments that have already been made to improve fish habitat in Ennis Creek. These habitat investments include stream restoration projects, construction of stormwater infiltration ponds, and fish passage improvements that have amounted to more than $18.4 million.

Comments advised that contaminated soils above cleanup levels in environmentally sensitive areas around the marine shoreline and the Ennis Creek shoreline should be excavated and disposed of offsite.

Response

Ennis Creek runs through the upland Study Area. We agree the creek is critical fish habitat. A previous interim action removed most of the contamination in the estuary area of Ennis Creek. However, some soils near Ennis Creek are contaminated. Removal of contaminated soil near the creek is a priority for cleanup. All the soil cleanup alternatives described in Volume III include removal of contaminated soil up to 250 feet from the edge of Ennis Creek within a 7-acre area.

Under MTCA, we do not require the removal of structures such as armoring, unless it is needed to achieve cleanup. We do not need to remove the armoring to achieve cleanup. Therefore, we will not require the removal of the armoring under a selected cleanup.

However, the armoring will likely be removed as part of the Natural Resource Damage Assessment[23] (NRDA) process. The NRDA process assesses damages to natural resources resulting from release of hazardous substances, and determines what restoration will compensate for damages. A trustee council of state and federal agencies and tribes oversees the NRDA program. Ecology is on the NRDA Trustee Council for Port Angeles.

The NRDA Trustee Council is working with Rayonier to determine the damages to natural resources. Together they will define the appropriate restoration project, which likely includes restoration of Ennis Creek. Once the council develops and releases a restoration plan, the council will ask for public feedback.

[23] https://ecology.wa.gov/Spills-Cleanup/Contamination-cleanup/Cleanup-sites/Toxic-cleanup-sites/Puget-Sound/Port-Angeles-Harbor/Port-Angeles-Harbor-NRDA

We will ensure that a selected cleanup will remove contaminated soil from around Ennis Creek. The soil cleanup will support the NRDA restoration plan.

17. When the mill was operating, an employee observed an area with a heavy smell of flammable fumes and the ground was black and oily

We received a comment from a former employee who worked in the area east of the fuel tanks, where hog fuel was stored and sawdust was piled. The person observed that the air was heavy with the smell of flammable fumes and the ground was black and oily.

Response

We appreciate learning about conditions at the former mill. These observations give us practical guidance in explaining and locating contaminant releases at the mill.

The areas east of the fuel tanks where the hog fuel was stored were hot spots of petroleum contamination. Rayonier completed interim actions to clean the petroleum-contaminated soil located in these areas in the early 2000s.

- 1993: When fuel tank 2 was dismantled, 1,500 cubic yards of petroleum contaminated soil (Bunker C fuel oil) were removed from underneath where the tank was located. The soil was treated by thermal desorption, and the treated soil was used to backfill the remedial excavation. Following the soil treatment and backfilling activities, Rayonier installed a steam injection and groundwater extraction system to enhance petroleum recovery and continue remediation.
- 2001: 2,700 cubic yards of wood residue containing diesel and heavy oil were excavated from the hog fuel area and transported off-site. The area was backfilled with concrete rubble and clean soil.
- 2002: 5,137 tons of petroleum-contaminated soil were excavated from two areas near the former fuel tank 2 and the hog fuel pile. The soil was disposed of off-site. The excavations were backfilled with concrete rubble and clean soil.

Comments Reference Table

We consolidated our responses to comments into the following the list of major topics of concern.

1. Cleanup is taking too long.
2. Hold Rayonier accountable.
3. Anything less than full removal of contamination is not protective of human health and the environment.
4. Want full removal of contaminated soil.
5. Want full removal of contaminated sediment.
6. Full removal of contaminants is necessary to safeguard against effects of climate change and natural events.
7. Cleanup levels and possible future mixed uses of the mill property.
8. Anything less than full removal of contamination discourages future buyers.
9. Proposed remedies should not rely on institutional controls.
10. Proposed remedies should not rely on long-term monitoring.
11. Give permanent solutions the highest priority.
12. Concerns about the disproportionate cost analysis.
13. Consider alternative cleanup methods.
14. Groundwater needs chemical treatment to remove/break down contaminants.
15. Removal of the dock, jetty, and creosote pilings, and recontouring of the shoreline.
16. Ennis Creek restoration.
17. When the plant was operating, an employee observed an area with a heavy smell of flammable fumes and the ground was black and oily.

The following table lists the commenters, the general topics of their comments, and the page number where the complete comment can be found in this document.

Table 3. List of commenters in alphabetical order, topics of concern, and the page number where the comment can be found in this document.

Commenter	Representing	Topic of Concern	Page number
Aagaard, Ann	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Aegerter, Robert E.	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Ahlburg, Kaj	Self	1, 7	98
Anonymous	Self	7	44
Anonymous	Self	4, 5, 16	61
Anonymous	Self	3, 4, 11	103
Anonymous	Self	4, 5, 14, 15, 16	103
Atkinson, W.	Self	2, 4, 5, 6, 11, 15, 16	59
Bahls, Peter	Northwest Watershed Institute	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Bailey, Elaine	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Baker, Norman T.	Self	2, 4, 5, 6, 11, 15, 16	55
Beardslee, Kurt	Wild Fish Conservancy	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Benson, Linda	League of Women Voters of Clallam County	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Bergstein, Al	The Olympic Peninsula Environmental News	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Blue, Alexis	Self	7	45
Brewer, Gretchen	Port Townsend Air Watchers	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Brewer, John	Self	3, 7, 11	101
Broadhurst, Judith	Self	1, 7	47
Bullen, Laura	Self	4, 5, 15, 16	94
Byrnes, Coleman	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Carpenter, Barbara	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Carter, Josh	Port Gamble S'Klallam Tribe	4, 5, 9, 14, 15, 16	124
Casey, Rob	Self	4	62
Celestino, Lucille	Self	4, 11	91
Chadd, Ed	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65

Commenter	Representing	Topic of Concern	Page number
Chadd, Susan	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	62
Charles, Frances G.	Lower Elwha Klallam Tribe	4, 5, 9, 14, 15, 16	151
Charles, Michael	Self	5, 15	84
Chickman, Sue /Bob Lynette	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Clark, Elizabeth	Self	2, 4, 5, 6, 11, 15, 16	57
Clarke, Bruce	Self	15	48
Clawson, Anna M.	Self	2, 4, 5, 6, 11, 15, 16	59
Clough, Pam	Environment Washington	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Corrado, Anthony	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Cox, Maja	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Cunningham, Colleen	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Darst, Dolores	Self	4, 5, 11	85
deFur, Paul	Environmental Stewardship Concepts, LLC	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	128
Dilworth, Erin	Citizens for a Healthy Bay	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
DiMartino, Terri	Self	4, 5, 7, 8, 11, 15, 16	78
Doherty, Mike	Self	1, 2, 4, 5, 6, 7, 11	101
Dries, Carol	Self	4, 5, 14	100
Dries, James	Self	4, 5, 14	99
Duff, Katherine	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Dunne, Elizabeth	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Eggerth, Rick	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Erickson, Diana	Self	3, 4, 5, 7, 10, 11, 12, 15, 16	88
Feltham, Wendy	Self	4, 5, 15	61
Fischer, Todd	Clallam County Chapter Surfrider Foundation	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Foote, Burton	Self	3, 4	85
Forsman, L. Syrene	Self	2, 3, 4, 5, 14	98
Fuson, Deborah	Self	7	110
Gale, Maradel K.	Self	2, 4, 5, 6, 11, 15, 16	53

Commenter	Representing	Topic of Concern	Page number
Gallant, Connie	Olympic Forest Coalition	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Germain, Carmen	Upper Elwha River Conservation Council	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Germain, Carmen	Self	3, 4, 5, 11	115
Germain, T.	Self	3, 4, 5	99
Goldie, Dr. Beverly & Douglas Goldie, M.A.	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Gresham, Ann	Self	11, 16	87
Hagen, Roger	Self	2, 4, 5, 6, 11, 15, 16	57
Halls, Hansi	Jamestown S'Klallam Tribe	5, 7, 15, 16	155
Hart, Karen	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Hart, Karen	Self	4, 6, 7, 10, 11	95
Hatch, Julie	Self	1, 7	101
Heegyi, Elizabeth	Self	2, 4, 5, 6, 11, 15, 16	57
Hendrickson, Doug	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Hines, Eleanor	North Sound Baykeeper & Lead Scientist	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Hood, Diane	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Imming, Allisa	Self	7	44
Johns, Nancy	Self	7	100
Kailin, Janet	Self	4, 5, 6, 7, 8, 9, 10, 11, 14	91
Kathol, Candace	Self	1, 2, 7	44
Kinn, Katelyn	Puget Soundkeeper	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Koehler, Steve	Protect Peninsula's Future	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Koehler, Steve & Sharle Osborne	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Langley, James Michael	Self	4, 7	103
Leavenworth, Natalie	Self	4	62
Leavenworth, Natalie	Self	2, 4, 5, 11	82
Lipman, Tina	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Long, Karen Marcoux	Self	4, 5	85
Longshore, Betty J.	Self	2, 4, 5, 6, 11, 15, 16	59

Commenter	Representing	Topic of Concern	Page number
López, Paulina	Duwamish River CleanUp Coalition/TAG	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Lowe, Stephen	Self	4, 5	90
Madsen, Greg	Self	4, 5	98
Mantooth, James E.	Self	2, 4, 5, 11, 15, 16	112
Mantooth, Jim and Robbie	Self	4	118
Mantooth, Robbie	Self	12, 16	116
Mantooth, Robbie and Jim	Friends of Ennis Creek	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Mantooth, Robbie and Jim	Self	3, 4, 5, 12, 16	110
Mantooth, Roberta & James Mantooth	Self	2, 4, 7, 8, 9, 11, 12, 16	45
Martin, Patty	Northwest Toxic Communities Coalition	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Martin, Patty	Save Our Soil	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Marx, Janet	Self	3, 4, 5, 14, 15, 16	99
Marx, Janet and Ron	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Mayer, Martha	Self	2, 4, 5, 6, 11, 15, 16	57
McAleer, Colleen	Self	4, 7, 8	100
McAleer, Colleen	Clallam County Economic Development Council	4, 7	140
McCulloch, Thomas H.	Self	2, 4, 5, 6, 11, 15, 16	59
McCulloch, Tom	Self	13, 15	45
McEntire, James	Port Angeles Business Association	7	135
McGuire, Edwin O.	Self	2, 4, 5, 6, 11, 15, 16	59
McMillan, Anita	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	104
Michel, James	Coastal Watershed Institute	6, 11	135
Miller, Barbara	Silver Valley Community Resource Center	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Moore-Lewis, Barbara	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Moreau, Donna	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Murphy, Jenny	Self	5, 7	85
Neugebauer, Whitney	Whale Scout	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65

Commenter	Representing	Topic of Concern	Page number
Nixon, Shirley Waters	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Owens, Charles	Peninsula Citizens for the Protection of Whales	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Ozias, Mark Randy Johnson Bill Peach	Clallam County Board of Commissioners	1, 7	156
Peake, Andy	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Phillips, John	Self	2, 4, 5	91
Phillips, Vera	Self	4, 7	95
Powell, Lynda & Niles	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Pryne, James	Self	4, 7	90
Quarto, Alfredo	Mangrove Action Project	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Relyea, Sandra	Self	2, 3, 4, 5, 11, 15, 16	80
Robins, Betsey	Self	2, 4, 5, 6, 11, 15, 16	59
Robins, Betsey	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Rolfe, Trish	Center for Environmental Law and Policy	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Sanford, Thomas	North Olympic Land Trust	4, 5, 7, 15, 16	136
Schanfald, Darlene	Friends of Miller Peninsula State Park	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Schanfald, Darlene & Paula Mackrow	Olympic Environmental Council (OEC)	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Schumacher, Stephen	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Sears, Helen	Self	2, 4	47
Sears, Helen & Murv	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Shaffer, Erika A.	WA Dept Natural Resources, Aquatic Resources Division	5, 9, 11, 14, 15	121
Shaffer, PhD. Anne	Coastal Watershed Institute	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Shogren, Virginia	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65

Commenter	Representing	Topic of Concern	Page number
Simmons, Donna	Hood Canal Environmental Council	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Skillman, Ann	Self	4, 5	62
Smith, Belinda	Self	11	90
Smith, Julia	Self	2, 4, 5, 6, 11, 15, 16	51
Smith, Kathe	Self	4, 5, 14	90
Somerville, Diana	Olympic Peninsula Watch	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Sprouse, Howard	The Remediators Incorporated	13	133
Stanard, ED	Self	17	80
Starr, Genaveve	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Strucker, Lee	Self	3, 4, 5, 6, 7, 9, 10, 11, 15, 16	86
Tarantino, Shari	ORCA Conservancy	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Trim, Heather	Zero Waste Washington	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Turecek, Elizabeth	Self	2, 4, 5	61
Turner, Carol	Self	1	61
Ulf, Sandy	Self	2, 4	78
Vail, Michele	Self	2, 4, 5, 6, 11, 15, 16	63
Valeriano, Laurie	Toxic-Free Future	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Vanderhoof, P. R.	Self	2, 4, 5, 6, 11, 15, 16	57
Vanderhoof, Peter	Self	4, 5, 13	110
Volmut, Bill	Sierra Club North Olympic Group	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Walker, Dorothy	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Walton, Dr. James	Self	3, 4, 5, 6, 11, 14	94
Walton, Katherine	Future Wise	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	140
Weinstein, Elyette	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
West, Nathan	City of Port Angeles	1, 3, 4, 7, 9, 10, 11, 12, 16	158
Whitney, Charles & Darlene	Self	4, 5, 7, 11, 15, 16	78
Williams, Melissa	Feiro Marine Life Center	4, 15, 16	137

Commenter	Representing	Topic of Concern	Page number
Wingard, Greg	Waste Action Project	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Wise, Barbara	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	83
Woodruff, Dave	Self	2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16	65
Wyman, Robert	Self	5, 11, 15, 16	119

Comments Received

Port Angeles Rayonier Mill Public Comments on Volumes I-III

Comment from: Anonymous

I think that the Rayonier site should be remediated enough so that it could be used as an open, green area. This would be logical due to the Discovery Trail passing though it, in addition to its Native American history. If it could be cleaned up enough perhaps a Nature Audubon center like the one that exists on the Dungeness River in Sequim WA. Port Angeles chief assets are it's natural resources and natural beauty leading me to believe we should emphasize this with a Nature center for recreation and community activities.

Comment from: Allisa Imming

It is my opinion that whatever contamination exists in the marine and upland environments hasn't been serious enough to warrant any concern for the past 22 years, and so I would like to submit that this site be allowed to be developed into waterfront condominiums and retail with a small amount of parking. Fairhaven, WA comes to mind. Future options could include a private marina on the harbor side. This would bring a lot of property tax revenue to Clallam County along with other obvious incomes from sales, excise, registration taxes. This parcel of land has been rained on and endured repeated storm weather that much of the contamination is probably mostly perc'd away. Let's develop it. Then, the Port of PA can get out of the slip rental business, which they clearly would rather not provide; they can redevelop Boat Haven into industrial use which would benefit the industry and provide more jobs and tax revenue. The additional housing would help to alleviate the perceived "housing shortage".
Thank you.

Comment from: Candace Kathol

I am a local resident and I just want to state that I feel strongly that Rayonier should be made to clean up the site and restore it as best as current science will allow. Rayonier profited off the site for many years and they should be held accountable for clean up and the sooner the better! I think that Ecology and the City of PA have been too lenient on Rayonier and the the environment must be cleaned up asap and restored to productive land. Its a shame that it has sat idle for so long! Please make this a priority and make it happen somehow.

Comment from: Alexis Blue

A design option to restrict the public from visiting the updated site only twice a week is absolutely absurd. Beyond preposterous. Rayonier has put this process decades behind GP, asarco and eagle harbor by being obstructionist. They should not be rewarded for taking longer. Minimally, a paramount requirement is the people of the community and those visiting should be able to visit the site as they please in the cleaned up condition.

Comment from: Tom McCulloch

My only concern is for the anenomes and the starfishes on the creosoted poles that are going to be removed. Can you transfer them to other habitats so that they can continue to live and thrive?
Is there anyway that the toxic waste could be burned in place rather than contaminating another area with the same toxicants by moving them? By moving the contaminated soil, you are burning a lot of diesel fuel in trucks that is going to contaminate other areas. I would rather have you burn the toxic waste on the Rayonier property in a safe manner.

Comment from: Roberta Mantooth & James Mantooth

These comments also represent the views of: James E. "Jim" Mantooth
2238 E. Lindberg Rd.
Port Angeles, WA 98362
Please call if confirmation is needed. 360-477-0782
Thank you.

James E. “Jim“ and Roberta T. “Robbie”
Mantooth 2238 E. Lindberg Rd. Port Angeles, WA
98362 360-808-3139
ennis@olypen.com

To: Comment site for former Rayonier mill site
From: James E. “Jim” and Roberta T. “Robbie” Mantooth
Subject: Volumes I, II, III Summary Reports

First, we want to express appreciation and admiration for the Ecology team’s work that has resulted in these volumes. They reflect dedication, as well as knowledge and persistence.

We also want to acknowledge the patience and professionalism of Rayonier leadership in the difficult work of obtaining and evaluating scientific information.

Above all, we hope our comments reflect respect for all those involved in addition to representatives from Ecology and Rayonier: all who will be impacted by the decisions yet to be made, with particular regard for the Lower Elwha Klallam Tribe. The Tribe has been deprived of an important cultural heritage site: its ancient village, its cemetery, its stream with salmon, steelhead and cutthroat trout, its beautiful beach and the once abundant resources of the nearby saltwater. It has been extraordinarily patient about these losses to industry and the years involved in trying to find the fairest remediation and restoration.

The site can never be as it was when the Tribe was using it and even when Puget Sound Co- Colony joined them there. But fairness requires giving priority to Ennis Creek and other natural resources the Tribe took responsibility for stewarding over millennia. References in the reports indicate such priorities, and I assume those involved are taking advantage of the expertise of the Tribe's Habitat Manager Mike McHenry and Environmental Director Matt Beirne. We appreciated the maps and other references to restoring the long lost estuary in the report and posters at the open house but didn't see assurance that armoring now restraining the stream to a narrow channel would be removed and the stream allowed the meander essential for good fish habitat.

Much is still at stake. We have an enormous responsibility not only to all the elements of the present community but also to generations to come – even beyond the seven generations our Tribal friends speak about. Those generations include all the organisms impacted by the former mill site. We are all interdependent.

As we tried to analyze the almost impenetrable report released in September 2019, one overarching thought keeps returning amid all the detailed data. The cleanup plan must be for perpetuity. Every time we see any reference to the need for monitoring and possible revisions, we worry about the "penny wise/pound foolish equation." All the costs of a compromised cleanup can't be anticipated accurately. But they will be there for future owners, enforcers and users of the site.

That is why we favor the alternatives that would remove contaminants from the site regardless of their up-front costs and even their carbon footprint.

Just one example of unanticipated costs and other negative impacts that might not have been considered in the reports is the need to use so much sand in options for covering and capping contamination instead of removing it. Quarries that provide sand can have negative impacts on the environment and people living near them. Those impacts might even offset those of hauling contaminated materials 350 miles or more. Finding new quarry sources could also delay remediation. Efforts to activate just one quarry on the North Olympic Peninsula have prompted years of legal interventions.

We respect Ecology's emphasis on following the MTCA laws but are troubled by the possibilities for misinterpreting the mandate directing Ecology to select the least expensive of two or more alternatives that are equal in benefits "provided the minimum requirements for cleanup actions are met." Determining whether alternatives are equal in benefits and meet minimum requirements for cleanup actions could be highly subjective, even impossible, when permanent remedies are needed.

We are sympathetic about financial impacts on Rayonier but believe the most thorough cleanup is also in the company's best interests. Who would want to buy the site and take a chance on such cheaper remedies as consolidating toxic materials, fencing areas that might not be safe, and monitoring that would likely need to continue long after the lives of those selecting cleanup options.

Removal of all contaminants is the only way a buyer should take responsibility for the site. Until the site is truly clean, no one should want it, even as a gift. If anyone should accept the responsibility without a certified cleanup complete, taxpayers still could be left with costs of lawsuits and remediation related to deleterious impacts on the health of people, fish and other animals.

Much has been made of how future use of the property might influence cleanup decisions, but all involved must admit we cannot predict this. The various zoning designations just add to the confusion. If the site is cleaned up by removing all contaminants, the zoning need not be a distraction from attracting the most appropriate buyer. That also could help Rayonier recover some cleanup costs.

We would like Rayonier also to receive value through positive recognition at the site commending it for the investment that provided jobs and contributed to the community in other ways and then taking responsibility for toxic waste and such other harmful impacts on the environment as the dock on creosote pilings, jetty, log yard and stream armoring. Of course, even more prominent in such educational elements the restored site might contain would be history of the Tribe’s stewardship and the highly skilled roles of Department of Ecology personnel.

Such partnerships, as well as the restored site itself, should provide inspiration for area residents and visitors.

Comment from: Helen Sears

Rayonier had the benefit of doing business at the Port Angeles site for a nice, long time. And it's only following minimal ethical standards that they clean up after themselves. We lived in Port Angeles for over 10 years and know first-hand that the mill supplied good jobs, but also pollution. It's vital to the health of all residents, as well as the land and water, that thorough clean-up efforts be made. This will let the company be duly honored, not only as a major employer, but as a responsible corporate citizen.

Comment from: Judith Broadhurst

One of your plans mentions "occasional Site visitors/trespassers." Ha! This is where people walk, run, and bike daily – with children and dogs, where the annual North Olympic Discovery Marathon and half marathon and 5k races occur, and where a lot of tourists would be likely to visit if we could rightly restore it for the use of Port Angeles, with the use of it decided by the Elwha tribe, City of Port Angeles, and tourist bureau as the decision-makers. NOT the Jamestown S'Klallam tribe. This is Elwha land. They have proposed turning it into a replica of the village that once stood there.
Therefore, I do not see how you can possibly decide what level of toxins you're going to just cover over and let remain for generations to come until how the land and water are going to be used is determined. That should have happened DECADES ago. We are trying very hard, at great expense, to revive the economy in Port Angeles and bring it

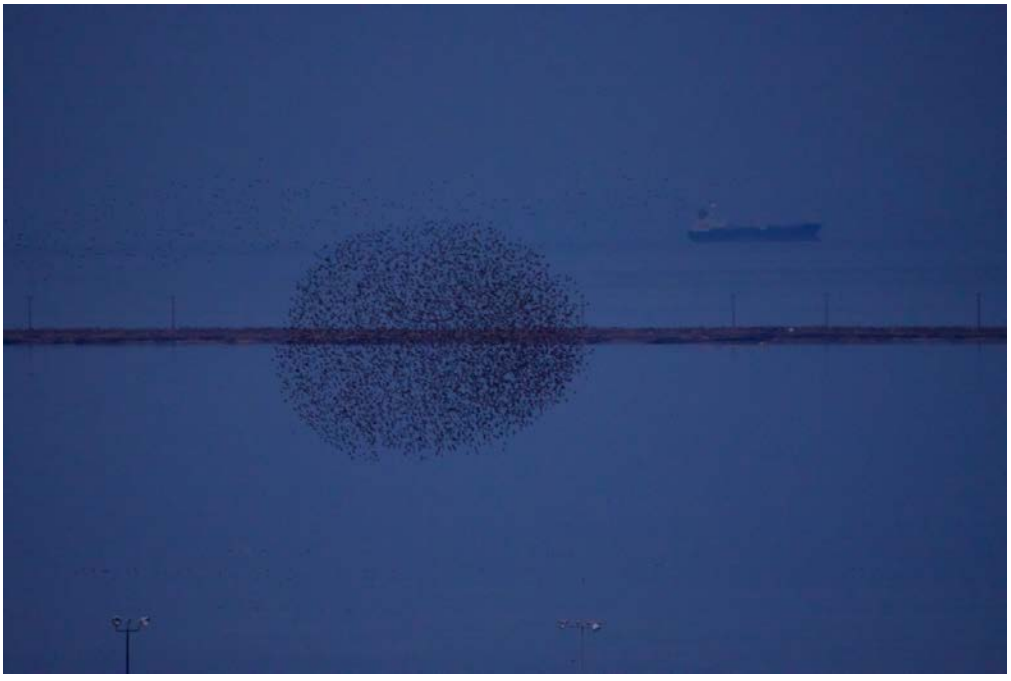
into the 21st century. Please stop holding all residents and visitors hostage by your continual delays. And please ensure that the City of Port Angeles, which now owns part of that property, is fully included in the decision.

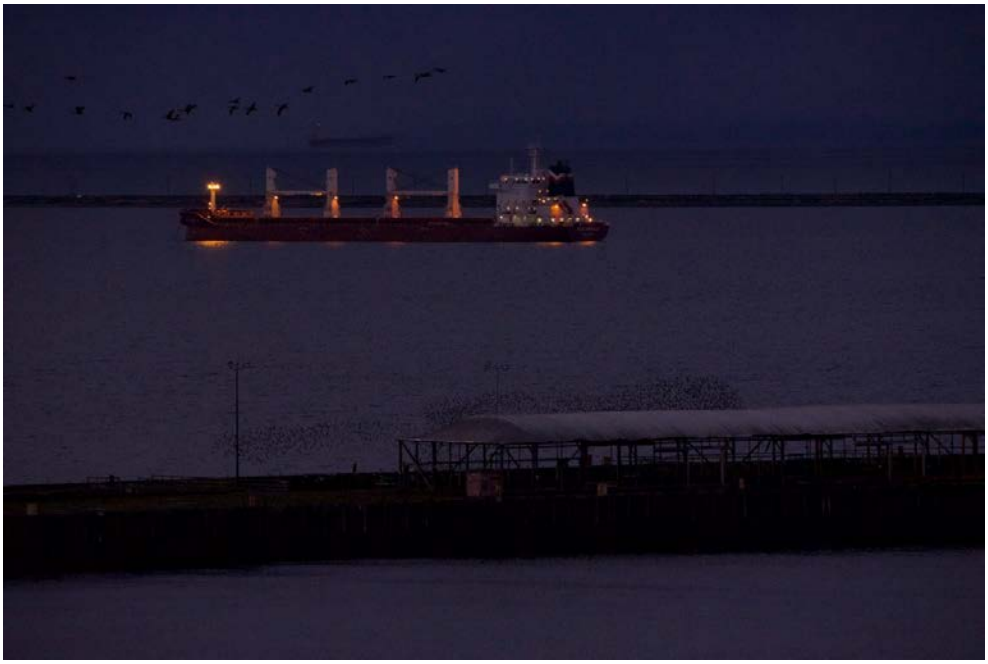
My wish: Make it safe enough for walk, picnics, boating, fishing.

Comment from: Bruce Clarke

I live on the bluff above the Rayonier site in Port Angeles. I have a second story balcony that gives me a good lookout on the site where i've taken pictures from and watched all the different species of birds that use the pier for roosting. In the evening i can watch the birdlife use the canopy for a shelter from predators and winter gales.
I have attached photos of the Starling murmurations that we get to enjoy from November to March. The Starlings focal point right before it gets dark,is the canopy on the pier. As the murmuration start to finish up you can see some of the Starlings sitting on the canopy as the rest of the group is slightly above the canopy. When the murmuration is finished, its too dark to capture on the camera, but they will roost overnight underneath the canopy, probably in the rafters.
In these photos you can see small silhouettes of GANNETS,GULLS and GEESE under the awning while the murmuration goes on above them. The pier provides shelter and isolation from the public which is needed for the health of the sea life and bird life in a harbor that has been fouled at times by all the ships and boats that come and go.
Underneath the pier, at the shoreline also allows harbor seal pups a place to be unhassled by people or dogs whenever they haul out. We had a seal pup haul out on Hollywood Beach in August and it was inundated with onlookers. It soon died and part of it's demise was stress from curious people. There were people showing up after dark shining flashlights on it for their viewing.
The attached photos were taken with a 900 mm lens.These are very small files. If you would like larger files and more pictures, i would be happy to send them for you to use in any way for the Rayonier project.
I realize that the pilings have creosote on them,so you want them removed. However, knowing how nature encapsulates foreign substance, it might be more toxic for the water if that encapsulation is disrupted during removal? Along with the disruption of buried toxins in the layers of sediment on harbor floor as the pilings are pulled out of the mud.This seems like a risk to all sea life nearby?
If the pilings are removed, i want be eating anymore local crabmeat.
Are your samplings actually now showing creosote or PAHs in the sea life that have been sampled near the pier?
My hope is that you will leave the pier fenced off from the public and allow our birdlife to hang on to dwindling safe areas at a suitable feeding area.
I would hope that the east beach be allowed for people to walk but a barricade put into place to isolate dogs and people from the pier area. Save the money from taking out the pier and put it into attractive fencing to isolate sea life and bird life from the public.
Please consider how human population is increasing rapidly and encroaching

anddestroying wildlife habitat. I'm not aware of any seaside wildlife refuge in the Port Angeles area and i'm not aware of any seabird refuge in Washington that has a pier and shelter covering that is off limits to people?
Thank you for your concern and the important work you do.





Comment from: Julia Smith

DATE: October 28, 2019

Maia Bellon, Director Rebecca S. Lawson, P.E., LHG
WA State Department of Ecology Southwest Regional Office Section Manager
PO Box 47600 Toxics Cleanup Program
Olympia WA 98504

Mariam Abbett, P.E.
Unit Supervisor
Toxics Cleanup Program
Southwest Regional Office

RE: Port Angeles Rayonier Mill Cleanup Plan

Dear Director Bellon, Ms. Lawson and Ms. Abbett,

I wish to join other organizations and individuals who have submitted comments for the Port Angeles Rayonier Mill Cleanup Plan, which is dated July, 2019. In light of the active efforts to cleanup the Salish Sea, which includes the Strait of Juan de Fuca and Hood Canal, I add my support to the following:

- Removal of structures and debris. I support the removal the jetty and the wharf, with its nearly 1000 creosote pilings and newer arsenic-based pilings will be removed. I hope these removals will soon be undertaken.

- Options that leave contaminants in place. I oppose the proposed upland and sediment options which leave the pollutants in place, cover them with soil or sediment, monitor the site over years, and rely on institutional controls (such as signage, fencing, and allowing site access twice a week). This will not protect the public, protect the marine ecosystem, nor the wildlife. It will leave all life vulnerable for years. The proposed option does not meet the intent of the Shoreline Management Act nor, again, the Puget Sound Partnership cleanup mandate, of which Ecology is a major partner.

- Option that removes contaminants. I strongly support an option that will remove contamination. I believe that Rayonier is a wealthy company and can afford the cleanest options of only $55 million. The company should leave the Port Angeles community and Puget Sound healthy. As sea level rises and as storm surges create more destruction along our coastline, it makes no sense – morally or financially - to leave the hazardous waste in place. The waters host endangered and threatened species including chinook and Southern Resident Killer Whales. Furthermore, a quality cleanup, as was done by the Port of Port Angeles at the KPly/PenPly site and at Site 4 in the Lower Duwamish Waterway -- complete removal – results in the elimination of future costs and maintenance, long term monitoring and liability.

Lastly, Ennis Creek, which runs through the center of the mill in which citizens and the Lower Elwha Klallam Tribe invested many resources towards its renovation, is known for having the greatest potential for salmon habitat recovery among Port Angeles's streams. We have an obligation to assure that the fish and other wildlife are not endangered by remaining hazardous wastes and not treated with the best available technology. Wastes left at the site will defeat the tremendous investments made to date.

I strongly urge you to hold Rayonier to the best cleanup option. Restoration to the most natural state attainable is the only responsible approach to protect our natural resources, our wildlife, and our public health. I urge you to see to it that this effort comes to completion in a thorough and timely manner.

Julia Smith MD, Port Angeles, WA

Comment from: Maradel K. Gale

239 Parfitt Way SW, #2A Bainbridge
Island, WA 98110

24 October 2019

Maia Bellon, Director
WA State Department of Ecology
PO Box 47600
Olympia WA 98504

Rebecca S. Lawson, P.E., LHG
Southwest Regional Office Section Manager
Toxics Cleanup Program

Mariam Abbett, P.E.
Unit Supervisor
Toxics Cleanup Program
Southwest Regional Office

RE: Port Angeles Rayonier Mill Cleanup Plan

Dear Director Bellon, Ms. Lawson and Ms. Abbett:

We already know there are serious problems with the Salish Sea and our part of it, Puget Sound. In terms of the Vital Signs monitored by the Puget Sound Partnership, we are lagging behind in most of the measures that were designed to indicate progress is being made on improving the health of the Sound.

I am an active beach naturalist who spends a lot of time monitoring the beaches around Puget Sound. I also own property on Hood Canal which has been in my family since the 1950s. I am herewith submitting my comments for the *Port Angeles Rayonier Mill Cleanup Plan* for 2019.

- **Removal of structures and debris.** The jetty and the wharf should be removed. We don't need to retain the more than 1000 creosote pilings and the newer arsenic-based pilings.

- **Options that leave contaminants in place.** This is an unacceptable option. Merely covering over the problem is not going to resolve the issues of pollution in the long run. The public and the wildlife need to be protected, as does the marine ecosystem. Private landowners on the shoreline must clean up their messes under Washington's Shoreline Management Act. We can ask no less of this corporation.

- **Option that removes contaminants.** The proper choice is the option that will remove contamination. Rayonier is a wealthy company and can afford the cleanest options of only $55 million. The company should leave the Port Angeles community and Puget Sound healthy. As sea level rises and as storm surges create more destruction along our coastline, it makes no sense – morally or financially - to leave the hazardous waste in place. The waters host endangered and threatened species. Including chinook and Southern Resident Killer Whales. Furthermore, a quality cleanup results in the elimination of future costs and maintenance, long term monitoring and liability.

I strongly urge you to require Rayonier to execute the best cleanup option. Protect our natural resources, our wildlife, and our public health. Get this done well and soon.

Sincerely,

Maradel K. Gale

Comment from: Norman T. Baker

DATE:

Maia Bellon, Director
WA State Department of Ecology
PO Box 47600
Olympia WA 98504

Rebecca S. Lawson, P.E., LHG
Southwest Regional Office Section Manager
Toxics Cleanup Program

Mariam Abbett, P.E.
Unit Supervisor
Toxics Cleanup Program
Southwest Regional Office

RE: Port Angeles Rayonier Mill Cleanup Plan

Dear Director Bellon, Ms. Lawson and Ms. Abbett,

The undersigned organizations and individuals are submitting our comments for the *Port Angeles Rayonier Mill Cleanup Plan*, which is dated xx, 2019. We actively are working towards the cleanup of the Salish Sea, which includes the Strait of Juan de Fuca and Hood Canal. Some of our organizations were petitioners to USEPA Region 10 for the Superfund listing of the site in 1998. Our comments follow:

- **Removal of structures and debris.** We support the removal the jetty and the wharf, with its nearly 1000 creosote pilings and newer arsenic-based pilings will be removed. We hope these removals will soon be undertaken.

- **Options that leave contaminants in place.** We oppose the proposed upland and sediment options which leave the pollutants in place, cover them with soil or sediment, monitor the site over years, and rely on institutional controls (such as signage, fencing, and allowing site access twice a week). This will not protect the public, protect the marine ecosystem, nor the wildlife. It will leave all life vulnerable for years. The proposed option does not meet the intent of the Shoreline Management Act nor, again, the Puget Sound Partnership cleanup mandate, of which Ecology is a major partner.

- **Option that removes contaminants.** We strongly support an option that will remove contamination. We believe that Rayonier is a wealthy company and can afford the cleanest options of only $55 million. The company should leave the Port Angeles community and Puget Sound healthy. As sea level rises and as storm surges create more destruction along our coastline, it makes no sense – morally or financially - to leave the hazardous waste in place. The waters host endangered and threatened species. Including chinook and Southern Resident Killer Whales. Furthermore, a quality cleanup, as was done by the Port of Port Angeles at the KPly/PenPly site and

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Lastly, Ennis Creek, which runs through the center of the mill in which citizens and the Lower Elwha Klallam Tribe invested many resources towards its renovation, is known for having the greatest potential for salmon habitat recovery among Port Angeles's streams. We have an obligation to assure that the fish and other wildlife are not endangered by remaining hazardous wastes and not treated with the best available technology. Wastes left at the site will defeat the tremendous investments made to date.

We strongly urge you to hold Rayonier to the best cleanup option. Protect our natural resources, our wildlife, and our public health. Get this done well and soon.

Signed,

Norman T. Baker, PhD

Comment from: Elizabeth Clark & 10 others

DATE: Oct 24, 2019

Maia Bellon, Director
WA State Department of Ecology
PO Box 47600
Olympia WA 98504

Rebecca S. Lawson, P.E., LHG
Southwest Regional Office Section Manager
Toxics Cleanup Program

Mariam Abbett, P.E.
Unit Supervisor
Toxics Cleanup Program
Southwest Regional Office

RE: Port Angeles Rayonier Mill Cleanup Plan

Dear Director Bellon, Ms. Lawson and Ms. Abbett,

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We strongly urge you to hold Rayonier to the best cleanup option. Protect our natural resources, our wildlife, and our public health. Get this done well and soon.

Signed,

P. A. K Vandeberg (best cleanup option)
Elizabeth Heagji
Matthew Mayer
for complete cleanup
Elizabeth Coard

DATE: Oct 24, 2019

Maia Bellon, Director
WA State Department of Ecology
PO Box 47600
Olympia WA 98504

Rebecca S. Lawson, P.E., LHG
Southwest Regional Office Section Manager
Toxics Cleanup Program

Mariam Abbett, P.E.
Unit Supervisor
Toxics Cleanup Program
Southwest Regional Office

RE: Port Angeles Rayonier Mill Cleanup Plan

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We strongly urge you to hold Rayonier to the best cleanup option. Protect our natural resources, our wildlife, and our public health. Get this done well and soon.

Signed,

Betty J. Longshore
Anna M. Clawson
Betsy Robins
Edwin O McGuire
W. Atkinson
Thomas N. McCulloch

Comment from: Carol Turner

I won't pretend I've read these hundreds of pages of scientific jargon that I wouldn't comprehend anyway. I wish there were a shortened, simplified version for regular citizens. I am just commenting to register my concern about the site and wonder what is taking so long to clean it up. Having a contaminated site right here in town is hardly responsible stewardship. Rayonier should have cleaned it up long ago.

Comment from: Wendy Feltham

I am writing to support of removal of the jetty and wharf and their creosote and arsenic-based pilings, and for Rayonier to fund removal of all its contaminants. Do not allow them to leave the hazardous waste in place. Although I am a resident of Jefferson County, I often go to the Port Angeles area to shop, watch birds, explore tide pools, and hike. Any hazardous waste left in Port Angeles affects all of the precious marine life of Puget Sound. Rayonier's hazardous wastes must be removed, not covered over.

Comment from: Anonymous

I have been a citizen of Port Angeles WA for over 20 years. I am dismayed that a less than thorough clean up job is being proposed for the Rayonier Mill Site. I strongly oppose any solution that calls for a capping with sand instead of a hauling away of toxic soil. I live on Ennis Creek and it is my hope that a salmon run could be restored to this beautiful creek. Please know that my whole family and my neighbors want a full clean up of the mill.

Comment from: Elizabeth Turecek

Please require true cleanup of the site by removing contamination and import of clean replacement materials. Until there is accountability for corporations that have detrimentally impact public resources, this short sighted approach will continue. Corporations benefit with large profits and citizens pay—either with taxpayer money or an impaired world and health. Thanks for the opportunity to comment and please advocate for a clean future and Sound.

Comment from: Ann Skillman

I support the full cleanup of the Rainier Mill site

Comment from: Natalie Leavenworth

Please make Rayonier do a thorough clean up including removing toxic soil.

Comment from: Rob Casey

Please remove toxins instead of covering at the Rayonier Mills site. Thank-you.

Comment from: Susan Chadd

I support all of the comments and recommendations put forth by Protect the Peninsula's Future.

The hazardous waste must be removed as an essential step toward restoring the natural species and systems of this community. This would be the only plan that is in line with Governor Inslee's climate initiative.

There is no question that Rayonier profited from the damage they wrought, and the company should be held entirely responsible for the cost of a permanent and thorough remediation. The Department of Ecology is beholden to the citizens and ecosystem of Washington, not to the Rayonier Corporation.

This polluted and forsaken area was historically Klallam tribal territory, and it lies in and at the heart of Port Angeles. The proposal to cover. "monitor", fence, post warnings and limit access is short sighted and disrespectful to our community.

Comment from: Michele Vail

DATE: October 30, 2019

Maia Bellon, Director
WA State Department of Ecology
PO Box 47600
Olympia WA 98504

Rebecca S. Lawson, P.E., LHG
Southwest Regional Office Section Manager
Toxics Cleanup Program

Mariam Abbett, P.E.
Unit Supervisor
Toxics Cleanup Program
Southwest Regional Office

RE: Port Angeles Rayonier Mill Cleanup Plan

Dear Director Bellon, Ms. Lawson and Ms. Abbett,

The undersigned organizations and individuals are submitting our comments for the *Port Angeles Rayonier Mill Cleanup Plan*, which is dated xx, 2019. We actively are working towards the cleanup of the Salish Sea, which includes the Strait of Juan de Fuca and Hood Canal. Some of our organizations were petitioners to USEPA Region 10 for the Superfund listing of the site in 1998. Our comments follow:

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- **Option that removes contaminants.** We strongly support an option that will remove contamination. We believe that Rayonier is a wealthy company and can afford the cleanest options of only $55 million. The company should leave the Port Angeles community and Puget Sound healthy. As sea level rises and as storm surges create more destruction along our coastline, it makes no sense – morally or financially - to leave the hazardous waste in place. The waters host endangered and threatened species. Including chinook and Southern Resident Killer Whales. Furthermore, a quality cleanup, as was done by the Port of Port Angeles at the KPly/PenPly site and

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- Lastly, Ennis Creek, which runs through the center of the mill in which citizens and the Lower Elwha Klallam Tribe invested many resources towards its renovation, is known for having the greatest potential for salmon habitat recovery among Port Angeles's streams. We have an obligation to assure that the fish and other wildlife are not endangered by remaining hazardous wastes and not treated with the best available technology. Wastes left at the site will defeat the tremendous investments made to date.

We strongly urge you to hold Rayonier to the best cleanup option. Protect our natural resources, our wildlife, and our public health. Get this done well and soon.

Signed,

Michele Vail
1454 S. Bagley Creek Road
Port Angeles, WA 98362

Comment from: Olympic Environmental Council

From: OEC <oec@olympus.net>
Sent: Wednesday, November 6, 2019 5:37 PM
To: Bellon, Maia (ECY) <maib461@ECY.WA.GOV>; Abbett, Marian L. (ECY) <MABB461@ECY.WA.GOV>; Lawson, Rebecca (ECY) <rlaw461@ECY.WA.GOV>; Pendowski, Jim (ECY) <jpen461@ECY.WA.GOV>
Subject: Comments from the Olympic Peninsula Council, et al

Please confirm receipt of this email.

Attached please find Dr. Peter L. deFur's technical comments and a cover letter signed by over 60 individuals and organizations interested in the cleanup of Port Angeles Rayonier Pulp Mill hazardous wastes.

Respectfully submitted,

Darlene Schanfald

Darlene Schanfald
Olympic Environmental Council
Project Coordinator,
Rayonier Mill-Port Angeles Harbor Hazardous Waste Cleanup Project
PO Box 2664
Sequim WA 98382
1-360-681-7565

Olympic Environmental Council

PO Box 2664 Sequim WA 98382

28 October 2019

Maia Bellon, Director
WA State Department of Ecology
PO Box 47600
Olympia WA 98504

Rebecca S. Lawson, P.E., LHG
Southwest Regional Office Section Manager
Toxics Cleanup Program

Marian Abbett, P.E.
Unit Supervisor
Toxics Cleanup Program
Southwest Regional Office

Jim Pendowski
Program Manager
Toxics Cleanup Program

RE: Port Angeles Rayonier Mill Cleanup Plan FSID #: 19 CSID#: 2270

Dear Director Bellon, Ms. Lawson, Ms. Abbett and Mr. Pendowski:

The undersigned organizations and individuals are submitting our comments for the *Port Angeles Rayonier Mill Cleanup Plan*, which is dated xx, 2019. We actively are working towards the cleanup of the Salish Sea, which includes the Strait of Juan de Fuca and Hood Canal. Some of our organizations were petitioners to USEPA Region 10 for the Superfund listing of the site in 1998. Our comments follow:

- **Removal of structures and debris.** We support the removal the jetty and the wharf, with its nearly 1000 creosote pilings and newer arsenic-based pilings will be removed. We hope these removals will soon be undertaken.

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- **Option that removes contaminants.** We strongly support options that will remove contamination -- alternatives 5 for sediments and for soils. We believe that Rayonier is a wealthy company and can afford the best cleanup options at only $55 million for sediments and $37 million for soil. The company should leave the Port Angeles community and Puget Sound healthy.

As sea level rises and as storm surges create more destruction along our coastline, it makes no sense – morally or financially - to leave the hazardous

waste in place. The waters host endangered and threatened species, including chinook and Southern Resident Killer Whales. Furthermore, a quality cleanup, as was done by the Port of Port Angeles at the KPly/PenPly site and at Site 4 in the Lower Duwamish Waterway -- complete removal – results in the elimination of future costs and maintenance, long term monitoring and liability.

Lastly, Ennis Creek, which runs through the center of the mill in which citizens and the Lower Elwha Klallam Tribe invested many resources towards its renovation, is known for having the greatest potential for salmon habitat recovery among Port Angeles's streams. We have an obligation to assure that the fish and other wildlife are not endangered by remaining hazardous wastes and not treated with the best available technology. Wastes left at the site will defeat the tremendous investments made to date.

We cannot return to the early days of looking the other way and allowing the pollution. The moral compass of our culture has changed. As you can see, there is broad interest in how this area will be restored. Together these signatories represent thousands of citizens. We strongly urge you to hold Rayonier to the best cleanup option. Be a leader. Remain committed to cleaning up Puget Sound. Protect our natural resources, our wildlife, and our public health. Get this done well and soon.

Please see the attached technical comments from Dr. Peter deFur, Environmental Stewardship Concepts, LLC .

Signed,

Paula Mackrow
Paula Mackrow, President

other signatories follow

Attached: Environmental Stewardship Concepts, LLC . Technical Comments

The following organizations and individuals that have signed this letter should be kept abreast of developments at the Rayonier site. Their addresses are provided in order that Ecology can keep them informed.

Ed Chadd	edchadd@olypen.com
Janet and Ron Marx	janetmarx_76@msn.com
Betsy Robins	brobins@wavecable.com
Elizabeth Dunne	emkdunne@gmail.com
Colleen Cunningham	ccunningham@olypen.com
Elaine Bailey	elainembailey@earthlink.net
Doug Hendrickson	saltcreekfarmcsa@gmail.com
Karen Hart	hart@olympus.net
Steve Koehler & Sharle Osborne	steve@stevekoehler.com
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Rayonier Mill Site Cleanup Report Vol 3
Comments on behalf of the Olympic Environmental Council
October 20, 2019

A public comment period is set from August 29 to October 28, 2019 to provide a chance to comment on Volumes I, II, and III before they are finalized.

An open house was held on September 25, 2019, from 6:30 to 8:30 p.m. at the Olympic Medical Center, Linkletter Hall.

Volume I is the report on contamination in the upland soils in the vicinity of the former Rayonier plant.

Volume 2 is the report on contamination in the marine areas, including sediment, water and marine animals, such as fish and crabs.

Volume 3 is the description and analysis of cleanup techniques and approaches considered for the Rayonier site. In this document, Rayonier has described a series of specific methods for cleaning up the contamination at the Rayonier site in Port Angeles, including the parts of the harbor that are included in this action. The report and this action do not address the contamination associated with the landfills that received Rayonier during the operation and demolition of the pulp mill.

Summary

The document relies too much on Institutional Controls (ICs) for managing the interaction between people and the contaminated material that is left behind and neither treated nor removed. Institutional Controls are intended to control the behavior of people and not do anything with the contamination. Some examples of Institutional Controls include deed restrictions on private or public property, signage to keep people out of an area, and fish consumption warnings in cases of contaminated fish. Long term costs of leaving contamination in place will include fences, signs and employees to inspect and monitor, including full time, as needed.

The cost factors for remedial expenses and costs of leaving contaminants in place are not based on a sufficiently long period of time. The metals, PCBs and dioxins will not breakdown at all (metals) or not breakdown in a measurable period of time (PCBs and dioxins). The remedy must be effective for a sufficiently long period of time to account for the permanence of the chemicals. Additionally, the costs do not seem to account for the costs of leaving contaminants in place. Those costs include annual or more frequent inspections and monitoring, maintaining signage, inspecting the site and inspecting the remedy, even if only a cover of sand is the remedy. The costs of leaving contamination and covering it up will include the costs of dirt, the hauling fees, any fees for spreading, and more.

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This site is already subject to weather extremes, and the changing climate that brings global warming will make the problem worse. Extreme weather will be the tides, storm surges, rainfall and drought, and high temperatures as well as rising sea level.

P3-10: “MTCA rules stipulate that soil cleanup actions using this conditional POC [‘POC= Point of Compliance’- with the applicable regulation or legal remedy] for the protection of terrestrial ecological receptors must include institutional controls (ICs) to ensure that the cleanup action remains protective. All of the soil remediation alternatives developed in Section 5 include ICs.”

Exactly how does an IC control wildlife behavior so as to reduce or prevent exposure? An IC cannot. This option is just silly. Institutional Controls have been shown as ineffective and not reliable in the long term (US GAO 2005 and 2006). Moreover, wildlife exposure cannot be controlled via Institutional Controls.

Page 4-1 The document and public need to note that the EPA considers General Response Actions in the following order:

- Treatment is preferred
- Removal is the second option
- Containment (covering up and walling off) is the choice of last resort

The other general response actions listed in the report are not active remediation and should not be considered in the same section. Institutional controls (ICs) are discussed below because this approach has been used throughout and has been evaluated and found defective and ineffective by no less than the U.S. Government Accountability Office (USGAO 2005 and 2006).

Monitored natural recovery (MNR) and monitored natural attenuation (MNA) are not preferred and are specifically noted as inappropriate for chemicals that do not breakdown at all (such as all metals) or breakdown at an imperceptible rate (such as dioxins and PCBs). Using natural processes to cover up such chemicals as metals, dioxins and PCBs should be rejected out of hand. Both MNR and MNA should be rejected outright.

This section fails to consider extraction / removal followed by treatment, such as pump and treat technology for groundwater or dredging sediments and biological or chemical treatment to breakdown the contaminants. Such options are used in cases of even extensive soil removal that can include streams. One Superfund Site that used removal and treatment is the Ward Site in Raleigh North Carolina with approximately 400,000 cubic yards of PCB contaminated soil. The remedy selected and used was thermal desorption following soil removal. Thermal desorption is a high temperature industrial oven that collects and treats all vapors. The closed desorption unit was located on site and operated at a temperature sufficiently high to treat the PCBs.

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The section on methods fails to include a method that has been used in Washington State at a number of sites and may well be useful here- the Remediators. This firm is local and uses biochar to treat both organic chemicals and metals. The method has been applied in a number of situations, including low level PCB contamination.

Institutional Controls

A special note is due the consideration of Institutional Controls that are used at a number of contaminated sites around the country. This approach involves changing human behavior in order to prevent or limit human interaction between the population and the contamination. Institutional Controls do not work for wildlife and are completely inappropriate for wildlife, by definition, regardless of MTCA.

Institutional Controls are not effective in achieving the intended objective, as described in the reports by the US Government Accountability Office (USGAO 2005 and 2006). In this report, USGAO describes the investigation conducted by this office in reviewing the remedies at Superfund sites around the nation. The controls that had been put in place included deed restrictions, signage, fish consumption advisories and property use restrictions. The full report (USGAO 2006) provides more details on the limitations of Institutional Controls, and to summarize issues,:

- When properties are sold or transferred, the new owner disregards the Control;
- Signs are not maintained;
- Signage is ignored or not encountered;
- EPA project managers neglected to implement controls in the final remedy;
- State responsibility was not clearly assigned;
- Site reviews were either not conducted or did not include Institutional Controls.

These and other problems were identified in the USGAO (2005 and 2006) reports.

Page 4-6 Section 4.2.2.2 Bioremediation.

This section does not include the bacterial breakdown used on PCBs, dioxins and several chlorinated organics used in California and other sites by Biotech Restorations (https://biotechrestore.com/). This method has proven to be effective in breakdown of a range of organic chemicals, notably chlorinated organic pesticides and industrial chemicals. This method has been used in numerous situations and should have been evaluated for the Rayonier site.

Nor does this section contemplate using multiple techniques used either simultaneously or in sequence. The report does not account for the more cost effective method of BioTech Restorations. Biotech Restorations has developed a method that uses bacteria to breakdown chlorinated organic chemicals such as PCBs and dioxins. Because this method is not included, the analysis therefore assumes or miscalculates that a combination of methods is too expensive and perhaps not effective. Combining bioremediation with metal extraction is cost effective using the BioTech Restoration 3

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method and metal extraction, allowing unrestricted use and in many sites, eliminates long term costs of monitoring and maintenance.

Remediation Alternatives Section 5

Under any and all remedial action taken at this site, as should be the case for all MTCA (and federal Superfund) Sites, the final order needs to indicate and require completion by a date certain, or within a specified time. Such requirements that the work be completed are normal at such sites, even though this one has continued for more than 20 years.

Upland Soil:

5.1.6. SL-5 – Excavation is the best selection and the only option that provides a permanent long-term solution. In addition, this alternative will be the least expensive in the long term because there will be no monitoring in the future and no maintenance costs. The complete excavation offers the advantages of no maintenance, no monitoring and no additional liability for the company or effort for the agency. In a related decision in Seattle, on the Lower Duwamish River, at Slip 4, the Boeing Co chose complete removal and elimination of further costs for maintenance, monitoring and the liability on the corporate accounting books.

Groundwater:

The report may well be correct that all three options use methods that have been used at other sites and some other uses have been in somewhat similar circumstances. Both air sparging (pumping a gas, such as air, through groundwater) and chemical oxidation (adding a chemical that will react with the contaminants and render the chemicals less toxic or inert) are well proven technologies. Reactive barriers (a physical barrier that is made of or soaked in a chemical that reacts with and de-toxifies the contaminants), however, have a less successful track record, especially under the specific conditions in the groundwater at the Rayonier site. The report is correct that any option will have to be pilot tested to be sure that the final design and operation is appropriate to the specific site conditions.

The Remedial options should have considered combinations of the different methods.

Sediment:

All options assume removal of the mill dock and jetty, per section 7.*4: "Additional costs would be incurred for other components, including removal of the mill dock and jetty and restoration of the Ennis Creek Estuary (pending NRD-related agreement)."* Apparently, the remedy options leave the mill dock and jetty removal to the NRD action (presumably because of the habitat restoration value of the action in this area). While this approach is mentioned in the section describing the sediment alternatives, this approach may not have been entirely clear to the public. The removal needs to be part of the final decision document and a legal commitment on the part of the company and Ecology.

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Section 5.3.6 S-5 The sediment contaminants include dioxins/furans, PCBs, mercury, PAHs (chemicals that make up creosote), phthalates, Complete removal of all contaminated sediment is both the most protective in the long term, and the most permanent. In addition, the remedy that covers the contamination with sand or "clean soil" will incur additional direct and indirect costs to include hauling materials through the Port Angeles community.

Section 6 presents the criteria by which the remedy options are evaluated as presented in the report. Unfortunately, the cost estimates do not include the financial benefits of a complete removal and cleanup over a long period of time. These financial benefits are not only for monitoring and maintenance, but also include administrative savings of not having a contaminated site.

The report ranks all alternatives equally with regard to public input because the public comment period remains open. This approach is not the one used in most EPA analysis in which no ranking is conducted until the public comments are received. As of the present point in the process, the public has repeatedly called for complete removal of the dock, jetty and all contamination.

Section 7 is the selection of remedies for each category- soil, groundwater and sediment. The brief section simply restates the information that is contained in sections 4, 5 and 6 along with the conclusions of the consulting firm that prepared the document.

The previous text of this comment letter explains why the choices are insufficient and will not satisfy the criterion of permanence, nor meet the preference for treatment over removal or containment.

Permanence is ever more important for remedies at the shore in the current era. The Port Angeles region is facing rising sea levels and higher temperatures in the coming years. The near-shore areas will be inundated more frequently than in previous years; some shoreline intertidal areas will be subtidal and thus permanently under water.

It is clear that permanence needs to be given the highest priority. The options that work for the best and most permanent solution, as indicated in Volume 3 are:

Upland soil (SL): SL 5- Removal of all soil that has chemicals above the regulatory limit presented in Vol 3 and remove that soil off site for disposal. Any holes or such excavations will be filled in with clean soil. No long term maintenance will be needed.

Groundwater (GW): GW 3- Chemically treat the contaminated groundwater to breakdown the contaminants.

Sediment (S): S 5- Remove contaminated sediment from the log pond, around the dock, in the near shore area, and all other areas where contamination is present. Covering would not be needed. 5

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Prepared by Environmental Stewardship Concepts, LLC, Henrico VA environsc@gmail.com. 20 October 2019.

Comment from: Terri DiMartino

The cleanup must be permanent.

Hazardous wastes need to be removed instead of covering them with dirt and sand, monitoring the site for what could be infinity, and trusting fences, seafood consumption warnings and limiting time on the site to the two days a week suggested in the Ecology report.

Ennis Creek and Puget Sound and their inhabitants, including salmon, steelhead and orcas, would continue to be harmed.

The most thorough cleanup would be best for the property owner, allowing sale or donation with fewer liability risks and ongoing costs.

Comment from: Sandy Ulf

I am deeply disturbed that the contamination would basilly remain and be covered up
Future generations will wish to use this site but subjected to contamination
I do not understand why the agency that is responsible for the pollution would be allowed to not clean up their mess
It should not matter that it is expensive, they polluted the site they should be held responsible for cleanup not cover up
Thank you

Comment from: Charles Whitney

Comments from Charles and Darlene Whitney are present in uploaded file Rayonier.pdf
Comment follows.

Comments from Charles and Darlene Whitney
RE: Port Angeles Rayonier Mill cleanup
November 18, 2019

I am a homeowner living on property that is traversed by Ennis Creek approximately 3 miles upstream from the junction with Port Angeles Harbor, the site of the old Rayonier Mill site. Our family has a long history of interests in fly fishing and conservation of trout, salmon, and steelhead. It is well known that Ennis Creek has been a significant source of spawning and reproduction of salmon, steelhead, and trout for many years in the past. Contamination of the stream at end of the creek at the Rayonier site is a major detriment to reproduction of these fish species that are significant economic sources to the greater Port Angeles area whether it be for commercial fishing or recreational fishing for steelhead or trout and whatever means of remediation of the serious contamination problem must be complete, permanent, and trustable.

From the standpoint of protecting future sport and commercial fish, remediation of contamination of the upland soil and sediment certainly must be permanent and complete or no favors have been done. The structures and debris from the pilings and jetty must be removed and the upland pollutants must not be allowed to remain or they will haunt us again in short order. Complete removal or permanent neutralization of toxins are the only repairs to these polluted areas. If toxins are allowed to remain by having them covered, it is a sure thing repeated incidents with toxins appearing through erosion and breakdown of coverups—no matter how deep the coverups. Limiting human access to twice weekly is an open admission that toxins are not thoroughly remediated.

Removing contaminants to licensed storage facilities is the only truly trusted method to avoid costly, repeated exposures to contamination surely after short term “coverups” have failed. Alternative SL-5 for sediments and soils is a reasonable approach.

Historically, Ennis Creek has been a strong source of spawning of steelhead and salmon. Our community has witnessed the striking recovery of salmon runs in the Elwha River when longstanding dams were removed and the same should be counted on when true remediation of hazardous wastes are removed from this sensitive creek.

Charles and Darlene Whitney
crwinc@olypen.com

Comment from: ED Stanard

I worked at the mill for 15 years and worked various locations in the mill. I started off in the Power House as a Cat operator which push the Hog Fuel (Sawdust and wood chips to the Boiler for fuel.
As the pile became level with the road way I was playing around on the TD-20 Bulldozer and dug a hole in the center of the pile in which the top of the machine was level with the ground and black oily and a strong smell of flammable fumes persisted. I know from experience that area is bad, that was east of the fuel storage tanks. the ground is contaminated bad in the area of the sawdust pile for sure.

Comment from: Sandra Relyea

Comment follows.

From: Sandra <sandrajr8@gmail.com>
Sent: Monday, November 18, 2019 3:00 PM
To: Abbett, Marian L. (ECY) <MABB461@ECY.WA.GOV>
Cc: Robbie Mantooth <ennis@olypen.com>
Subject: Rayonier Mill hazardous waste removal

Ms. Abbett:

I am writing as a citizen of Clallam County who works and plays in the Port Agneles area, and who is a property owner through which runs a portion of Ennis Creek.

In regards to planning for cleanup of hazardous waste that is contained in and around the former Rayonier Mill site:

1) It is my strong preference that the jetty and wharf be removed including all of the pilings.
2) It is my strong preference that all upland, on site and marine sediments be removed as this is the only solution that permanently assures protection of public, marine life and wildlife both now and into the future.
3) Rayonier siphoned huge profits from the site to the detriment of the site, its surroundings and the larger community. Holding them accountable sets a precedent sending a message to industry, here and across the nation, that companies have an obligation to leave the world, in which they prosper, as healthy or better than it was prior to the company's presence.
4) Plans to address the debacle Rayonier perpetrated should include restoration of Ennis Creek.

Thank you for taking my comments under consideration.

Sincerely,
Sandra Relyea
4801 S Mt Terrace Way, Port Angeles

Comment from: Natalie Leavenworth

-----Original Message-----
From: Natalie Leavenworth <natleaven@gmail.com>
Sent: Monday, November 18, 2019 3:06 PM
To: Abbett, Marian L. (ECY) <MABB461@ECY.WA.GOV>
Subject: Rayonier Mill Site Cleanup

THIS EMAIL ORIGINATED FROM OUTSIDE THE WASHINGTON STATE EMAIL SYSTEM - Take caution not to open attachments or links unless you know the sender AND were expecting the attachment or the link

Dear Ms. Abbett,
Please hold Rayonier accountable for cleaning up the site of their mill in Port Angeles to the fullest extent possible. They must remove the sediment from the harbor. This is the most expensive option but it is the only way to make it clean.
The lives of future generations are in your hands. Please make the right decision.

Sincerely,
Natalie Leavenworth
505 S. Francis Street
Port Angeles, WA 98362

Comment from: Barbara Wise

From: Barbara Wise <wisebarbara@hotmail.com>
Sent: Monday, November 18, 2019 6:00 PM
To: Abbett, Marian L. (ECY) <MABB461@ECY.WA.GOV>
Subject: Rayonier Mill

Hello Ms Abbett,
I would like to verbalize my support for the Olympic Environment Council's recommendations on the old Rayonier mill site.
Remove structures and debris
Oppose proposed upland and sediment options to leave pollutants in place
Support options to remove contamination (alternative 5 for sediments and soils)
Help restore Ennis Creek

Because our beautiful planet is in catastrophic peril from our own ignorant and heedless greed, the least we can do is all we can do.

Thank you for your kind attention.
Barbara Wise RN

Sent from myMail for iOS

Comment from Michael Charles

From: Michael Charles <michaelcharlescurrency@gmail.com>
Sent: Monday, November 18, 2019 5:28 PM
To: Abbett, Marian L. (ECY) <MABB461@ECY.WA.GOV>
Subject: Mill clean up

I have lived in Port Angeles all my life when I was younger I would see fish all over out there outside of the dock.but now that the mill is closed and all the pollution is going through the layers of dirt into water and the sealife near the dock are not likely to be there often anymore I would like to see that area cleaned up to the fullest extent possible to get the waterfront back to the nice clean way I remember it as a kid

Comment from: Dolores Darst

I don't think we need to reiterate the facts of this needed complete clean-up of the former mill site.
At some point in our history may we all realize the true importance of loving & caring for the soil on our lands.
It just makes all kinds of sense to do the right thing and remove these contaminates right and fully.
Otherwise the threat in the future goes on and on.... into nowhere, man! Nowhere but down!

For the obvious reasons and also for the community that supported your company for so long, we ask you
to recognize the need and do a complete job... not the piecemeal 'thingy' you submit!
Its for everyone to thrive, and for everyone to care about our land and our communities.

Your turn is NOW! Thanks for reading this far... that means you may care enough to try harder!
Dolores Darst

Comment from: Jenny Murphy

The proposal to only partially clean the area is absolutely not sufficient. To limit a person's exposure to the area for 2 hours per week is meaning that the area is still toxic. What are these toxins doing to our shellfish and water ways? The restoration work must be more sufficient and those responsible should be required to return the area to a healthy and natural ecosystem free from chemicals that will harm our food and children.

Comment from: Burton Foote

I would like to see the contamination removed rather than merely covered. The site should be restored to the condition it was prior to Rayonier being there. The site will not be safe and further use will be limited if restoration to the original condition is not done.

Comment from: Karen Marcoux Long

Please do the comprehensive clean up of all toxins by removing harmful toxic land. Do not cover with sand and call it good. Our children's futures deserve better. My Dad worked years at Rayonier Mill and his car always rusted from the acid in the air. He worked to help Rayonier become less polluting. This cleanup is very important. Please

clean the waters in the harbor as well. We love to Crab and would never eat Crab from our own harbor. :(

Karen Marcoux Long, 360-460-1849

Comment from: Lee Strucker

I am appalled at the Rayonier Mill Site Cleanup Report conclusions. The WA State Dept. of Ecology is taking the short and inexpensive view of this clean-up process leaving toxins in the land and marine area forever.

Monitoring
After a superficial clean-up, Ecology suggests monitoring and managing the site. Their representative, Rebecca Lawson said the goal is to make the site available for "occasional use" that would be at a lower standard than an industrial use or someone spending 8 hours a day onsite.

Lawson says, "This open space or occasional use would be protective of people just being there two times a week with the exposure assumptions we used," What a terrible future to leave the citizens of Port Angeles. Rayonier polluted and Rayonier needs to clean it all up.

Toxic metals like arsenic, mercury and lead will be on site forever given the Department's partial clean-up. How does the Department of Ecology really think this site can be monitored indefinitely? It's not detailed in the Department's report and past experience with the Department monitoring piles of debris at the site fell ridiculously short of being adequate. I know there are budget issues and manpower issues for department monitoring. I am not blaming here just pointing out how difficult it is for a state agency to monitor something forever. Also, it seems the cost of this long term monitoring far outweighs the savings on the department's partial clean-up plan. Furthermore, I wonder just how the site would it be effectively monitored to make sure people only visited twice a week. Would there be a sign saying, "If you've already been here twice this week, don't come back until next week"? Will it be written in deer language, or otter language or salmon language? The idea of long term monitoring seems absurd and unmanageable for humans and wildlife.

Toxins in Sediments and Upland
If we consider climate change and rising sea levels, this partial clean-up looks even worse. The partial clean up calls for leaving some sediments in the marine area and then covering them up. I wonder how well that will hold up as sea levels rise or when "the big one" causes a tsunami to hit the harbor. Then the toxic sediment spreads and all chances of cleaning it up are lost as it covers a larger area. We are leaving a terrible heritage for the future of Port Angeles at this site.

I end with this from the Olympic Environmental Council's comments which I completely agree with.

- Remove structures and debris, including jetty and wharf with its nearly 1,000 creosote pilings and newer arsenic-based pilings.
- Oppose proposed upland and sediment options to leave pollutants in place, cover them with soil or sediment, monitor the site over years, and rely on institutional controls (such as signage, fencing, and limiting access to twice a week). This will not protect the public, the marine ecosystem, or the wildlife. It will continue to expose lives for years and will cost owner more in the long term.
- Support options to remove contamination (alternative 5 for sediments and soils). Rayonier should leave the Port Angeles community and Puget Sound healthy.
- Help restore Ennis Creek, which flows through center of site and studies cite as having the greatest potential for salmon habitat recovery among Port Angeles's streams. We have an obligation to assure that the fish and other wildlife are not endangered by remaining hazardous wastes.

Comment from: Ann Gresham

To Whom It May Concern:

I write to you with some urgency today, having recently learned of this study on the heightened threat of environmental danger to Clallam County land and streams, fish and wildlife, residents and saltwater inhabitants, caused by contamination from the remaining ruins of the old
Port Angeles Rayonier Mill, abandoned in 1997.

Our hopes, plans and efforts for the future depend on the "humane management of environmental watershed sustainability" and the ability to evaluate, support and modernize the cleanup of such antiquated industrial sites for all time, by dredging and capping any remaining leakage or pockets of pollution left open to soil erosion.

While recognizing the enormity of such an on-going project, the cleanup and its challenges to the community, your attention to and understanding of our concerns and your subsequent action to support them are of paramount importance to those of us who live here on the Olympic Peninsula, we who cherish beloved streams like Ennis Creek and the Bay of Port Angeles.

We need your influence in a sustained effort to rid this fresh-water stream and its surrounding corridor, in fact 75 upland acres and 1,325 acres of the harbor, of all contaminants, including harmful dioxins, pcbs, arsenic and other toxins that flow daily into the saltwater of the bay. These pollutants endanger not only a growing human population, but the seabirds, shellfish, crustacea, salmon and the orca who depend on them, as well.

I recently reviewed a map of Ennis Creek's entire course, from the mountains to the bay. The affected area, so close to the Olympic Discovery Trail, runs through occupied farmland and an ancient Klallam tribal site, with graveyard and cultural history sacred enough to protect for future generations. Can we not acknowledge their importance to our shared culture on the peninsula and partner with corporations to clean up, protect and defend them for all time?

I now live here in the area I came to know and love as a child. It hurts to see the progress of years of American conservation efforts stalled, halted, even reversed so swiftly by recent administrative mandates and economic growth. The unique county sites we all enjoy, the extraordinary beauty of snow-capped mountains, of breathing in pristine air, reveling in Nature, hiking trails and digging for fresh clams, swimming in clear blue waters, some of them a crystalline blend of freshwater mountain run-off and the warmer tidal currents of saltwater that flow in and out of the strait, watching the salmon run and pods of orca feeding freely again, not dying of starvation. We must, all of us, clean up, preserve and protect all of them by whatever means possible for, as John Muir said in The Yosemite, "When one tugs at a single thing in nature, he finds it attached to the rest of the world."

Thank you for your attention to our citizen comments and your dedication to our environment. The rest of our world, this fragile Earth, depends on it.

Sincerely,
Ann Gresham

Comment from: Diana Erickson

In what universe does the proposed clean-up plan for the Rayonier site make sense? My first question to individuals in the Department of Ecology and Rayonier is, would you allow the proposed "clean up" (and I use that term loosely) to happen if it were your town. What if it were your own back yard? Would you allow your family to be exposed to the toxins left behind by the pulp mill? Would you allow anyone you care about to eat anything coming from the waters around the site that necessarily will ingest the toxins left in the sediment? This is a Superfund site. No one ever expects it to be "pristine" again, but at minimum Rayonier and DOE should try to restore it as close to its original state as possible.

Second, have you reviewed the history of monitoring the materials that were already taken out and supposedly were safely stored (at one point by covering them with plastic and tires)—but consistently experienced issues with appropriate monitoring and upkeep to prevent exposure of the public to toxins? Frankly, the "monitoring" of that site proved to be minimal and, even worse, when notified of damage, repairs were not implemented immediately. Regardless of newer methods (which will be impacted by

earthquakes, rising sea levels, etc. not to mention the fact that plants themselves are very effective in growing through concrete given the slightest crack)—there is no basis to believe that the site will be appropriately managed.

Third, does Rayonier (who has avoided its responsibility for the pollution it created for 20 years) and the Department of Ecology seem to think this is the most cost effective approach? Have you really considered the full cost of litigation for the hundreds of years the site will be in existence, if the current proposed plan is adopted? As a retired attorney, I am familiar with the practice by businesses of factoring in the inevitable costs of litigation and settlement (though that hasn't worked very well for the drug companies or their administrators in the opioid epidemic). However, I can tell you, particularly since Ms. Lawson admits "This open space or occasional use would be protective of people just being there two times a week with the exposure assumptions we used,"—that the current plan sets the stage for numerous lawsuits when people are exposed to the toxins (whether from the soil or in the waters) and develop illnesses as a result. This is not some isolated location, this is right in the middle of the Olympic Discovery Trail in a city that is growing quickly and attracts people from all over the world. In legal terms, the site is an "attractive nuisance" and case law is very clear about the owner's responsibility. Whether or not there is cement covering the site, or warning signs or a fence, you have been on notice for 20 years of the clearly harmful impact of the metals (which never go away) and toxins. At a bare minimum, if the site is not maintained sufficiently and being fully aware of the risk posed to the public, the State and Rayonier will be fighting legal battles for years to come. The only way you will be able to argue against liability is by doing a full clean up.

Fourth, is the real reason you are promoting this minimal "clean up" in Port Angeles because of the fact that this is a small city and you think you can get away with it? If we were Seattle, or Spokane or Olympia, or Yulee, Florida would this minimal plan even be considered? Boeing completely cleaned up their Superfund site on the Duwamish River, so it clearly has been done. While I don't expect Rayonier to be more responsible for the pollution it caused, it is reprehensible that the State of Washington is not pushing harder to protect its residents and visitors.

The DOE, as the representative of the citizens of Washington, should adopt the proposal from the Olympic Environmental Council:

- Removal of structures and debris, including jetty and wharf with its nearly 1,000 creosote pilings and newer arsenic-based pilings.
- Oppose proposed upland and sediment options to leave pollutants in place, cover them with soil or sediment, monitor the site over years, and rely on institutional controls (such as signage, fencing, and limiting access to twice a week). This will not protect the public, the marine ecosystem, or the wildlife. It will continue to expose lives for years and will cost the owner more in the long term.
- Support options to remove contamination (alternative 5 for sediments and soils). Rayonier should leave the Port Angeles community and Puget Sound healthy.

- Help restore Ennis Creek, which flows through center of site and studies cite as having the greatest potential for salmon habitat recovery among Port Angeles's streams. We have an obligation to assure that the fish and other wildlife are not endangered by remaining hazardous wastes.

Comment from: Belinda Smith

Port Angeles residents & those who visit deserve a healthy environment. After reading all opinions I believe we should not allow a bandaid clean up but a complete ecologically recommended clean up for future generations. Yes, it would be wonderful to see thriving commerce on that property immediately but we have waited over 20 years to see it done properly. Do it for the health of future generations. Not quickly & "just" enough for a few new businesses & tourist traps.
Think, would you want your kids to play & breathe this contamination.

Comment from: Stephen Lowe

Please return the site to a condition where it can be used for any human activity, including habitation. The population in Clallam County is booming, stable waterfront land is scarce, and it's ridiculous to save money at the expense of future opportunities for communal and economic growth.

Comment from: Kathe Smith

I support only full cleanup of contamination on the site. If the little old Port of Port Angeles can fully clean up the Pen Ply site, Rayonier AM can fulfill their responsibility and clean up their mess. What would ever give them the right to leave the waste of their money making decades to permanately poison the waters of the Salish Sea? How is it different from allowing cruise ships to dump their sewage or tankers to leak crude oil? The contaminated sediments need to be removed, not capped. Contaminated soils above the regulated limit need to be removed, not capped. Groundwater needs to be chemically treated to remove contaminates. No one is asking for pristine, just less than toxic.

Comment from: James Pryne

Dear Marian Abbett:

I am a property owner including coastal tidelands near the Raynoier Mill location.
The Rayonier Site must be returned to unrestricted public use status within a reasonable

time frame. To merely fence, cap off, and restrict use is totally unacceptable and ethical.

Thank you for considering my comments.

Regards:

James Pryne

Comment from: John Phillips

The proposed "clean up" of this site is completely unacceptable. In fact it is not cleaning anything up, but rather leaving a pile of contamination in perpetuity. That is NOT a clean up.

Rayonier must be required to actually clean this site up removing ALL contaminants so that ALL of the land is clean and usable into the future.

Please do not let them walk away from this responsibility leaving a mess behind when done.

Comment from: Lucille Celestino

It is not a satisfactory result to leave a mountain of contaminated material on the site in the near future or into perpetuity. We live here. We want to continue to make our waterfront a livable and aesthetic space. No mill means no mill. Get rid of it garbage and all.

Comment from: Janet Kailin

Comment follows.

Janet Kailin

Please see attached file.

p.s. Could you please post signs on the fence around the Rayonier Mill site to alert the public that this is a hazardous waste area?

I am writing to urge you to revise your choice of Preferred Alternative. Your Preferred Alternative does not effectively clean-up the toxic wastes of the Rayonier Mill site, but instead attempts to cover up the toxins.

My husband and I frequently walk the Discovery Trail where it goes through the old mill site. We appreciate the wildlife who are trying to live here. Our sightings include: otter, ducks, seals, whales, fish, eagles, heron, kingfisher, mink, deer, slugs, worms, and more. These beautiful and essential creatures breathe, eat and move through this environment every moment of every day. They cannot escape the pollutants that we humans dump into the ecosystem. We do not have the right to poison their world; and we are foolish to needlessly pollute our own.

There are four major problems with your proposed Preferred Alternative, which is essentially a cover-up of the toxic layers:

1) The first problem is that the cover-up will likely be temporary given the active geologic nature of the area. Earthquakes, floods, tsunamis and storm surges are likely to occur, and toxins would again be exposed. It is not sufficient to look at "average" sediment erosion during these events. Local variability of erosion will score the sediments and uncover toxic layers.

2) The second problem with the cover-up approach is that, with or without major geologic events, leaching & groundwater movement will inevitably pull toxins into the Straits, where the toxins will affect fish, wildlife and marine vegetation for centuries to come. The terrestrial, avian and marine wildlife cannot be diverted to other areas with fences or signs.

3) The third problem is that the cover-up limits future use and development of the site. Any future development would require doing a clean-up! That clean-up should be done now.

4) The fourth problem is that the cover-up approach requires ongoing (and unaccounted for) costs of monitoring, and maintenance.

In view of these concerns, I urge you to change your Preferred Alternative to the one that provides the greatest protection for the longest period of time (SL-5, GW-3, S-5). The Preferred Alternative should specify complete removal of the toxins, rather than a cover-up. In the long run, the cost to the environment and to humans will be minimized if the toxins are removed now.

Comment from: Laura Bullen

Port Angeles has one of the most amazing ocean front locations of any city in WA, except for the blemished Rayonier site. It is not only unsightly, but polluted. This is detrimental to citizens and wildlife. Please fund a full recovery- removal of structure and debris, and remove contaminants as well as restoring Ennis creek, prime salmon habitat. Thank you for keeping Port Angeles beautiful!

Comment from: Dr James Walton

Please accept these comments as my views on and review of the proposals for the cleanup of the former Rayonier pulp mill site. My utmost concern is that we implement a permanent solution that best maximizes the chances for continuing and complete protection of human health and the environment. My recommendation is to adopt:

S-5 for dealing with the sediments,
SL-3 for the upland soil, and
G-3 for Groundwater

I realize these are the most expensive options now but if the preferred options are selected there is a significant chance there will increased costs in the near future. I say this for the following reasons. Global warming and climate change are already causing a rise in sea level and increasing storm events. As this continues, events that could wash away capping material and expose contaminants to erosion and runoff become more likely. Dioxins, Furans, PCBs and many of the heavy metals which do not degrade would once again be exposed to the environment and have to be dealt with immediately. The preferred options are only temporary and the current modeling methodologies being used to predict future events can't possibly predict storm events influenced by major climate change or the effects of a tsunami that we are constantly being warned against.

I live a few miles to the east of the pulp mill site at 4 Seasons Ranch. I use the waterfront trail regularly and I crab and shrimp in Port Angeles Harbor. The mill site should not be treated as permanent landfill for toxic chemicals that should be fenced off from the public, forever creating an eyesore for residents and an example for all those that come to the U.S. on the Black Ball Ferry of what we failed to do. We ask the city of Victoria to clean up their pollution and sewage effluent into the Straits, now we should be setting the example of what we will do to contribute to the same environment. I first came to Port Angeles in 1980 when contaminants from all the mills turned the harbor waters into blues, browns and greens depending upon the effluent of the day.

Over the last 40 years great strides have been made in improving the environment and understanding the effects of pollution. We have a chance to make a significant difference. Please do the right thing.

Dr James M Walton, former Director of the Fisheries program at Peninsula College, State Fish and Wildlife Commissioner and President of Centralia College.

Comment from: Vera Phillips

The proposed clean up the Rayonier Mill site is totally unacceptable. Leave years of oil, gasoline and god know what other solvents to be just capped. Would you build your house there and expose your family to this. I think not!!! Do it correctly so the land can be used for a benefit for the city. Poor Job on your part. Fix it right. Outrageous!!!!!!

Vera Phillips

Comment from: Karen Hart

Comment follows.

I appreciate that this process involves citizen comments. As a person living near Port Angeles I have been looking at Volume III to increase my understanding of Rayonier's analysis and proposal for cleanup of the former Rayonier mill site in Port Angeles. I have also read the comments by Environmental Stewardship Concepts (ESC) on behalf of the Olympic Environmental Council.

I have a few comments/questions to add.

1. A comment on the description of the site (Section 1-2 of Volume III)

> "Most of the property is zoned "Industrial- Heavy" (Figure 1-2) in the City of Port Angeles zoning ordinance (Ordinance #2801) and has been used for industrial activities for many decades."
>
> The Zoning Map Fig. 1-2 p. 138 shows that this particular industrial-heavy zone contains only two elements: the former mill area and the city wastewater treatment plant. The areas surrounding the site are residential or are bluffs/shoreline or stream corridor (Ennis Creek). A satellite view such as available on Google Maps shows this clearly. The only current industrial use is the city wastewater treatment plant which presumably is a safe neighbor to the surrounding residential areas.
>
> If the toxic contaminants in the former mill area were removed then the former mill area would be returned to a condition similar to the areas surrounding it.

2. Human use of the area currently and in the future

> A feature that brings a continual flow of people through the study area is the Olympic Discovery Trail. The trail is used for example by walkers, runners, cyclists (including commuters) and in events such as the North Olympic Discovery Marathon.
> A tall fence separates people on the trail from the Rayonier site.
>
> I have not found information in Volume III about the state of public access when cleanup is complete. What will be the state of the trail? Will there be public access to the site? Volume III contains passages such as the following that refer to "trespassing" and the company's "right to place institutional controls on property it owns".
>
> > "Remediation levels appropriate for more reasonable exposure scenarios – such as occasional trespassing or visitation of open areas – are derived for use in defining some upland soil remedial alternatives. Industrial use is assumed when setting PCULs for human exposures in areas zoned "Industrial-Heavy" that continue to be used as industrial areas (i.e. the City Purchase Area)."
> >
> > "The company recognizes that the Port Angeles Shoreline Master Plan includes a 200-foot-wide "open-space" future land use buffer area along the shoreline. In this context, human exposures in the open-space areas will include occasional visitors but not full-time residents. Note that the company reserves the right to place institutional controls on property it owns in order to achieve limited human access, regardless of designated future land uses in master planning documents."
>
> Does this mean that after cleanup the safety of humans depends on keeping them off the site?

3. Stability of the site

> The analysis by Rayonier and ESC discuss factors such as sea level rise and storms that will affect the stability of the site. Those factors are a certainty. Another factor that could affect this site is disruption due to earthquake and/or tsunami.

4. Permanence of Rayonier's proposal (SL-2, G-1, S-2)

Tables 6.1, 6.2, 6.3 state that

SL-2

"requires maintenance of cover and ICs for permanence."

G-1 would involve

"Perform post-remediation performance and confirmational groundwater monitoring for 30 years."

"Record an environmental covenant for the property"

"Permanence Compliance will rely on long-term monitoring and ICs."

S-2 would involve

"Long-term effectiveness will depend on ENR performance and long-term maintenance."

"Monitoring and, if needed, maintenance will be implemented to ensure long-term protection."

Rayonier's proposal requires long-term monitoring and maintenance and involves ICs (to keep people out).

5. Does Rayonier's proposal solve the problem of toxic materials at the site?

Does a cleanup proposal that requires long-term monitoring and maintenance and involves ICs (to keep people out) solve the site's toxic materials problem?

Is it actually feasible for some entity to carry out this long-term activity?

Who would that be?

How long is long-term?

Who is responsible for the expense, liability, etc. of this monitoring and maintenance?

What happens if the entity originally responsible ceases to exist?

Comment from: L. Syrene Forsman

The only answer is to cleanse the area of ALL contaminants! Rayonier stockholders benefitted financially for decades by not acknowledging the poisonous mess nor installing procedures to control the pollution.

If allowed to remain, it can continue to do untold damage: to the shoreline, water, animal and sea life, and to Port Angeles. It would remain a wound on the face of a potentially beautiful harbor.

Comment from: Greg Madsen

Rayonier and the Department the Department of Ecology should commit to removing every scrap of hazardous waste from this sensitive site. Burying poisons is no solution!

Comment from: Kaj Ahlburg

Please require and ensure that the Rayonier property is cleaned up to a standard so that subsequently it can be used for activities consistent with the Jamestown S'Klallam Tribe's vision statement for the site, including a Native American cultural center and commercial activities such as a small marine harbor. Residential and retail use, and Peninsula College marine sciences teaching and research facilities should not be ruled out by the level to which the property is cleaned up.

The property was used by Rayonier for industrial/commercial activity that involved employees being on site on a daily basis. It would be completely unacceptable if Rayonier were not required by the Department of Ecology to clean up the property to a standard that would again allow people to safely be on the site on a daily basis and for extended periods.

I also encourage you in the strongest terms to speed up the proposed clean-up schedule. Other properties with similar levels of pollution have been cleaned up in three to four years. This clean-up has already been allowed to drag on for 22 years since the closing of the Rayonier plant in 1997. Another ten years would be completely unacceptable. There have been enough studies and comments and responses back and forth between the Department of Ecology and Rayonier. It is time for you to use your legal authority to make Rayonier complete the cleanup in the shortest time technically and practically possible.

The taxpayers whom the Department of Ecology serves deserve no less.

Thank you for your consideration.

Comment from: Janet Marx

While I understand that the Rayonier site can not be returned to the same conditions prior to Rayonier tenancy; however, The current proposed cleanup is not acceptable to those of us who have lost a valuable shoreline to Rayonier's carelessness and greed.

The affected marine and upland sediments should be removed and not just covered over as you have proposed. This leaves pollutants in place and would not fully protect us. Covering piles of upland pollution that require "forever" monitoring is a ridiculous solution. Alternative 5 is the only acceptable solution for marine sediments and upland soils.

Marine structures including jetty and wharf should be removed as the creosote and arsenic impregnated pilings continue to pollute the waters.

Ground water continues to be polluted under covered soils and should be dealt with a more effective clean up. As well Rayonier should help restore Ennis Creek to a salmon bearing habitat.

THIS SHOULD NOT DRAG ON FOR ANOTHER 19 YEARS.

Comment from: T. Germain

I support removing contaminants, which is alternative 5 for sediments and soils. Leaving toxins in place through covering with soil along with monitoring the site will ensure that future, much more expensive clean-up will be required as the dioxins, lead, and arsenic remain. This latter approach would pose increased danger to the community through years of exposure to these toxins. We are the ones who live and breathe here.

Comment from: James Dries

The Rayonier Mill sure should be cleaned up totally. Anything less is a betrayal of the values of a state whose governor and people are committed to the cleanest environment possible!
Thank you!

Comment from: Carol Dries

This "plan" makes me scratch my head and shake my fist, like so many of the things that are going on now - mostly government-driven! What kind of a plan gets us part-way to a solution and then drops the ball? I am in a fellowship where we say, among other things, "Half-measures availed us nothing." We also say: "Don't quit before the miracle happens!" Let's all see a real miracle and have a plan that goes to the finish and truly solves a problem rather than kicking it down the road - or the rabbit hole!

Yours Sincerely,
Carol Dries

Comment from: Nancy Johns

I agree with the concerns expressed by the City of Port Angeles. A simple bury and cap with cement is not what we need in this water front property that will continue to face more and more pressure for various uses in the coming decades.

Comment from: Colleen McAleer

I am opposed to the current preferred alternative proposed by Rayonier at the Port Angeles site.

This alternative prevents citizens and businesses from being able to use this critical land asset for economic or community development since it merely consolidates the contaminated soils on the most viable portion of the site. The consolidation of contaminated soils is in effect a permanent landfill on the property that is planned to be fenced off from public access in perpetuity.

The proposed cleanup level rules out most future uses and any use other than industrial will require additional extensive clean up action across the site. That means the only logical path for other uses is for the Rayonier brownfield site to be purchased by a government entity and use taxpayer dollars to clean it up. This process is not a wise use of government resources.

Require Rayonier conduct a more thorough cleanup which would allow for numerous future uses.

Comment from: John Brewer

For all the reasons you have from the city of Port Angeles, the Clallam County commissioners and the Clallam County Economic Development Council, the preferred alternative proposed for the Rayonier mill site is totally unacceptable.

It allows Rayonier to literally walk away from the chemical contamination and public health risks its use created -- leaving a toxic mess behind forever.

Comment from: Julie Hatch

I would like to go on record as stating that the proposal for the cleanup of the Rayonier Mill Site is totally unacceptable. The site has sat vacant for at least 25 years and still NO action to make this a useable piece of real estate. This waterfront property could be an economic changer for Port Angeles and Clallam County. It is a jewel in the rough. The possibilities for this property are limitless but unless YOU take immediate and necessary steps to get it clean and ready to be utilized it will sit looking almost like a garbage dump for "How Many More Years"?

Please revisit your proposal and do something tangible that we can get behind.

Thank you for listening and taking action.

Julie K Hatch, Port Angeles resident.
360-477-3373

Comment from: Mike Doherty

Please see the uploaded file for my comments. I am also mailing them by standard post.

Mike Doherty
doherty_mike@yahoo.com
Insert comment by Doherty

Nov. 26, 2019

Washington State Dept. of Ecology
Attn.: Marian Abbett, TCP/SWRO
P.O. Box 4775,
Olympia, Wash. 98504-777

RE: Port Angeles Rayonier Mill Clean-up

Dear Ms. Abbett,

Thank you for the administrative oversight of the clean-up of the former Rayonier Mill site in Port Angeles, Washington. However, as a long-term resident of Port Angeles, I have been concerned regarding the slow progress on the actual clean-up.

The Rayonier mill site has amazing potential, if it is cleaned to a high standard, above that proposed by the Dept. of Ecology. I agree with the City Manager of Port Angeles, "We can't afford to have it fenced off with a big pile of contamination." (Nathan West, Peninsula Daily News, Nov. 24, 2019). I also agree with the Clallam County Board of County Commissioners that the "proposed standard of "occasional use makes little sense when thinking about the safety of the community. Cleanup to a higher standard is both desirable and necessary... The standard you propose makes the site largely unusable for either industrial or recreation uses in the future (letter to record; Nov.26, 2019).

Recently, I listened to two webinars featuring Dr. Peter de Fur, technical adviser to the Olympic Environmental Council Coalition. Dr. de Fur's experience and expertise, developed through connections with numerous cleanup projects, leads me to believe that a complete excavation, soil removal, and treatment, is the best remedy for the long-term use option for the subject property.

Being a non-scientist, I found the webinars very instructive and convincing that the State of Washington should require that we should take a long-term view, and require the highest cleanup standard. For over five decades, public polling demonstrates that the public strongly supports the concept that "The Polluter Pays." Today and in our future, we will see that the DOE proposed level of cleanup is a short-term, cheaper solution.

Future weather and forecasted climate change impacts will exacerbate the future risks of spreading soil pollution, and limitations on future uses of the site. And as the threat of climate change mounts we can expect sea level rise and winter storm inundation to damage the sediment structure at the former mill site. Of special interest to the DOE should be the recent GAO report which found that 60% of federal Superfund sites are expected to impacted by climate change. Additional impacts to marine resources can be expected from ocean acidification, invasive species, fish stock migration to the north and other challenges

In the most recent three decades, federal, state, tribal and local governments, along with non-profits and private interests, have invested billions of dollars to restore the Salish Sea marine resource habitat. The Port Angeles harbor should be a priority for a higher standard of cleanup because of the potential for restoration of salmon, shellfish, forage fish, bottom fish and related habitat features contained in this unique, protected deep-water harbor.

At the end of the cleanup of the Rayonier mill site, I hope the Washington Dept. of Ecology will be able to factually tell the citizens of Port Angeles and Washington State a story about a full cleanup and restoration, not a coverup.

Mike Doherty 617 So. B. St., Port Angeles, WA 98363

Comment from: Anonymous

Please clean up the Rayonier Mill Site thoroughly...meaning 100% of the land used by the mill should be 100% contaminate free. This land was pristine for marine life, animals, and people at one time and should be returned to this state. Taking only the top

layer of the contaminates will just cause issues in future years....requiring more $ for clean up that should have been done correctly the first time....which is NOW!

Comment from: James Michael Langley

In the mid 1950's my family moved to the mouth of Morse Creek where I grew up on a small farm, directly downwind from the Rayonier Pulp Mill. Everyday was contaminated by smoke carried by the prevailing west wind. The windows in our house were always dirty.

A hundred years of contamination now lies on and around the Rayonier Mill site. Contamination that was not there when the mill was built.

When a gas station owner sells and the property is repurposed, the Department of Ecology requires the landowner to remove all underground tanks and all contaminated soil. Under Washington State laws and regulations, why would the Department of Ecology not require Rayonier (the landowner to remove all contamination?

I am requesting that the Washington State Department of Ecology change their preferred alternative (to cover the contaminationand require that all contamination be removed to give the site it's highest value to the most people for the longest time.

Thank you for your time and action to this critical issue.

Still living on the Morse Homestead at the mouth of Morse Creek.

J.Michael Langley
360-775-5980

Comment from: Anonymous

We believe that the plan for cleaning up the Ennis Creek Rayonier site is not sufficient to result in a healthy and restored environment. We believe an appropriate cleanup should involve 1) removing structures and debris including the jetty, wharf and pilings; 2) remove sediments and pollutants rather than leave them in place and 3) restore Ennis Creek to be a healthy and natural salmon-producing stream again.

Comment from: Anita McMillan

In the mid 1950's my husband's family moved to the mouth of Morse Creek where Mike grew up on a small farm, directly downwind from the Rayonier Pulp Mill. Everyday was contaminated by smoke carried by the prevailing west wind. The windows in their house were always dirty. I was blessed to become part of the Langley family and was fortunate enough to raise our family here.

A hundred years of contamination now lies on and around the Rayonier Mill site. Contamination that was not there when the mill was built.

When a gas station owner sells and the property is repurposed, the Department of Ecology requires the landowner to remove all underground tanks and all contaminated soil. Under Washington State laws and regulations, why would the Department of Ecology not require Rayonier (the landowner) to remove all contamination?

We are requesting that the Washington State Department of Ecology change their preferred alternative (to cover the contamination)and require that all contamination be removed to give the site it's highest value to the most people for the longest time.

I support the comments provided by the Olympic Environmental Council. I have copied some of the information that was sent by them that I would like you to act on.

- Removal of structures and debris. We support the removal the jetty and the wharf, with its nearly 1000 creosote pilings and newer arsenic-based pilings will be removed. We hope these removals will soon be undertaken.

- Options that leave contaminants in place. We oppose the proposed upland and sediment options which leave the pollutants in place, cover them with soil or sediment, monitor the site over years, and rely on institutional controls (such as signage, fencing, and allowing site access twice a week). This will not protect the public, protect the marine ecosystem, nor the wildlife. It will leave all life vulnerable for years. The proposed option does not meet the intent of the Shoreline Management Act nor, again, the Puget Sound Partnership cleanup mandate, of which Ecology is a major partner.

- Option that removes contaminants. We strongly support an option that will remove contamination. We believe that Rayonier is a wealthy company and can afford the cleanest options of only $55 million. The company should leave the Port Angeles community and Puget Sound healthy. As sea level rises and as storm surges create more destruction along our coastline, it makes no sense – morally or financially - to leave the hazardous waste in place. The waters host endangered and threatened species. Including chinook and Southern Resident Killer Whales. Furthermore, a quality cleanup, as was done by the Port of Port Angeles at the KPly/PenPly site and at Site 4 in the Lower

Duwamish Waterway -- complete removal – results in the elimination of future costs and maintenance, long term monitoring and liability.

Lastly, Ennis Creek, which runs through the center of the mill in which citizens and the Lower Elwha Klallam Tribe invested many resources towards its renovation, is known for having the greatest potential for salmon habitat recovery among Port Angeles's streams. We have an obligation to assure that the fish and other wildlife are not endangered by remaining hazardous wastes and not treated with the best available technology. Wastes left at the site will defeat the tremendous investments made to date.

We strongly urge you to hold Rayonier to the best cleanup option. Protect our natural resources, our wildlife, and our public health. Get this done well and soon.

Volume I is the report on contamination in the upland soils in the vicinity of the former Rayonier plant.

Volume 2 is the report on contamination in the marine areas, including sediment, water and marine animals, such as fish and crabs.

Volume 3 is the description and analysis of cleanup techniques and approaches considered for the Rayonier site. In this document, Rayonier has described a series of specific methods for cleaning up the contamination at the Rayonier site in Port Angeles, including the parts of the harbor that are included in this action. The report and this action do not address the contamination associated with the landfills that received Rayonier during the operation and demolition of the pulp mill.

Summary
The document relies too much on Institutional Controls (ICs) for managing the interaction between people and the contaminated material that is left behind and neither treated nor removed. Institutional Controls are intended to control the behavior of people and not do anything with the contamination. Some examples of Institutional Controls include deed restrictions on private or public property, signage to keep people out of an area, and fish consumption warnings in cases of contaminated fish. Long term costs of leaving contamination in place will include fences, signs and employees to inspect and monitor, including full time, as needed.

The cost factors for remedial expenses and costs of leaving contaminants in place are not based on a sufficiently long period of time. The metals, PCBs and dioxins will not breakdown at all (metals) or not breakdown in a measurable period of time (PCBs and dioxins). The remedy must be effective for a sufficiently long period of time to account for the permanence of the chemicals. Additionally, the costs do not seem to account for the costs of leaving contaminants in place. Those costs include annual or more frequent inspections and monitoring, maintaining signage, inspecting the site and inspecting the remedy, even if only a cover of sand is the remedy. The costs of leaving contamination and covering it up will include the costs of dirt, the hauling fees, any fees for spreading, and more.

This site is already subject to weather extremes, and the changing climate that brings global warming will make the problem worse. Extreme weather will be the tides, storm surges, rainfall and drought, and high temperatures as well as rising sea level.

P3-10: "MTCA rules stipulate that soil cleanup actions using this conditional POC ['POC= Point of Compliance'- with the applicable regulation or legal remedy] for the protection of terrestrial ecological receptors must include institutional controls (ICs) to ensure that the cleanup action remains protective. All of the soil remediation alternatives developed in Section 5 include ICs."

Exactly how does an IC control wildlife behavior so as to reduce or prevent exposure? An IC cannot. This option is just silly. Institutional Controls have been shown as ineffective and not reliable in the long term (US GAO 2005 and 2006). Moreover, wildlife exposure cannot be controlled via Institutional Controls.

Page 4-1 The document and public need to note that the EPA considers General Response Actions in the following order:

- Treatment is preferred
- Removal is the second option
- Containment (covering up and walling off) is the choice of last resort

The other general response actions listed in the report are not active remediation and should not be considered in the same section. Institutional controls (ICs) are discussed below because this approach has been used throughout and has been evaluated and found defective and ineffective by no less than the U.S. Government Accountability Office (USGAO 2005 and 2006).

Monitored natural recovery (MNR) and monitored natural attenuation (MNA) are not preferred and are specifically noted as inappropriate for chemicals that do not breakdown at all (such as all metals) or breakdown at an imperceptible rate (such as dioxins and PCBs). Using natural processes to cover up such chemicals as metals, dioxins and PCBs should be rejected out of hand. Both MNR and MNA should be rejected outright.

This section fails to consider extraction / removal followed by treatment, such as pump and treat technology for groundwater or dredging sediments and biological or chemical treatment to breakdown the contaminants. Such options are used in cases of even extensive soil removal that can include streams. One Superfund Site that used removal and treatment is the Ward Site in Raleigh North Carolina with approximately 400,000 cubic yards of PCB contaminated soil. The remedy selected and used was thermal desorption following soil removal. Thermal desorption is a high temperature industrial oven that collects and treats all vapors. The closed desorption unit was located on site and operated at a temperature sufficiently high to treat the PCBs.

The section on methods fails to include a method that has been used in Washington State at a number of sites and may well be useful here- the Remediators. This firm is local and uses biochar to treat both organic chemicals and metals. The method has been

applied in a number of situations, including low level PCB contamination.

Institutional Controls
A special note is due the consideration of Institutional Controls that are used at a number of contaminated sites around the country. This approach involves changing human behavior in order to prevent or limit human interaction between the population and the contamination. Institutional Controls do not work for wildlife and are completely inappropriate for wildlife, by definition, regardless of MTCA.

Institutional Controls are not effective in achieving the intended objective, as described in the reports by the US Government Accountability Office (USGAO 2005 and 2006). In this report, USGAO describes the investigation conducted by this office in reviewing the remedies at Superfund sites around the nation. The controls that had been put in place included deed restrictions, signage, fish consumption advisories and property use restrictions. The full report (USGAO 2006) provides more details on the limitations of Institutional Controls, and to summarize issues,:

- When properties are sold or transferred, the new owner disregards the Control;
- Signs are not maintained;
- Signage is ignored or not encountered;
- EPA project managers neglected to implement controls in the final remedy;
- State responsibility was not clearly assigned;
- Site reviews were either not conducted or did not include Institutional Controls. These and other problems were identified in the USGAO (2005 and 2006) reports.

Page 4-6 Section 4.2.2.2 Bioremediation.
This section does not include the bacterial breakdown used on PCBs, dioxins and several chlorinated organics used in California and other sites by Biotech Restorations (https://biotechrestore.com/). This method has proven to be effective in breakdown of a range of organic chemicals, notably chlorinated organic pesticides and industrial chemicals. This method has been used in numerous situations and should have been evaluated for the Rayonier site.

Nor does this section contemplate using multiple techniques used either simultaneously or in sequence. The report does not account for the more cost effective method of BioTech Restorations. Biotech Restorations has developed a method that uses bacteria to breakdown chlorinated organic chemicals such as PCBs and dioxins. Because this method is not included, the analysis therefore assumes or miscalculates that a combination of methods is too expensive and perhaps not effective. Combining bioremediation with metal extraction is cost effective using the BioTech Restoration 3 method and metal extraction, allowing unrestricted use and in many sites, eliminates long term costs of monitoring and maintenance.

Remediation Alternatives Section 5
Under any and all remedial action taken at this site, as should be the case for all MTCA (and federal Superfund) Sites, the final order needs to indicate and require completion by a date certain, or within a specified time. Such requirements that the work be

completed are normal at such sites, even though this one has continued for more than 20 years.

Upland Soil:
5.1.6. SL-5 – Excavation is the best selection and the only option that provides a permanent long-term solution. In addition, this alternative will be the least expensive in the long term because there will be no monitoring in the future and no maintenance costs. The complete excavation offers the advantages of no maintenance, no monitoring and no additional liability for the company or effort for the agency. In a related decision in Seattle, on the Lower Duwamish River, at Slip 4, the Boeing Co chose complete removal and elimination of further costs for maintenance, monitoring and the liability on the corporate accounting books.

Groundwater:
The report may well be correct that all three options use methods that have been used at other sites and some other uses have been in somewhat similar circumstances. Both air sparging (pumping a gas, such as air, through groundwater) and chemical oxidation (adding a chemical that will react with the contaminants and render the chemicals less toxic or inert) are well proven technologies. Reactive barriers (a physical barrier that is made of or soaked in a chemical that reacts with and de-toxifies the contaminants), however, have a less successful track record, especially under the specific conditions in the groundwater at the Rayonier site. The report is correct that any option will have to be pilot tested to be sure that the final design and operation is appropriate to the specific site conditions.

The Remedial options should have considered combinations of the different methods.

Sediment:
All options assume removal of the mill dock and jetty, per section 7.4: "Additional costs would be incurred for other components, including removal of the mill dock and jetty and restoration of the Ennis Creek Estuary (pending NRD-related agreement)." Apparently, the remedy options leave the mill dock and jetty removal to the NRD action (presumably because of the habitat restoration value of the action in this area). While this approach is mentioned in the section describing the sediment alternatives, this approach may not have been entirely clear to the public. The removal needs to be part of the final decision document and a legal commitment on the part of the company and Ecology.
4
Section 5.3.6 S-5 The sediment contaminants include dioxins/furans, PCBs, mercury, PAHs (chemicals that make up creosote), phthalates, Complete removal of all contaminated sediment is both the most protective in the long term, and the most permanent. In addition, the remedy that covers the contamination with sand or "clean soil" will incur additional direct and indirect costs to include hauling materials through the Port Angeles community.

Section 6 presents the criteria by which the remedy options are evaluated as presented in the report. Unfortunately, the cost estimates do not include the financial benefits of a

complete removal and cleanup over a long period of time. These financial benefits are not only for monitoring and maintenance, but also include administrative savings of not having a contaminated site.

The report ranks all alternatives equally with regard to public input because the public comment period remains open. This approach is not the one used in most EPA analysis in which no ranking is conducted until the public comments are received. As of the present point in the process, the public has repeatedly called for complete removal of the dock, jetty and all contamination.

Section 7 is the selection of remedies for each category- soil, groundwater and sediment. The brief section simply restates the information that is contained in sections 4, 5 and 6 along with the conclusions of the consulting firm that prepared the document.

The previous text of this comment letter explains why the choices are insufficient and will not satisfy the criterion of permanence, nor meet the preference for treatment over removal or containment.

Permanence is ever more important for remedies at the shore in the current era. The Port Angeles region is facing rising sea levels and higher temperatures in the coming years. The near-shore areas will be inundated more frequently than in previous years; some shoreline intertidal areas will be subtidal and thus permanently under water.

It is clear that permanence needs to be given the highest priority. The options that work for the best and most permanent solution, as indicated in Volume 3 are:

Upland soil (SL): SL 5- Removal of all soil that has chemicals above the regulatory limit presented in Vol 3 and remove that soil off site for disposal. Any holes or such excavations will be filled in with clean soil. No long term maintenance will be needed.

Groundwater (GW): GW 3- Chemically treat the contaminated groundwater to breakdown the contaminants.

Sediment (S): S 5- Remove contaminated sediment from the log pond, around the dock, in the near shore area, and all other areas where contamination is present. Covering would not be needed. 5

Prepared by Environmental Stewardship Concepts, LLC, Henrico VA
environsc@gmail.com. 20 October 2019.

Thank you for the opportunity to provide comments.

Anita McMillan

Comment from: DEBORAH FUSON

I will make this short and sweet. I have been a resident of Port Angeles for over 40 years. When the Rayonier Mill closed we were promised a cleanup that would allow the site to be used on a continual basis for light industry or greater. It is my understanding that ecology is now wavering on the cleanup level. The proposed standard of "OCCASIONAL USE" makes little sense when thinking about the safety of our community. Cleanup to a higher standard is both desirable and necessary since this was previously an industrial sit. At the minimum the cleanup should be to create other industrial or commercial use. The standard you are proposing makes the site largely unusable for either industrial or recreational use in the future. We believe the standard of cleanup should be "raised" and this higher standard needs to mutually benefit the owner of the site as well as the entirety of our community. The Citizens of Port Angeles deserve better.

Comment from: Peter Vanderhoof

AS best I could tell given the time available, the proposed capping pan in the marin area dos not clearly address the permeaability/transmissivity through the capping layer and for how long of such contaminants as dioxins/furans known to be in the benthic layer. That is important because the literature shows long-lived persistence in such an environment.

The site should be remediated to per-industrial conditions, not less.The literature suggests that such contaminants are best removed by controlled incineration, not by capping, which would admittedly be more expensive.

Comment from: Robbie and Jim Mantooth

Comment follows.

From: Robbie Mantooth <ennisarbor@olypen.com>
Sent: Sunday, November 24, 2019 11:51 AM
To: Abbett, Marian L. (ECY) <MABB461@ECY.WA.GOV>
Subject: additional comments, Rayonier Mill cleanup

November 24, 2019

To: Washington State Department of Ecology, Attention Marian Abbett
From: Robbie and Jim Mantooth (see address and phone number below)
Subject: Additional comments on Rayonier mill cleanup

Our previous comments focused on removing the contaminants from the Rayonier property as the only way to provide a reasonable opportunity to protect the health of people, fish and other wildlife from toxins and to protect any owners of the land from loss of potential value and even liability.

Our convictions have been bolstered even more after the presentations from Dr. Peter deFur and indications of public sentiment from the audiences at those events as well as other communications we've received. We are confident the public has earned the right to be considered as it is entitled and not outweighed by other sectors that might seem more powerful.

In this addendum we want to concentrate on fish and wildlife. Apparently no monetary value is being placed on them. Yet Ecology easily could at least determine the public dollars being spent on salmon recovery in the area and even specifically on Ennis Creek. That not only would include all the grants for such stream restoration projects as large woody debris, engineered log jams and culvert repair. It also must cover all the staff and contracted consultants involved in such work as the WRIAs, lead entity and other salmon recovery. We have personal knowledge that several hundred thousand dollars were spent through a Bureau of Indian Affairs grant to the Lower Elwha Klallam Tribe for habitat improvements on the approximately one-half mile of Ennis Creek that flows through our land. Clallam Conservation District also built two ponds on our land to filter stormwater runoff before it reaches Ennis Creek. Department of Transportation is designing a replacement for the Ennis Creek fish passage under Highway 101. That bridge is likely to be much more expensive than the one the City already built on the waterfront trail. Even unsuccessful grant applications have their costs. Just one example is the City of Port Angeles's efforts to obtain funding to replace a culvert on East Ennis Creek Road that is a partial impediment to the salmonids.

Even if a dollar figure cannot be assigned to every fish left that stands between Ennis Creek's status as having the greatest productivity potential among Port Angeles urban streams and it joining those where salmonids are considered extirpated, who wants to be responsible for such a loss?

If Ecology allows anything less than a complete cleanup, it must forever share such blame. It would have plenty of company – from Europe to the United Kingdom, to the east coast of the United States and countless other streams. Plenty of evidence could be collected about the costs of trying to get salmon back once extirpated.

Such losses happen stream by stream. As noted fisheries specialist Jim Lichatowich told me in words something like these: You take a number of streams like Ennis and pretty soon you've got an Elwha.

Any legal provisions that direct agencies to select least expensive alternatives must take such priceless elements as salmon, orcas and all the food they depend on into account.

We plead with you not to make expensive lawsuits necessary. We must speak up for the voiceless wildlife.

When I keep working on their behalf, I often am inspired by the Tribal people I know and respect and their ancestors, including those in the cemetery on the former Rayonier site. We must honor them with the right path to this rare opportunity for justice. I can imagine temptations for settlements that might seem more secure. But the evidence is unquestionable that anything other than all possible removal of hazardous waste would be yet another deceit for these outstanding stewards over many millennia and for countless generations to come.

Robbie and Jim Mantooth
2238 E. Lindberg Rd.
Port Angeles, WA 98362
360-808-3139
ennis@olypen.com

Sent from Mail for Windows 10

Comment from: James E. Mantooth

Comment follows.

From: Jim <ennisarbor@olypen.com>
Sent: Sunday, November 24, 2019 11:28 AM
To: Abbett, Marian L. (ECY) <MABB461@ECY.WA.GOV>
Cc: Jim Mantooth <ennisarbor@olypen.com>
Subject: Rayonier Mill Hazardous Waste Removal

The following is my protest to the proposed cleanup plan by Washington Department of Ecology:

I have lived, worked, raised our family, and owned land along Ennis Creek with my wife---near and downwind of the Rayonier Mill---since 1971. And my wife and I still live there, and we continue being active in trying to restore Ennis Creek and create a Conservation Corridor along Ennis Creek.
We complained frequently about the fumes from the mill while it was operating, and I often wondered about health problems that, to me, seemed possibly related to those noxious fumes. But we were aware of the economic importance of the mill to the economy of Port Angeles and tolerated the fumes and other pollution. The mill has been closed for many years now, and a proper cleanup is long overdue. Rayonier is responsible for doing a permanent cleanup and not leaving our community with a toxic site along Port Angeles Harbor at the mouth of Ennis Creek.

I have heard several presentations from Ecology and feel the final result would be a permanent scar on our waterfront and creek. A better solution would be complete removal of the contaminated soils (alternative 5) by barging them to a toxic waste dump in eastern Oregon. The proper removal should include all the pilings, wharfs, and sediments along with the contaminated soils. Then the restoration of Ennis Creek could recreate the historic estuary and shoreline for increasing the salmon/steelhead returns.

This option would certainly be best for our community, and possibly, for Rayonier. It would allow Rayonier to leave honorably and not have ongoing responsibilities of remaining contamination. Then the future generations would thank Rayonier for doing the right thing.

Thank you for the opportunity to comment on this very important issue.

James E. Mantooth
2238 E Lindberg Rd
Port Angeles, WA 98362

Comment from: Carmen Germain

From: Carmen Germain <cgermain1@hotmail.com>
Sent: Monday, November 25, 2019 10:28 PM
To: Abbett, Marian L. (ECY) <MABB461@ECY.WA.GOV>
Subject: Rayonier Mill Hazardous Waste Removal

Ms. Abbett,

Please include the following as my comment re the Port Angeles Rayonier Mill Clean-up:

I **support** removing contamination from the former mill site and am **opposed** to options that would leave polluted sediments in place. I do not want my community to be further exposed to dioxins, arsenic, lead, and other toxins that will endanger our lives for decades into the future.

Carmen Germain

Comment from: Robbie Mantooth

From: Robbie Mantooth <ennis@olypen.com>
Sent: Monday, November 25, 2019 7:09 PM
To: Abbett, Marian L. (ECY) <MABB461@ECY.WA.GOV>
Subject: Port Angeles Hwy. 101 fish passage project

Just got projected cost for Ennis Creek Hwy. 101 fish passage improvement — $18.3 million. That and all the other fish habitat investments on Ennis Creek make the costs for removing hazardous materials from the Rayonier site not seem so great.
Please add this to my previous comments. Thank you.
Robbie Mantooth
2238 E Lindberg Rd.
Port Angeles, WA 98362

Sent from my iPhone

Begin forwarded message:

> **From:** "Popoff, Lisa" <PopoffL@wsdot.wa.gov>
> **Date:** November 25, 2019 at 12:34:34 PM PST
> **To:** Robbie Mantooth <Ennis@olypen.com>
> **Subject: RE: Port Angeles Hwy. 101 fish passage project**
>
> Hi Robbie,
> The total project cost is estimated at approximately $18.3 million. However, we are early in the design phase and there are many design elements to work through which will affect that estimate in one way or another. We will keep you up to date as we progress with this project. Please feel free to contact me with any questions in the meantime.
>
> Thank you,
>
> *Lisa Popoff, P.E.*
> Project Engineer
> WSDOT North Central Region

(509) 664-0860

From: Robbie Mantooth <Ennis@olypen.com>
Sent: Thursday, November 21, 2019 10:44 AM
To: Popoff, Lisa <PopoffL@wsdot.wa.gov>
Subject: Port Angeles Hwy. 101 fish passage project

Hello Lisa.

Hope progress is continuing on the project to provide better fish passage where Hwy. 101 crosses Ennis Creek. We'll be eager for further updates.

In the meantime it would be helpful to know what the estimated cost/appropriation is for the project. We probably could get it from another source, but I thought asking you would be most expeditious.

We're confident you'll make sure designers are cognizant of the importance of discouraging use of the bridge for camping. That would certainly create problems with the stream's water quality, essential for the fish and the micro-organisms on which they depend.

Thanks for your help.

Continuing best wishes,
Robbie Mantooth

Sent from Mail for Windows 10

Comment from Jim and Robbie Mantooth

-----Original Message-----
From: Robbie Mantooth <ennis@olypen.com>
Sent: Tuesday, November 26, 2019 9:06 AM
To: Abbett, Marian L. (ECY) <MABB461@ECY.WA.GOV>
Cc: Jim Mantooth <ennisarbor@olypen.com>
Subject: Concrete parking lot

THIS EMAIL ORIGINATED FROM OUTSIDE THE WASHINGTON STATE EMAIL SYSTEM - Take caution not to open attachments or links unless you know the sender AND were expecting the attachment or the link

Do the reports now receiving public comment address the concrete parking lot west of Ennis Creek that is being used primarily by trail bikers and hikers?

We looked for it but could have missed it.

Also, may have missed what will happen to trail during cleanup.

Thanks.
Jim and Robbie Mantooth
Sent from my iPad

Comment from: Robert Wyman

From: Robbie Mantooth <ennis@olypen.com>
Sent: Friday, November 29, 2019 5:25 PM
To: Abbett, Marian L. (ECY) <MABB461@ECY.WA.GOV>
Subject: Did you get this?

The man who wrote this is concerned it didn't get to you because he may not have had the correct address. He asked me to try to send it to you because he said commenting is important to him.

Hope you got a good holiday break, providing energy for the enormous work ahead.

Continuing best wishes.
Robbie Mantooth

Sent from my iPhone

Begin forwarded message:

> **From:** Robert Wyman <rdwyman@msn.com>
> **Date:** November 29, 2019 at 5:16:16 PM PST
> **To:** "ennis@olypen.com" <Ennis@olypen.com>
> **Subject: Fw:**
>
> ----- Original Message -----
> **From:** Robbie Mantooth
> **To:** Robert Wyman
> **Sent:** Tuesday, November 26, 2019 8:23 PM
> **Subject:** RE:
>
> Thanks, Bob. Well said!
>
> Sent from Mail for Windows 10
>
> ---
>
> **From:** Robert Wyman
> **Sent:** Tuesday, November 26, 2019 3:04 PM

To: marian.abbett@ecy.gov
Cc: ennis@olypen.com
Subject:

Ms. Abbett,

I would llike to comment on the clean up proposed for the Port Angeles Bay area. As a friend of Ennis Creek I am very interested in its health now and in the future, not only for the interest of us humans, but also the fish and wildlife that abound there. I am a proponent of the most permanent and expansive clean up of the Bay and affected shoreline areas as possible. I believe anything less wouuld lead to possible neglect in the future. There is a good opportunity to fix the problem once and for all at present and I would hope this will be the case.

Respectfully,

Robert D. Wyman
Bainbridge Island
rdwyman@msn.com

Comment from: WA Dept Natural Resources, Aquatic Resources Division

Comment follows.

HILARY S. FRANZ
COMMISSIONER OF PUBLIC LANDS

October 21, 2019

DEPARTMENT OF
NATURAL RESOURCES

AQUATIC RESOURCES DIVISION
1111 WASHINGTON ST SE
MAIL STOP 47027
OLYMPIA, WA 98504-7027

360-902-1100
FAX 360-902-1786
TRS 711
ARD@DNR.WA.GOV
WWW.DNR.WA.GOV

Marian Abbett, Toxics Cleanup Program

Washington State Department of Ecology

P.O. Box 47775

Olympia, WA 98504-7775

Re: Rayonier Cleanup Study Comments

Dear Ms. Abbett:

The Washington State Department of Natural Resources (DNR) would like to thank you for the opportunity to comment on the Interim Action Report Volumes I-III for the Rayonier, Inc site in Port Angeles.

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 investigation and cleanup of the site.

Firstly, DNR encourages a conservative approach to the design of both the initial and expanded sparging system for groundwater alternative G-1. Only limited study was undertaken of the groundwater to sediment pathway. It is vital that a rigorous approach to determining whether the groundwater is meeting criteria at the point of compliance be completed in order to protect state-owned aquatic lands.

Secondly, based upon "hot spots" where toxicity and chemical criteria exceed the CSL along the current jetty footprint and areas of the dock footprint, DNR encourages consideration of the feasibility of limited removal of contaminated sediments from these areas before ENR placement. Additionally, the sediments under the dock have not been significantly characterized; characterization of the quality of these sediments should be coordinated with removal of the dock to ensure that the selected remedy is sufficient.

Thirdly DNR is supportive of alternatives that incorporate permanent, effective remediation technologies. Where feasible, DNR supports removal of contaminated sediments, especially in the log pond and in the most contaminated areas of the dock footprint. DNR supports enhanced natural recovery where sediment contaminant concentrations are lower. Monitoring for effectiveness and stability of the ENR areas should be rigorous to ensure the protection of state-owned aquatic lands.

DNR acknowledges that it may need to coordinate with the PLP for authorization of future monitoring efforts as well as any required replenishment work to the ENR layers.

Finally, DNR is supportive of the selection of a sediment remediation alternative that does not require institutional controls that could potentially impact future uses of state-owned aquatic lands by the people of Washington state, including shellfish harvest, recreational access, and other public uses.

Sincerely,

Erika A Shaffer, MS

Aquatics Division, Sediment Specialist

Comment from: Port Gamble S'Klallam Tribe

The Port Gamble S'Klallam Tribe shares the concerns of the Lower Elwha Klallam Tribe (see attached document) regarding the review drafts of the Rayonier Mill cleanup documents. We agree that Enhanced Natural Recovery (ENR) is an inadequate method of remediation for the site and has the potential to mobilize contaminants that currently reside among the sediments within the site. Dredging should additionally be prioritized for contaminated sediments above cleanup levels over capping. We also support their position that if ENR is the selected remediation method, it needs to include comprehensive monitoring, performance standards that will trigger further remedial actions if not met, and that this method only be chosen if contaminant levels are low. Sediments should be characterized before any cleanup action is chosen.

We also support the Lower Elwha Klallam Tribe's position that contaminated material be disposed of properly at approved upland facility and that any contaminated material stored temporarily onsite be properly contained and include leachate monitoring and post-removal soil sampling to ensure no additional contamination has occurred. In addition, capping should not be preferred method for the environmentally sensitive areas around the marine shoreline and Ennis Creek shoreline. Contaminated soils above cleanup levels in these areas should be excavated and disposed of offsite in an appropriate manner.

Attached letter from Lower Elwha Klallam Tribe follows.

Lower Elwha Klallam Tribe

ʔəʔɬx̣ʷə nəxʷsƛ̓ay̓ əm *"The Strong People"*

2851 Lower Elwha Road **360.452.8471**
Port Angeles, WA 98363 **360.452.3428**

November 25, 2019

Marian Abbett
Cleanup Site Manager
Washington Department of Ecology
Toxics Cleanup Program
PO Box 47775
Olympia, WA 98504-7775

Re: Further Comments of Lower Elwha Klallam Tribe regarding Rayonier Millsite Cleanup in Port Angeles Harbor

Dear Ms. Abbett:

The Lower Elwha Klallam Tribe has previously submitted review comments to the Department of Ecology on agency review drafts of the Rayonier Mill cleanup documents, including Volume I (Upland Data Summary Report), Volume II (Marine Data Summary Report), and Volume III (Cleanup Alternatives Evaluation Report-May 2015, May 2018, June 2019). While many of the Tribe's concerns as expressed in our prior comments have been addressed by revisions that are reflected in the current public review drafts of the cleanup documents, the Tribe still has outstanding concerns as set forth herein for consideration in the development of the Interim Action Plan for the Study Area.

Sediment Remediation

There has been only very limited characterization of sediments located beneath the Mill Dock (or pier). Because this area is relatively quiescent and may have been impacted by historical nearshore outfalls, this area should be fully characterized before the pier is removed. The presence of dredged berths on either side of the pier has created a "peninsular" feature of the underlying pier footprint that will be prone to rapid erosion following pier removal. Berth areas should be filled with clean, appropriate sand/gravel substrate and brought to adjacent subtidal grades. If contamination above cleanup levels is found to be present beneath the Mill Dock, the selected cleanup action should prioritize dredging over capping, and not rely solely on enhanced natural recovery (ENR) in this area. Ecology must consult with the Tribe and obtain its concurrence regarding determination of remediation thresholds for capping versus dredging in this area, as this would seem to be a major cleanup decision as provided in our 1999 Deferral Agreement.

The modeling presented in Appendix C does not provide adequate assurance that ENR will be effective in the subtidal portions of the Log Pond or in the vicinity of the Mill Dock following the removal of the marine structures. The Interim Action Plan should consider dredging the entire extent of contamination in the Log Pond, as has been the Tribe's long-standing position, followed by the placement of clean fill material. If ENR is selected as the remedy in the vicinity of the Dock, it should only be implemented under the following conditions: (1) sediments have low levels of contamination; (2) comprehensive monitoring is required to ensure that the remedy is functioning as intended; and (3) that there be appropriate triggers for implementing additional remedial measures if they are required. Additionally, it is not clear that the size of the ENR materials necessary to prevent sediment erosion will be consistent with the needs for adequately isolating the underlying contaminants.

To the extent that institutional controls are required in ENR areas, they should in no way limit the exercise of tribal treaty rights, including harvesting geoduck, shoreline access via small craft, or other cultural uses or activities.

Upland Placement of Dredged Sediment

The Cleanup Alternatives Evaluation Report, in Section 5.3, assumes that sediment excavated using upland-based equipment from the nearshore areas would be placed in the upland, "either beneath a cap or used as fill, depending on the characteristics and residual contaminant levels in the excavated/dredged material." However, the state Solid Waste Handling Standards (WAC 173-350) consider contaminated dredged material to be a solid waste that must be disposed of at an approved upland facility. If contaminated dredged material is temporarily stockpiled on the Site it must be properly contained, must include leachate monitoring, and should require post-removal sampling of surface soils to ensure that all dredged sediments have been removed from the site and have not resulted in additional soil or groundwater contamination.

Soil Remediation

As acknowledged in the Cleanup Alternatives Evaluation Report, Rayonier A.M. has certain obligations under its Aquatic Lands lease for the dock, jetty, "and other fill that is located on the Washington State Department of Natural Resources (DNR) leasehold." It is not currently clear to what extent DNR may require removal of this "other fill" or how this will impact the final location and alignment of the marine shoreline within the current lease area. The selected cleanup action should ensure that capping will not be relied upon in environmentally sensitive areas, including the marine shoreline (200 feet) and the Ennis Creek shoreline (150 feet on either side). Cleanup in these areas should be based on excavation and removal of soils above cleanup levels.

To the extent that institutional controls are required in upland areas, they should in no way limit future public access or access for the exercise of tribal treaty rights or other tribal cultural uses or activities.

Conclusion

The Tribe has appreciated its close working relationship with Ecology under our Deferral Agreement and looks forward to continued collaboration on this critically important project. I thank you for your consideration of these additional comments. If you have any questions please do not hesitate to contact Matt Beirne, Natural Resources Director, at 360-457-4012, ext. 7480.

Sincerely,

Frances G. Charles
Chairwoman

cc: Maia Bellon, Ecology Director
Lower Elwha Tribal Council
Lower Elwha Natural Resources Director

Comment from: Environmental Stewardship Concepts, LLC

Rayonier Mill Site Cleanup Report Vol 3
comments 2019
October 19, 2019

A public comment period is set from August 29 to October 28, 2019 to provide a chance to comment on Volumes I, II, and III before they are finalized.

An open house was held on September 25, 2019, from 6:30 to 8:30 p.m. at the Olympic Medical Center, Linkletter Hall.

Volume I is the report on contamination in the upland soils in the vicinity of the former Rayonier plant.

Volume 2 is the report on contamination in the marine areas, including sediment, water and marine animals, such as fish and crabs.

Volume 3 is the description and analysis of cleanup techniques and approaches considered for the Rayonier site. In this document, Rayonier has described a series of specific methods for cleaning up the contamination at the Rayonier site in Port Angeles, including the parts of the harbor that are included in this action. The report and this action do not address the contamination associated with the landfills that received Rayonier during the operation and demolition of the pulp mill.

Summary
The document relies too much on Institutional Controls (ICs) for managing the interaction between people and the contaminated material that is left behind and neither treated nor removed. Institutional Controls are intended to control the behavior of people and not do anything with the contamination. Some examples of Institutional Controls include deed restrictions on private or public property, signage to keep people out of an area, and fish consumption warnings in cases of contaminated fish. Long term costs of leaving contamination in place will include fences, signs and employees to inspect and monitor, including full time, as needed.

The cost factors for remedial expenses and costs of leaving contaminants in place are not based on a sufficiently long period of time. The metals, PCBs and dioxins will not breakdown at all (metals) or not breakdown in a measurable period of time (PCBs and dioxins). The remedy must be effective for a sufficiently long period of time to account for the permanence of the chemicals. Additionally, the costs do not seem to account for the costs of leaving contaminants in place. Those costs include annual or more frequent inspections and monitoring, maintaining signage, inspecting the site and inspecting the remedy, even if only a cover of sand is the remedy. The costs of leaving contamination and covering it up will include the costs of dirt, the hauling fees, any fees for spreading, and more.

This site is already subject to weather extremes, and the changing climate that brings global warming will make the problem worse. Extreme weather will be the tides, storm surges, rainfall and drought, and high temperatures as well as rising sea level.

P3-10: “MTCA rules stipulate that soil cleanup actions using this conditional POC [‘POC= Point of Compliance’- with the applicable regulation or legal remedy] for the protection of terrestrial ecological receptors must include institutional controls (ICs) to ensure that the cleanup action remains protective. All of the soil remediation alternatives developed in Section 5 include ICs.”

Exactly how does an IC control wildlife behavior so as to reduce or prevent exposure? An IC cannot. This option is just silly. Institutional Controls have been shown as ineffective and not reliable in the long term (US GAO 2005 and 2006). Moreover, wildlife exposure cannot be controlled via Institutional Controls.

Page 4-1 The document and public need to note that the EPA considers General Response Actions in the following order:

- Treatment is preferred
- Removal is the second option
- Containment (covering up and walling off) is the choice of last resort

The other general response actions listed in the report are not active remediation and should not be considered in the same section. Institutional controls (ICs) are discussed below because this approach has been used throughout and has been evaluated and found defective and ineffective by no less than the U.S. Government Accountability Office (USGAO 2005 and 2006).

Monitored natural recovery (MNR) and monitored natural attenuation (MNA) are not preferred and are specifically noted as inappropriate for chemicals that do not breakdown at all (such as all metals) or breakdown at an imperceptible rate (such as dioxins and PCBs). Using natural processes to cover up such chemicals as metals, dioxins and PCBs should be rejected out of hand. Both MNR and MNA should be rejected outright.

This section fails to consider extraction / removal followed by treatment, such as pump and treat technology for groundwater or dredging sediments and biological or chemical treatment to breakdown the contaminants. Such options are used in cases of even extensive soil removal that can include streams. One Superfund Site that used removal and treatment is the Ward Site in Raleigh North Carolina with approximately 400,000 cubic yards of PCB contaminated soil. The remedy selected and used was thermal desorption following soil removal. Thermal desorption is a high temperature industrial oven that collects and treats all vapors. The closed desorption unit was located on site and operated at a temperature sufficiently high to treat the PCBs.

The section on methods fails to include a method that has been used in Washington State at a number of sites and may well be useful here- the Remediators. This firm is

local and uses biochar to treat both organic chemicals and metals. The method has been applied in a number of situations, including low level PCB contamination.

Institutional Controls

A special note is due the consideration of Institutional Controls that are used at a number of contaminated sites around the country. This approach involves changing human behavior in order to prevent or limit human interaction between the population and the contamination. Institutional Controls do not work for wildlife and are completely inappropriate for wildlife, by definition, regardless of MTCA.

Institutional Controls are not effective in achieving the intended objective, as described in the reports by the US Government Accountability Office (USGAO 2005 and 2006). In this report, USGAO describes the investigation conducted by this office in reviewing the remedies at Superfund sites around the nation. The controls that had been put in place included deed restrictions, signage, fish consumption advisories and property use restrictions. The full report (USGAO 2006) provides more details on the limitations of Institutional Controls, and to summarize issues,:

- When properties are sold or transferred, the new owner disregards the Control;
- Signs are not maintained;
- Signage is ignored or not encountered;
- EPA project managers neglected to implement controls in the final remedy;
- State responsibility was not clearly assigned;
- Site reviews were either not conducted or did not include Institutional Controls.

These and other problems were identified in the USGAO (2005 and 2006) reports.

Page 4-6 Section 4.2.2.2 Bioremediation.

This section does not include the bacterial breakdown used on PCBs, dioxins and several chlorinated organics used in California and other sites by Biotech Restorations (https://biotechrestore.com/). This method has proven to be effective in breakdown of a range of organic chemicals, notably chlorinated organic pesticides and industrial chemicals. This method has been used in numerous situations and should have been evaluated for the Rayonier site.

Nor does this section contemplate using multiple techniques used either simultaneously or in sequence. The report does not account for the more cost effective method of BioTech Restorations. Biotech Restorations has developed a method that uses bacteria to breakdown chlorinated organic chemicals such as PCBs and dioxins. Because this method is not included, the analysis therefore assumes or miscalculates that a combination of methods is too expensive and perhaps not effective. Combining bioremediation with metal extraction is cost effective using the BioTech Restoration method and metal extraction, allowing unrestricted use and in many sites, eliminates long term costs of monitoring and maintenance.

Remediation Alternatives Section 5

Under any and all remedial action taken at this site, as should be the case for all MTCA (and federal Superfund) Sites, the final order needs to indicate and require completion by a date certain, or within a specified time. Such requirements that the work be completed are normal at such sites, even though this one has continued for more than 20 years.

Upland Soil:

5.1.6. SL-5 – Excavation is the best selection and the only option that provides a permanent long-term solution. In addition, this alternative will be the least expensive in the long term because there will be no monitoring in the future and no maintenance costs. The complete excavation offers the advantages of no maintenance, no monitoring and no additional liability for the company or effort for the agency. In a related decision in Seattle, on the Lower Duwamish River, at Slip 4, the Boeing Co chose complete removal and elimination of further costs for maintenance, monitoring and the liability on the corporate accounting books.

Groundwater:

The report may well be correct that all three options use methods that have been used at other sites and some other uses have been in somewhat similar circumstances. Both air sparging (pumping a gas, such as air, through groundwater) and chemical oxidation (adding a chemical that will react with the contaminants and render the chemicals less toxic or inert) are well proven technologies. Reactive barriers (a physical barrier that is made of or soaked in a chemical that reacts with and de-toxifies the contaminants), however, have a less successful track record, especially under the specific conditions in the groundwater at the Rayonier site. The report is correct that any option will have to be pilot tested to be sure that the final design and operation is appropriate to the specific site conditions.

The Remedial options should have considered combinations of the different methods.

Sediment:

All options assume removal of the mill dock and jetty, per section 7.*4: "Additional costs would be incurred for other components, including removal of the mill dock and jetty and restoration of the Ennis Creek Estuary (pending NRD-related agreement)."* Apparently, the remedy options leave the mill dock and jetty removal to the NRD action (presumably because of the habitat restoration value of the action in this area). While this approach is mentioned in the section describing the sediment alternatives, this approach may not have been entirely clear to the public. The removal needs to be part of the final decision document and a legal commitment on the part of the company and Ecology.

Section 5.3.6 S-5 The sediment contaminants include dioxins/furans, PCBs, mercury, PAHs (chemicals that make up creosote), phthalates, Complete removal of all contaminated sediment is both the most protective in the long term, and the most permanent. In addition, the remedy that covers the contamination with sand or "clean

soil" will incur additional direct and indirect costs to include hauling materials through the Port Angeles community.

Section 6 presents the criteria by which the remedy options are evaluated as presented in the report. Unfortunately, the cost estimates do not include the financial benefits of a complete removal and cleanup over a long period of time. These financial benefits are not only for monitoring and maintenance, but also include administrative savings of not having a contaminated site.

The report ranks all alternatives equally with regard to public input because the public comment period remains open. This approach is not the one used in most EPA analysis in which no ranking is conducted until the public comments are received. As of the present point in the process, the public has repeatedly called for complete removal of the dock, jetty and all contamination.

Section 7 is the selection of remedies for each category- soil, groundwater and sediment. The brief section simply restates the information that is contained in sections 4, 5 and 6 along with the conclusions of the consulting firm that prepared the document.

The previous text of this comment letter explains why the choices are insufficient and will not satisfy the criterion of permanence, nor meet the preference for treatment over removal or containment.

Permanence is ever more important for remedies at the shore in the current era. The Port Angeles region is facing rising sea levels and higher temperatures in the coming years. The near-shore areas will be inundated more frequently than in previous years; some shoreline intertidal areas will be subtidal and thus permanently under water.

It is clear that permanence needs to be given the highest priority. The options that work for the best and most permanent solution, as indicated in Volume 3 are:

Upland soil (SL): SL 5- Removal of all soil that has chemicals above the regulatory limit presented in Vol 3 and remove that soil off site for disposal. Any holes or such excavations will be filled in with clean soil. No long term maintenance will be needed.

Groundwater (GW): GW 3- Chemically treat the contaminated groundwater to breakdown the contaminants.

Sediment (S): S 5- Remove contaminated sediment from the log pond, around the dock, in the near shore area, and all other areas where contamination is present. Covering would not be needed.

Prepared by Environmental Stewardship Concepts, LLC, Henrico VA
environsc@gmail.com. 19 October 2019.

Comment from: The Remediators Incorporated

From: Howard Sprouse <hsprouse@theremediators.com>
Sent: Tuesday, November 26, 2019 1:22 PM
To: Abbett, Marian L. (ECY) <MABB461@ECY.WA.GOV>
Subject:

The current proposal from ECY for the cleanup action that is under review for the Rayonier Mill property is insufficient from both and environmental as well as long term use-based perspective. I hope that a cleanup plan is made that will both ensures the health and safety of the community as well as allow for this land to be useful to the purposes of stakeholders I'm attaching a white paper about the current state of the art of bioremediation technology. This paper is a non technical introduction to the technology. For specific contaminants and applications we have papers citing results as well as examples from former and ongoing work that is in use in the lower 48 states of the US and in Alaska. This technology is currently being evaluated for treatment of soils in a similar project in Oregon. We have used it successfully for organic and inorganic, soil and waterborne contaminant treatment. It can be used as an in situ treatment with minimal disturbance to soils as shown in the photo in the white paper.

Howard Sprouse
The Remediators Incorporated
www.theremediators.com
Google Phone Number 773-609-(CHAR), 2427

Mycoremediation and the Integrated Biological Approach for the Treatment of Organic and Mixed Contaminants

Petroleum based contamination of soil and water are a major threat to the health of our ecosystems and human health. Cleanup costs for these often hard to treat contaminants have imposed an enormous financial burden on society with negative effects on land values. As a standalone treatment for petroleum contamination mycoremediation has achieved 'non-detects' in as little as a few months' time. The fungal metabolization of hydrocarbons creates no toxic waste stream with carbon dioxide and water being the final product of decomposition. Mycoremediation in an integrated bioremediation system represents the state of the art in bioremediation technology. We combine the use of specifically selected fungal treatments with phytoremediation plant / microbe combinations that have been proven successful in field applications to treat a variety of pollutants. This newly developed approach allows an effective and low cost solution for a broad range of organic and inorganic pollutants.

Fungi are natures recyclers. They secrete enzymes into their environment that break down organic compounds. These compounds are chemically broken down into simpler ones which then become available to the growing fungi and other organisms. The degradation of lignin and cellulose are primary sources of energy for most fungi and lignin is a natural analogue of petroleum based hydrocarbons. Fungi can degrade a variety of petroleum hydrocarbons including aromatic (PAHs, dioxins) and chlorinated (PCBs, DDT) compounds. Enzymes responsible for this can likewise deconstruct inorganic compounds and metals which then become available to microbes and plants within our combined bioremediation systems.

Mycelium, where mushroom meets toxin. Mycelium, the rootlike structure that comprises the bulk of these fungal organisms, exist in an interconnected web of microscopic threads called hyphae that penetrate their environment. A gram of healthy soil can contain hundreds of meters of fungal hyphae. Fungal growth is dependent upon nutrients and minerals that the mycelium encounters that are degraded by enzymes secreted by the mycelium and then reabsorbed as their primary food source. It is in and around the mycelial network that the

Comment from: Coastal Watershed Institute

"The proposed alternative recommendations do not constitute a cleanup. They are a coverup that will leave toxic materials onsite. This leaves the site extremely susceptible to re-exposure of contaminants in the event of a natural event such as an earthquake or tsunami. The marine shoreline is not an appropriate disposal site for contaminants that were discharged by Rayonier. Please re-evaluate the alternatives and select an alternative that remediates the site to a condition that does not continue to burden our community with toxic materials poorly disposed of on a former Klallam village site".

Comment from: Port Angeles Business Association

This comment is from the Port Angeles Business Association (PABA, a member-directed business advocacy organization in Port Angeles, Washington. Please accept it into the file for the cleanup analytical and options file for the former Rayonier Mill site in Port Angeles.

Jim McEntire
Chair, PABA Government Affairs Committee
Cell: 360-775-7357

Comment follows:

It is good to see plans for the re-start of the cleanup of the still-polluted Port Angeles Rayonier Mill site.

But the Port Angeles Business Association does not agree with the state cleanup plans as briefed to the public in late September in Port Angeles.

Since the site is zoned for industrial activity, clean-up plans must be to a standard befitting safe and healthy industrial use.

But the state Department of Ecology has proposed making the site available for "occasional use." This would be a lower standard than industrial use, which would have to be clean enough for workers spending, for example, eight hours a day on the site. Not requiring the site to be cleaned up to at least an industrial level prevents appropriate future industrial use of the site -- and, in addition, it leaves in place unacceptable health risks at a site that is centrally located within the Port Angeles community.

Cleanup to a higher standard is both desirable and necessary. There must be nothing that prevents industry from coming into that industrial-zoned site.

Please get the cleanup done to at least an industrial level.

Comment from: North Olympic Land Trust

Dear Department of Ecology,
Thank you for this opportunity to comment on the draft Port Angeles Rayonier Mill Upland and Marine Data Summary Reports and Cleanup Alternatives Evaluation Report. For over two decades, North Olympic Land Trust has worked side by side with local landowners and agencies to support the Ennis Creek Watershed for the purpose of ensuring this waterway and its associated watershed maintains and restores its Conservation Values including a wildlife corridor, riverine wetlands, working lands, and salmonid habitat.

The wait for eventual cleanup at the former Rayonier mill site is long overdue as the mill closed over 20 years ago. We appreciate this evidence that cleanup is imminent. We do want to comment that we oppose the suggestion to only bring the property to a cleanup standard allowing for 'occasional use'. We support full cleanup of the site including the removal of all structures, debris and pilings and the full removal of all contaminants.

Ennis Creek, its entire watershed and nearshore environment play a key role in the health and quality of life in this community. The human and non-human occupants and visitors to this area, including endangered salmon, deserve a full cleanup. Without cleanup to the highest level, we are specifically concerned about negative impacts on the potential for further restoration on properties permanently conserved by the Land Trust upstream of the former Rayonier Mill site.

As a stakeholder in this watershed, we look forward to working together toward the ecological integrity of this amazing place. We understand that a full clean-up proposal will be released in the near future, and look forward to commenting on that plan as well. Please don't hesitate to reach out if you have anything you would like to discuss further.

Best regards,

Tom Sanford
Director, North Olympic Land Trust

Comment from: Feiro Marine Life Center

Feiro Marine Life Center

Dear Marian Abbett,
The following comments on Volumes I, II and III of the Rayonier Mill cleanup are submitted on behalf of the Feiro Marine Life Center, located at 315 N Lincoln St on City Pier in Port Angeles. Feiro is a 501(c)3 nonprofit, whose mission reads: Feiro Marine Life Center contributes to a strong community by providing local marine and watershed learning experiences, inspiring us all to act on behalf of our environment.

Our learning programs and core business rely on an open flow water system that services aquarium exhibits open to the public seven days a week, all year long. More than 200 species of marine invertebrates and fish live at Feiro. We care for these animals daily, providing clean habitats, and a diversity of food sources as appropriate for each species. We even have launched a limited health care program, to ensure parasite reduction. Some of our collection animals are known to the public by name, such as Rocky, whose inflamed eye was surgically removed by a licensed veterinarian to give him the best chance to live to his maximum possible age.
The nature of our open flow system permits needed nutrients to enter our habitats and feed the many filter-feeders who call Feiro home. As our system was designed in 1981, there is currently no good way to shut down the flow of sea water and recirculate it in the event of an emergency.

The Feiro Marine Life Center is extremely supportive of Ecology's efforts to remediate contaminated sediments in Port Angeles Harbor and help restore healthy ecosystem processes to this unique convergence of numerous streams with critical nearshore, estuarine, and benthic habitats. We understand that there are a variety of remedies under consideration for the cleanup of contaminated sediments in the Rayonier "Study Area" in the Volume III report. We also recognize the separate MTCA remedial investigation and feasibility studies (RIFS) underway for western and central Port Angeles Harbor involving other potentially liable parties (PLPs). In the mid-1990s a dredging operation in the vicinity of the Valley Creek estuary resulted in the resuspension of anoxic sediments. These anoxic were drawn into the water intake system of the Feiro Marine Life Center, which resulted in the death of nearly all organisms in the collection. It is important that Ecology is aware of this potential risk to our open flow water intake system when remediation activities are contemplated to ensure that best management practices are employed and a similar incident may be avoided.

As an education organization concerned with the marine environment, we also endorse cleanup methods that restore the maximum possible amount of biodiversity in both the nearshore and uplands watershed. We often take learners into the field to study and steward watershed health, marine organisms, and other biotic and abiotic features of our landscape in order to inspire beneficial action. We are concerned with any potential site access restrictions to the Ennis Creek floodplain and nearshore areas following the cleanup. A Rayonier site that is cleaned to the extent that it could be actively used by students and adult learners would be the preferred outcome for both the upland and marine portions of the Rayonier cleanup. Thank you for your time and consideration.

Sincerely,
Melissa A. Williams

Executive Director
(Signed attachment on letterhead

Feiro
MARINE LIFE CENTER

November 25, 2019

Marian Abbett
Department of Ecology Southwest Regional Office
PO Box 47775
Olympia, WA 98504-7775

Dear Marian Abbett,

The following comments on Volumes I, II and III of the Rayonier Mill cleanup are submitted on behalf of the Feiro Marine Life Center, located at 315 N Lincoln St on City Pier in Port Angeles. Feiro is a 501(c)3 nonprofit, whose mission reads: Feiro Marine Life Center contributes to a strong community by providing local marine and watershed learning experiences, inspiring us all to act on behalf of our environment.

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PO BOX 625 • 315 LINCOLN ST • PORT ANGELES, WA 98362
360 417 6254 • FEIROMARINELIFECENTER.ORG

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Sincerely,

Melissa A. Williams
Executive Director

Comment from: Clallam County Economic Development Council

The Clallam County Economic Development Council is opposed to the current preferred alternative proposed by Rayonier at the Port Angeles site.

This alternative prevents our citizens and businesses from being able to use this critical land asset for economic or community development since it merely consolidates the contaminated soils on the most viable portion of the site. The consolidation of contaminated soils is in effect a permanent landfill on the property that is planned to be fenced off from public access in perpetuity.

The proposed cleanup level rules out most future uses and any use other than industrial will require additional extensive clean up action across the site. That means the only logical path for other uses is for the Rayonier brownfield site to be purchased by a government entity and use taxpayer dollars to clean it up. This process is not a wise use of community or government resources.

The Clallam EDC's position would require that Rayonier conduct a more thorough cleanup which would allow for numerous future uses.

Comment from: Future Wise

Comment follows.

From: Katherine Walton <katherine@futurewise.org>
Sent: Tuesday, November 26, 2019 2:16 PM
To: Abbett, Marian L. (ECY) <MABB461@ECY.WA.GOV>
Cc: Darlene Schanfald <darlenes@olympus.net>; Tiernan Martin <tiernan@futurewise.org>; Alex Brennan <alex@futurewise.org>
Subject: Rayonier Mill Cleanup Comment

Dear Marian Abbett,

Futurewise would like to add our signature to Olympic Environmental Council's comments on Volumes I, II, and III. Please let me know if you have any questions or concerns.

Sincerely,
Katherine

Katherine Walton (she/her)
Community Engagement Coordinator

future wise

816 Second Avenue, Suite 200
Seattle, WA 98104-1530
e: katherine@futurewise.org
p: 206 343-0681 x109
f: 206 709-8218
futurewise.org

Olympic Environmental Council

PO Box 2664 Sequim WA 98382

28 October 2019

Maia Bellon, Director
WA State Department of Ecology
PO Box 47600
Olympia WA 98504

Rebecca S. Lawson, P.E., LHG
Southwest Regional Office Section Manager
Toxics Cleanup Program

Marian Abbett, P.E.
Unit Supervisor
Toxics Cleanup Program
Southwest Regional Office

RE: Port Angeles Rayonier Mill Cleanup Plan

Dear Director Bellon, Ms. Lawson and Ms. Abbett,

The undersigned organizations and individuals are submitting our comments for the *Port Angeles Rayonier Mill Cleanup Plan*, which is dated xx, 2019. We actively are working towards the cleanup of the Salish Sea, which includes the Strait of Juan de Fuca and Hood Canal. Some of our organizations were petitioners to USEPA Region 10 for the Superfund listing of the site in 1998. Our comments follow:

- **Removal of structures and debris.** We support the removal the jetty and the wharf, with its nearly 1000 creosote pilings and newer arsenic-based pilings will be removed. We hope these removals will soon be undertaken.

- **Options that leave contaminants in place.** We oppose the proposed upland and sediment options which leave the pollutants in place, cover them with soil or sediment, monitor the site over years, and rely on institutional controls (such as signage, fencing, and allowing site access twice a week). This will not protect the public, nor the marine ecosystem, nor the wildlife. It will leave all life vulnerable for years. The proposed option does not meet the intent of the Shoreline Management Act nor, again, the Puget Sound Partnership cleanup mandate, of which Ecology is a major partner.

- **Option that removes contaminants.** We strongly support options that will remove contamination -- alternatives 5 for sediments and for soils. We believe that Rayonier is a wealthy company and can afford the best cleanup options at only $55 million for sediments and $37 million for soil. The company should leave the Port Angeles community and Puget Sound healthy. As sea level rises and as storm surges create more destruction along our coastline, it makes no sense – morally or financially - to leave the hazardous

waste in place. The waters host endangered and threatened species, including chinook and Southern Resident Killer Whales. Furthermore, a quality cleanup, as was done by the Port of Port Angeles at the KPly/PenPly site and at Site 4 in the Lower Duwamish Waterway -- complete removal – results in the elimination of future costs and maintenance, long term monitoring and liability.

Lastly, Ennis Creek, which runs through the center of the mill in which citizens and the Lower Elwha Klallam Tribe invested many resources towards its renovation, is known for having the greatest potential for salmon habitat recovery among Port Angeles's streams. We have an obligation to assure that the fish and other wildlife are not endangered by remaining hazardous wastes and not treated with the best available technology. Wastes left at the site will defeat the tremendous investments made to date.

We strongly urge you to hold Rayonier to the best cleanup option. Protect our natural resources, our wildlife, and our public health. Get this done well and soon.

Please see the attached technical comments from Dr. Peter deFur, Environmental Stewardship Concepts, LLC .

Signed,

Paula Mackrow, President
ETC signatures

K. Walton

Katherine Walton
Livable Communities Coordinator
Futurewise

Rayonier Mill Site Cleanup Report Vol 3
Comments on behalf of the Olympic Environmental Council
October 20, 2019

A public comment period is set from August 29 to October 28, 2019 to provide a chance to comment on Volumes I, II, and III before they are finalized.

An open house was held on September 25, 2019, from 6:30 to 8:30 p.m. at the Olympic Medical Center, Linkletter Hall.

Volume I is the report on contamination in the upland soils in the vicinity of the former Rayonier plant.

Volume 2 is the report on contamination in the marine areas, including sediment, water and marine animals, such as fish and crabs.

Volume 3 is the description and analysis of cleanup techniques and approaches considered for the Rayonier site. In this document, Rayonier has described a series of specific methods for cleaning up the contamination at the Rayonier site in Port Angeles, including the parts of the harbor that are included in this action. The report and this action do not address the contamination associated with the landfills that received Rayonier during the operation and demolition of the pulp mill.

Summary

The document relies too much on Institutional Controls (ICs) for managing the interaction between people and the contaminated material that is left behind and neither treated nor removed. Institutional Controls are intended to control the behavior of people and not do anything with the contamination. Some examples of Institutional Controls include deed restrictions on private or public property, signage to keep people out of an area, and fish consumption warnings in cases of contaminated fish. Long term costs of leaving contamination in place will include fences, signs and employees to inspect and monitor, including full time, as needed.

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11223 Fox Meadow Dr., Henrico VA 23233 ph: 804-690-4153 environsc@gmail.com

This site is already subject to weather extremes, and the changing climate that brings global warming will make the problem worse. Extreme weather will be the tides, storm surges, rainfall and drought, and high temperatures as well as rising sea level.

P3-10: “MTCA rules stipulate that soil cleanup actions using this conditional POC [‘POC= Point of Compliance’- with the applicable regulation or legal remedy] for the protection of terrestrial ecological receptors must include institutional controls (ICs) to ensure that the cleanup action remains protective. All of the soil remediation alternatives developed in Section 5 include ICs.”

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Institutional Controls

A special note is due the consideration of Institutional Controls that are used at a number of contaminated sites around the country. This approach involves changing human behavior in order to prevent or limit human interaction between the population and the contamination. Institutional Controls do not work for wildlife and are completely inappropriate for wildlife, by definition, regardless of MTCA.

Institutional Controls are not effective in achieving the intended objective, as described in the reports by the US Government Accountability Office (USGAO 2005 and 2006). In this report, USGAO describes the investigation conducted by this office in reviewing the remedies at Superfund sites around the nation. The controls that had been put in place included deed restrictions, signage, fish consumption advisories and property use restrictions. The full report (USGAO 2006) provides more details on the limitations of Institutional Controls, and to summarize issues,:

- When properties are sold or transferred, the new owner disregards the Control;
- Signs are not maintained;
- Signage is ignored or not encountered;
- EPA project managers neglected to implement controls in the final remedy;
- State responsibility was not clearly assigned;
- Site reviews were either not conducted or did not include Institutional Controls.

These and other problems were identified in the USGAO (2005 and 2006) reports.

Page 4-6 Section 4.2.2.2 Bioremediation.

This section does not include the bacterial breakdown used on PCBs, dioxins and several chlorinated organics used in California and other sites by Biotech Restorations (https://biotechrestore.com/). This method has proven to be effective in breakdown of a range of organic chemicals, notably chlorinated organic pesticides and industrial chemicals. This method has been used in numerous situations and should have been evaluated for the Rayonier site.

Nor does this section contemplate using multiple techniques used either simultaneously or in sequence. The report does not account for the more cost effective method of BioTech Restorations. Biotech Restorations has developed a method that uses bacteria to breakdown chlorinated organic chemicals such as PCBs and dioxins. Because this method is not included, the analysis therefore assumes or miscalculates that a combination of methods is too expensive and perhaps not effective. Combining bioremediation with metal extraction is cost effective using the BioTech Restoration 3

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method and metal extraction, allowing unrestricted use and in many sites, eliminates long term costs of monitoring and maintenance.

Remediation Alternatives Section 5

Under any and all remedial action taken at this site, as should be the case for all MTCA (and federal Superfund) Sites, the final order needs to indicate and require completion by a date certain, or within a specified time. Such requirements that the work be completed are normal at such sites, even though this one has continued for more than 20 years.

Upland Soil:

5.1.6. SL-5 – Excavation is the best selection and the only option that provides a permanent long-term solution. In addition, this alternative will be the least expensive in the long term because there will be no monitoring in the future and no maintenance costs. The complete excavation offers the advantages of no maintenance, no monitoring and no additional liability for the company or effort for the agency. In a related decision in Seattle, on the Lower Duwamish River, at Slip 4, the Boeing Co chose complete removal and elimination of further costs for maintenance, monitoring and the liability on the corporate accounting books.

Groundwater:

The report may well be correct that all three options use methods that have been used at other sites and some other uses have been in somewhat similar circumstances. Both air sparging (pumping a gas, such as air, through groundwater) and chemical oxidation (adding a chemical that will react with the contaminants and render the chemicals less toxic or inert) are well proven technologies. Reactive barriers (a physical barrier that is made of or soaked in a chemical that reacts with and de-toxifies the contaminants), however, have a less successful track record, especially under the specific conditions in the groundwater at the Rayonier site. The report is correct that any option will have to be pilot tested to be sure that the final design and operation is appropriate to the specific site conditions.

The Remedial options should have considered combinations of the different methods.

Sediment:

All options assume removal of the mill dock and jetty, per section 7.*4: "Additional costs would be incurred for other components, including removal of the mill dock and jetty and restoration of the Ennis Creek Estuary (pending NRD-related agreement)."* Apparently, the remedy options leave the mill dock and jetty removal to the NRD action (presumably because of the habitat restoration value of the action in this area). While this approach is mentioned in the section describing the sediment alternatives, this approach may not have been entirely clear to the public. The removal needs to be part of the final decision document and a legal commitment on the part of the company and Ecology.

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Section 5.3.6 S-5 The sediment contaminants include dioxins/furans, PCBs, mercury, PAHs (chemicals that make up creosote), phthalates, Complete removal of all contaminated sediment is both the most protective in the long term, and the most permanent. In addition, the remedy that covers the contamination with sand or "clean soil" will incur additional direct and indirect costs to include hauling materials through the Port Angeles community.

Section 6 presents the criteria by which the remedy options are evaluated as presented in the report. Unfortunately, the cost estimates do not include the financial benefits of a complete removal and cleanup over a long period of time. These financial benefits are not only for monitoring and maintenance, but also include administrative savings of not having a contaminated site.

The report ranks all alternatives equally with regard to public input because the public comment period remains open. This approach is not the one used in most EPA analysis in which no ranking is conducted until the public comments are received. As of the present point in the process, the public has repeatedly called for complete removal of the dock, jetty and all contamination.

Section 7 is the selection of remedies for each category- soil, groundwater and sediment. The brief section simply restates the information that is contained in sections 4, 5 and 6 along with the conclusions of the consulting firm that prepared the document.

The previous text of this comment letter explains why the choices are insufficient and will not satisfy the criterion of permanence, nor meet the preference for treatment over removal or containment.

Permanence is ever more important for remedies at the shore in the current era. The Port Angeles region is facing rising sea levels and higher temperatures in the coming years. The near-shore areas will be inundated more frequently than in previous years; some shoreline intertidal areas will be subtidal and thus permanently under water.

It is clear that permanence needs to be given the highest priority. The options that work for the best and most permanent solution, as indicated in Volume 3 are:

Upland soil (SL): SL 5- Removal of all soil that has chemicals above the regulatory limit presented in Vol 3 and remove that soil off site for disposal. Any holes or such excavations will be filled in with clean soil. No long term maintenance will be needed.

Groundwater (GW): GW 3- Chemically treat the contaminated groundwater to breakdown the contaminants.

Sediment (S): S 5- Remove contaminated sediment from the log pond, around the dock, in the near shore area, and all other areas where contamination is present. Covering would not be needed. 5

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Prepared by Environmental Stewardship Concepts, LLC, Henrico VA environsc@gmail.com. 20 October 2019.


North
Former Fibreboard Mill
Marine
Study Area
Upland Study Area
(Former Raymier Mill)

Comment from: Lower Elwha Klallam Tribe

Comment follows.

Lower Elwha Klallam Tribe

ʔəʔɬx̣ʷə nəxʷsƛ̓ay̓ əm *"The Strong People"*

2851 Lower Elwha Road **360.452.8471**
Port Angeles, WA 98363 **360.452.3428**

November 25, 2019

Marian Abbett
Cleanup Site Manager
Washington Department of Ecology
Toxics Cleanup Program
PO Box 47775
Olympia, WA 98504-7775

Re: Further Comments of Lower Elwha Klallam Tribe regarding Rayonier Millsite Cleanup in Port Angeles Harbor

Dear Ms. Abbett:

The Lower Elwha Klallam Tribe has previously submitted review comments to the Department of Ecology on agency review drafts of the Rayonier Mill cleanup documents, including Volume I (Upland Data Summary Report), Volume II (Marine Data Summary Report), and Volume III (Cleanup Alternatives Evaluation Report-May 2015, May 2018, June 2019). While many of the Tribe's concerns as expressed in our prior comments have been addressed by revisions that are reflected in the current public review drafts of the cleanup documents, the Tribe still has outstanding concerns as set forth herein for consideration in the development of the Interim Action Plan for the Study Area.

Sediment Remediation

There has been only very limited characterization of sediments located beneath the Mill Dock (or pier). Because this area is relatively quiescent and may have been impacted by historical nearshore outfalls, this area should be fully characterized before the pier is removed. The presence of dredged berths on either side of the pier has created a "peninsular" feature of the underlying pier footprint that will be prone to rapid erosion following pier removal. Berth areas should be filled with clean, appropriate sand/gravel substrate and brought to adjacent subtidal grades. If contamination above cleanup levels is found to be present beneath the Mill Dock, the selected cleanup action should prioritize dredging over capping, and not rely solely on enhanced natural recovery (ENR) in this area. Ecology must consult with the Tribe and obtain its concurrence regarding determination of remediation thresholds for capping versus dredging in this area, as this would seem to be a major cleanup decision as provided in our 1999 Deferral Agreement.

The modeling presented in Appendix C does not provide adequate assurance that ENR will be effective in the subtidal portions of the Log Pond or in the vicinity of the Mill Dock following the removal of the marine structures. The Interim Action Plan should consider dredging the entire extent of contamination in the Log Pond, as has been the Tribe's long-standing position, followed by the placement of clean fill material. If ENR is selected as the remedy in the vicinity of the Dock, it should only be implemented under the following conditions: (1) sediments have low levels of contamination; (2) comprehensive monitoring is required to ensure that the remedy is functioning as intended; and (3) that there be appropriate triggers for implementing additional remedial measures if they are required. Additionally, it is not clear that the size of the ENR materials necessary to prevent sediment erosion will be consistent with the needs for adequately isolating the underlying contaminants.

To the extent that institutional controls are required in ENR areas, they should in no way limit the exercise of tribal treaty rights, including harvesting geoduck, shoreline access via small craft, or other cultural uses or activities.

Upland Placement of Dredged Sediment

The Cleanup Alternatives Evaluation Report, in Section 5.3, assumes that sediment excavated using upland-based equipment from the nearshore areas would be placed in the upland, "either beneath a cap or used as fill, depending on the characteristics and residual contaminant levels in the excavated/dredged material." However, the state Solid Waste Handling Standards (WAC 173-350) consider contaminated dredged material to be a solid waste that must be disposed of at an approved upland facility. If contaminated dredged material is temporarily stockpiled on the Site it must be properly contained, must include leachate monitoring, and should require post-removal sampling of surface soils to ensure that all dredged sediments have been removed from the site and have not resulted in additional soil or groundwater contamination.

Soil Remediation

As acknowledged in the Cleanup Alternatives Evaluation Report, Rayonier A.M. has certain obligations under its Aquatic Lands lease for the dock, jetty, "and other fill that is located on the Washington State Department of Natural Resources (DNR) leasehold." It is not currently clear to what extent DNR may require removal of this "other fill" or how this will impact the final location and alignment of the marine shoreline within the current lease area. The selected cleanup action should ensure that capping will not be relied upon in environmentally sensitive areas, including the marine shoreline (200 feet) and the Ennis Creek shoreline (150 feet on either side). Cleanup in these areas should be based on excavation and removal of soils above cleanup levels.

To the extent that institutional controls are required in upland areas, they should in no way limit future public access or access for the exercise of tribal treaty rights or other tribal cultural uses or activities.

Conclusion

The Tribe has appreciated its close working relationship with Ecology under our Deferral Agreement and looks forward to continued collaboration on this critically important project. I thank you for your consideration of these additional comments. If you have any questions please do not hesitate to contact Matt Beirne, Natural Resources Director, at 360-457-4012, ext. 7480.

Sincerely,

Frances G. Charles
Chairwoman

cc: Maia Bellon, Ecology Director
Lower Elwha Tribal Council
Lower Elwha Natural Resources Director

Comment from: Jamestown S'Klallam Tribe

From: Hansi Hals [mailto:hhals@jamestowntribe.org]
Sent: Wednesday, December 11, 2019 9:37 AM
To: Groven, Connie (ECY) <cgro461@ECY.WA.GOV>
Subject: RE: Rayonier and Western Harbor Updates?

Yes, I think there would be interest. I can ask technical staff and leadership. Probably what is most convenient is for ECY to provide a few possible dates and I can then let you know if we are able to have participation at what level for those dates.

Also, while JST did not comment during the public comment period (not public), the Tribe does have comment related to Rayonier volumes 1, 2 and 3. Largely, JST supports LEKT position in their comment letter. In particular, JST has concerns about the designated 'occasional use' clean up level. JST wishes contaminant burden from upland areas to be remediated to a level of future use that is greater than 'occasional/ open space' given the NOAA designated status as critical habitat for threatened PS steelhead (Ennis Creek and marine nearshore) and chinook (marine nearshore). JST especially supports LEKT comment to prioritize dredging over capping in the Mill Dock area. The Tribes goals may include harvest of shellfish that burrow below surface substrate – and given the dynamic sediment transport processes, having clean substrate for considerable depth is essential.

Thanks Connie, Hansi

Hansi Hals
Natural Resources Director
Jamestown S'Klallam Tribe
1033 Old Blyn Hwy
Sequim WA 98382
(360) 681-4601

Comment from: Clerk of Board

Clerk of Board

See attached for comments approved by the Board of Clallam County Commissioners today November 26, 2019.
Loni Gores - Clerk of Board

Board of Clallam County Commissioners

223 East 4th Street, Suite 4
Port Angeles, WA 98362-3015
360.417.2233 Fax: 360.417.2493
Email: commissioners@co.clallam.wa.us

MARK OZIAS, District 1, Chair
RANDY JOHNSON, District 2
BILL PEACH, District 3

Rich Sill, County Administrator

File: A72

November 26, 2019

Washington State Department of Ecology
Attn: Marian Abbett, TCP/SWRO
PO Box 47775
Olympia, WA 98504-7775

Re: Port Angeles Rayonier Mill

Dear Department of Ecology:

First, the County Commissioners appreciate being able to comment on the proposed site cleanup plan.

It has been far too long since any positive action has taken place on the Rayonier site and it has been over twenty years since the mill was closed. Therefore, we appreciate your plans to restart the cleanup.

However, we strenuously object to the standard of cleanup that has been proposed. The proposed standard of "OCCASIONAL USE" makes little sense when thinking about the safety of the community. Cleanup to a higher standard is both desirable and necessary since this was previously an industrial site and at a minimum, should be cleaned up to this standard. The standard you propose makes this site largely unusable for either industrial uses or recreation in the future.

We therefore believe the standard of cleanup should be "raised" and this higher standard needs to mutually benefit the owner of the site as well as the entirety of the community.

Sincerely,

BOARD OF CLALLAM COUNTY COMMISSIONERS

Mark Ozias, Chair | Randy Johnson | Bill Peach

Comment from: Nathan West

Nathan West

Attached are the cover letter and comments from the City of Port Angeles for the Rayonier Mill Cleanup

From: Sherry Curran <Scurran@cityofpa.us>
Sent: Tuesday, November 26, 2019 3:59 PM
To: Abbett, Marian L. (ECY) <MABB461@ECY.WA.GOV>
Cc: Nathan West <Nwest@cityofpa.us>; William Bloor <Wbloor@cityofpa.us>; Allyson Brekke <Abrekke@cityofpa.us>; Lawson, Rebecca (ECY) <rlaw461@ECY.WA.GOV>
Subject: RE: Public Comment for Port Angeles Rayonier Mill

Hello Ms. Abbett,

As a follow up to the email below, the attached comments that were sent to you had unintentionally included the word "Draft" on the document. Please know that the submitted documents contain the final comments from the City of Port Angeles regarding the Rayonier Mill Cleanup.

Thank you for your consideration.

Sherry

Sherry Curran
Administrative Assistant | Deputy Clerk
City Manager's Office
City of Port Angeles
360.417.4500
www.cityofpa.us

From: Sherry Curran
Sent: Tuesday, November 26, 2019 2:54 PM

To: Marian Abbett (marian.abbett@ecy.wa.gov) <marian.abbett@ecy.wa.gov>
Cc: Nathan West <Nwest@cityofpa.us>; William Bloor <Wbloor@cityofpa.us>; Allyson Brekke <Abrekke@cityofpa.us>; Rebecca Lawson (Rebecca.Lawson@ecy.wa.gov) <Rebecca.Lawson@ecy.wa.gov>
Subject: Public Comment for Port Angeles Rayonier Mill

Hello Ms. Abbett,

On behalf of City Manager Nathan West, attached are the cover letter and comments for the Rayonier Mill Cleanup.

Thank you for the opportunity to comment on the Rayonier Cleanup Volume III. The attachment contains detailed comments offered by the City of Port Angeles on the cleanup approach for the Rayonier Study Area.

Please reply to confirm your receipt.

Kindly,
Sherry

Sherry Curran
Administrative Assistant | Deputy Clerk
City Manager's Office
City of Port Angeles
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CITY OF PORT ANGELES
WASHINGTON, U. S. A.
City Manager's Office

November 26, 2019

Marian Abbett, PE
Cleanup Project Manager
Southwest Regional Office WA
Department of Ecology
PO Box 47775
Olympia, WA 98504-7775

RE: Public Comment for Port Angeles Rayonier Mill

Dear Ms. Abbett,

The City of Port Angeles would like to thank you for the opportunity to comment on Rayonier Cleanup Volume III. Attached are detailed comments on the cleanup approach for the Rayonier Study Area. We recognize there are multiple facets of the site proposed in Volume III for change at this time. Our comments focus entirely on the upland portion of the Rayonier MTCA cleanup. The City recognizes and appreciates the challenges with sediment cleanup and does not oppose the intended remedy for in-water cleanup efforts. In addition, the City is appreciative of the ongoing discussions between Department of Ecology, Department of Natural Resources, and Rayonier to ensure the shoreline area is actively restored. It is our hope that these efforts progress rapidly. Intended restoration of the Ennis Creek Corridor and north eastern portion of the site are found to be consistent with anticipated future land use. Unfortunately, the preferred alternative planned for the western upland portion of the site is not acceptable to our community.

The current preferred alternative proposed by Rayonier and presented by Department of Ecology is not acceptable to the City because it consolidates contaminated soils on the most viable or usable portion of the site. The consolidated contamination effectively creates a permanent landfill on the property that is planned to be fenced off from public access in perpetuity.

We recognize that the community has diverse interests in future uses of the Rayonier property ranging from residential uses to public access, but no one wants a contaminated, closed-off landfill. City designations from Comprehensive Plan land use designation, Shoreline designation and Zoning also illustrate the diversity of uses possible at the site and indicate a mixed-use environment. The proposed cleanup level rules out most future

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uses. Any future use other than industrial would be required to take additional cleanup action. As such, Rayonier's solution is not a fix, but rather delays the remedy to some future time. The City expects to see future use of the site and therefore cannot accept a cleanup solution that requires additional cleanup action for any future activity.

To date the cleanup has taken far too long. Rayonier and Ecology should rework their cleanup design and create a new cleanup alternative for a more complete and long-term cleanup without taking any backward steps in the RIFS/Volume III process.

The City looks forward to the expedient forward progress of this cleanup. We would welcome the opportunity to discuss alternative design plans for the upland portion of the site.

Sincerely,

Nathan A. West

City Manager

DRAFT City of Port Angeles Comments on Agreed Order Task 4d Deliverable, Interim Action Report Volume III: Alternatives Evaluation, Port Angeles Rayonier Mill Study Area, Port Angeles, Washington—July 1, 2019

These comments relate only to the analysis of and preferred alternative for dealing with the upland portion of the site as described in Volume III. Nothing in these comments is intended to analyze, comments on, or be applicable to sediment cleanup issues.

Future Land Use

The preferred soil remedy does not appropriately reflect future land uses. In particular, the preferred remedy would impose a restrictive covenant on most of the west side of the property and fence off the portion that has the greatest potential for future use. Rayonier proposes to create on the west side of the property a long-term, private landfill. That is not acceptable to citizens of Port Angeles, and it is not allowed under governing land use regulations of the City of Port Angeles.

As required in WAC 173-340-600(14)(c), whenever the cleanup action plan proposes a restrictive covenant as part of the draft cleanup plan, the Washington State Department of Ecology (DOE) is to provide notice to and seek comments from the city or county department with land use planning authority for real property subject to the restrictive covenant. The purpose of this notification is to solicit comment on whether the proposed restrictive covenant is consistent with any current or proposed land use plans. The current zoning of the west side of the property is heavy industrial, but the proposed land uses for the subject property in the City's Shoreline Master Program (SMP) are mixed use, which includes industrial, commercial, and high-density residential land use. It is expected that the Port Angeles City Council in the near future will take legislative action to conform the zoning of the area to mixed use, as already designated in the SMP.

Additional evidence of the City's intended future uses of the Rayonier property are incorporated in the City Comprehensive Plan. In the City's Future land use Map the Rayonier property is designated to have a variety of different uses including multifamily residential and public access. Furthermore, the Goal statements in the City's Comprehensive Plan emphasize the City's goals for mix use development, encouraging "live/work environments for art or media based cultural activities" and that development should occur "in a manner which efficiently uses the community's natural resources and

physical environment, has minimal impact on the natural environment, contributes to quality of life, and is compatible with the desired development patterns."

A private landfill or disposal site are not, and will not be, allowed uses on any portion of the Rayonier property.

The law requires DOE to consider acceptable future land uses:

Setting cleanup levels or remediation levels. Under DOE regulations, both cleanup standards and cleanup actions must "protect human health and the environment for current and potential future site and resource use." WAC 173-340-702(4). A party seeking to establish levels that will protect human health must consider the "reasonable maximum exposures [RMEs] expected to occur under both current and potential future site use conditions." WAC 173-340-708(3)(a), (b), (d).

With respect to soil cleanup standards, a site's potential future land use affects whether industrial or unrestricted/residential standards should apply. To determine whether a site qualifies as industrial, it is "essential to evaluate land uses and zoning." This includes the "actual text in the comprehensive plan and zoning ordinance," as well as a "visit to the site to observe land uses in the zone." WAC 173-340-745(1)(a); *see* WAC 173-340-200. The regulations thus require a thorough but flexible inquiry into future land use plans.

Selecting a cleanup action. A cleanup action must protect human health and the environment, WAC 173-340-360(2)(a). This depends in part on future land use at the property, WAC 173-340-708(3). A party selecting a cleanup action must also consider the action's "[e]ffectiveness over the long term"; "[u]se permanent solutions to the extent practicable"; and provide for "a reasonable restoration timeframe." WAC 173-340-360(2)(b)(i)(ii), (3), (4). These provisions require consideration of future land use, as well.

A site is "potential future residential" if it "has a potential to serve as a future residential area based on the consideration of zoning, statutory and regulatory restrictions, comprehensive plans, historical use, adjacent land uses, and other relevant factors." WAC 173-340-360(2)(d)(ii). Thus, the regulations do not require an ordinance; the SMP and the City's imminent legislative action are "other relevant factors" that demonstrate the City of Port Angeles's plans to develop the property for mixed use.

In light of these requirements, consideration of appropriate land use considerations will drive the remedial action toward alternatives SL-1, SL-3, and SL-5.

The future land use needs to be fully evaluated, and the Rayonier Draft Cleanup Alternatives Evaluation Report (Volume III) needs to be revised accordingly, prior to interim action remedy selection and implementation.

1. Volume III, Principal Objectives Section 1.2 incorrectly states: "Residential use is not a foreseeable future use of this property. Most of the property is zoned 'Industrial-Heavy' (Figure 1-2) in the City of Port Angeles zoning ordinance (Ordinance #2801) and has been used for industrial activities for many decades." Residential is an allowable use under the current zoning. Landfills are not. Also, as specified in the City of Port Angeles' Shoreline Master Program (SMP; 2014), the shoreline portion of the Rayonier Site is intended to be returned to productive use as high-intensity mixed-use (HI-MU). This HI-MU designation accommodates public access and water-oriented commercial, transportation, institutional, and recreational uses. While the Site is currently zoned as Industrial-Heavy, the City of Port Angeles is working toward updating the zoning in the western Rayonier area which will in this case allow a wide variety of uses in the area. These land uses should be considered in the remedy development and selection process. Future land uses may include commercial, high-density residential, industrial, and/or public access. The preliminary cleanup levels (PCULs), soil remedial alternatives, and the selected alternative should reflect these potential uses. WAC 173-340-360(2)(d); WAC 173-340-702(4); WAC 173-340-708(3)(a).
2. In addition to being inconsistent with planned future land use, the statement "Residential use is not a foreseeable use of this property" is incorrect and conflicts with other statements in Volume III (e.g., Sections 2.3.1 and 2.3.1.5).
3. Also, the proposed cleanup doesn't provide access to the and the greater shoreline. This result is in complete conflict to the intent of the State's Shoreline Management Act.
4. Use of remediation levels (RELs) described in Volume III, Principal Objectives Section 1.2, third paragraph (and other locations in Volume III), are not appropriate given the anticipated future uses of the Site. Volume III asserts that RELs are appropriate for visitation of Site areas outside of the Ennis Creek Corridor. These assumptions of a lower frequency exposure are not appropriate adjacent to property designated for mixed use. The RELs are also not appropriate given the future land uses. For human health, PCULs based on unrestricted land use should be used for remedy selection and implementation. . WAC 173-340-740(1)(a); WAC 173-340-745(1)(a)(i).
5. Industrial PCULs should not be applied to areas that are designated by the City for mix uses in the future.
6. The upland risk evaluation completed by Malcom Pernie in 2007 and updated by GeoEngineers (Volume III, Appendix B) does not reflect the range of potential future land uses. The assumed future industrial land use in the West Mill area is incorrect as noted above. In addition, the West Mill area will be located immediately adjacent to likely restored, sensitive environments at Ennis Creek that will be frequented by human and ecological receptors.

Interim Action Objectives

1. The Interim actions using the RELs proposed in Volume III conflict with the remedial objectives stated in Volume III, Table 3-1. The stated objectives are confusing and inconsistent. The table indicates the objective for the Soil Interim Action is to protect the ability for unrestricted land use in the East and West Mill, Ennis Creek and Shoreline Buffer areas. Then a contradictory footnote is added indicating no commitment to establish unrestricted land use in the future.
2. Section 3.1, Interim Action Objectives, Overall Approach states that Rayonier's preference is to minimize the need for long-term, active treatment technologies and long-term maintenance and monitoring wherever possible. Again, the statement is in conflict with the remedy proposed. If the preference were to minimize maintenance and monitoring, that goal could be better accomplished through excavation and offsite disposal combined with capping with managed land reuse, rather than permanent fencing and in-place landfilling of waste.
3. The Remedial Objectives Section states: "In developing the alternatives, significant consideration was given to the remoteness of Port Angeles, limited site access, distance to disposal sites, and the potential resource and community impacts from long-distance hauling of materials for disposal." While these factors should be considered in the remedy selection, their significance should not outweigh the importance of selecting a remedy that is protective of the public and allows the Site to be returned to productive use. The remoteness and distance to disposal sites is already considered in the alternative selection through the costs analysis process and should not be considered as a separate objective (i.e., disposal costs are higher due to distance and therefore negatively impact the cost to benefit ratio).

Soil Remedial Alternatives and Evaluation Considerations

1. Alternatives SL-2 and SL-4 are not protective for future land use and should be removed. They do not acknowledge the City's land use regulations, future use opportunities for the property, and they do not facilitate the property being returned to productive use in the future. *See* WAC 173-340-360(2)(a), (b), (d); WAC 173-340-708(3)(a).
2. The proposed capping remedy, as designed, is not appropriate or acceptable because it does not accommodate future land use options. Any selected remedy must be designed and implemented to not impede future land use options at the Site, which would likely include buildings and improvements. *See* WAC 173-340-360(2)(a), (d). The remedy should be designed to allow for the land to be easily

returned to productive use. This will need to include offsite disposal. Any consolidation/capping strategy and associated institutional controls need to allow for plausible reuse scenarios (i.e., building and improvements to be easily built at the Site, all anticipated uses supported); long-term fencing requirements as part of institutional controls are not consistent with future land use. Should SL-3 result in consolidation of excessive soil volumes that limit the ability to reuse the land, the alternative must be ranked much lower in the disproportionate cost analysis (DCA). Constructing a fenced, capped landfill on the Site is inconsistent with future land use and is not acceptable.

3. Consolidation of dredged sediment on the upland portion of the Site is not appropriate or acceptable, nor consistent with future land use. The placement of these sediments beneath the cap is likely to cause significant engineering and cost constraints for future land use of the Site.

4. Fencing should not be the primary, long-term method for maintaining the integrity of any implemented cap. Any fencing required by an environmental covenant would conflict with the long-term anticipated reuse of the Site and, thus, should not be part of any proposed remedy. Section 4.2.5.2 of Volume III identifies the significant limitations of fencing as a long-term and effective component of a remedial action, particularly at a facility that is not actively managed.

5. The cost estimate significantly under-represents the expenses for maintenance and monitoring that would be necessary to maintain the integrity of the cap proposed in the preferred alternative. The cap is relatively thin; thus, adequate monitoring/maintenance will need to ensure the cap is not degraded by stormwater runoff, burrowing animals, human impacts, etc. and to verify that adequate and appropriate vegetation is maintained on the cap. Similarly, fencing will need frequent inspection and repair. When these expenses are appropriately assessed, alternatives with more removal will be preferred.

6. While the DCA is the primary analysis used to select a cleanup remedy (WAC 173-204-570), further evaluations and discussions of the degree of risk and uncertainty associated with each alternative, including the protectiveness of the remedy under future land use scenarios, the ability to return the Site to productive use, and the long-term risk to the public, should be considered in identifying the preferred cleanup action. Alternative SL-2 provides the greatest benefit for the associated cost; however, the limitations of only meeting the RELs and the reliance of this alternative on containment and institutional controls results in a higher degree of risk and uncertainty compared with Alternative SL-3, SL-4 and SL-5.

7. All alternatives propose industrial PCULs for the City Purchase Area; this is consistent with current and likely future land use. However, the proposed remedial actions do not address uncertainties regarding whether this the City Purchase Area or the City right-of-ways meet the industrial PCULs in the surface and subsurface

soil due to limited sampling data. The City expects that a No Further Action letter will be provided by Ecology for the City owned property and right-of-ways as part of any cleanup action and that additional soil management and handling costs will not be incurred by the City during retrofits and upgrades of the plant or right-of-ways (e.g., installing additional subgrade utility lines, replacing streets).

8. Similarly, with regard to the Olympic Discovery Trail, the City is unclear whether the existing data and proposed alternatives sufficiently characterize and address risks, and address the needs for soil management during trail maintenance.

To be clear, the City's objection and comments relate only to the analysis of and preferred alternative for dealing with the upland portion of the site as described in Volume III. Nothing in these comments is intended to analyze, comments on, or be applicable to sediment cleanup issues.