RESPONSIVENESS SUMMARY

Port Angeles Rayonier Mill Site
October 18 – December 1, 2006 Public Comment Period

Public Review Draft
Remedial Investigation for the Uplands Environment of the Former Rayonier Mill Site

Prepared by
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Southwest Regional Office
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More Information

The Remedial Investigation for the Uplands Environment of the Former Rayonier Mill Site, and other site materials are available at these information repositories:

North Olympic Library System
Reference Desk
2210 South Peabody Street
Port Angeles, WA 98362
(360) 417-8500

Peninsula College Library
Reference Desk
1502 East Lauridsen
Port Angeles, WA 98362
(360) 452-9277

Washington Department of Ecology
Southwest Regional Office
300 Desmond Drive SE
Lacey WA 98503
(360) 407-6243

Selected documents are also available on the Washington Department of Ecology's Web site at http://www.ecy.wa.gov/programs/tcp/sites/rayonier/rayonier_hp.htm.

The Washington Department of Ecology (Ecology) has compiled a list of interested parties, organizations, agencies, and residents. If you would like to be added to the mail list, please contact Hannah Aoyagi at 360-407-6790 or haoy461@ecy.wa.gov.

Introduction

Ecology is overseeing cleanup at the Port Angeles Rayonier Mill Site (Rayonier Mill Site). The cleanup is currently being conducted by Rayonier Properties LLC (Rayonier), a wholly owned subsidiary of Rayonier, Inc.

This responsiveness summary addresses comments received during the public comment period on the Public Review Draft Remedial Investigation for the Uplands Environment of the Former Rayonier Mill Site (Draft Uplands RI). The public comment period was open from October 18, 2006, through December 1, 2006. Based on public comments and further review of the Uplands RI, Ecology determined that further investigation was needed. Since 2006, the agency has done further investigative work both in upland areas outside of the Rayonier Mill property, and in Port Angeles Harbor. Ecology is now publishing the responsiveness summary to provide some of the context for next steps in the cleanup.

Format of the Responsiveness Summary

Ecology has reviewed all comments received. Comments from different reviewers often covered the same topics. Ecology has responded to these common concerns in this responsiveness summary. All comments are attached.

Findings and Next Steps in the Cleanup Process

Based on further review of the data and consideration of public comments, Ecology has determined that the Draft Uplands RI fails to fully characterize the uplands portion of the Site. The Model Toxics Control Act (MTCA) defines a "Site" as "…any site or area where a hazardous substance, other than a consumer product in consumer use, has been deposited, stored, disposed of, or placed, or otherwise come to be located" (WAC 173-340-200). A Remedial Investigation Report must "…collect, develop, and evaluate sufficient information regarding a site to select a cleanup action (WAC 173-340-200)." Ecology has determined the Draft Uplands RI fails to adequately address the off-property areas of the upland portion of the Site. It also fails to adequately characterize the vertical and lateral extent of contamination on the uplands of the Rayonier Mill property itself.

Study Area

Ecology is working on a new path forward based on the determination that further investigation work is necessary at the Site, and in order to expedite cleanup. Ecology intends to negotiate a new Agreed Order with Rayonier which requires Rayonier to take an Interim Action at a portion of the Site known as the Study Area. The upland portion of the Study Area includes the Rayonier Mill property owned or leased by Rayonier. See Figure 1 for the full Study Area.

Rayonier will need additional soil and groundwater sampling to evaluate cleanup alternatives for the upland portion of the Study Area. Ecology will require Rayonier to collect these data and incorporate them into an Upland Data Summary Report. Ecology will also require them to:

1. Revise the report;
2. Bring it into compliance with current laws and regulations; and
3. Change the title to reflect that the investigation only covers the upland portion of the Study Area.

Ecology expects the upland portion of the Study Area will be adequately characterized with the additional soil and groundwater data. This would allow Rayonier to then evaluate Interim Action alternatives, and develop an Interim Action plan for the Study Area.

The rest of this responsiveness summary is organized into the five following sections:

- **Summary of Public Involvement –** describes the public involvement process for the Uplands Remedial Investigation.
- **List of Commenters**.
- **Acronyms and Abbreviations.**
- **Responses to Common Concerns –** Comments from different public reviewers often covered the same topics. To reduce redundancy, comments addressing the same topic were grouped under a set of common themes with responses provided to those common themes.
- **Appendix A: Comments**

STRAIT OF JUAN DE FUCA

Ediz Hook

PORT ANGELES HARBOR

PORT ANGELES

Rayonier Mill Effluent Outfall

Sewers

OF-01 OF-06 OF-07 OF-08

SD-01 SD-02 SD-03 SD-04 SD-05 SD-06 SD-07 SD-09 SD-10 SD-11 SD-12 SD-13 SD-15 SD-16 SD-16 SD-17 SD-18 SD-19A SD-20 SD-21 SD-22A SD-23 SD-24 SD-25 SD-26 SD-28 SD-29 SD-30A SD-32A SD-33 SD-34 SD-35 SD-36 SD-37 SD-38 SD-39 SD-40 SD-41a SD-42 SD-43 SD-44 SD-45 SD-46a SD-47 SD-48 SD-49third SD-50 SD-54 SD-54b SD-55b SD-56 SD-57 SD-58 SD-59 SD-60a SD-61 SD-62A SD-63 SD-64 SD-65 SD-66a SD-66b SD-67 SD-67b SD-68 SD-68-x SD-69 SD-70 SD-72 SD-71A SD-80 SD-82 SD-83

LEGEND

+ SD-09	EPA ESI Sediment Sample Locations
● OF-01	Outfall Samples
———	Study Area Boundary

N

0 2000 4000

Scale in Feet

Proposed Study Area

MALCOLM PIRNIE

Summary of Public Involvement

The Model Toxics Control Act (MTCA) mandates public involvement in the site cleanup process. The public involvement process for this Site provides for participation through stakeholder input, periodic distribution of fact sheets and other outreach materials, public meetings and presentations, and formal public comment periods.

Regulatory Technical Advisory Group and Stakeholders

Recognizing that several other regulatory agencies have a stake in the cleanup, Ecology, the Lower Elwha Klallam Tribe (Tribe), and Rayonier established a regulatory technical advisory group (RTAG). The purpose of RTAG was to provide representation of the member agencies' interests and concerns at key points in the cleanup process. The agencies represented on the RTAG included:

- City of Port Angeles
- Clallam County Dept. of Health and Human Services, Environmental Health Division
- Washington Department of Natural Resources
- Washington Department of Fish and Wildlife
- The Agency for Toxic Substance and Disease Registry
- The National Oceanic and Atmospheric Administration
- Washington Department of Health
- U.S. Fish and Wildlife Service

Although not officially a member of the RTAG, the technical advisor for the Olympic Environmental Council was also included in meetings and communications between Ecology and the RTAG. The RTAG was active and met regularly through March 2007.

In the fall of 2007, Ecology transferred management of the cleanup of the Rayonier Mill Site from the Solid Waste and Financial Assistance Program to the Toxics Cleanup Program. The Toxics Cleanup Program is in the process of revising the Public Participation Plan to include opportunities for interested stakeholders to be informed of progress and give input. However, the RTAG is no longer a formal group in this process.

Fact Sheets and Other Outreach

The following fact sheets and notices were distributed in association with the Remedial Investigation for the Uplands Environment for this site:

- October 13, 2006 — Mail focus sheet, announcing comment period for draft documents and public meeting notice (distributed to approximately 181 addresses).
- October 18, 2006 — Notice of public comment period and public meeting on Ecology's Public Involvement Calendar.
- October 18, 2006 — Ecology news release notifying media outlets of public comment period for draft report and date of public meeting.

- October 19, 2006 — Notice of public comment period in Ecology Site Register. (Notices also ran in the November 2, November 16 and November 30 issues of the Site Register.)
- November 5, 2006 — Display ad announcing November 8 public meeting in the Port Angeles *Peninsula Daily News.*
- November 6, 2006 — Ecology-released media advisory on public comment period for draft report and information about the public meeting.
- November 8, 2006 — Fact sheet for the public meeting, including agenda, background, status of the cleanup, next steps, and information on how to participate.

Public Outreach Meetings/Presentations

Ecology and the Tribe hosted a public meeting on the Draft Uplands RI on November 8, 2006 (attended by approximately 55 people).

Public Comment Period

The public comment period was open from October 18, 2006 through December 1, 2006.

List of Commenters

Persons providing comments to the Draft Uplands RI, Port Angeles, Washington, are identified in the following table.

Name	Affiliation
Linda Rotmark	Clallam Economic Development Council
Josephine Zuzarte	
Eloise Kailin, MD	Protect the Peninsula's Future
Carol Johnson	North Olympic Timber Action Committee
Jerry Hauxwell	
Bob Levick	
Darlene Schanfald	Olympic Environmental Council Coalition
Dr. Peter L. deFur	Olympic Environmental Council Coalition
Mrs. Eycke Strickland	
Ms. Robbie Mantooth	Friends of Ennis Creek
Mr. Bob Lynette	
Ms. Robbie Mantooth	On behalf of James Mantooth
Elaine Bailey	Citizens for Environmental and Economic Health
Ms. Kathleen H. Moore	
Aaron Warner	
Mr. Steve Rodrigues	
Ms. Katherine Duff	
Robert Sextro	
Mark E. Madsen	City of Port Angeles & Exponent for the City of Port Angeles
Bob Vreeland	
Russell Veenema	Port Angeles Regional Chamber of Commerce
Martha Hurd	Washington State Department of Natural Resources
Alfredo Quarto	Mangrove Action Project
Margaret Owens	
Pamela Tazioli	Breast Cancer Fund
Polly Dyer	Olympia Coast Alliance
Tina Lipman	
Heather Trim	People for Puget Sound

Acronyms and Abbreviations

Draft Uplands RI	Public Review Draft Remedial Investigation for the Uplands Environment of the Former Rayonier Mill Site
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
MTCA	Model Toxics Control Act
PCBs	polychlorinated biphenyls
Rayonier	Rayonier Properties LLC
RI	Remedial Investigation
RTAG	Regulatory Technical Advisory Group
TCDD	tetrachlorodibenzo-p-dioxin
TEFs	toxicity equivalency factors
Tribe	Lower Elwha Klallam Tribe
WAC	Washington Administrative Code

Responses to Common Concerns

Pace of Cleanup

Several commenters shared their concerns with the slow pace of the cleanup process at the Port Angeles Rayonier Mill Site and the need for an enforceable schedule. Ecology acknowledges that the cleanup has progressed more slowly than was originally expected. The mill closed in 1997, and after twelve years, during which the mill was decommissioned and dismantled, and investigation of the site began in earnest, the cleanup of the site is not complete. While several proposals involving redevelopment of the Rayonier property have been put forward in the intervening time, none of them has moved beyond the conceptual stage. The Port Angeles community has expressed its eagerness to complete this cleanup in a timely manner and return the land to productive use, while also protecting human health and the environment.

Management plans for the uplands and marine Remedial Investigations and cleanup have previously set schedules for completion. Existing Agreed Orders between Ecology and Rayonier directed Rayonier to complete the work outlined in the management plans and follow the included schedules. However, some of the schedule has changed and become outdated. Ecology recognizes the importance of putting a new schedule in place that will govern the pace of remediation going forward.

Ecology, Rayonier, and the Tribe have considered several approaches to improve the pace of the cleanup. These have ranged from combining or synchronizing some cleanup steps to reduce review times, to completely restructuring the administrative framework of the cleanup, including placing oversight authority with the EPA. Ecology has also consulted with EPA on these considerations. To allow more resources and staffing to be devoted to this cleanup site, Ecology transferred management of the Rayonier Mill Site from the Solid Waste and Financial Assistance Program to the Toxics Cleanup Program in November of 2007.

After looking at several options, Ecology has concluded that a new Agreed Order with Rayonier is the quickest way to move cleanup forward. The agreement will include specific deadlines for delivery and review of cleanup plans and reports. It will also allow an Interim Action Plan to be developed to expedite cleanup in an area where Rayonier and Ecology agree Rayonier is responsible. This area is identified as the Study Area (see Figure 1). Rayonier will remain liable for cleanup of the entire Site, to be addressed separately. Ecology is currently in discussions with Rayonier regarding this new Agreed Order.

Evaluation of Dioxins

Several reviewers stated that the methods used in the dioxin analysis need to conform to the standards approved by the World Health Organization. For the purpose of this discussion, the family of dioxins and furans will be referred to collectively as dioxin or dioxins. Different dioxin compounds are called congeners.

Evaluating the effects of dioxin mixtures in the environment is complicated by the number of congeners, and the lack of information about their specific toxic effects. The EPA has a method to simplify such evaluations. It uses toxicity equivalency factors (TEFs), which are estimates of the relative toxic effects of the various congeners. The use of TEFs allows the congener concentrations to be reduced to the effect of the equivalent concentration of a single dioxin compound, 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD), whose toxic effects are well understood.

In its 2001 amendments to MTCA, Ecology specified that the EPA method may be used when setting cleanup levels for mixtures of dioxins. After publishing the rule amendments, Ecology prepared guidance on how the EPA method should be used for MTCA cleanups.

In November 2005, while the Draft Uplands RI was being written, Rayonier filed a lawsuit challenging Ecology's use of the guidance for the cleanup of the Rayonier Mill Site. Rayonier challenged Ecology's cleanup standards in terms of their application to mixtures of dioxins and furans and the use of the TEF methodology.

In April 2006, Ecology settled the lawsuit and agreed that Rayonier's approach was an acceptable interpretation of the current MTCA rule. Rayonier used this approach in their evaluation of dioxins presented in the Draft Uplands RI report. In June 2006, Ecology initiated a rulemaking process to amend MTCA so as to clarify the policies and procedures for establishing cleanup levels for mixtures of dioxins, furans, polycyclic aromatic hydrocarbons, and polychlorinated biphenyls. The new rule formally adopts the EPA methodology and the use of TEFs, and uses a lower gastrointestinal absorption fraction factor for dioxin mixtures. The amendment also describes how this evaluation can be done within MTCA's risk-based decision framework.

With the 2007 MTCA rule amendment complete, Rayonier is expected to present recalculated toxic equivalency values for the site's dioxin data in the final revisions of this report. Rayonier will be held to cleanup standards for final cleanup action based on the MTCA requirements in effect at the time when Ecology approves a Cleanup Action Plan for the Site.

Cleanup Levels and Future Uses of the Mill Property

Many commenters presented their position on cleanup levels and how they relate to future land uses of the mill property. Some would like to have the property cleaned up to an industrial site standard, assuming that would be the likely future land use. Others felt the cleanup level should allow for unrestricted future use of the property.

Under MTCA, Ecology does not direct the future land use at a site through the cleanup process. Rather, Ecology considers the site's current uses, projected future uses, and local zoning designations in determining appropriate cleanup levels. Typically, Ecology will consult with the owner of the property and local land use planning authorities on the range of future uses of a site. The Rayonier Mill property is now vacant, and therefore offers a wide range of potential future uses. The City of Port Angeles has land

use jurisdiction over the Rayonier Mill property. City zoning on this property remains unchanged since the Mill closure in 1997. In accordance with Title 17 of the City of Port Angeles Municipal Code the property is mostly zoned "industrial heavy." Adjoining Rayonier-owned properties are also zoned "industrial light," "residential low density" (RS-7), "public buildings and parks," and "commercial arterial."

Ecology expects that the report evaluating alternatives for the Study Area will evaluate cleanup alternatives that address various types of potential uses that apply to the property. Also, the public will have the opportunity to comment on any draft Interim Action Plan for the Site, including the preliminary cleanup levels to be applied to the Interim Action. If the property is later redeveloped and used in a way where the Interim Action preliminary cleanup levels are no longer protective of human health and the environment, MTCA allows for further investigation and cleanup.

Air Emission Modeling and Evaluation of Off-Property Soils

Several reviewers expressed concern about the air emissions model and particulate deposition analysis. This analysis looks at the impact or extent of particulate deposition from the mill to the off-property areas surrounding the mill. Comments indicated a lack of confidence in the results of the model and asked for further soil sampling in the off-property areas. Comments also criticized the Draft Uplands RI as minimizing the contribution of mill stack emissions to the chemical concentrations seen in the off-property soils data generated during the 1997/1998 Expanded Site Inspection (ESI).

The Draft Uplands RI's off-property soils evaluation relied on three elements:

- The air deposition model, to delineate the areas of primary particulate deposition from the mill;
- Analysis of patterns of dioxin groups in the ESI samples, to determine if patterns from other dioxin emission sources looked different than the emissions from the former Rayonier Mill Site;
- Comparison of ESI sample results, grouped by location relative to the former Mill, with the air deposition modeling and dioxin pattern analyses. This comparison was to guide any more off-property soil sampling needed to fill gaps in the areal coverage of the ESI sampling.

Put into practice, however, the products of both the air deposition model and the dioxin pattern analysis were of limited use as a guide for additional off-property soil sampling. The main limitation of the air deposition model is uncertainty arising from the meteorological datasets used to drive the model. Rayonier deemed the dioxin pattern analysis inconclusive due to:

1. Lack of complete dioxin pattern data for the mill emissions and other possible sources; and
2. The difficulty of finding differences between patterns of dioxins from possible sources and ambient dioxins at the concentrations detected in the ESI samples.

Dioxins are the main focus of regulatory and community concerns with the off-property soils. As is explained in Responses to Common Concerns – Evaluation of Dioxins, the regulatory criteria for dioxins went through a period of change. This complicated data evaluation during the Remedial Investigation (RI) phase. Still, RI data have raised questions about potential human exposures to off-property soils:

- Are the ESI samples that exceed risk-based criteria from small, isolated, hot spots?
- What are ambient concentrations of dioxins/furans in the Port Angeles area?
- What are other possible sources of dioxins/furans in the Port Angeles area?
- What are possible sources of dioxins/furans in samples that exceed risk-based criteria?

Ecology concluded that additional sampling was necessary to address these questions; however, Rayonier was unwilling to do any additional sampling. In December 2007, Ecology began the Rayonier Mill Off-Property Soil Dioxin Study with the objective of helping to determine the magnitude of dioxin/furan contamination in off-property surface soils potentially impacted by airborne emissions from the former Rayonier Mill. The final report for this project is expected in 2010.

Comparisons of ESI and RI Data

The 2003 RI sampling included soil samples collected from several locations across the mill property. The locations were where ESI samples from 1998 had exceedances of MTCA Method B unrestricted land use cleanup values. The purpose of this sampling was to confirm the chemical concentrations in the ESI. In most cases, the RI results were lower than the ESI results. Many commenters said that the Draft Uplands RI report did not provide enough explanation of the differences in results of the two sampling events.

The ESI locations selected for resampling were mostly identified on the basis of a single chemical in the ESI sample exceeding the screening criteria. The RI sample results for those locations reported only those chemicals. Several of the RI samples were analyzed for metals (arsenic, lead, copper). Two samples were analyzed for dioxins.

In general, there are many reasons why differences might be seen in results between two different sampling events. Ecology cannot cite with confidence any single reason why the differences have been observed in this case. However, two possible factors are:

- **Alterations to the site** - Most of the ESI locations resampled in the RI were in surface soils. Parts of the site underwent major changes between the sampling events, mostly in the form of removing above-ground structures and floor slabs. While the removal of these features was not intended to cause major disturbances of the ground surface, there was likely some minor displacement of the surface soils. Thus, contamination from an ESI sampling location may have been relocated, or distributed over a larger area prior to the RI sampling.

- **The characteristics of contaminants in soil –** The metals and dioxins, which were the focus of the resampling, generally have low mobility in soils. They are unlikely to have become distributed evenly throughout a volume of soil. Two samples, even from nearby locations, are unlikely to have the same concentration.

Ecology will continue to consider data from both investigations as the cleanup proceeds. Rayonier will also be required to consider all data from both investigations unless there is enough information to support excluding any data.

Interim Action Areas

MTCA allows Interim Actions (partial cleanup actions) to be performed in several cases. Interim Actions are often used to reduce a threat to human health or the environment by eliminating or reducing one or more pathways for exposure to hazardous substances. An Interim Action may also be used to correct a problem that could become worse or cost more if the action is delayed. In some cases it may allow completion of a Site Hazard Assessment or Remedial Investigation/Feasibility Study, or the design of a cleanup action.

MTCA is explicit that Interim Actions shall be followed by additional remedial actions unless compliance with cleanup standards has been confirmed at the site. Rayonier has completed several Interim Actions on the Rayonier Mill property since the Mill's closure in 1997. Rayonier Interim Action Areas include:

- Ennis Creek Finishing Room
- Fuel Oil Tank No. 2
- Hog Fuel Pile
- Machine Shop
- Spent Sulfite Liquor Lagoon
- Wood Mill
- Fuel Oil Tank No. 1
- Polchorinated biphenyls (PCBs) Cleanup of Former Transformer Rooms
- Log Pond

Several commenters expressed concern that not enough confirmation samples were taken in some Interim Action Areas. They were also concerned that sampling was not done for all contaminants of potential concern, and the extent of remaining contaminated soil was not fully defined. Ecology agrees with these concerns. The agency intends to require Rayonier to collect and analyze additional soil samples. These samples should characterize and define the extent of remaining contaminated soil in the Interim Action Areas. Ecology also intends to require Rayonier to install several additional groundwater monitoring wells downgradient of Interim Action Areas, and resume groundwater monitoring across the Study Area. This information will be needed for the Evaluation of Alternatives report for the Study Area.

Fate and Transport

Several commenters referred to data gaps in the characterization of groundwater and soil on the Rayonier property, and the relationships between the two media. Several noted a lack of explanation for differences and similarities found between results in groundwater samples and corresponding soil samples. Others commented that Rayonier appears to actively explain away elevated concentrations of metals, dioxin and furans, and other contaminants in soils. Others noted Rayonier failed to search for possible sources of elevated groundwater results. The existence of seeps has never been evaluated.

Fate and transport of environmental contaminants refers to the ways contaminants move and change within the environment. Ecology agrees Rayonier must collect additional data to better evaluate fate and transport of contaminants of potential concern within the Study Area. Ecology intends to require Rayonier to fill data gaps in the soil and groundwater data, further evaluate the relationships and movement taking place between the two, and identify additional sources of groundwater contamination. Rayonier will also be required to collect additional information, such as locating and evaluating remaining process pipes, identifying seeps, and beginning groundwater monitoring to complete characterization of the Study Area and evaluate alternatives for an Interim Action Plan.

Appendix A: Comment Letters

Clallam netWorks
ECONOMIC DEVELOPMENT COUNCIL
A PRIVATE NON-PROFIT CORPORATION WORKING FOR BUSINESSES IN CLALLAM COUNTY
102 E Front Street, 2nd Floor • PO Box 1085 • Port Angeles, WA 98362

December 1, 2006

Shannon McClelland
Department of Ecology
Solid Waste and Financial Assistance Program—SWRO
P.O. Box 47775
Olympia, WA 98504-7775

Dear Ms. McClelland:

In November, I attended the public hearing meeting held at the Clallam County's Commissioners Chambers regarding the Rayonier site cleanup. At that meeting, I responded by comment card, however, I would like to have this letter included in the public input documentation.

At the Clallam meeting, during the networking portion, a comment was made to me that, in general said, "If there was a business waiting to develop the land, this project would have been completed in half the time. But, because there is no such incentive to expedite the process, it will probably be 3 to 5 more years before the studies are finished."

I would like to propose that one must assume that there is a business ready to develop this prime piece of Port Angeles real estate. I also strongly urge the participating agencies to bring this property into compliance at the industrial level, not the unrestricted level. From an outsider's point of view, the implication of the "moving target" dioxin level seemed unreasonable and impossible to attain.

Please let me know how the Clallam EDC can facilitate the expedient solution to this very important economic development property.

Sincerely,

Linda Rotmark
Executive Director

Phone: 360.457.7793 • Fax: 360.452.9618 • Web: www.clallam.org

Rayonier Mill Cleanup - Public Comment Meeting
November 8, 2006

Name: *Linda Rotmark*
Representing: *Clallam Economic Development Council*

Written Comment: We need this land for economic development. Just today I met with 2 big companies who are tenants of the Port. We asked them what they would wish for if they could. Their answer was "more land." They want to expand, to prosper, to develop more jobs for the community.

Name: *Josephine Zuzarte*
Representing: *No affiliation*

Written Comment: If the land is contaminated, why are people allowed to use the path thru the property? Why are there no warning signs of possible contamination? Some months ago there was talk in the papers about warning signs being put up. This appears to have been squashed.

Why is there not a timetable for the cleanup?

Name: *Eloise Kailin, MD*
Representing: *Project the Peninsula's Future*

Written Comment: Please include a follow-up to mortality statistics in the census tracts east side of Port Angeles (in path of plume from Rayonier) for excess rates of death from: a) all cause, b) pulmonary/ influenza, c) cardiovascular. WDOH has stopped publishing detailed cause-of-death and left out even all of Port Angeles in their annual reports –also stopped age-adjusting even earlier than latest.

Name: *Carol Johnson*
Representing: *North Olympic Timber Action Committee*

Oral Comment: My name is Carol Johnson. I'm present as the executive director the North Olympic Timber Action Committee located here in Port Angeles. The Rayonier site is currently zoned heavy industrial and that has been the traditional use for this site. Since 1997 this site has been in various stages of demolition, sampling and cleanup. There are 70 acres of waterfront and uplands, that could be used to create family wage jobs, which are currently sitting idle.

Our community has a demonstrated ability to utilize industrial zoned waterfront property and it is currently at a shortage. We have a need to have more of that available so that we can accommodate future growth in a variety of industries that need industrial zoned property with salt water access.

It seems prudent to complete this process under current rules and complete the clean up on this heavy industrial site so that Rayonier and our community can move on.

Thank you very much.

Name: *Jerry Hauxwell*
Representing: *No affiliation*

Oral Comment: My name is Jerry Hauxwell. I'm representing myself today. I'm coming to express a lot of concern about the rate at which this cleanup is proceeding. I had a discussion with our city manager and we came up with a revenue number that this is costing this community today. I know our friends at the Department of Ecology know this number because we delivered it to them about a year ago. But that number says that for every year that this site is inactive, at least not active to the level which Rayonier had it, this community is losing 100 million dollars of revenue. Now that's not all payroll. That's payroll that goes into the multiplier being used to buy and do business in Port Angeles. That means for every month two hundred and seventy five thousand dollars are being lost. And while we're sitting around here talking tonight something like twenty or thirty thousand dollars have been lost.

Now that's significant money at least to me, maybe not to some folks. My point is, I listen to the discussion tonight and I sense that there is an interest in trying to get more samples, spending more time because we didn't get the contaminated results that we wanted to get and we want to get more.

It seems to me that, I'm a scientist, I always like to see more data. But I know there is a time at which we need to stop and take a critical look at this thing and move forward, get it cleaned up and get it back in action. Thank you.

Name: *Bob Levick*
Representing: *No affiliation*

Oral Comment: Hi, Bob Levick, human race. I haven't read the whole report but what I kept feeling as I read it was it was a little too self-serving. There were too many instances of "Gee, we looked again and we didn't find what was found prior". There were too many of that without any rationale for why the contaminants disappeared. It didn't make good sense that they would disappear.

So what I would at least like to see is an expanded explanation of that. Also I think, and maybe it's in the report and I missed it but if it isn't in the report, an addendum or something should be written to explain the quality assurance or quality control that was used in taking the samples. Like who took the samples? Was Ecology there looking over their shoulder? Was the tribe or was nobody?

Something to give me confidence that the data collection has integrity. Thanks.

Harris, William W.

From: Darlene Schanfald [darlenes@olympus.net]
Sent: Wednesday, November 22, 2006 1:18 PM
To: Davies, Laurie; Harris, William W.; Seel, Kathy
Cc: Peter deFur; Pamela Johnson
Subject: Additional OEC comments on Upland RI

Peter's office is emailing Kathy comments for the OEC Coalition, to be passed to Laurie and Bill.
Please confirm to Peter and me that you received his email.

I am adding this additional comment for the Coalition for the record.

The Rayonier Port Angeles cleanup is a Puget Sound cleanup. Its pollution and any pollution within a certain distance that could re-contaminate the Strait will be considered in Governor Gregoire's Puget Sound Cleanup effort. Additionally, the Precautionary Principle will be considered in this effort. Thus, it is important to see that the Rayonier cleanup plans and work are well done and primary are public health and natural resources rather than the polluter costs.

Respectfully submitted,

--
Darlene Schanfald
Project Coordinator
Rayonier Hazardous Waste Cleanup Project
Olympic Environmental Council Coalition
PO Box 2664
Sequim WA 98382
360-681-7565
darlenes@olympus.net

Harris, William W.

From: Darlene Schanfald [darlenes@olympus.net]
Sent: Thursday, November 30, 2006 10:37 AM
To: Harris, William W.
Subject: Additional OEC comment on Upland Report

Bill:

I submit for the Olympic Environmental Council this additional comment.

In light of NOAA's announcement today of recommended Orca Whale protected water bodies, which include the Rayonier Mill area, the need for real data and cleanup of mill toxins from soils to what real background levels are, not Rayonier's perceived background levels, must not be compromised. Expanded soil assessments around the Port Angeles area should be sampled, analyzed and reported out to the public by Ecology and billed to Rayonier, since Rayonier habitually dismisses its own findings. Ditto for further analysis of mill area soils and groundwater.

And we have to look carefully at the hundreds of creosoted wood support structures beneath the mill site to see what level of toxicity they contribute to this area.

--
Darlene Schanfald
Project Coordinator
Rayonier Hazardous Waste Cleanup Project
Olympic Environmental Council Coalition
PO Box 2664
Sequim WA 98382
360-681-7565
darlenes@olympus.net

Remedial Investigation Report for the Rayonier Mill clean up,
Port Angeles, WA

Comments on behalf of
The Olympic Environmental Coalition
Prepared by
Peter L. deFur, Ph.D.
Environmental Stewardship Concepts
Richmond VA
November 22, 2006
Peter L. deFur, Ph.D.

Funding for this product was provided by a Public Participation Grant from the Washington State Department of Ecology. These materials were reviewed by the Department of Ecology for consistency with the purposes of the grant only; grant funding does not constitute endorsement of opinions or recommendations expressed herein. A copy of these technical comments was sent to the Department of Ecology for their files.

These comments were prepared at the request of and on behalf of the Olympic Environmental Coalition, a group of citizen organizations in Washington cooperating to insure that the Rayonier Mill Site is cleaned to protect the health of the citizens and the environment.

SITE SUMMARY AND BACKGROUND

From 1930 to 1997, Rayonier operated a pump mill in Port Angeles. In 1993, EPA investigated the possible release of pollutants from the mill and contamination of the soils, marine environmental and groundwater on and near the site. Contamination came from a number of on site sources, included but not limited to the finishing room (a PCB spill), the screen room, a fuel oil tank, the hog fuel pile, the former machine shop, the spent sulfite liquor lagoon, the pre-fab/chlorine dioxide generator, and air emissions from the mill's stacks. The locations of these potential sources are shown in Figure 1. A number of previous actions at the site have taken place in an attempt to cleanup dioxins, PCBs, polyaromatic hydrocarbons (PAHs), and heavy metals to safe levels. Despite this previous work, large quantities of contamination remain.

The cleanup of the Rayonier Mill Site is being undertaken by Rayonier under the Model Toxics Control Act (MTCA) requirements. Accordingly, investigations were conducted in 2003 to evaluate the scope of remaining contamination and determine how to clean up the contamination. The information gathered during this investigation and previous investigations are discussed in this Remedial Investigation (RI) Report.

Evidence suggests that contamination from the mill has also affected the surrounding ocean habitats. Information regarding marine contamination at the site is contained in a

separate remedial investigation scheduled to be released next year, and is not included in the current RI.

The first draft of this Remedial Investigation Report (RI Report) was distributed to agencies for comment in December 2004, based on sampling conducted in 2002 and 2003. Thus, the data are not up to date and more current information should be and could be obtained.

Clean up of the Rayonier Mill site is part of the Governor's initiative to clean Puget Sound and the Straits of Georgia of toxic chemicals. The Rayonier cleanup will contribute to the Puget Sound /Straits of Georgia cleanup by eliminating the land-based sources of contamination derived from the Rayonier site.

RECOMMENDATIONS

- Groundwater samples need to be collected as soon as possible from those wells that seem to have isolated occurrences or declining concentrations of contaminants. These samples would be targeted to answering the question of whether the contaminants are present or not and at lower concentrations than previously measured.

- Soil samples should be obtained from the areas immediately up-gradient from two monitoring wells that had elevated levels of chemicals of potential concern, MW 51 and MW 56. Both wells are located east of the base of the dock and within a short distance of the shoreline and nearby soil samples had elevated COPC's. The data gap is that the soil samples and groundwater wells are not in sufficient proximity. MW 51 is near the former chip screen and MW56 is at the former pulp storage warehouse.

- The off-site soil sampling in the neighboring residential area and around Port Angeles needs to be initiated as soon as possible, without holding up the cleanup effort on the mill site proper.

- Include all data from both the RI and the ESI in the Feasibility Study unless further data can be obtained to justify not using both.

- Manganese sampling should be performed on both groundwater and soil samples.

- The dioxin analysis needs to be conducted in accordance with the accepted scientific methodology as approved by the World Health Organization (Van den Berg et al. 2006).

- There is not now, nor has there been an enforceable schedule for completion of any phase of this process. Ecology, with EPA concurrence, needs to set an enforceable schedule to insure that the remediation begins as soon as possible.

- Background levels of dioxins and arsenic are represented as unknown or variable because these contaminants occur at other sites or at some regional levels. In the cases of these two chemicals, the RI Report needs to use the background levels that are set by MTCA or determined by state surveys for non-urban areas.

- The RI Report needs to display the data along the lines of the figures displayed here in Figures 2 and 3 with the total number of COPC's above background or screening levels at each sampling location.

- The sulfate and manganese data from other investigations need to be shown in the RI Report, and additional data collected.

- Federal guidelines for assessing dioxin TEQ need to be used in the TEE, rather than the inappropriate method used in the present RI Report.

GENERAL COMMENTS

- On-site soil is contaminated with dioxins, arsenic, heavy metals, and other compounds. The pattern of contamination shows a limited distribution for many of these chemicals. Dioxin and arsenic are two exceptions and are found at elevated levels in many locations on site.
- Widespread groundwater contamination is apparent, but not in large plumes. As with the soil contamination, groundwater contamination occurs in smaller zones, seemingly associated with specific site activities.
- Off-site residential deposition of dioxins is not well treated in this RI Report. The only treatment is through an air deposition modeling effort that has problems and does not explain or account for the results observed in soil sampling by EPA. More soil sampling needs to be conducted in the neighborhood and the greater Port Angeles area.
- Lack of urgency for cleanup is evident in the 2 years it has taken to produce this draft of the RI Report that is little changed from the 2004 draft.
- Evaluation of the site is incomplete owing to the lack of off-site sampling, the need for up-to-date groundwater samples and soil samples in several places. Manganese (Mn) was not measured in soil or groundwater samples, despite the fact that Mn was elevated in ash and waste samples taken off-site.
- The data are presented and explained so as to minimize contamination problems. Several of the recent RI soil samples have considerably lower levels of contaminants than reported in the EPA ESI Report, and there is no logical explanation for the disparity between samples.

Overall, the document does not appear to be drastically different from the previous draft that was internally reviewed in 2004. No new data seem to be presented in this report, despite the two years that have elapsed since this report. An even longer period has elapsed since the last data were collected on site (2002- 2003) and some new information

from selected sampling would provide valuable insight into the spatial and temporal trends of chemical distributions.

Rayonier continues to use explanations and language that paint the site as not very contaminated and that industrial, less protective cleanup standards should be used. Rayonier often seeks to find ways to discount elevated concentrations of metals, dioxins and furans, and other contaminants in soils.

This language and tone contribute to an overall pattern where Rayonier appears to be actively resisting efforts to cleanup the site. This document was originally supposed to have been released 18 or more months ago, but Rayonier has actively contested the internationally recognized WHO methodology for evaluating dioxins in an effort to weaken state standards. This has continued even after NAS reviewed those standards and found them to be the best available approach for regulatory agencies to use. A general lack of urgency and appreciation for the widespread extent of the contamination of the site has contributed to a number of glaring flaws, which leaves the RI incomplete and inaccurate.

Soils

The data from the ESI and RI reports combine to reveal a large number of sampling locations with multiple chemicals in excess of screening or "background" levels (Figure 2). The data from the RI report that show soil samples with contaminants exceeding the screening levels were taken from tables and the total number of different contaminants summed for display in graphic form in Figure 2. This simple analysis reveals that while few individual chemicals are "site-wide", many sampling sites on the Rayonier site have multiple contaminants.

It is not clear how some of the soil data will be treated, specifically the cases where there are substantial differences between the samples taken by EPA (presented in the ESI report, 1997-98), and the data collected and presented here in the RI report. There are several cases where substantial differences between the two sets of sampling are not obviously explained. The report needs to comment on the interpretation of the data, and how and where the data interpretation will be presented. Specifically, the RI report needs to have some text on what will be done to resolve the differences among data sets. This comment is not meant to indicate that the RI report is the place for that resolution, but the report should say how and where it will be done.

The fact that the site has been "created" over many years with fill material only creates conditions that are not-uniform. Fill material is not a justification for contamination that discounts the need to address the problem. Clearly, uneven groundwater flow and concentrations can be explained in part by "fill" creating non-natural conditions. Rayonier is still responsible for fill related contamination.

The RI also does not accurately represent background levels. The problem with background samples for anthropogenic chemicals is that true background is 0. We should

use the term “ambient” and perhaps add a qualifier such as “reference” or “unaffected”. There being no known natural sources of dioxins, it is hard to set a natural background. This case is true for dioxins, PCB’s, chlorinated pesticides, certain industrial chemicals and PAH’s, though less so this last group. Clearly the RI report is correct in trying to frame a natural background for minerals and metals. The RI would be better to include a paragraph acknowledging the issue with establishing background for natural v anthropogenic chemicals.

The Department of Ecology data on dioxin levels in Washington also yields a mean (geometric) state-wide ambient soil dioxin level of about 0.98 ppt. The geometric mean for rural areas is even lower (0.24 ppt). The values presented in the figures and table should be presented against the state-wide geometric mean for comparison. The state-wide geometric mean needs to be used as the screening level or at least as one point of comparison. I am certain that the citizens of Port Angeles do not consider their community to be similar to Spokane, Tacoma or Seattle. I am also certain that the industrial activity in these three cities is far greater than in Port Angeles.

Metals

Rayonier fails to account for the differences between the sampling results in the RI and the earlier ESI results. The RI cannot simply discount the earlier samples (in the ESI) and claim that debris or site variability or sampling depth was the explanation. Without a coherent and convincing reason to not use the earlier data, all of the sampling information has to be included in the evaluation.

High concentrations of metals, particularly arsenic, copper, and lead are present at a number of sampling locations and are dismissed offhand. Rayonier claims laboratory contamination whenever concentrations exceed standards. If Rayonier followed their own procedures, then there is no way they can dismiss samples for contamination from metal debris etc. The first bullet in Section 4.1.2.1 states:

“The sample location was visually inspected to ensure the area was relatively free of debris and foreign objects.”

And the fifth bullet:

“The soils in the stainless steel bowl were inspected for non-soil material, which were removed from the sample.”

If these relatively standard soil sampling procedures were followed, no debris should have made it into soil samples to contaminate the testing process. Backhoe samples underwent similar precautions to those stated above. Based on this information, the values obtained from this sampling are accurate or Rayonier failed to follow its own sampling protocols. Include these data in the RI Report, as they potentially represent “hot spots” of contamination which need to be remediated.

The results indicate that arsenic is quite widely distributed across the site, despite the attempt to discount arsenic levels on the basis of some variable "background." The discussion on arsenic levels presents some ambiguity in the background levels and the regulations. The cleanup standards for residential, unrestricted use need to apply here and indicate a number of exceedances for arsenic.

Groundwater

The most glaring problem with the groundwater samples detailed in the RI is that no new samples have been taken since those taken in 2003 for the previous draft of the RI. Additional sampling could have revealed important trends. The identification of wells with increasing or declining concentrations of contamination could help evaluate the extent and scope of soil contamination at the site. Instead, regulatory agencies and the public are again not given the information required to adequately address the pollution at the site.

There are no groundwater monitoring stations over the screen room. In light of the current contamination of dioxins and other heavy metals as well as the discovery of a broken pipe with an unknown liquid in that area, more extensive groundwater monitoring should be performed at this location on the site.

The groundwater maps do show a pattern of contamination, though not the one that indicates a plume in a large area (Figure 3). Plotting the data from the figures in the RI report, based on the data tables as inserts, the results yield a number of wells that have several chemicals above the screening levels. The numbers of chemicals detected above screening levels in each well is shown in color coded fashion in Figure 3. Monitoring wells 51, 56, 57, 59, and PZ 3 all have 5 or more chemicals. This pattern is one of multiple chemical occurrence in a group of wells, four of which form a cluster and the other is near the shoreline. This summary needs to be included in the text.

The RI report does not include all the ground water results. Specifically, sulfate and manganese have been routinely found in well water over the years. These results should be presented in the RI report body, not just in the appendix.

We also recommend adding sulfate to the list of COPCs because it is a product of the industrial processes carried on at this site and sulfate is a source of bacterial production of hydrogen sulfide and carbon disulfide. Both of these gasses are poisonous to animal life including humans.

Groundwater contamination at the site appears to be directly influenced by contamination in overlying soils. At almost every location at the site, contaminants in groundwater match those in the soils above. More extensive groundwater monitoring in areas where soil contamination has been identified is required. Figure 4 plots the occurrence of both soil and groundwater contamination, essentially taking the data from figures 2 and 3 to show where they overlap. Some of these combinations are quite close, others are in proximity. It is clear from Figure 4 that several locations have both groundwater and soil

contamination. These locations should be considered “hot spots” of contamination that will need remediation in the upcoming feasibility study and cleanup plan. At least two of these sites, MW 51 and MW 56 are near the shoreline and more precisely located soil samples would greatly improve the understanding of any co-occurrence of the soil and groundwater contamination.

Air Modeling

The modeling of air emissions remains unchanged, and is just as unacceptable as it was before. We continue to express our dismay over the analysis of soil contamination off site, especially on the bluff and in the surrounding residential neighborhood. Notwithstanding the plan by the SMT to wait on off site soil sampling, the effort here does not provide the evidence needed to decide on no further sampling. The soil sampling by EPA in 1998 stills stands as unrefuted evidence of contamination. Additional soil sampling is needed in the community surrounding the mill site, analyzing for the compounds known or suspected in the mill emissions. We do not agree that the fact that some of the compounds may derive from other sources makes this known source free of responsibility for contaminating the residential properties.

Rayonier again shirks responsibility for its actions by blaming the highest soil concentrations on another source, a waste incinerator operational when the mill was active. Rayonier proposes this hypothesis because concentrations were higher than the modeled deposition rate predicted. It is important to note that Rayonier isn’t denying that its air emissions affected those locations, just the degree to which they did. Based on the evidence presented it can only be assumed that the model was wrong in its predictions. Rayonier should be held fully accountable for the cleanup of these off-site soils. Rayonier’s attempted confusion about the degree to which particular sources contributed to the contamination does not change the fact that the soils in those areas continue to be a threat to public health and the environment.

The Clean Air Hotline (CAH) took 3000 calls and took photographs of mill plumes to match with the calls between 1990 and 1995. These data overlapped with the excessive death rate data of 1990-1997 reviewed by the Washington Sate Department of Health and Eloise Kailin, MD. These data and the photographs of Olympic National Park provide empirical evidence of the distribution of Rayonier emissions and contaminants. The CAH data were submitted to DOE and OAPCA. The RI Report should incorporate these data into the analysis of deposition in the soils at residential, business, school and health facility locations import Angeles.

One key assumption of the model may be the reason for the underestimation of particulate deposition in some areas. The assumption that emissions from the electroscrubber inlet are representative of emissions prior to the installation of the scrubber may not be accurate due to changes in production rates or processes. Another problem with the air modeling is the assumption that only particulate deposition is a mechanism of depositing contaminants. A number of contaminants (dioxins, PAH’s, lead, mercury, SVOC’s, etc.) can volatilize and transport greater distances, depositing out

when the warm emission air cools to ambient temperatures or by evening cooling. These possibilities are not accounted for in the present RI report.

The RI report should have a discussion of the limitations of the ISCST3 model, including whether it is effective for these distances and for deposition of these chemicals. The comment on effectiveness of the model also needs to address the time period over which the emissions occurred- many decades. To address these flaws, Rayonier should either accept responsibility for contamination on the bluff or perform additional sampling to incorporate into a more accurate air model, and quickly, so as to not delay the cleanup process.

Dioxins

The main document has been revised to reflect the recent settlement requiring Rayonier to use the internationally accepted TEQ methodology. However, risks from dioxins are often painted in an unthreatening light or as inconsequential. There also appear to be significant differences between concentrations found during the earlier ESI sampling and the current round of samples taken for the RI [See Morgan's Table]. Rayonier offers no explanation for these differences before discounting the earlier samples. All ESI samples should be included in the RI's evaluation of dioxins.

The Terrestrial Ecological Evaluation does not appear to have been revised pursuant to the recent agreement regarding dioxins and the Rayonier site. This is completely unacceptable. Rayonier has had ample time to revise this document using the internationally accepted TEQ methodology, so there is no excuse for them not to do so. ESC in conjunction with environmental groups from around the state have repeatedly outlined how and why the MTCA approach used in the Terrestrial Ecological Evaluation significantly underestimates risks posed from dioxin-like compounds. We have attached the correspondence and white papers that have been prepared and previously submitted outlining these flaws.

The TEE also does not follow the official EPA framework for the handling of dioxins in an ecological setting. These guidelines were set out in a 2003 EPA document titled "Framework for the Application of the Toxicity Equivalency Methodology for Polychlorinated Dioxins, Furans, and Biphenyls in Ecological Risk Assessment" (EPA 2003). In the absence of state guidelines or when they are in dispute, the federal guidelines should be used.

There is significantly more uncertainty in the hazard quotient index approach than the TEQ approach, and also places a greater emphasis on comparative soil concentrations than verified toxicological data. Please reference attached dioxin information. Even as Rayonier uses this more relaxed approach, they do not respect its findings. Hazard indices over one are representative of unacceptable risks to wildlife, but Rayonier dismisses the hazard indices for shrews and voles in the west mill area because they are apparently not far enough above one. The standards used in the hazard index methodology are levels assumed to be greater than the "*de minimus*" claimed in the

evaluation. These effects would also not be as localized as Rayonier claims, with both shrews and voles being prey species for the various raptors that may forage in the area. The Terrestrial Ecological Evaluation needs to be revised before the final draft to be in compliance with the agreement to use the TEQ methodology. Anything short of this would be unacceptable.

The Terrestrial Ecological Evaluation (TEE)

Beyond the problems mentioned above regarding the methodology for measuring dioxin toxicity, the Terrestrial Ecological Evaluation (TEE) is flawed in a number of other ways. The TEE contains no evaluation of higher predators such as raptors, otters, or other high level carnivores as if they do not occur at the site. This is completely inappropriate and has not changed since the last draft of the document. These species are the most susceptible to the biomagnification of persistent compounds like dioxins and PCBs, both of which are found in significant concentrations throughout the site. Representative species of these types of organisms should be included in the TEE.

One flaw of the current plan is that Rayonier examines the uplands and marine habitats separately. For bald eagles and a number of other species that forage in both environments, this greatly underestimates risks for them by not combining the risks from the two ecosystems. The level of interaction between the two can be significant (Polis et al. 2004), and should not be overlooked.

Rayonier does not include sufficient evaluation of threatened and endangered species as legally required. For example, Section 2.1 states: “The marbled murrelet is listed as both threatened on both federal and state lists and may forage within the bay, but numbers documented during the Puget Sound Avian Monitoring Project flights are low.” Marbled murrelet numbers are threatened *because* its numbers are low. For Rayonier to discount a threatened species because of insufficient population densities is the height of irresponsibility. Another example of Rayonier’s cavalier attitude regarding endangered species involves bald eagles foraging on the site: “The mere presence of eagles does not indicate that they are exposed to chemicals found in the site soil.” This fact doesn’t indicate that the birds aren’t either. The assumption should be made that if they are present at the site they are foraging there. These sorts of intellectually dishonest approaches to wildlife protection have no place in a document such as this.

There was also a significant problem in the evaluation of contaminants contained within earthworm tissues. Rayonier used ash soluble analysis to eliminate the influence of contaminated soils contained in the worm’s digestive tracts. Purging soils from the worm’s guts is not appropriate for incorporating the earthworm samples. Robins do not remove the soil from earthworms before they are eaten, so Rayonier should not do so in its sampling either. This is especially pertinent since negative values of some contaminants were obtained using the ash-soluble analysis, further indicating the unreliability of this methodology. Earthworm samples should be retaken and analyzed in a way that includes contributions from soils within worm digestive system.

Even with its flaws the data in the TEE still indicates that action should be taken at the site to protect wildlife. Contrary to Rayonier's claims, remedial action is required in all sections of the site based on Rayonier's own hazard indices. Still, the number of unfounded and inappropriate assumptions is discouraging, and these problems should all be rectified before the release of the Final Upland RI Report. This is particularly true regarding dioxins and the inappropriate methodology used to evaluate them. Rayonier appears to openly be flaunting both Ecology and the legal agreements that it has made, which is unacceptable.

SPECIFIC COMMENTS

Section 3

Section 3.1.3: There should be more information regarding the remediation of the Hog Fuel Pile. In particular, the effectiveness of the 2001 and 2002 excavations need to be discussed. Text should be inserted into the last paragraph of this section regarding any monitoring since that action as well as current contaminant levels.

Section 4

Section 4.1.4, page 4-6, last dash bullet: Why weren't wood chips sampled? They were on the surface and accessible to both human and ecological receptors. It is inappropriate to take a deeper sample in this instance.

Section 4.1.4, page 4-6, second to last bullet: Location SR21 should be resampled with an effort to obtain enough soil for conventional analysis. Many of the compounds in that suite have been detected at levels exceeding cleanup standards at other locations on the site. If the only requirement to close this data gap is a sample with more soil, then there is no reason to not test this location for those compounds.

Section 4.1.4, page 4-7: The contents of the green pipe encountered during the excavation at location SR23 should be analyzed. A common byproduct of paper mill operations is a black liquor like fluid similar to the one encountered. The fluid has caustic properties and frequently contains high levels of chlorides and other harmful compounds. It is worrisome that the pipe was capped and no further action taken especially considering that a cleanup action is in progress at the site. Further investigation is required.

Section 4.2.9, page 4-10 and 4-11: Why were conventionals like tannins and ammonia sampled from PZ-7? If there was limited sample volume why not focus on COPCs?

4.2.10: ESC and the Olympic Environmental Coalition agree that all wells need to be tested for the full suite of chemicals. In the case of monitoring well PZ-7, PCBs should have been included because they are considered a priority pollutant for the site. PCB compounds should be measured across this site because PCB's are known contaminants here.

Section 4.4.6, page 4-15, first bullet: Acid insoluble ash analysis is inappropriate for earthworms. Wildlife consuming the worms would also ingest soils contained in their guts.

Table 4-1: The type of the fluid discovered in the pipe at location SR23, where that pipe leads, and the state of soils and groundwater around that location should all be considered data gaps. Current data shows high levels of dioxins and other compounds in the soils in the screen room. These data gaps should be closed by positively identifying the contents of the pipe in question, determining the location of the rest of the pipe-work, and a further characterization of the soils and groundwater in the area.

Section 6

6.2.2: Screening page 6-7 to 6-8 This section lists two SVOCs, 2 PAHs, six metals, pesticides, PCBs, and ammonia as COPCs on page 6-7. Manganese is notably lacking from this list, despite the fact that it is elevated in soils and has been found in high concentrations in waste removed from the mill site. We recommend adding manganese to this list and analyzing manganese in archived groundwater samples. Manganese is not listed as an analyte in Appendix A and was not measured, but this omission is a flaw and Mn needs to be measured in groundwater and soil across the site.

Section 6.3.2: With MW-11 abandoned, there is no clear evidence that total petroleum hydrocarbons (TPHs) do not pose a risk to the ecosystem. Reactivation of MW-11 should be considered to assess the extent of TPH contamination before it is removed from the list of COPCs.

The Terrestrial Ecological Evaluation

Section 2.2 page 2-6, first bullet: Most predators forage over large areas, so determining locations with “sufficient prey base” is inappropriate. If prey are present, then they could be consumed.

Section 2.4: Why is this section even mentioned if all the information relevant to it is to be included in an appendix? It should all be moved from the appendix to the main document.

Section 2.6, page 2-13, first full paragraph: “Chemical concentrations are generally highest near the surface.” There are a number of soil samples on site where this is not the case. While grasses should be included as an indicator species, other plant species with deeper root systems should have also been included in the evaluation.

Table 2-9: Why is manganese not on this table? Regardless of the results of Rayonier’s evaluation it should be included.

Table 2-10- This table should have “compare concentrations to toxicological thresholds/NOAELs” for each species included in the process. This is a common sense step and it is odd that it is not included.

Table 3-2: Manganese is again not included in this table, but should be measured on site. See comment on Table 2-9.

Section 4.2.1.1.4, page 4-11, top paragraph: Where was the .66 ft value regarding impacted soils obtained from? Is there evidence to support this assertion?

Section 4.2.2.1, pg 4-17: The Oakridge Labs data are almost 10 years old. More recent data are needed.

Page 4-18, first bullet: All dioxins listed by WHO and examined in this document have Ah-receptor toxicity. This passage is misleading and should be amended.

References

EPA. 2003. Framework for Application of the Toxic Equivalence Methodology for Polychlorinated Dioxins, Furans, and Biphenyls in Ecological Risk Assessment. EPA/630/P-03/002A.

Polis et al. 2004. Food Webs at the Landscape Level.

Van den Berg et al. 2006. The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds. Toxicological Sciences. 93: 223-241.

Figure 1: Potential Souces of Contamination

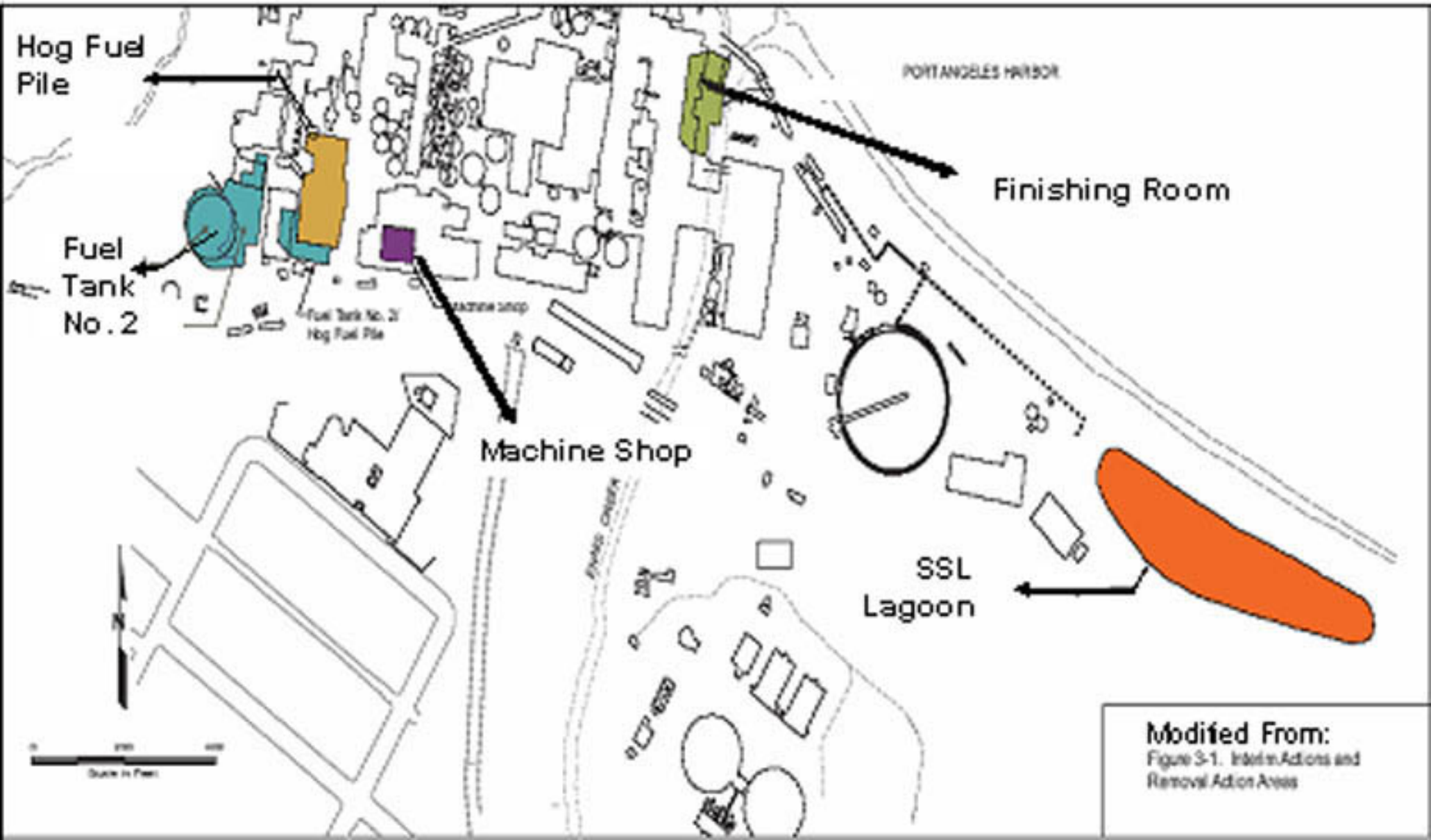


Figure 2: Extent of Soil Contamination

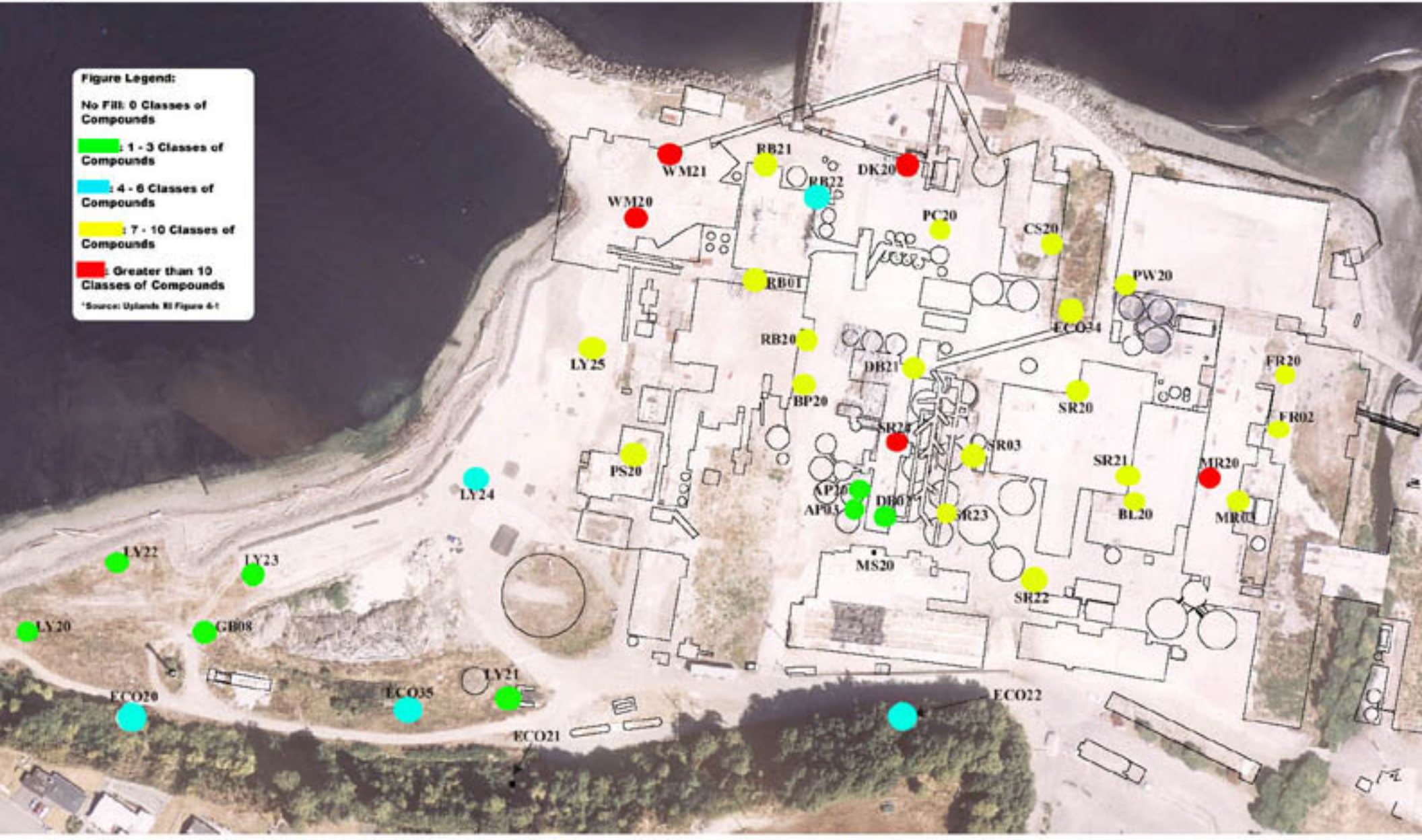


Figure 3: Extent of Groundwater Contamination

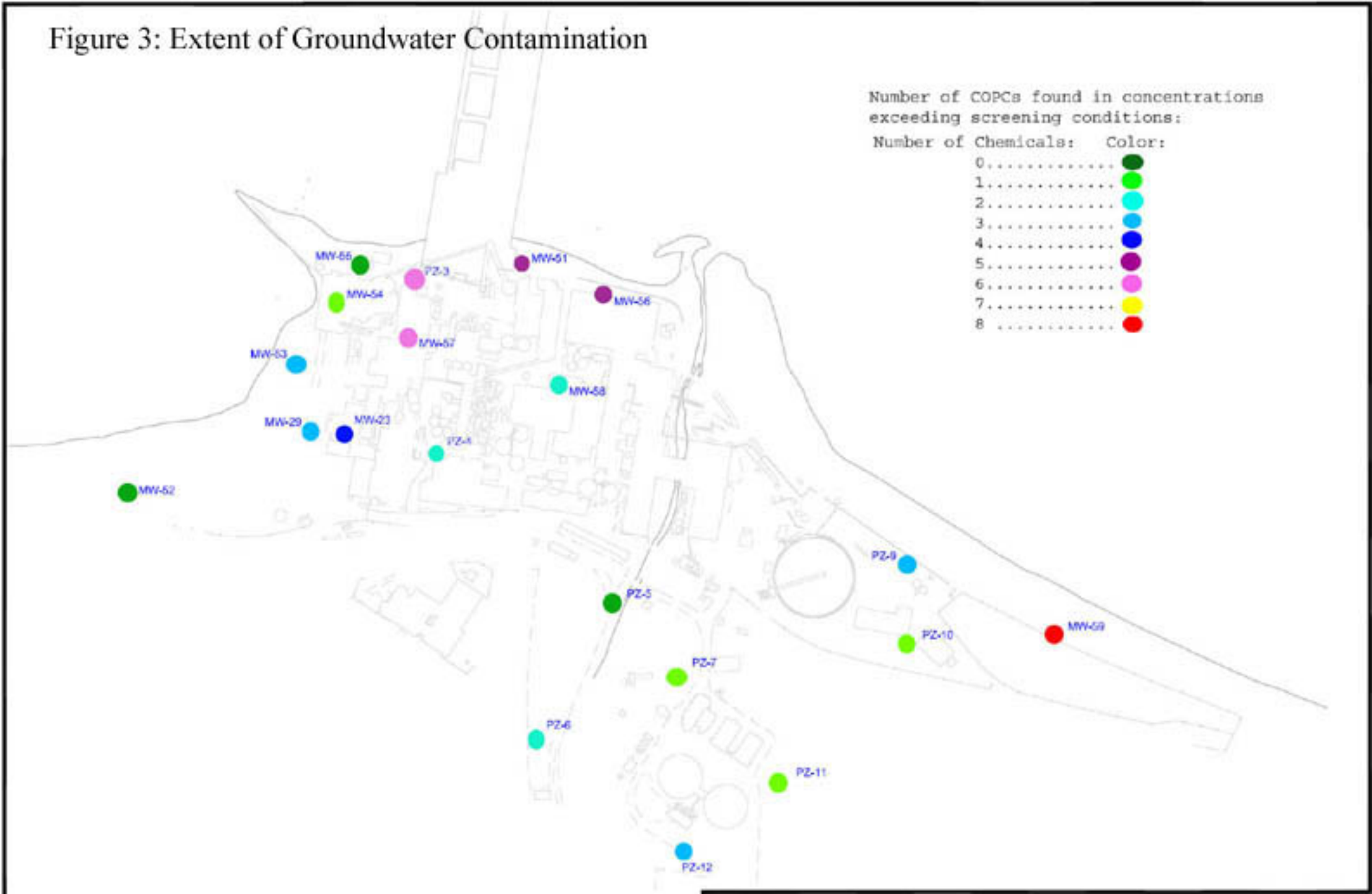


Figure 4: Co-occurance of Soil and Groundwater Contamination

Figure adapted from Uplands Remedial Investigation Figure 6-45.

Black font signifies Groundwater Sampling Location

Blue font signifies Soil Sampling Location

Red dots indicate common chemicals present in both Soil and Groundwater Sampling Results

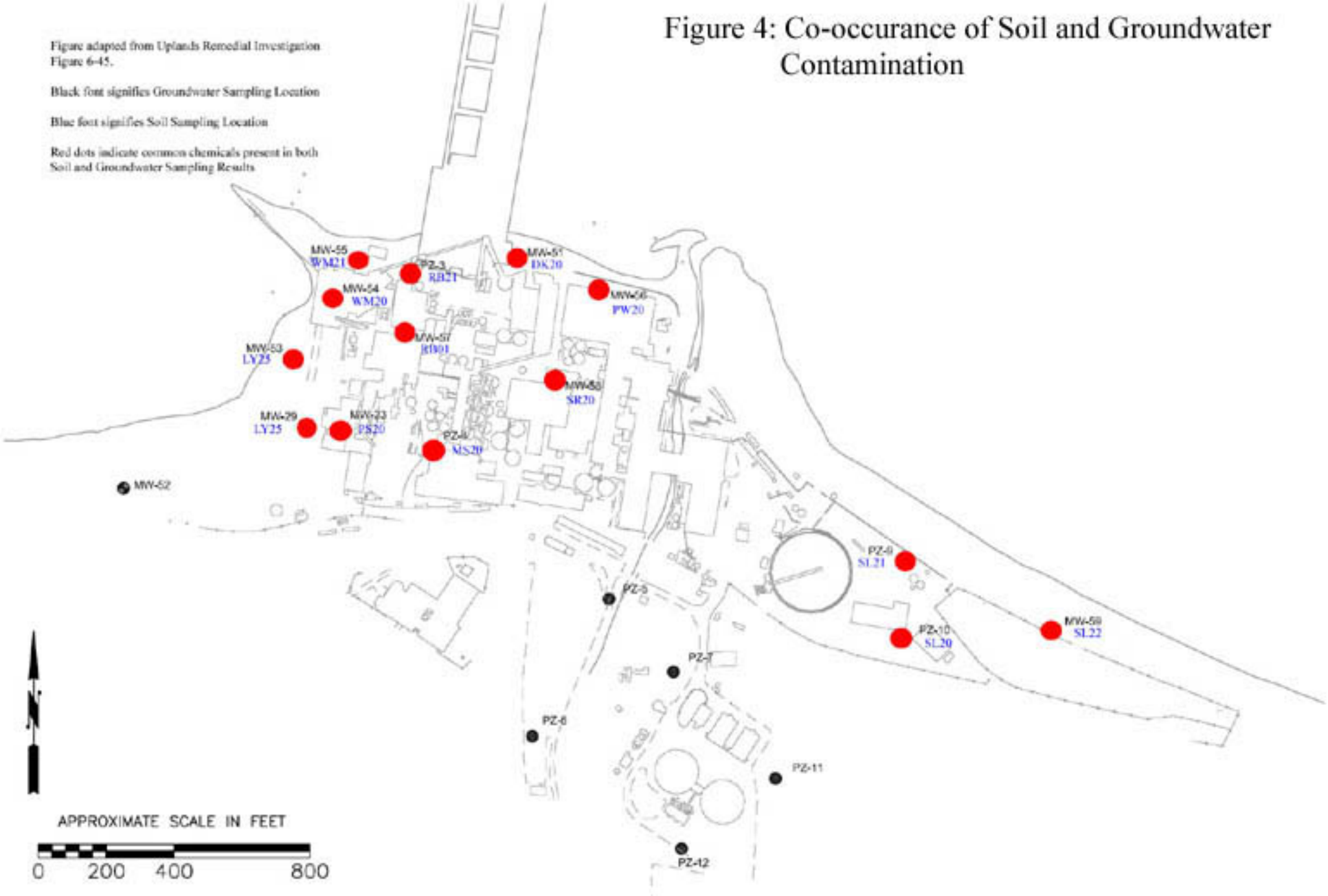


Figure 5a: Dioxin Contamination in Western Portion of Site

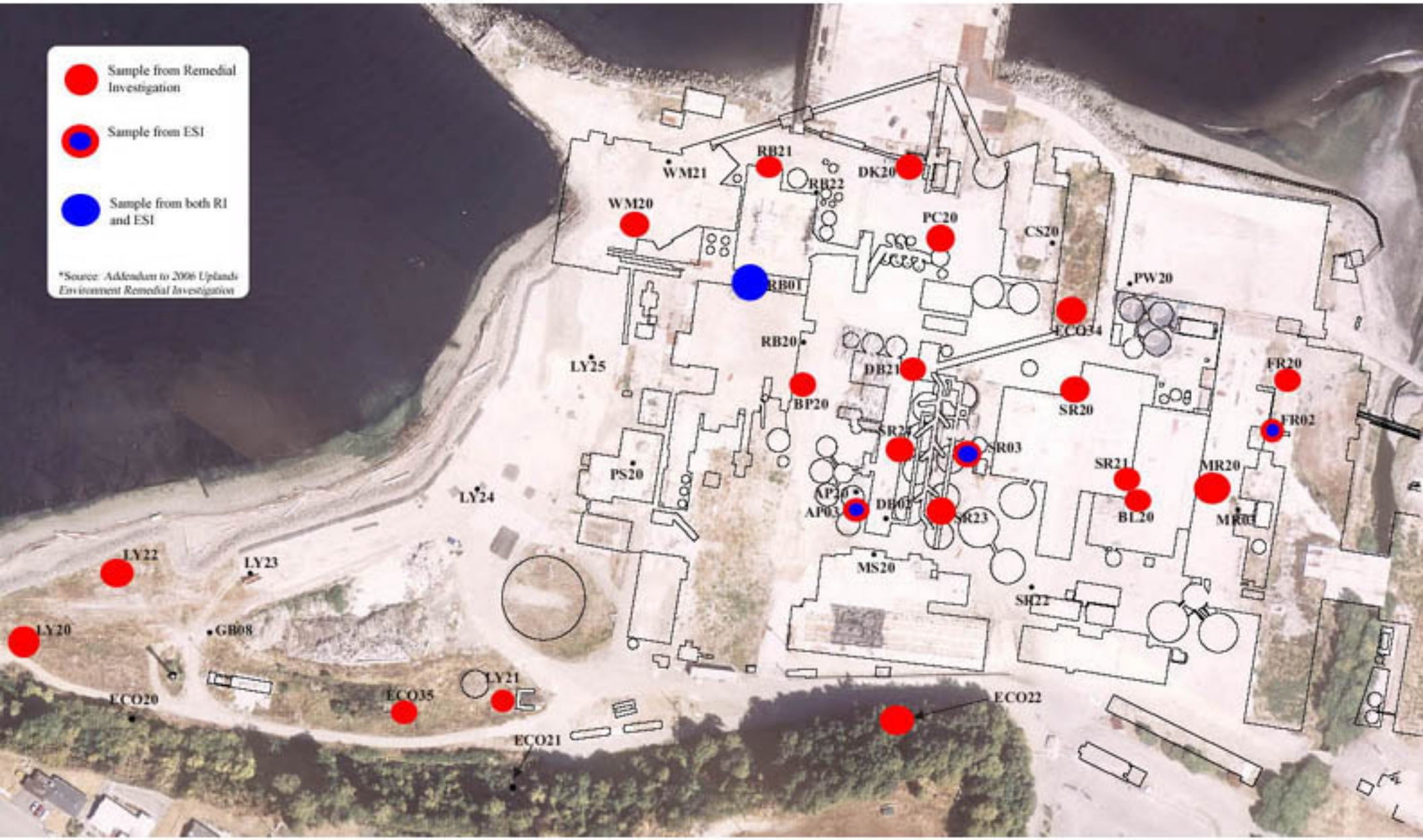
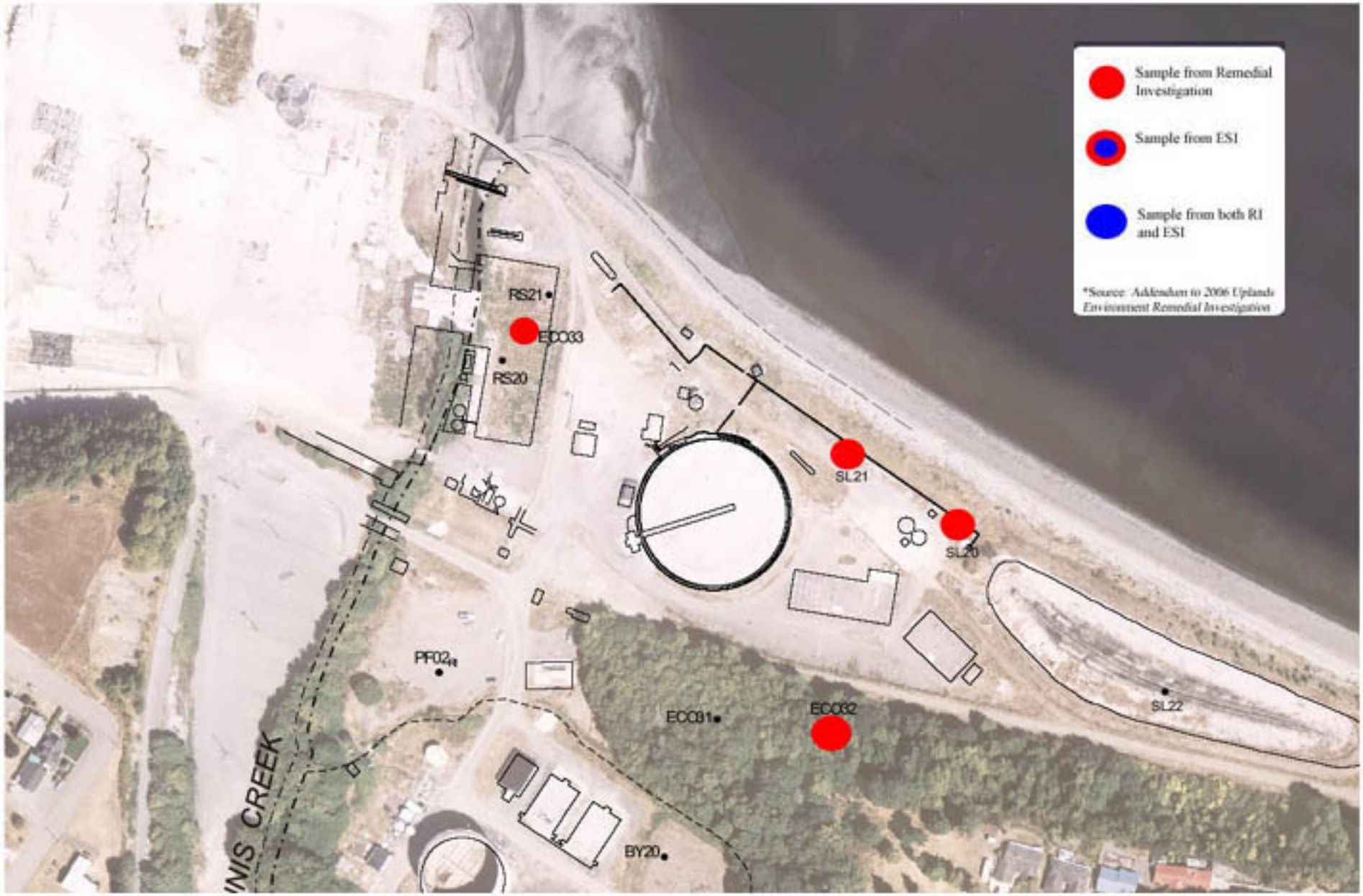


Figure 5b: Dioxin Contamination in Eastern Portion of Site



Harris, William W.

From: Charles and Eycke Strickland [chareyck@olypen.com]
Sent: Tuesday, November 28, 2006 7:08 AM
To: Harris, William W.
Subject: Clean-up of Rayonier Site in Port Angeles WA

Importance: High

Before Rayonier developed their Port Angeles site some 75 years ago the land, the water and groundwater of the site and the surrounding residential areas could not possibly have been contaminated with the concentration of toxins that it is today.

I am asking that the Department of Ecology insist that Rayonier clean up the entire site of dangerous contaminations. Once again I am urging that Rayonier be held to the highest standards of testing for contaminants available and that the entire site be cleaned up to ³residential standards² instead of the proposed ³industrial standards.²

After years of insufficient testing and a lengthy and inadequate attempt to clean-up of the site, it is ironic that if the site had been declared a ³superfund² years ago it might have been cleaned up by now.

I agree with the Olympic Environmental Council assessment below.

Respectfully submitted,

(Mrs.) Eycke Strickland
613 Cedar Park Drive

Port Angeles, WA 98362
Olympic Environmental Council has reviewed the draft Uplands Remedial Investigation report, and is asking Ecology to:

Not dismiss high levels of contamination without further examination. High concentrations of metals, particularly arsenic, copper, and lead are present at a number of sampling locations and are dismissed offhand. Rayonier claims laboratory or limited unique site contamination whenever concentrations exceed standards, instead of further investigating the data. Rayonier and Ecology should include these data as they could potentially represent ³hot spots² of contamination. The selected sites need to be cleaned up if the levels do not meet criteria that protect human health and the environment.

Use standards for dioxin that are protective of human health and the environment. Dioxin is one of the most dangerous chemicals known to exist. Rayonier seeks to find ways to discount elevated dioxins and furans concentrations in soils around Port Angeles. Not investigating these dioxin levels further leaves residents in the dark about the nature and extent of dioxin contamination in their soils. They are proposing to use their own dioxin standards, created by a lawsuit settlement, not science, which is inadequate for this cleanup.

Revisit the air deposition analysis. Models used to determine to what extent air emissions impacted surrounding land are flawed. Rayonier shirks responsibility for its actions by blaming the highest soil concentrations on another source, a hospital waste incinerator operational when the mill was

active. Rayonier proposes this hypothesis because concentrations were higher than the modeled deposition rate predicted. Confusion about the degree to which particular sources contributed to the contamination does not change the fact that the soils in those areas continue to be a threat to public health and the environment.

Use all applicable data. Rayonier fails to account for the differences between the sampling results in the RI and earlier sampling results that showed higher concentrations of contamination. Without a coherent and convincing reason to not use the earlier data, all of the sampling information has to be included in the evaluation.

Use protective cleanup standards. Rayonier continues to use explanations and language that paint this site as not very contaminated, when in fact many of the samples came back with levels of contaminants that don¹t even meet the more relaxed ³industrial² cleanup standard. While the decision about what cleanup levels are used at the site will come at a later date, all relevant documents should avoid subjective terms like ³low levels of contamination² when the data does not support such biased language.

Set an enforceable schedule for all future work at the site. Multi-year delays that set back the release of the draft Uplands Remedial Investigation, and yet to be released draft Marine Remedial Investigation, are unacceptable. The public has no way of holding any of the parties accountable for a timely cleanup, nor is there currently any requirement to notify the public when significant delays occur, and for what reasons.

Robbie Mantooth
2238 E. Lindberg Road
Port Angeles, WA 98362

To: Rayonier Cleanup Site Stakeholders
From: Robbie Mantooth, chairperson, Friends of Ennis Creek
Subject: Rayonier Upland Remedial Investivation

The Rayonier Upland Remedial Investigation Report is such a highly technical report that I and most other lay people must depend on those with appropriate technical expertise to analyze and critique it. But even scientific data can be interpreted differently, so I hope the DOE will give careful consideration to such comments as those from the Olympic Environmental Council and its consultants as well as from the Lower Elwha Klallam Tribe and Rayonier.

The MCTA process has been long and frustrating for everyone, but we all must stay focused on the most important goal: making sure the site does not harm public health, in the long-term as well as the more immediate future. We must not let the rush to get the process behind us keep needed analysis of data and examination of possible "hot spots" from happening, if Olympic Environmental Council's information is correct.

The Olympic Environmental Council also has questioned Rayonier's descriptions of the site as being too vague. Regardless of the level of contamination determined, I hope the Department of Ecology will urge all stakeholders to use the most specific possible terms. It is essential for the public to have confidence in the process, and I believe objective terms will add to the needed credibility.

As my previous comments have emphasized, one of the concerns of greatest interest to me is the effect on salmon habitat in Ennis Creek and in the Strait of Juan de Fuca of the millsite land as it now exists and as it will be following cleanup. Rayonier isn't responsible for all the problems related to the decline of fish populations in Ennis Creek, and its remediation work to date deserves commendation. In the process of determining a cleanup plan, all stakeholders need to continue to make sure salmon habitat receives the emphasis it deserves.

Thank you for considering my comments.

Harris, William W.

From: Elaine Bailey [elainembailey@earthlink.net]
Sent: Wednesday, November 29, 2006 3:28 PM
To: Harris, William W.
Subject: Re: Rayonier

November 28, 2006

Bill Harris, Project Manager
SWRO Solid Waste and Financial Assistance Program
PO Box 4775
Olympia, WA 98504-7775
whar461@ecy.wa.gov

Subject: Rayonier Draft RI Upland Soils Report

To Whom It May Concern:

We are concerned that the cleanup at the Rayonier site meets the strictest of standards.
This site is a hazard to the health of the community and to the Straits of Juan de Fuca.
We must not continue to endanger life with practices that bow to old paradigms rather than hard facts that show the disastrous effects toxic pollution and the accumulated soup of combinations from PCBs and PAHs, dioxins and heavy metals are having on human life and the natural environment. We all desire to live healthy lives, to have healthy environments. As it is stated on Ecology's website.

"We take accountability very seriously. Our job is to protect, preserve and enhance Washington's environment and ensure that our air, land and water are safe for both people and animals."

With that thought in mind, we support the Olympic Environmental Council's recommendations:

There should be complete sampling in all areas to determine exact distribution of cumulative toxic contaminants. These and all areas that contain toxins that do not meet criteria protective requirements for human and environmental health should be cleaned up.

Dioxin sampling must continue especially in areas known to have been in the mill's emission pathways. Ecology must look at the air deposition analysis previously done by EPA showing high levels of dioxin impacting surrounding areas. The hard data
collected over the years while the mill was operating must be used in evaluating the extent of possible toxic soil contamination. Cleanup of areas that may be found containing high concentrations of toxic compounds from sampling using all data showing Rayonier's air deposition pattern should proceed without delay. Cleanup standards should be those supported by the World Health Organization.

Current groundwater samplings should be taken soon. Comparisons of accurate soil and
And groundwater runoff is imperative to understanding the relationship between soil contamination and marine environmental health.

As you well know we are in a battle for the health of the entire Puget

Sound Area's marine health and along with that our own. The life- blood of Native Americans has been immensely impacted by accumulative toxins in their main food source of shellfish, crabs and seafood. Whales and Orcas at the top of the food chain are suffering from the results of our unconscious acts. You have the job to help all of us reverse this damage. The impeccable cleanup of the Rayonier site and all that it affected is the only possible way to address the issues involved. To bow to legal and political pressure is not Ecology's job.

Cleanup must be set on an enforceable schedule. We must have ways to insure timely cleanup. The public, who are at risk, need to be notified and informed of progress or delays and have an avenue to hold parties accountable for acceptable progress.

Thank you for representing the highest standards for environmental health.

Elaine Bailey
Citizens For Environmental and Economic Health
P.O. Box 1182
Port Townsend, WA. 98368

elainembailey@earthlink.net

Harris, William W.

From: Kathy Moore [mpirouette@olypen.com]
Sent: Thursday, November 30, 2006 9:32 AM
To: Harris, William W.
Subject: Draft RI Upland Soils Report

Bill Harris, Project Manager,
As a concerned citizen of the north Olympic Peninsula, please protect our environment.
Do not dismiss high levels of contamination without further examination.
Use credible dioxin sampling and analysis.
Use dioxin cleanup standards supported by the World Health Organization. Do not lessen the scientific standard out of fear of a Rayonier legal action.
Get current groundwater data.
Use all applicable data.
Use protective cleanup standards and eliminate biased language discounting the significant findings.
Set an enforceable schedule for all future work at the site.
Thank you for all you do.
Kathleen H. Moore
Sequim, Wa. 98382

Harris, William W.

From: Aaron Warner [aaron98362@gmail.com]
Sent: Thursday, November 30, 2006 1:35 PM
To: Harris, William W.
Subject: Responce and comments to the Port Angeles, Rayonier RI
Attachments: Comments of Public Review Draft Uplands RI (3).doc

Mr. Bill Harris, WSDOE Site Manager, (360) 407-6253, whar461@ecy.wa.gov

COMMENTS ON THE PUBLIC REVIEW DRAFT
OF THE
REMEDIAL INVESTIGATION FOR THE UPLANDS ENVIRONMENT
OF THE FORMER RAYONIER MILL SITE

After reading and analyzing the RI presented by the WSDOE and prepared by Rayonier I am left with the following questions and then detailed comments:

Is this RI really the standard that the WSDOE, citizens of Washington State, and the United States of America want to represent as an acceptable level of environmental investigation, representation and cleanup? In the following years, is it really a true representation of the WSDOE ability to lead an environmental investigation and cleanup project?

I and a few thousand area residents have the following comments.

General Comments

It seems counterproductive to allow Rayonier, Inc. to conduct this investigation since they have the most to loose if contamination at the site is discovered. This inherent conflict of interest casts a shadow of doubt over all of the results presented within this report. It would seem highly likely that Rayonier would conduct the investigation and draw conclusions to minimize the contamination and related cleanup costs presented in this report. Such strategies could include the following, many of which were observed in this report and are described in greater detail in comments listed below:

- Refusing to sample in areas that are likely to be highly contaminated or that they alone know to contain waste;
- Not submitting samples for the full suite of chemical analysis; thereby limiting observed elevated concentrations of site COPCS.
- Adjusting sampling locations to avoid visible contamination (i.e. selecting cleaner-looking soil as the sample aliquot adjacent to stained soil);
- Downplaying facts and data to show Rayonier in a favorable light;
- Drawing conclusions that are not based on scientific fact but on speculation that benefits Rayonier's economic interests.

Overall, the data and results of the RI seem to be deliberately presented poorly and in an unclear, unorganized manner. In many cases, it is difficult or impossible determine the complete list of contaminants analyzed in the samples. The text often discusses sample results by focusing what was not found in the samples versus what was found. The discussion of the groundwater results were particularly difficult to follow because samples were collected over time. Rayonier did not show how concentrations were stable or decreasing over time as they claimed.

Executive Summary

Page xxv, first paragraph. I disagree that the reasons stated for using marine aquatic water quality criteria for comparison to

site groundwater are environmentally conservative. Bullet 1: Even though it is true the volume of groundwater seeping into the ocean is small in comparison, contamination in it can still impact nearshore marine environment due to continual, long-term exposure. Bullet 3: Naturally-occurring soil metal concentrations would not be a concern; however, **elevated** concentrations of metals in onsite soils (i.e. between unrestricted and industrial cleanup standards such as that found in onsite soils) would cause groundwater concentrations to be elevated. Bullet 4: Since geochemical conditions between groundwater and seawater are very different as stated, using marine water quality criteria for groundwater is inappropriate, like comparing apples and oranges. As contaminants and entrained particulates in the groundwater enter the marine environment, the change in chemistry will cause contaminant concentrations in the water to change through oxidation/reduction, solubilization, and precipitation. In order to compare groundwater concentrations to these marine water quality standards in a meaningful way, the data would somehow have to be adjusted to account for the change in chemistry.

Page xxvi, paragraphs 3 through 5. The report states: "Leaching of site soil COPCs to groundwater is not expected to be a significant future transport mechanism. The majority of soil COPC's onsite have been present for many years, and monitoring … has shown 1) a general lack identifiable soil sources for observed groundwater detections, and 2) decreasing or stable concentrations in groundwater COPCs." Contaminants in onsite soils will continue to leach into groundwater until they are removed. The fact that concentrations have stabilized indicate that equilibrium has been reached between soil and water. The fact that in some cases concentrations have decreased reflect that some sources (i.e. tanks, buildings, contaminated soil) have been removed during site razing and through interim cleanup actions. The fact that Rayonier has not been able to identify sources of contamination indicates that they have not performed sufficient characterization of the site or that the soils themselves are sources having become contaminated by years of onsite activity.

The report additionally implies that the high contaminant concentrations are due to unusual groundwater chemistry, for example high pH and not due to Rayonier's activities. This argument is ridiculous since the unusual groundwater chemistry was caused by Rayonier's activities (i.e. the release of ammonia and bleach into the groundwater).

Finally, the report describes a loading evaluation of groundwater transport and estimates "metals loading at less than 1/1000th of a pound per day and 2 to 4 orders of magnitude less for organic compounds." While this sounds like a small amount, 1/1000th of a pound is 453 milligrams per day or 165 grams per year for metals and approximately 100 micrograms per year for organic compounds. Table 6-4 Ambient Water Quality Criteria lists criteria standards for metals in the *microgram* per liter range and for organics in the *nanogram* per liter range. Using Rayonier's own logic, one would expect water quality standards to be exceeded within one year. Therefore, the statement that leaching of site contaminants to groundwater is not a significant transport mechanism could not be true based on Rayonier's own argument and data. This is a prime example of Rayonier stating the facts in a way to downplay the contamination at the site.

Section 2

Page 2-4, Paragraph 5. The report states that contaminated soil was removed from a stormwater ditch located on the east side of the site and that the ditch was filled with clean fill and hydroseeded. Were confirmation samples collected from the ditch to show that all contamination was removed prior to filling and seeding?

Page 2-6, Paragraph 4. The distribution of crushed concrete rubble across the western portion of the site would make it difficult to characterize any soil contamination potentially underlying it and provide a true picture of the nature and extent of contamination.

Page 2-7, Paragraph 3. Rayonier states that the chloride concentrations found in their deep process well were of an unknown origin. Since the well was located next to Rayonier's bleach plant, it seems obvious that this was the source. This is an example of Rayonier downplaying obvious facts to show themselves in a more favorable light (see general comments above). This illustrates the concern that Rayonier may have "spun" other facts and not represented the true nature and extent of contamination at the site. In addition, this suggests that activities from Rayonier have also impacted the deep aquifer which was not investigated in the RI.

Section 3

General Comments. The Interim Cleanup and Removal Actions performed by Rayonier appeared to be inadequate in removing contaminated soil from the identified areas of concern. The questionable routine methodologies used at the five areas include the following:

- Leaving known contaminated soil in place due to "inaccessibility issues." This is a weak argument since the whole site was razed and "inaccessible" areas could become accessible with the use of appropriate heavy excavation equipment.

- Most cleanup/removal excavations had confirmation samples that exceeded cleanup standards, but Rayonier attempts to explain away each incident and ultimately concludes that "no further action was necessary."
- Removing contaminated soil only down to the groundwater table (approximately 8 feet below ground surface) and conducting inadequate sampling to verify assumptions.
- Confirmation samples were not analyzed for the full suite of site COPCs, but only for selected analytes. The reason for selecting this truncated list of analytes is not explained.
- Waste characterization samples were also not analyzed for the full suite of COPCs before disposing in the local landfill. The chance that wastes were disposed improperly is high.
- During most Interim Actions, excavations were backfilled with clean fill and then covered with crushed concrete rubble. This makes it difficult for Rayonier to go back to an Interim Action area to remove any remaining contamination. I suspect Rayonier did this on purpose so they could use this reason as an excuse to not conduct further cleanup in these areas.

Below is a detailed list of the questionable methodologies used at each Interim Action Area.

Page 3-2, Paragraph 2; Page 3-3, Paragraph 1-4. Contaminated soil was left in the stream bank due to access issues during the interim action at the **Finishing Room**. Additionally, confirmation samples collected from the walls and floor of the excavation were compromised so it is unknown if the removal of contamination was complete.

Rayonier could not remove soil near the sump and pipe racks because of limited access during the Interim Action at the Fuel Oil Tank No. 2. The sump and pipe racks were a likely site of spills and leaks.

When the second interim action was performed in this area due to petroleum hydrocarbons traveling "underneath the road toward the sludge building/hog fuel pile," no action was taken to investigate and remove the path along which the petroleum flowed between the two excavations.

Soil was removed down to only to the shallow groundwater table. The likelihood of contaminated soil below this level is high since floating product was observed on the shallow groundwater. Confirmation samples again indicated that not all contamination was removed.

Page 3-4, Paragraph 4 and 5. During the Interim Action at the **Hog Fuel Pile**, samples were analyzed for a limited suite of compounds to determine dangerous waste disposal requirements before disposal to the local sanitary landfill. This characterization was inadequate since dioxin/furan congeners and PCBs are also COPCs on this site. This also raises the question if all interim action confirmation samples were analyzed only for specific analytes and not the full COPC suites. If not then how can Rayonier be certain that all contamination was removed?

Page 3-5, Paragraph 3.
During the Interim Action at the **Former Machine Shop**, soil was removed down to only to the shallow groundwater table. The likelihood of contaminated soil below this level is expected since contamination was observed at the groundwater level. Confirmation samples were only submitted for a limited chemical analysis and did not include dioxin/furans, PAHs, or pesticides/herbicides. Again, confirmation samples exceeded cleanup standards indicated that possibly not all contamination was removed.

Page 3-5, Paragraph 5; Page 3-6, Paragraph 1. During the **Spent Sulfite Liquor Lagoon** Interim Action, contamination soil was removed down only to the groundwater. Confirmation samples were only submitted for limited chemical analysis and did not include VOCs, pesticides, or PCBs.

Page 3-10. The presentation of the groundwater monitoring results following the interim actions is unclear and confusing. Overall, the groundwater data does not appear to show that cleanup actions decreased groundwater contamination below standards. It doesn't appear that wells MW-7 and MW-16 that were observed to have floating product on 3-18-1991 were re-sampled during the 7-1-1991 sampling event (Table 3-4). This would be necessary to determine if cleanup actions were sufficient. Also, MW-13 and MW-26 were found to contain elevated concentrations of vinyl chloride and chlorinated solvents. The report does not address this concern.

The text does not clearly describe the historical progression of groundwater monitoring for each individual Interim Action area, including installation of wells, sampling and results, well decommissioning, and remaining issues of concern. Instead the text lumps the groundwater sampling and results for all cleanup areas together and focuses on which analytes were not detected and downplays those analytes that were detected. This raises many questions. Looking at Table 3-4, why were wells not analyzed for gasoline, diesel, and PAHs? Why were samples submitted for a limited suite of COPCs? Why were

wells abandoned during the 2002 Fuel Tank Cleanup Action when many (according to Rayonier data, contained elevated concentrations of contaminants? Why was MW-28 never sampled? All these questions lead to the conclusion… that the groundwater monitoring conducted was inadequate to determine if interim actions were sufficient.

Section 4

Page 4-4, Section 4.1.3 Chemical Analyses, Table 4-3. Since dioxin/furan congeners were potentially spread across the site via the smoke stack and other onsite processes, all of the samples should have been submitted for dioxin/furan analysis. The same logic applies to pesticides, since groundwater was found to contain pesticides (DDT, DDE, and DDD) across the site, probably from Rayonier spraying these chemicals for mosquito control, pesticides should have analyzed in every sample.

The report does not state the reasoning of how analytical suites were selected for individual samples. Certainly, the analytical suites that were selected give an incomplete description of the nature and extent of contamination at the site.

Page 4-7, Paragraph 2 and 3. Rayonier describes uncovering a pipe containing black liquid that drains into the soil and that Rayonier reburies without sampling. The reasons given for not sampling this black liquid are absolutely ludicrous: That it was *probably* cooking liquor, washed pulp, or spent sulfite liquor (SSL). Rayonier stated they did not expected to contain contaminants in the first two and the SSL would not result in *significant* contamination.

COME ON!! This is insulting! This area is right in the middle of the main processing area and is the MOST likely area to contain contamination. The nature and extent of contamination in this area in particular has most definitely NOT been determined. The location of the pipes obviously buried in this area needs to be determined, sampled, and remediated.

Page 4-10, Section 4.2.9, Table 4-6. Petroleum analysis of groundwater was limited to diesel. Analyses should have also included Hydrocarbon Identification (HCID) and gasoline (TPH-Gx) since BTEX compounds and floating product were detected in several wells.

Section 5

General Comments. Onsite soils were generally not analyzed for pesticides and PCBs even though these contaminants were found prevalent in groundwater above criterion levels. Further sampling and analysis of soils for these contaminants is needed to better describe the extent of pesticide and PCB contamination across the site. Additionally, soil samples were routinely not analyzed for the full suite of site COPCs which would be required since contamination across the site is so variable and the sources of groundwater contamination has not yet been identified.

The contamination observed in the groundwater is of concern and exceeds criterion for many analytes. The investigation performed to date has not sufficiently identified those sources of contamination by Rayonier's own admission. Of particular concern is the pesticide (DDT, DDE, and DDD) contamination observed across the site. While Rayonier states that it does not know the source of this contamination, it is likely that Rayonier must have conducted insecticide spraying across the site, probably during the 40's and 50's when it was common practice.

Page 5-1, Paragraph 4. The report states that areas that were addressed as part of interim actions were not further evaluated or discussed. As described above in the Section 3 comments, these areas were not sufficiently cleaned up. Contaminated soil was left in place, confirmation samples were not submitted for the full suite of site COPCs, and in many cases final confirmation samples exceeded cleanup levels which were explained away for various reasons. This lends an incomplete description of the nature and extent of site contamination described in this section.

Page 5-3 and 5-4. Visual and olfactory indications of petroleum were observed at seven soil sample locations (LY21, LY22, LY23, SR22, CS20, DB21, and RB21); however, Rayonier analyzed samples from only one of these locations for petroleum hydrocarbons. Rayonier's reasons for not analyzing for petroleum at the other locations was weak at best and based on speculation. These areas should be re-sampled and submitted for petroleum hydrocarbons.

Page 5-7, Section 5.1.2.2. Samples collected in the boneyard were only analyzed for arsenic. COPCs in a typical boneyard include PCBs from transformers, petroleum hydrocarbons from engines, metals from batteries, and PAHs from tires. In addition, groundwater samples collected from this location exceeded copper and pesticide criterion and the area is located downwind from the Rayonier smokestack. These samples should be re-collected and submitted for the full suite of site COPCs.

Section 5.1.2.3. Samples collected in the chlorine dioxide and pre-fab area were only analyzed for copper, even though ESI samples contained elevated levels of arsenic and chrysene. In addition, the area is located downwind from the Rayonier smokestack. These samples should be re-collected and submitted for the full suite of site COPCs.

Section 5.1.2.4. Samples collected at the SSL Lagoon were not analyzed for pesticides or PCBs even though these contaminants were observed in groundwater at levels above criterion. Additionally, surface samples were only analyzed for dioxin and subsurface samples were not analyzed for dioxin. These samples should be re-collected and submitted for the full suite of site COPCs. During the interim removal, confirmation samples were only submitted for limited chemical analysis and did not include VOCs, pesticides, or PCBs. Samples in this area should be re-collected and submitted for the full suite of site COPCs.

Section 5.1.2.5. Samples collected at the wood mill were not analyzed for pesticides, even though these contaminants were observed in groundwater at levels above criterion. These samples should be re-collected and submitted for the full suite of site COPCs.

Section 5.1.2.6. Samples collected at the Log Yard were not analyzed for the appropriate suite of contaminants. Samples LY20, LY22, and LY23 were only analyzed for dioxins even when stains and organic odors were observed in LY22 and LY23. No samples were analyzed for pesticides or PCBs even though nearby wells contained these contaminants above groundwater criterion. These samples should be re-collected and submitted for the full suite of site COPCs.

Sections 5.1.2.6.1 through 5.1.2.6.4. Rayonier routinely discounts the presence of contaminants found in the log yard samples based on speculation, supposition, faulty hypotheses, or lack of information. Rayonier often discounts ESI data when it was not reproduced during the RI sampling even though Rayonier often did not sample in the same location. Additionally, because sampling strategy did not include analysis of the full suite of COPCs, the summary of the data is incomplete.

Section 5.1.2.7. Ecological samples collected were not analyzed for PAHs and SVOC even though the area is located downwind from the Rayonier smokestack. Additionally, these samples were analyzed for pesticides even though there is evidence that pesticides were used across the site. These samples should be re-collected and submitted for these suites of COPCs.

Section 5.1.2.8. Soil samples collected from the main process area should have been analyzed for all the suites of site COPCs due to the varied activities and widespread contamination associated with this part of the site. Even so, extensive and varied contamination was observed in this area which is not unexpected. As with the log yard soils, Rayonier tries to discount observed contamination. Rayonier seems unduly concerned with the source of each analyte, tying each analyte's legitimacy to whether or not its source can be determined. This would be an impossible task and irrelevant, the important point being that the contamination is present. The fact that observed contamination may have been brought in with the fill to build the site is of no consequence to Rayonier's responsibility for remediation. Data gaps still exist in this area since the buried pipes and storm water drains have yet to be evaluated for contamination.

Section 5.2.1, Appendix H. The meteorological data used to generate the particulate deposition modeling was collected at the base of Ediz Hook and not from data collected at the site. By comparing wind roses generated from both data, it is clear there are significant differences that would impact the validity of the modeling results. Specifically, the wind rose data collected onsite had a significant radial in the northeast quadrant with wind speeds of up to seven to 10 knots, whereas the wind rose generated from the Ediz Hook data had none. It is probable that this wind vector is caused by the diurnal shift of winds and occurs primarily during the nighttime hours. The lower wind speeds, compared to the primary winds, would cause contaminants from the Rayonier stack to aerially deposit on top of the cliff, southwest of the site and relatively close to the site's boundary. By looking at the residential soil data, elevated concentrations of site COPCs were indeed observed in these areas.

The reasons that Rayonier gave for not using the site data were weak when combined with actual soil data. It is suspected that Rayonier chose to use the Ediz Hook met data to try to discount the elevated residential soil results. As it stands, the results of Rayonier's atmospheric deposition modeling is not valid.

Rayonier also supposes that the elevated residential dioxin concentrations are due to the incinerator at the hospital. This is easily determined by conducting dioxin fingerprint analysis of the onsite versus hospital incinerator waste and it is recommended that they do so.

Section 6

Please refer to the fourth paragraph in the Conclusions.

Section 7

General. Refer to Executive Summary comments.

Page 7-5, paragraph 2. Rayonier states that it is unlikely that additional leaching of contaminants from soil to groundwater will occur since groundwater concentrations have stabilized. This is ridiculous. The stable groundwater concentrations indicate that equilibrium has been reached between soil and groundwater. Additional leaching would occur during heavy rainfall or flooding events of Ennis Creek.

Conclusions

The nature and extent of contamination in groundwater, onsite soil, and residential offsite soil has not been adequately characterized at the upland portion of the Former Rayonier Mill Site. Furthermore, Rayonier consistently downplayed or tried to discredit the contamination that they did observe and drew unsubstantiated conclusions that favored minimizing clean-up efforts.

Groundwater is very contaminated across the entire site. Wells closest to the shoreline and nearest the pier contain the greatest number of contaminants as would be expected since groundwater flows toward these wells. This is a major concern since they are indicative of what is flowing into the marine environment. Another major concern is the presence of pesticides and PCBs in the groundwater. Since these compounds have such low solubility, their presence in groundwater indicates that either pesticides/PCB were spilled directly into the groundwater, or the concentration of these compounds is very high in surrounding soils which are then leaching to groundwater. The RI report downplays the seriousness of their presence.

Contamination in onsite soil has not been adequately characterized. This is clearly demonstrated by the widespread groundwater contamination for which Rayonier admits no point sources have been found. Some hot spots were identified and subsequent interim cleanup and removal actions were performed. Rayonier conducted inadequate cleanups at most of these hot spots admitting to either leaving some contamination in place due to "inaccessibility", or confirmation samples exceeded action levels, indicating contamination remained. Rayonier routinely discounted elevated concentrations of contaminants in soil as outliers or anomalies. In one case, they reburied a pipe of black liquid without sampling rationalizing that it wouldn't contain contamination. This seems unlikely and irresponsible of Rayonier. Remaining contamination at these hot spots and in buried pipes across the site are some of the probable point sources that may be contributing to groundwater contamination.

Soils were routinely analyzed for a subset of site COPCs and no clear explanation was given for the selection of each subset. This would greatly underestimate the actual contamination at the site. Since Rayonier states that no point sources of contamination were identified, all samples should be analyzed for all COPCs. There are several large areas that contain no soil analytical data, particularly near the shoreline wells and in the area east of the mouth of Ennis Creek.

The air modeling that Rayonier conducted to evaluate the residential soil data is rife with the following problems:

- The placement of the meteorological station on Ediz Hook would not represent wind patterns at the site and data collected from this location would not yield accurate wind roses.
- Modeling based on the inaccurate wind rose information would not be accurate.
- Rayonier used air modeling data to discredit the residential soil sampling results. This is exactly backwards. Soil data is always more reliable than modeling data and should always be used if given a choice. In fact, there really is no point to conducting air modeling if surface soil data is available. Much more accurate and complete information could have been gathered if Rayonier's efforts had been focused on collecting more soil information.
- Rayonier should conduct dioxin fingerprinting to determine if the hospital incinerator is indeed contributing to residential soil contamination.

Rayonier is one of the largest land owners in Washington State and has done business as one of the largest employers in the region for many years. Washington and its citizens have benefited greatly from their investment in infrastructure and jobs created thereby. Rayonier has also benefited enormously from the natural resources and dedicated labor efforts of the citizens of Washington State. Rayonier is now an international Four Billion Dollar business and needs to recognize the true cost of some of its past practices. The Port Angeles community, the Puget Sound has been economically stunted and its citizen's heath damaged by the actions of Rayonier long enough. In short Rayonier has made a tremendous mess over a long period of time and needs to truly clean it up. Finally, it would not seem to be in the Washington Department of Ecology's best interests to allow Rayonier to get away with such an obviously jaded and poorly conducted Remedial Investigation that sets a precedent for future RP-led cleanups.

Sincerely

Aaron Warner
Port Angeles, Washington

Harris, William W.

From: steve rodrigues [olympicforum2000@usa.net]
Sent: Thursday, November 30, 2006 2:57 PM
To: Harris, William W.
Cc: steve rodrigues
Subject: Rayonier Mill Cleanup Port Angeles Public Comment due before Dec 1, 2006

I attended the November 8, 2006 Open House and Public Meeting held in Port Angeles.

I elected to email my public comment for the record.

My comment follows that of the gentleman Nov. 8, 2006 who stated, in part, the community and economic losses to the community are measureable related to past and future Rayoniers site cleanup delays. And that the site is one of the major commercial properties within the heart of the community.

It is important that State environmental governing levels, as stated in the meeting, related to permissive dioxin levels being considered to become more stringent not to enforce the change from 66.7ppt to 6.7 ppt.

The State over the past decades, since the the early 1980's, have cleaned up mills to federal and state environmental regulatory standards. The previous set levels of cleanup ensured public safety and health to date. If you change the criteria to become more strigent then the past must be reviewed at hundreds of other sites that were cleaned up and on record to date.

Therefore, the 66.7 ppt should be acceptable and the 6.7 ppt level proposed should be eliminated from further study. The State actions must be legal and take the responsibility for assurances to clean up the Rayonier site.

A critical community comment related to the shut down of the Olympia Brewry must be mentioned as an example for Port Angeles DOE levels of cleanup. The State, Olympia, Lacey, and Tumwater all were involved with the shut down of the brewery due to unacceptable levels of effluent temperature and volumes. Their decisions shut down the brewery perpetually. The brewery was operated for over 125 years. We are able to determine the communities losses over the next 100 years, and it is not all related to environmental protections in the State.

Mr. Peter Kemetz was involved with the brewery decisions. And, today he is the man setting the decisions regarding the Port Angeles Rayoiner Mill site. He is a City Council member with the City of Tumwater, and has witnessed a major communtity loss of diverse means and a loss of citizens jobs and quality of life due to the brewery shutdown. Now, he is one person that should help Port Angeles to determine the communities losses due to his new levels of environmental cleanup stardards as proposed.

He and the State must project all the realistic losses or gains since the Port Angeles Rayonier site closeure to the day that the State can determine the site ready to be developed in the future. This period of time is not just about field studies, but about the impacts of the community. Tremendous financial losses and human factors can be proven form a study of both delays of primary and secondary economic impacts that should be included within your final decisions for tomorrow.

Today, the brewery and community have fallen apart. They will continue to struggle for many years to come. The facts are the regulatory entities drove the owners away due to simple management of temperature and volume discharges.

The plant is similar to Rayonier Mill site if the State controls levels of cleanup that impacts costs to remove. More delays caused by the State will force an inability to consider development and the sites best use for the best economic future within the next 100 years.

Mr. Kemetz should not be involved in this decision nor take responsibilty within any future DOE decisions. He should not be allowed to jeopardize another communtiy ever again. Please revisit the 66.7ppt vs the 6.7ppt cleanup standards without him.

Also, the alternative levels of cleanup should be studied and compared before making any final decisions. The studies should include volumes of environmental cleanup, construction cleanup costs, loss or gains of community revenues based upon the tax base delays, and health and safety issues.

Thank you,
Steve Rodrigues

Harris, William W.

From: Kathy Duff [katduff@olypen.com]

Sent: Thursday, November 30, 2006 5:20 PM

To: Harris, William W.

Subject: Comment re: Draft RI Upland Soils report

Dear Mr. Harris
Project Manager

I am submitting comments re: Draft Upland Remedial Investigation Soils Report - Rayonier Mill Site in Port Angeles, WA

Rayonier, through its many years of operation in Port Angeles has been very aware of environmental standards. Unfortunately, their awareness resulted in asking for and being excused from keeping current with environmental standards while in operation. They have known all along that they would need to clean this site.
In order to prevent cost shifting of their environmental cleanup costs to the taxpayer, I would like consideration of the following:

1. The toxic chemicals and metals found at this site are known to cuase human health problems. Further investigation of these chemicals and thorough cleanup are necessary to avoid causing illness and birth defects. It is not the right of any corporation to leave behind chemicals that can cause permanent, life long deficits as these chemicals such as dioxin, PCBs and PAHs are known to do.

2. Dioxin cleanup at the site and off the site should conform to the standards set forth by the World Health Organization. It should be not up to the polluting corporation to dictate the standards and methods for measuring contaminant levels.

3. Sampling results of the report and earier sampling are inconsistent. Earilier sampling showed higher levels. An explanation of those differences must be included in the final report.

4. Rayonier is dragging out the cleanup of this site. They have spent plenty of time fighting and threatening when they are called to clean up their mess. A schedule of cleanup should be adopted that Rayonier would be expected to meet under penalties for failing to do so.

Thank you for your consideration,
Katherine E. Duff
960 Thornton Drive
Sequim, WA 98382

TECHNICAL REVIEW COMMENTS ON THE DRAFT TERRESTRIAL ECOLOGICAL EVALUATION AND THE UPLANDS REMEDIAL INVESTIGATION REPORT FOR THE RAYONIER MILL HAZARDOUS WASTE SITE IN PORT ANGELES WA

Reviewer: Robert Sextro

By way on introduction, since I am a new reviewer to the Rayonier project, I have MS degrees in Analytical Chemistry and Environmental Engineering, and currently I work for a not-for-profit, conflict-free company consulting with the US DoD on investigating, remedy selection and remediation of closed military facilities. I have been working with the DoD for about 20 years, prior to that I managed analytical laboratories for over 15 years including an air quality sampling and testing laboratory. I have expertise that includes developing sampling and analysis plans and strategy using EPA guidance and the DQO process, QA/QC of sampling and analytical data, interpretation of results and data, field and laboratory audits, and optimizing remedial systems.

General Comments

In my opinion, our entire understanding of potential contamination at the former Rayonier mill site rests squarely on representativeness of the samples collected, the completeness of the analytical data (which implies data of known accuracy and precision) and the comparability of the various data sets collected over time at this site.

Using this statement as a back-drop for my review of the draft Terrestrial Ecological Evaluation (TEE) and the Uplands RI, neither report does an adequate job of evaluating these standard concepts of data quality and discussing the uncertainty this causes to our understanding of potential contamination at the sites and its impact on human health and the environment. After skimming over some of the main sections of these reports (given my time constraints for this review) I focused my attention on the sampling of soils and groundwater and subsequent sample analysis. Appendix F presents the limited data assessment that was done, and it appears to be just a summary of the case narratives provided by the analytical laboratory. Given the nature and magnitude of this project, I would have expected to see atleast some independent assessment of the data quality. It certainly appears to me that the authors of the two reports ignored the contents of Appendix F and the more detailed data CDs from the laboratory and just assumed that there were no data quality problems that affected the results and their subsequent interpretation and findings (such as ecological hazard indices).

All the case narratives the I reviewed for soil sample analysis by method SW 6020 on the data CDs and the data quality summaries in Appendix F indicate matrix spike recovery for antimony that is below the project's control criterion (75 to 125 percent recovery). The narratives further state that "antimony results from this procedure (digestion procedure SW 3050) should only be used as indicators of estimate(d) concentrations". My review of the data CDs indicate that this "low recovery" is around 30 to 35 percent. In my opinion, this "recovery below the project's control criterion" is a systematic error that has biased the reported antimony concentrations in soil low. Since the TEE reports that antimony is a COPEC for wildlife in the west mill area and calculates a hazard index for this element, this systematic error must be considered and discussed in the report.

I have the following recommendations based on my discussion above:

- Revise the data assessment in Appendix F to include numeric values for the cases described in the various narratives as recoveries above or below project control criteria.
- Direct the authors of the two reports to closely review the data assessments and original laboratory case narratives and then summarize any negative impacts and/or uncertainties on results of COPCs and COPECs that are being used in the reports.
- Select a representative sample delivery group with case narrative and have someone independent of the laboratory review and "validated" those data, particularly for COPC and COPECs of interest at this site.
- If addition soil sampling is to be done at this site, as Dr. deFur's comments suggest, re-analysis for antimony should be attempted using alternate digestion procedures that I believe can overcome the poor matrix recoveries for antimony and silver.

I'm not familiar with the quality of the groundwater and samples obtained from the monitoring wells and the uplands RI does not discuss this or present the results of the stabilization parameters measured in the field prior to sample collection (the following discussion may not be germane if the monitoring wells at the Rayonier site have turbidity values when sampled that are consistently at or below 10 to 20 NTUs). Table 5.1 of the Uplands Environmental SAP of March 2004 provides the project's groundwater stabilization criteria but does not include a maximum turbidity value (above which perhaps sampling is not allowed until the well is re-developed). The collection procedure does indicate that samples for dissolved metals will be field filtered prior to preservation and shipment to the laboratory. However, very high turbidity (at values between 25 to 100 NTU and greater) can also effect the results of some of the other analyses, depending on how the samples are handled, sub-sampled (as needed) and prepared for analysis by the laboratory. My experience indicates that samples of high, uncontrolled turbidity can result in biased high results for selected organics such as DRO, PAHs and PCBs and certainly for total metals.

I have the following recommendations based on my discussion in the previous paragraph:

- Provide the field data sheets in an Appendix that show the stabilization parameters, including turbidity, for the samples collected from the monitoring wells at the site.
- As appropriate, incorporate and discuss any information obtained from these well purging and stabilization data that might have affected the groundwater results you are interpreting in the report.
- Establish an upper limit for turbidity in the well water, such that samples cannot be collected if the turbidity is above this limit (25 to 50 NTU is commonly used on projects that I have worked with in the DoD), and apply when groundwater is sampled again at this site.

Specific Comments on the Uplands RI Report

Item	Section	Location	Comment
1.	4.1	Page 4-1	It is stated that a sampling objective is to provide "legally defensible data". In the EPA-world, this has a very specific meaning that generally includes a rigorous independent "validation" of the sampling and laboratory data. This has not been done with the data used in these reports, so perhaps your definition of "legally defensible data" should be provided.
2.	4.2.6	Page 4-9	Indicate if the objective of "minimum production of artificial turbidity" in the groundwater samples was achieved using micropurging techniques.
3.	4.2.7	Page 4-10	In the first paragraph, add a reference to the Appendix where the results of the field stabilization parameters will be documented.
4.	5.1.2.1	Page 5-7	Using a study of urbanized areas in New England for background PAHs does not seem applicable to an isolated town such as Port Angeles and in an area of very limited fossil-fuel power generation. Why not just assume the background for cPAHs to be ND?
5.	5.2.6	5-27	The statement "PAHs can also occur naturally in the environment" appears to try and minimize the potential impact that mill generated PAHs has on human health and environment and is not universally accepted. Either delete this sentence or provide reference to EPA publications or peer-reviewed literature from scientific journals that supports this ad-hoc claim.
6.	Appendix F	Pages F-11 & 12	The sample matrix for sample group K2303506 is defined as worms, yet the reason given for the low matrix recoveries for antimony is "soil particulate present' in the matrix. Clarify if this assessment language is just a "boiler plate" explanation, and explain how there was enough soil particulate present to affect the matrix, given that Dr. deFur's comments on the worms seems to imply that the soil was removed from the "worm matrix" prior to sample preparation (which would seem to mean that no soil was present in this matrix to cause any of the problems encountered).

Item	Section	Location	Comment
7.	Appendix F	Pages F-17, 18, and 19	The data assessment written for sample group K2303509 is almost word for word, perhaps arranged in a different order, as what is stated by the analytical laboratory in their case narrative for the same "service request". If this data assessment were even somewhat independent of the laboratory's explanation of what went on with the sample group, the sentences would be written as a confirmation of the laboratory's findings and not as just a "parrot" of what the laboratory stated. I recommend entirely re-writing this data assessment as an "independent" confirmation of what the laboratory has reported (see specific example in the next two comments).
8.	Appendix F	Page F-20	Under "other analysis notes" and metals, it states that "some analytes were analyzed by method 6010B due to elevated analyte concentrations". Which is fine, but tell the reader which metals were analyzed via method 6010B and on which samples? Again this is exactly what the laboratory has stated in their case narrative, but the assessors should at least fill in the blanks and complete the message.
9.	Appendix F	Page F-27	For sample group K2303593, what is stated in the section "other analysis notes" under PCBs regarding Aroclor 1248 is virtually word-for-word what the laboratory has said on page 6 of their case narrative for this same service request group. The wording of the second paragraph starts by stating "a review of the sample chromatographs indicated the presence of " etc., and I believe this is misleading because the data assessors were not the ones that "reviewed the sample chromatograms" but they just copied what the laboratory has stated. If the data assessors are not going to review these chromatograms and just accept what the laboratory has done, then the sentence should clearly state that the laboratory performed the chromatographic review and this was not verified as part of this assessment.

Note: the latter 4 specific comments on the contents of Appendix F does not reflect the complete condition of either this Appendix or the data CDs, but represents just a sampling of the types of problems and questions I encountered during my less than complete review.

CITY OF PORT ANGELES
WASHINGTON, U. S. A.
Legal Department

Bill Harris, Project Manager
WA Department of Ecology
PO Box 47775
Olympia, WA 98504-7775

(Also sent electronically to avoid delay)
E-mail: whar461@ecy.wa.gov

December 1, 2006

Re: *Draft Remedial Investigation for the Uplands Environment of the Former Rayonier Mill Site.*

The City hired an independent firm to assist us in evaluating the RI. In a special open session of City Council, the full Council was presented an overview of the RI, the draft Comments prepared for the City by Exponent, and engaged in an thorough discussion regarding the Rayonier site, the long delayed release of the RI, and the future potential redevelopment of that property. Attached to this letter are Comments prepared at the request of the City of Port Angeles. City Council and Staff have reviewed both the RI and the comments prepared at our behest. We are submitting both this letter and the attached Comments to you as the City's official comments on the *Draft Remedial Investigation for the Uplands Environment of the Former Rayonier Mill Site.*

In submitting these comments the City's interest is to protect the citizens of Port Angeles. The City hopes to accomplish that, first, by ensuring that the remedial investigation uses the appropriate and correct methods so that it accurately identifies conditions that might be harmful to people or the environment. The City hopes to accomplish that, second, by ensuring that the remedial investigation uses the appropriate and correct methods so that it does not imply health concerns not indicated by the scientific evidence and does not suggest unwarranted negative consequences for citizens.

Bear in mind that these comments on the RI truly represent a wholly independent review of the RI. The consultants who prepared them are highly respected in their respective fields of expertise. In that light two points merit special attention:

A. It should be noted that these comments on the RI, independently prepared by three respected scientists, are NOT critical of the overall approach used in preparing the RI. Thus we believe that the RI should be considered to be substantially consistent with the best theoretical and applied science currently available after the issues identified in our comments have been addressed.

B. These comments appropriately note specific issues or locations that require further analysis or clarification. As noted in the comments, at those specific locations there may need to be future reviews conducted by a potential purchaser or redeveloper of the site to

Phone: 360-417-4530 / **Fax**: 360-417-4529
Website: www.cityofpa.us / **Email**: attorney@cityofpa.us
321 East Fifth Street - P.O. Box 1150 / Port Angeles, WA 98362-0217

fully characterize conditions after the interim cleanup actions, relative to proposed final uses of the site and appropriate cleanup

Finally, I would like to note that while this Draft RI is an important hurdle in restoring this site to being a valuable asset to the community, it is only one step. Moving from this point forward, we believe there must be a much stronger emphasis placed on integration of final site redevelopment and use planning with the regulatory oversight of brownfield restoration.

If you have any question that you would like to discuss, please feel free to contact me.

Very truly yours,

Mark E. Madsen
City Manager

Enclosure included

Harris, William W.

From: Bob Vreeland [bvreeland@tenforward.com]
Sent: Monday, December 04, 2006 3:18 PM
To: Harris, William W.
Subject: Draft RI Upland Soils Report

Mr. Bill Harris, Porject Manager
SWRO Solid Waste and Financial Assistance Program

Dear Sir:

I am writing to express my concern about the Draft Ri Upland Soils Report. The report identifies high levels of contamination at some sites but seems to downplay their importance. Some sites contain high concentrations of several toxic an potentially toxic metals and compounds. The cumulative effect at these sites must be considered. Further examination of these sights must also be conducted.

It appears that the dioxin standards proposed by Rayonier do not meet the test of best available science. This must not be allowed. Given the known toxicity of dioxin, cleanup standars supported by the Wold Health Organization must be used.

The air deposition analysis must be revisited. At a minimum, the assumptions used in the modeling of the air emissions impact from former Rayonier mill must be examined carefully.

Current groundwater data is not included in the report. This must be rectified.

The report fails to include earlier sampling data that showed higher concentrations of contamination. The report must include the data or clearly explain why the data is not included.

The report contains language implying that the site is not very contaminated. Some of the samples show levels that don't meet industrial cleanup standards. Given these data, it appears that additional sampling may be needed. Until additional data are analysed, the report should not contain language stating or implying there are low levels of contamination on the site.

Given the multi-year delays of the relaese of the draft Upland Remedial Investigation and the yet to be released Marine Remedial Investigation, an enforceable schedule for future work must be set.

Thank you for the opportunity to comment on the draft RI report.

Sincerely,

Robert Vreeland
Fishery Biologist, Retired

PORT ANGELES CHAMBER OF COMMERCE

121 East Railroad Port Angeles, WA 98362 (360) 452-2363

November 21, 2006

Mr. Jay Manning
State Dept. of Ecology
PO Box 47600
Olympia, WA. 98504

Dear Mr. Manning:

The Port Angeles Regional Chamber of Commerce has been following the progress or in some cases it seems lack of progress in reference to the clean up of the former Rayonier Mill site here in Port Angeles. Recently we had an opportunity to review the proposed changes by Washington State DOE with regard to what is considered acceptable levels of Dioxin in the soil, not only at the mill site specifically, but in all areas of the community.

This is a very complex issue and I am sure a great deal of work has gone in to your studies, however it appears the new regulations being proposed could cause serious problems for Port Angeles, because they are unnecessarily stringent. We see no reason why State DOE should go beyond the acceptable levels that are being used on a national level by EPA. Dioxin is found in microscopic amounts in soil at a variety of areas, which has not been caused by any commercial or toxic fall out. The proposed regulations would cause an unnecessary hardship to land owners and City and County Government.

The Port Angeles Regional Chamber of Commerce encourages you to not pursue these more stringent levels of dioxin evaluation.

Sincerely

Russell J. Veenema
Executive Director
Port Angeles Regional
Chamber of Commerce

November 30, 2006

Bill Harris, Project Manager
WA Department of Ecology
PO Box 47775
Olympia, WA 98504-7775
Subject: Comments on Uplands Remedial Investigation Report –Rayonier Mill Cleanup

Dear Bill:

The State of Washington owns filled tidelands, tidelands and bedlands that have been leased to Rayonier for many years. The Department of Natural Resources manages these lands for Washington State. The DNR has participated and commented throughout the environmental cleanup of the Rayonier site.
The following comments are provided at this point in the evaluation process:

1. Comments on the drafts of both Volume 1 and 2 were submitted in February and March 2003 (Copies of the submitted comments are attached). There has not been written response as to how the comments were addressed. It is not clear if and how these comments were incorporated into the current draft.
2. Areas along the shore in filled tidelands resulted in samples containing multiple compounds. Over 10 classes of compounds were identified in samples at WM20, WM21, and DK20. These areas need additional sampling and cleanup considerations to determine extent of contamination and any synergistic effects between the compounds.
3. Reinstitute the RTAG (Rayonier technical advisory Group) in order to address and discuss the levels and phases of cleanup.
4. Due to the uncertain nature of future uses at the site, DNR continues to support evaluations for MTCA Method B unrestricted land use cleanup levels. 1) the land is in direct contact with the water so this allows for a continued pathway for ongoing releases to the aquatic environment that are not acceptable and 2) even if they intend to use it for industrial purposes in the near future, we do not want to limit our future opportunities at the site by increasing the cost of folks doing business in this area.

We look forward to working with all parties and moving forward with cleanup at the former Rayonier Mill site. Thanks for the opportunity to comment. If you have any questions, please contact me at 360-457-2570 ext 221 or Joanne Snarski at 360-902-1070.

Sincerely,

Martha Hurd
Straits District Manager, Aquatics, Orca Straits District

Cc David Roberts
Joanne Snarski
File

Harris, William W.

From: Alfredo Quarto [mangroveap@olympus.net]
Sent: Thursday, November 30, 2006 6:16 PM
To: Harris, William W.
Subject: Proper Procedure Must Be Implemented at Rayonier Cleanup Site

Bill Harris, Project Manager
SWRO Solid Waste and Financial Assistance Program
PO Box 4775
Olympia WA 98504-7775
Email: wha461@ecy.wa.gov

Subject: Draft RI Upland Soils Report

(The Draft Upland RI Report can be read online at
www.ecy.wa.gov/programs/tcp/sites/rayonier/rayonier_hp.htm)

==========

TELL ECOLOGY:

*** Do not dismiss high levels of contamination without further examination.**
*** Use credible dioxin sampling and analysis.**
*** Use dioxin cleanup standards supported by the World Health Organization. Do not lessen the scientific standard out of fear of a Rayonier legal action.**
*** Get current groundwater data.**
*** Use all applicable data.**
*** Use protective cleanup standards and eliminate biased language discounting the significant findings.**
*** Set an enforceable schedule for all future work at the site.**

BACKGROUND ON CONCERNS

Do not dismiss high levels of contamination without further examination. Soils were sampled for 14 classes of compounds throughout the mill site. High concentrations of metals, particularly arsenic, copper, and lead are present at a number of sampling locations. So, too, are dioxins PCBs and PAHs (polyaromatic hydrocarbons). Individually and together, these are carcinogenic, endocrine disruptors, and toxic at very low doses. They can cause developmental problems in children and fetuses. Review of the Draft RI shows that throughout the mill area, numerous sites sampled contain multiple chemicals, some individual samples exhibited as many as 10 classes of compounds. The cumulative impact at each of these points could rank for cleanup and should effect further sampling in those areas. Rayonier and Ecology must include these data to see if they represent "hot spots" or are representative of contamination in the wider area. Then the areas need to be cleaned up if the levels do not meet criteria protective of human health and the environment.

Demand credible dioxin sampling and analysis. Off-site, EPA found worrisome levels of dioxins when it took initial samples of hospital and residential soils in Port Angeles in the late 1990s. Rayonier is supposed to continue this sampling but is resisting. Rayonier is attempting to excuse further soil

analysis with a flawed air deposition model. Ecology must revisit the air deposition analysis and use real data because Rayonier's models for determining to what extent air emissions impacted surrounding land are flawed as they do not match the hard EPA data taken earlier that showed high levels of dioxin. Other data collected over the years during which the mill was operating were compiled from the Port Angeles Clean Air Now and Clean Air Hotline, from the Dept of Health (above expected death rates in Port Angeles), and from the Olympic National Park. These data show Rayonier's air deposition pattern. This hard data must be considered. More soil sampling, including from beneath roof drip lines where pollutants are often found, should be taken from areas known to have been in the mill's emission pathways.

Use dioxin cleanup standards supported by the World Health Organization. Do not lessen the scientific standard out of fear of a Rayonier legal action. Dioxin is one of the most dangerous chemicals known to exist. Ecology should use cleanup standards for dioxin protective of human health and the environment. It has been agreed on that 6.67/ppt is the cleanup level to be followed for the protection of human health and the environment. Now, since Rayonier has been resisting, Ecology is looking for some middle ground in their new rule making of dioxin cleanup standards under the state Model Toxics Control Act. Even 6.67/ppt safety is questionable given that everyone has its "safe" body burden of dioxin, now found in fetuses and in large quantities in mothers' breast milk. Ecology should not go below the WHO recommendation. Rayonier seeks to find ways to discount elevated dioxins and furans concentrations already found in soils around Port Angeles to excuse themselves from further sampling, leaving residents, schools, health facilities and businesses in the dark about the nature and extent of dioxin contamination in their soils. Science-based standards, rather than Rayonier-based economic concerns, must be used to determine dioxin cleanup levels.

Get current groundwater data. Most groundwater data in the report are from 2003. A number of compounds detected above criteria include PCBs, pesticides, metals and PAHs. Manganese was not measured. Here again, a number of samples from individual sites showed multiple chemicals. A close comparison of the soil and ground water samples show the marine contamination can be linked to the upland soil pollution directly above. New samples should be taken for all these compounds since during the last three years above ground seepage into the marine environment could show increases. This new sampling should be done soon so as not to further detain the cleanup investigative process.

Use all applicable data. Rayonier fails to account for the differences between the sampling results in the RI and earlier sampling results that showed higher concentrations of contamination. Without a coherent and convincing reason to not use the earlier data, that sampling information has to be included in the evaluation.

Use protective cleanup standards and eliminate Rayonier's subjective, biased language. Rayonier continues to use explanations and language that paint this site as not very contaminated, when in fact many of the samples came back with levels of contaminants that don't even meet the more relaxed "industrial" cleanup standard. Subjective terms like "low levels of contamination" should be discounted, particularly when the data does not support such biased language.

Set an enforceable schedule for all future work at the site. Multi-year delays that set back the release of the draft Uplands Remedial Investigation, and the yet to be released draft Marine Remedial Investigation, are unacceptable. The public has no way of holding any of the parties accountable for a timely cleanup, nor is there currently any requirement to notify the public when significant delays occur and for what reasons.

Sincerely,
--
Alfredo Quarto, Executive Director

Mangrove Action Project
PO Box 1854
Port Angeles, WA 98362-0279
USA
phone/ fax (360) 452-5866
<mangroveap@olympus.net>
mailto:mangroveap@olympus.net
web site: http://www.earthisland.org/map/map.html

Harris, William W.

From: Eli Owens [ezowens@gmail.com]
Sent: Friday, December 01, 2006 2:18 PM
To: Harris, William W.
Subject: RE: SWRO Solid Waste and Financial Assistance Program

To: Bill Harris, Project Manager
SWRO Solid Waste and Financial Assistance Program

Greetings from Joyce, Washington (15 miles west of Port Angeles) Please accept my e-mailed comments. We have been literally snowed in and without power for many days.
I attended the Novembger 8th forum in Port Angeles as well as various meetings in the past years on the Rainier clean up.
I am more astonished than ever at the apparent lack of urgency in this process. I am particularly disappointed that the aquatic sampling done many years ago has yielded no public information yet. Is it safe to eat the crab, shrimp and fish from our harbor? Many people do. Is it safe for chldren to swim and play at Hollywood Beach? Many do.
Common sense tells us that there must be many toxic contaminants in the sediments of these waters. To what extent have they entered the food chains? To what extent have they built up on the beach? I assumed that we would have answers to these public health concerns many years ago. Who is protected by the withholding of information? Not the public. If the waters are clean and safe, let us know that and show us the data to back it up!
I'll wind up by saying that I have read and am in agreement with the comments made by Peter de Fur.
Please: speed the process, but don't compromise our environment or our health.
Thank you for considering my comments.
Margaret Owens
612 Schmitt Rd.
Port Angeles, WA 98363

Harris, William W.

From: Pamela Tazioli [Pamela@breastcancerfund.org]
Sent: Friday, December 01, 2006 3:21 PM
To: Harris, William W.
Cc: Kessler.Lynn@leg.wa.gov; Hargrove, Jim; kevinvandewege@hotmail.com; Cantwell, Maria; Murray, Patty; ardis_dumett@murray.senate.gov; tom.luce@mail.house.gov; mary.schuneman@mail.house.gov; Fitzsimmons, Tom (GOV)
Subject: Rayonier Mill Cleanup - Port Angeles
Attachments: State of the Evidence 2006.pdf

Hello Bill

I am writing on behalf of Breast Cancer Fund and as a member of the Olympic Environmental Council. Breast Cancer Fund endorses a strict cleanup of the Rayonier Mill toxins in the Pt Angeles area.

Washington State has the highest rate of breast cancer in the country. When all traditional risk factors - like genetic predisposition, reproductive history, diet, exercise and alcohol - are aggregated, more than half of breast cancer cases remain unexplained. A considerable and growing body of evidence indicates that exposure to radiation and synthetic chemicals is contributing to the epidemic of breast cancer and other cancers in the United States and other industrialized countries.

For example, dioxin, which is of specific concern in the Rayonier Mill area, is ubiquitous and toxic. The body fat of every human being, including every newborn, contains dioxin. Dioxins are known human carcinogens and hormone mimickers. 'Endocrine disrupting chemicals' are chemicals such as dioxin that disturb the body's finely tuned hormonal (endocrine) balance. Any disruption in hormonal activity can interfere with an organism's ability to grow, develop and function normally.

For your further review, I am attaching two documents:

- Collaborative on Health and the Environment (CHE) Consensus Statement on Breast Cancer and the Environment 2006
  http://www.breastcancerfund.org/site/pp.asp?c=kwKXLdPaE&b=2065995

- State of the Evidence – What Is the Connection Between the Environment and Breast Cancer? - attached as a PDF

Breast Cancer Fund supports the concerns raised by the Olympic Environmental Council in their comment letter. We recommend the swift and thorough cleanup of the Rayonier Mill area, to levels that protect human health and the environment.

Sincerely

Pam Tazioli
Breast Cancer Fund
206-524-4405
www.breastcancerfund.org

OLYMPIC COAST ALLIANCE
13245 – 40TH Ave., N.E. Phone – (206) 364-3933
Seattle, WA 98125-4617 Email: marmot75@earthlink.net

December 1, 2006

Bill Harris, Project Manager
SWRO Solid Waste and Financial Assistance Program
P.O. Box 4775
Olympia, WA 98504-7775
Email: whar461@ecy.wa.gov

Subject: Draft Remedial Upland Investigation
Rayonier Port Angeles Mill Site

Dear Mr. Harris:

Olympic Coast Alliance [OCA] is a non-profit organization founded in 2003. OCA's purposes are to assure a healthy coastal ecosystem through public education and outreach, conservation issue advocacy, Olympic Coast National Marine Sanctuary support, stewardship programs, and a strong working relationship with coastal tribes.

OCA's geographic area of concern and interest includes the coast/shores of the Strait of Juan de Fuca and the Pacific Ocean coast south from Cape Flattery to the Copalis River.

Recently, we learned of the work your agency is undertaking with respect to the toxic contaminates accumulated during the years of operations by Rayonier at its mill site in Port Angeles. We are aware that this pollution occurred during the many years the company processed those forests from within their ownership and other forest sources on the Olympic Peninsula.

We appreciate having the opportunity to review some of the various web site files related to the current situation. We regret that OCA, being a relatively new organization, had not had the opportunity to become informed earlier about DOE and the company's examinations in order to restore this area to once again become a toxic free area.

OCA has consulted with the Olympic Environmental Council [OEC], a citizen organization closely monitoring the process. We support its recommendations for removing the years of accumulations of toxic contaminates from the Rayonier Company mill site.

Olympic Coast Alliance shares OEC's continuing concerns that a full and complete study has not yet been achieved. We support the Olympic Environmental Council's recommendations to DOE that further examinations and analyses are essential – beyond what has been accomplished thus far.

.

OCA concurs with the Olympic Environmental Council's findings that the highest scientific standards need to be maintained and implemented, particularly as established by the World Health Organization. Equally important will be to establish develop the highest standards possible to be followed in the toxic removal/clean-up procedures.

We find it of interest that the company, having been responsible for the resulting degradation of the area where it sited its mill, continues to have a substantial role in assessing the level of that toxicity that occurred under its jurisdiction.

It is to be hoped the Washington Department of Ecology, and, when again it enters the picture, the U. S. Environmental Protection Agency can assure the public at large that the Rayonier mill site's heavy toxic pollution will have been completely removed. That, when visiting the old mill site, they will have the guarantee the area will be free and safe from any toxic exposures left behind.

Sincerely,

Polly Dyer, President
Olympic Coast Alliance

cc: OCA Executive Committee

Harris, William W.

From: Heritagearts [heritagearts@olypen.com]
Sent: Friday, December 01, 2006 6:01 PM
To: Harris, William W.
Subject: Rayonier Millsite Draft RI Comments

Bill Harris, Project Manager
SWRO Solid Waste and Financial Assistance Program
PO Box 4775
Olympia WA 98504-7775
Email: whar461@ecy.wa.gov

Subject: Draft RI Upland Soils Report

I am writing to express my concerns about the Draft RI upland soils Report that Rayonier has submitted for public comment. I feel that the timing of this report is late in coming and that Rayoonier has dragged its heels in the entire clean up process.

This document is hardly an improvement over the first report 2 years ago. Two more years making it almost 10 years since Rayonier closed down and it is still unusable property that is costing the citizens of Port Angeles in tax revenues and placing a burdon on our economy.

Rayonier has for 70 years operated in this community and it is a shame what they are doing to us now. Ten years later and they have yet to get on with it. They need to clean it all up, not just the "hot Spots" It is ALL contaminated. There is high levels of contamination of known toxins at the millsite, Port Angeles deserves to have the site cleaned up to the highest standard, not to the minimum level that Rayonier,is asking for, by submitting this report.

When the State of Washington chose to oversee this project instead of Federal oversite, Rayonier said that they can do it faster . And still we wait.

There are testing flaws and unusual findings as were presented at the meeting. I agree with their concerns and feel strongly that the following recommendations be addressed

* Do not dismiss high levels of contamination without further examination.
* Use credible dioxin sampling and analysis.
* Use dioxin cleanup standards supported by the World Health Organization. Do not lessen the scientific standard out of fear of a Rayonier legal action.
* Get current groundwater data.
* Use all applicable data.
* Use protective cleanup standards and eliminate biased language discounting the significant findings.
* Set an enforceable schedule for all future work at the site.

Thank you for the opportunity to express my concerns

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PEOPLE FOR PUGET SOUND

pugetsound.org

December 1, 2006

Bill Harris, Project Manager
SWRO Solid Waste and Financial Assistance Program
PO Box 4775
Olympia WA 98504-7775
Via Email: whar461@ecy.wa.gov

RE: Draft Remedial Investigation for the Uplands Environment of the Former Rayonier Mill Site, Port Angeles

To Mr. Harris:

We have reviewed the *Draft Remedial Investigation for the Uplands Environment of the Former Rayonier Mill Site, Port Angeles*, dated January 2006, and released to the public in October 2006.

People For Puget Sound is a nonprofit, citizens' organization whose mission is to protect and restore Puget Sound and the Northwest Straits, including a specific goal to protect and restore the 2,000 miles of Puget Sound shoreline by 2015.

As this site sits on the Strait of Juan de Fuca, the toxic soils, if not removed, can continually contaminate marine life. It is important to human health, upland environment and marine environment that the soil cleanup is done right.

It is disappointing that cleanup at this site has taken so long. EPA began investigations in 1993 and now 13 years later we are still at this somewhat incomplete RI stage. This is not a simple leaking underground tank site but a site contaminated with significant levels of dioxins, PCBs, polyaromatic hydrocarbons (PAHs), and heavy metals – all of which are of grave concern for human and wildlife health.

The Governor has pledged to cleanup Puget Sound by 2020 and a site like this should be swiftly and completely addressed as part of the effort by the Department of Ecology to meet her goals.

Reviewing the comments prepared by Peter L. deFur, Ph.D on behalf of The Olympic Environmental Coalition is disheartening. Dr. deFur has had the opportunity to look at several generations of Rayonier reports. He concludes that data changes have been discounted, the overall picture is presented as rosier than reality, arsenic data is misrepresented, no new data (especially groundwater) has been collected in key areas, the text includes incomplete reporting (for example, some groundwater data

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are only described in the appendix), offsite impacts have been incorrectly characterized, the overall dioxin threat is minimized, and the report inappropriately handles exposures of wildlife, including endangered species.

We have reviewed many similar documents for other toxic cleanup sites and in no case have the reports been as misleading or incomplete. It is an insult to the Department of Ecology that Rayonier has presented such a poor report.

We strongly urge Ecology to

a) Require a major rewrite of the document for the final version to address the significant deficiencies.
b) Establish a time-schedule for the remaining needed documents for the site.
c) Require a data collection plan to fill in the needed soil, air deposition, and groundwater data gaps in a timely fashion.
d) Ensure that all risk characterizations for humans and wildlife in the vicinity of the Former Rayonier Mill Site incorporate both the upland, marine, and offsite impacts.
e) Require the use of dioxin cleanup standards supported by the World Health Organization.

Thank you for the opportunity to comment on the RI. Please contact us with questions at (206) 382-7007 X215.

Sincerely,

Heather Trim
Urban Bays Project Coordinator