RESPONSE to COMMENTS

Interim Action Work Plan
Removal of Mercury-Contaminated Soils at
Cell Building

GP West Cleanup Site
Chlor-Alkali Remedial Action Unit
Bellingham, Washington

January 6, 2017

WASHINGTON STATE DEPARTMENT OF ECOLOGY

TOXICS CLEANUP PROGRAM

1. Introduction

On October 3, 2016, an Interim Action Work Plan for the removal and disposal of mercury-contaminated soil from previous work in the Chlor-Alkali area of the site was issued for a 30-day public comment period. Public involvement activities related to this public comment period included:

- Distribution of a fact sheet describing the site and requesting review of the draft Work Plan through mailing and emailing to approximately 5,000 people, including neighboring businesses and other interested parties;
- Publication of a notice in the Washington State Site Register, dated September 29, 2016;
- Publication of one paid display ad in *The Bellingham Herald*; dated October 3, 2016;
- Announcement of the public comment period and posting of the documents on the Department of Ecology (Ecology) website;
- Providing copies of the documents through information repositories at Ecology's Bellingham Field Office and Northwest Regional Office, and Bellingham Public Library-Downtown Branch.

A total of 20 requests were submitted for Ecology to conduct a public meeting. Under state cleanup regulations (Model Toxics Control Act, Chapter 173-340 WAC), if ten or more persons request a public meeting, one will be provided. Based on these requests, the comment period was extended to December 3, 2016 and a public meeting was held on November 17, 2016 to discuss removing and disposing contaminated soils as described in the Work Plan. Five additional comments were submitted during the comment period.

This document includes:

- **Section 1: Introduction**
- **Table 1: List of commenters (does not include requests for public meeting).**
- **Section 2: Background information on the Site.**
- **Section 3: Next steps for the cleanup.**
- **Section 4: Comments received and Ecology's response.**

Table 1. Commenters

1	Monte D. Hokanson
2	Wendy Harris
3	Sandra Robson
4	Alexandra Wiley
5	Lee First, Eleanor Hines: RE-Sources

2. Site Background

The approximately 74-acre Georgia Pacific West cleanup site is located at 300 West Laurel Street, on the south side of the Whatcom Waterway federal navigation channel, in Bellingham. A pulp and tissue mill operated at the site from 1926 through 2007. The Port of Bellingham acquired property within the site from the Georgia Pacific Corporation in January 2005, and plans to use the property for industrial, commercial, retail, and residential purposes.

An environmental investigation of the site completed in 2013 showed contamination in two separate and distinct areas. As a result the port and Ecology agreed to divide the site into two separate cleanup remedial action units (RAUs) to expedite cleanup and support redevelopment. The two areas are known as the Pulp and Tissue Mill RAU and the Chlor-Alkali RAU.

Pulp & Tissue Mill RAU

The former mill manufactured pulp for on-site production of tissue and toweling products, and for sale as market pulp. Other operations included an alcohol plant, lignin plant, acid plant, and steam plant with fuel oil storage. As a result the 31-acre area contains metals, low pH, petroleum hydrocarbons, volatile organic compounds, and dioxin/furans at levels that exceed state cleanup standards for unrestricted use. An interim action to remove and dispose of petroleum-contaminated soil was conducted in 2011. Final cleanup of this RAU was completed in 2016 and consisted of removing and disposing of petroleum contaminated soil, area-wide capping to prevent direct contact and erosion/run-off to sediment, monitored natural attenuation for pH and metals in groundwater, and institutional controls.

Chlor-Alkali RAU

The former chlor-alkali plant operated from 1965-1999. It used mercury to produce chlorine and sodium hydroxide for use at the pulp & tissue mill. Petroleum was also stored there. As a result this 43-acre area contains mercury, high pH, polycyclic aromatic hydrocarbons, and petroleum hydrocarbons that exceed state cleanup standards for unrestricted use. An interim action to remove and dispose of mercury-contaminated soil was conducted in 2013/2014.

As part of the 2013/2014 interim action, mercury-contaminated building materials and about 2,300 cubic yards of soil were removed from the Chlor-Alkali RAU and disposed at an approved landfill. During this work, more contaminated soil than planned was excavated from the site and the port and Ecology agreed to secure the soil (about 600 cubic yards) on-site under a thick plastic protective cover.

The currently proposed interim action will remove and dispose of this remaining mercury-contaminated soil at an approved landfill.

3. Next Steps

Ecology has reviewed and considered all comments received on the Interim Action Work Plan. Comments are presented below with Ecology's response. No changes were made to the Work Plan and it is now considered a final document.

Cleanup work will begin in early 2017 and is expected to be complete by the end of March 2017. The estimated cost is about $1.5 million.

Work continues on developing a feasibility study for the entire Chlor-Alkali RAU. The study will evaluate several cleanup alternatives and identify a preferred alternative. Ecology anticipates issuing this document in 2017 for public review and comment. We also plan to hold a public meeting during the comment period.

4. Comments Received and Ecology Responses

Commenter #1 – Monte Hokanson (email)

From: Monte Hokanson [mailto:monte.hokanson@hotmail.com]
Sent: Monday, October 17, 2016 10:38 AM
To: Kenner, Krista (ECY) <KRKE461@ECY.WA.GOV>
Subject: Re: correction..Ecology public comment period - G-P West site in Bellingham

Hi Krista, I left out a quotation mark at the end of the Lummi Nation quote....please use the version below if you post...thanks

Washington Department of Ecology,

Whatcom Creek used to flow through salt marsh, sandy beach and tide flat.

The Lummi Nation wrote in 2005 "Restore some of the 80% of historic Whatcom Creek salt marsh and tide flat lost to development by removing artificial fill from the estuarine floodplain at the mouth of Whatcom Creek to reconnect 16.5 acres in the historical estuarine floodplain to Whatcom Creek and tidal hydrology."

Environmental law attorney Jean Melious recently wrote "They have ignored stream flows that are too low, and too warm, for threatened salmon species to thrive. They have avoided making hard decisions today, despite the fact that delay will only make tomorrow's decisions even more difficult."

Tim Hearden/Capital Press recently wrote " A University of California-Davis study suggests flooding farm fields during wet winters to replenish depleted groundwater basins." The research is also looking at whether winter flooding dilutes farm field surface contamination before it enters the aquifer or waterways.

Recreating small areas of salt marsh, sandy beach and tide flat on the Georgia-Pacific West cleanup site seems possible. If that is deemed impossible then reconsider rerouting Squalicum Creek through its historic channel along the bluff into restored salt marsh.

Regards,
Monte Hokanson

Ecology Response

Land use is a property owner decision and cannot be directed under Ecology's cleanup authority. Our regulatory mandate is to ensure protection of human health and the environment given the land use decisions.

Ecology supports habitat restoration and has partnered with the Port, City, Lummi Nation and others as part of the multi-agency Bellingham Bay Pilot Project to perform a variety of habitat related studies and projects, including restoration of the Padden Creek and Squalicum Creek estuaries.

Commenter #2 – Wendy Harris (email)

From: Wendy Harris [mailto:w.harris2007@comcast.net]
Sent: Wednesday, October 19, 2016 2:51 AM
To: Sato, Brian (ECY) <BSAT461@ECY.WA.GOV>
Subject: Request for public hearing

I would like to have a public meeting on the GP-West Interim Action Work Plan. I have many questions and concerns that I would like to have answered before the comment period expires.

I have learned that interim actions contain plenty of loopholes that would not otherwise be allowed for a final clean up solution. However, interim actions are often manipulated as a way to obtain concessions which then become incorporated into the final work plan. This has already happened at the Cornwall site. I would like assurances this would not happen again,

Given the highly technical nature of this interim action plan, I am worried that it will be difficult for the public to become engaged and participate without first holding a public meeting.

In particular, as someone who developed life threatening lung disease that is an environmental illness after moving to Bellingham, I concerned about toxic air emissions during treatment of mercury-contaminated soils. I am deeply troubled by the sloppy manner in which dioxin contaminated sediment was mixed with cement and left out to dry and the transported to the Cornwall site in a haphazard manner, only to be dumped and covered with white plastic sheets. I am also aware that in the process of preparing for the arrival of this sediment, the toxic refuge was uncovered at the site and had to inventoried and tested and sent to an update waste repository. How do I know that this will not happen again? I would like to learn the specifics of your interim plan. There have already been unanticipated problems with this project so my concerns are not unfounded.

The public was provided very little information regarding the specifics of on-going monitoring. This would be your opportunity to fill in the missing details as to who would do the monitoring, through the use of what methods, how frequently, and how often it would be reported and also made available to the public. If monitoring does reveal problems, who will be the responsible party handling any necessary remediation?

Finally, what efforts are being made to involve Lummi Nation and other treaty tribes in this interim plan development? It would be nice if the port, the city and DOE finally began to respect tribal treaty rights and threat the Lummis as co-managers of our near shores.

For these reasons and more, all of which impact public health and safety as well as the ecological integrity of Puget Sound, to which the governor has just made a big commitment, I request that a public meeting be held on the GP-West Interim Action Work Plan.

Thank you,
Wendy Harris

Ecology Response

Regarding your request for a public meeting, Ecology received more than ten requests for a public meeting. Therefore, in accordance with the requirements of the MTCA, a meeting was held on November 17, 2016.

Pertaining to your comments about interim actions, under Chapter 173-340-430 WAC, interim actions only partially address the cleanup of a site and may or may not achieve cleanup standards.

The 2013/2014 interim action removed 2,300 cubic yards of soil containing elemental mercury from a portion of the Chlor-Alkali Remedial Action Unit (RAU). This material was an ongoing source of groundwater contamination and the interim action allowed for the expeditious removal while work continued on developing the cleanup action alternatives for the entire Chlor-Alkali RAU. The proposed interim action removes about 600 cubic yards of contaminated soil left over from the 2013/2014 interim action.

A feasibility study, slated to be out for public review in 2017, will describe and evaluate cleanup action alternatives for the entire Chlor-Alkali RAU. If necessary to protect human health and the environment, additional remedial measures will be described for the interim action areas.

Regarding toxic air emissions, this interim action will build a tent-like cover to contain mercury vapors generated during treatment. The cover will provide containment and facilitate capture and treatment of mercury vapors generated during the soil treatment process. A large-capacity blower will draw air out of the enclosure and treat it with sulfur-impregnated activated carbon canisters designed to remove mercury vapor.

Air monitoring will be conducted throughout the interim action to protect both worker safety and the general public. Air monitoring will include real-time measurements for mercury using a Lumex portable mercury vapor analyzer, and time-weighted-average sampling using sorbent traps.

Air monitoring using the portable equipment will occur where workers are handling mercury-contaminated soil. If an exceedance is detected, the contractor will be required to stop work immediately, evaluate the cause of the exceedance, and make corrective actions to prevent additional exceedances. The perimeter of the work area will be monitored using the sorbent traps.

A similar air monitoring program was used for the 2013/2014 interim action. During that project, six exceedances were detected, and addressed, in the area where workers were handling mercury-contaminated soil. No exceedances were detected in the perimeter monitoring. The 2013/2014 interim action removed 2,300 cubic yards of mercury-contaminated soil and occurred during the summer months when the potential for generating mercury vapors are higher due to warmer temperatures.

Based on the air monitoring results from the 2013/2014 interim action, the substantially lower volume of material to be removed in the proposed interim action, and the fact that work will occur during the winter months when the potential for generating mercury vapors are lower due to colder temperatures, we do not expect exceedances of public safety action levels during the perimeter monitoring. Air monitoring results will be documented in the Interim Action Completion Report and made available to the public on Ecology's webpage for the site.

With regard to engaging with the Lummi Nation, they are a member of the Bellingham Bay Pilot Team and are briefed on these projects. Also, in our experience, their main concern is in-water work.

Commenter #3 – Sandra Robson (email)

From: Sandra Robson [mailto:sjrer2@yahoo.com]
Sent: Thursday, October 20, 2016 12:30 PM
To: Sato, Brian (ECY) <BSAT461@ECY.WA.GOV>
Subject: Requesting a public hearing be held - Bellingham waterfront contaminated soil

Dear Mr. Sato,
Please consider this comment an official request that a public hearing be held regarding the plan to move mercury-contaminated soil that's presently sitting on the Bellingham waterfront at the Georgia-Pacific West site to an approved landfill.

Also, because the plan addresses only a portion of the contaminated Georgia-Pacific West site, I think it is prudent to wait for the completion of the feasibility study that will explore options for cleaning up the entire site.

Since that feasibility study is not expected to go out for public comment until early 2017, I think that there should be a public hearing that would include both the plan to move mercury-contaminated soil that's presently sitting on the Bellingham waterfront at the Georgia-Pacific West site to an approved landfill, and the feasibility study that will explore options for cleaning up the entire site.

If it is not possible to hold such a hearing to address both related subjects at the same time, then perhaps there could be two separate public hearings held.

Thank you for considering my comment.
Regards,

Sandy Robson

Sent from my iPhone

Ecology Response
Regarding your request for a public "hearing" about the Interim Action Work Plan. Hearings are recorded, and attendees have an opportunity to voice opinions live for the record. Public hearings are not typically held on interim action work plans. However, Ecology is required to hold a public "meeting" if ten or more people request one. Meetings are not recorded, and provide an opportunity for a dialogue between Ecology and the audience. Since we received more than ten requests for a public meeting, one was held on November 17, 2016.

With regard to waiting to remove the mercury-contaminated soil, while the feasibility study for the Chlor-Alkali area of the Georgia-Pacific West site is anticipated to be issued for public review in 2017, there are additional steps in the cleanup process that take time. Based on the information in the feasibility study, Ecology will develop a cleanup action plan that is issued for public review. Then the project is designed and permitted, then construction can begin.

Rather than wait several years for construction of the cleanup action for the entire Chlor-Alkali area to begin, this interim action will remove the approximately 600 cubic yards of mercury-contaminated soil early next year.

Commenter #4 – Alexandra Wiley (email)

From: Alexandra Wiley [mailto:alexandrawiley@gmail.com]
Sent: Thursday, October 20, 2016 4:36 PM
To: Sato, Brian (ECY) <BSAT461@ECY.WA.GOV>
Subject: Contaminated Georgia-Pacific West site

Dear Sirs,

I would like to encourage clean up of the entire site.
Funding shortages are never ending, but expenses always increase.

Let's get this done sooner than later.

Alexandra Wiley
Helpful hint: If you get trapped in a thread where everyone replies all, you can do this in GMail: Click on the "**MUTE**" button under "more options" on the toolbar above the original message. The thread will continue, but replies will not show up as new messages cluttering your inbox! If you need to find something in the thread later, simply search "is:muted"

Ecology Response

We agree and are moving the site cleanup forward. Cleanup of the Pulp and Tissue area of the G-P West site was recently completed and the feasibility study evaluating different cleanup options for the Chlor-Alkali area is slated for public review in 2017.

After completing the Chlor-Alkali area feasibility study, Ecology will develop a cleanup action plan then the project will be designed and permitted, and construction can begin.

Rather than wait several years for construction of the cleanup for the entire Chlor-Alkali area to begin, the interim action will remove the approximately 600 cubic yards of mercury-contaminated soil early next year.

Comment #5 – Lee First, Eleanor Hines, RE Sources (email)

From: Lee First [mailto:leef@re-sources.org]
Sent: Tuesday, November 29, 2016 1:40 PM
To: Sato, Brian (ECY) <BSAT461@ECY.WA.GOV>
Subject: comments on IA for GP west

Hi Brian, here's our comments. Thanks for holding the public meeting. It's always encouraging when people who up to learn about our waterfront.

Thanks for all your work on GP West!

lee
--
Lee First
North Sound Baykeeper
Clean Water Program
RE Sources for Sustainable Communities
Direct Line (360) 220-0556
www.re-sources.org

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

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

November 26, 2016

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

RE: Comments on the Interim Action Work Plan for Removal of Mercury-Contaminated Soil at Cell Building

Dear Brian,

Thank you for the opportunity to comment on the interim action cleanup at the Georgia-Pacific West (G-P West) Cell Building. We greatly appreciate your willingness to answer our questions, and your continuing efforts in the cleanup processes. RE Sources for Sustainable Communities is a local organization in northwest Washington, founded in 1982. RE Sources works to build sustainable communities and protect the health of northwest Washington's people and ecosystems through the application of science, education, advocacy, and action. We have over 20,000 members in Whatcom, Skagit, and San Juan counties and submit this letter on their behalf.

Our comments on the Interim Action Work Plan for Removal of Mercury-Contaminated Soil at Cell Building are as follows:

1. We cannot overstate the importance of selecting an interim action that will be long lasting and protective of human and environmental health. To avoid the possibility of future stockpiling of contaminated material at this site, we request that the work plan include contingency steps that will be taken in the event that more contaminated material is discovered than was expected.
2. In section 2.1 of the Interim Action Work Plan (Work Plan), steps for waste designation and disposal are described. The two options described include adding elemental sulfur and cement or in-situ treatment, and steps are outlined which may result in significant cost savings by reducing the volume and weight of the treated soil. We understand that these methods will immobilize the hazardous constituents in the soil, but we are concerned that these methods may volatilize mercury. Because there are people living a short distance from this site, we request that Ecology publish the results of air emission tests in a timely manner (such as daily), and/or notify residents – including those who attended the public meeting and expressed these concerns.
3. Section 2.2 of the Work Plan states that the type and dosage of treatment reagents for the mercury-contaminated soil *was not available at the time of*

preparation of the work plan. The public deserves to have a complete and detailed work plan with ALL the technical information included in order to develop meaningful comments. Although we don't want to slow down the cleanup process – we think this is important. Please try to prepare a complete work plan for future actions.

4. During past operations at the GP West site and at the Cornwall Landfill site, we have observed clouds of dust arising and blowing towards the adjacent neighborhoods. We've also observed considerable track-out on public roads. We are very concerned that if work is conducted in windy, wet, or dry weather, people who reside in nearby neighborhoods may be subject to contaminated stormwater, air and dust. We request that cleanup operations only occur during times that dustings will not occur.
5. The Work Plan states that pavement will be placed across the Cell Building excavation area as a final step in this interim action. We are concerned that pavement will do nothing to manage the groundwater that flows under this area and into the Bay. We request that a groundwater collection system be installed before the area is paved so that this pollution source is reduced.
6. The Work Plan states that large debris that is found in the contaminated soil pile will be segregated into a separate waste stream. Please include details about exactly how this material will be sampled, handled, stored, and transported.

Thank you very much for considering our comments.

Lee First, North Sound Baykeeper
RE Sources for Sustainable Communities

Eleanor Hines, Lead Scientist
RE Sources for Sustainable Communities

Ecology Response

1. Under Chapter 173-340-430 WAC, interim actions only partially address the cleanup of a site and may or may not achieve cleanup standards.

   The 2013/2014 interim action removed 2,300 cubic yards of soil containing elemental mercury from a portion of the Chlor-Alkali Remedial Action Unit (RAU), helping to address an on-going source of contamination to ground water.

   This interim action will remove about 600 cubic yards of contaminated soil left over from the 2013/2014 interim action. The soil is contained above the existing grade, under a protective cover. There will be no excavation work or potential for encountering unexpected contamination during this interim action.

2. Regarding air emissions, this interim action will build a tent-like cover to contain mercury vapors generated during treatment. The cover will provide containment and facilitate capture and treatment of mercury vapors generated during the soil treatment process. A large-capacity blower will draw air out of the enclosure and treat it with sulfur-impregnated activated carbon canisters designed to remove mercury vapor.

   Air monitoring will be conducted throughout the interim action to protect both worker safety and the general public. Air monitoring will include real-time measurements for mercury using a Lumex portable mercury vapor analyzer, and time-weighted-average sampling using sorbent traps.

   Air monitoring using the portable equipment will occur where workers are handling mercury-contaminated soil. If an exceedance is detected, the contractor will be required to stop work immediately, evaluate the cause of the exceedance, and make corrective actions to prevent additional exceedances. The perimeter of the work area will be monitored using the sorbent traps.

   A similar air monitoring program was used for the 2013/2014 interim action, which removed 2,300 cubic yards of mercury-contaminated soil in the summer months when the potential for generating mercury vapors are higher due to warmer temperatures. During that project, six exceedances were detected, and addressed, in the area where workers were handling mercury-contaminated soil. No exceedances were detected in the perimeter monitoring. In fact the highest perimeter monitoring result was five times lower than the public safety action level.

   For this interim action, based on the air monitoring results from the 2013/2014 interim action, the substantially lower volume of soil (600 cubic yards) to be removed, and the fact that work will occur during the winter months when the potential for generating mercury vapors are lower due to colder temperatures, Ecology does not expect any exceedances of public safety action levels during the perimeter monitoring. This means that distant residences have an even greater factor of safety.

   Air monitoring results will be documented in the Interim Action Completion Report and made available to the public on Ecology's webpage for the site.

3. The type and dosage of treatment is related to disposal requirements, not to achieving cleanup standards for the site.

   All soils removed during this interim action will be designated as dangerous waste, transported under hazardous waste manifests, and properly disposed of at the Chemical Waste Management Subtitle C (hazardous waste) landfill in Arlington Oregon. Disposal of this material requires treatment to pass testing requirements prior to transporting to the receiving landfill. This is a performance standard (must produce passing results) required by Federal law. There is flexibility in the means and methods (type and dosage of treatment

reagents) used provided they produce passing results. The timing of this interim action did not allow us to include details on the soil amendments and dosages and we could not justify delaying work when the performance standard of achieving passing results will insure proper disposal of this material. Ecology will include this information for future work whenever possible.

4. This interim action will occur during the winter months when blowing dust is not anticipated. All stormwater within the site is contained and drains to the adjacent Aerated Stabilization Basin (ASB). Good housekeep practices are key to managing track-out onto public roads and the contractor, along with Ecology, the Port, and the City will be monitoring to keep the streets clean.

5. Please see response to comment #1 above. Interim actions only partially address the cleanup of a site, and may or may not meet cleanup standards. Mercury-contaminated groundwater beneath the Cell Building will be addressed as part of the future cleanup action for the entire Chlor-Alkali RAU.

   The Chlor-Alkali RAU feasibility study, slated to be out for public review in 2017, will include several alternatives with groundwater treatment technologies.

6. Large debris needs to be segregated from the contaminated soil to allow for proper soil treatment. The debris will be designated as dangerous waste and will not require further testing. This material will be macroencapsulated to meet federal requirements for debris and will be disposed of at the same Chemical Waste Management Subtitle C (hazardous waste) landfill in Arlington Oregon.