



DEPARTMENT OF
ECOLOGY
State of Washington

RESPONSIVENESS SUMMARY

**Cornwall Avenue Landfill Site
Bellingham, Washington**

First Amendment to the Agreed Order

August 2011

ISSUED BY:

WASHINGTON STATE DEPARTMENT OF ECOLOGY

TOXICS CLEANUP PROGRAM

1. Introduction

On June 6, 2011, the First Amendment to the Agreed Order (Amendment) for the Cornwall Avenue Landfill site (Site) in Bellingham was issued for a 30-day public comment period. Public involvement activities related to this public comment period were:

- Distribution of a fact sheet describing the Site and the documents through a mailing to 6112 people, including neighboring businesses and other interested parties;
- Publication of a paid display advertisement in The Bellingham Herald on June 5, 2011;
- Publication of notice in the Washington State Site Register on June 2 and June 30, 2011;
- A public meeting held on June 8, 2011;
- Announcement of the public comment period and posting of the documents on the Ecology web site; and
- Providing copies of the documents through information repositories at Ecology's Bellingham Field Office and Northwest Regional Office, and at the Bellingham Public Library- downtown branch.

A total of 10 persons and organizations submitted written comments on the Amendment. Comments letters are included in Appendix A.

Section 2 of this document provides background information on the Site and Site cleanup activities, and Section 3 presents anticipated next steps. Section 4 summarizes the comments received and provides Ecology's responses. To review a comment in its original form, refer to Appendix A.

2. Background

The Cornwall Avenue Landfill site, located at the south end of Cornwall Avenue, consists of approximately 16.5-acres and is adjacent to Bellingham Bay. Most of the Site was originally tide flats and sub-tidal areas of Bellingham Bay. From 1888 to 1946, the Site was used for sawmill operations, including log storage and wood disposal. From 1946 to 1965, the Port of Bellingham (Port) held the lease on the state-owned land, subleasing the property to the City of Bellingham (City) from 1953 to 1962. The City used the Site for municipal solid waste disposal. In 1962, the City entered into a lease with another Port tenant (American Fabricators) who continued waste disposal operations at the site until 1965.

Landfill operations ended at the site in 1965, and a soil layer was placed on top of the municipal solid waste. Previous environmental investigations of the Site indicate the presence of hazardous substances in groundwater, surface water, soil and/or sediments above state cleanup standards, including arsenic, copper, lead, mercury, silver, zinc, cyanide, polychlorinated biphenyls (PCB), bis(2-ethylhexyl)phthalate, polycyclic aromatic hydrocarbon (PAH) compounds and fecal coliform. These contaminants exceed standards of the state's cleanup law, the Model Toxics Control Act, and must be addressed.

As part of a separate project, the Port of Bellingham plans to dredge up to 40,800 cubic yards of sediment from the Squalicum Harbor marina to maintain required water depths for navigation. Under the proposed interim action, the dredged material will be placed on a portion of the upland area of the Site to raise the land elevation and to reduce the flow of contaminated groundwater to Bellingham Bay.

The dredged material will be barged to the former Georgia-Pacific property at 300 W. Laurel Street for handling then trucked to the Site. The material will be placed in an upland area about 150,000 square feet (3.6 acres) and contoured into a layer up to 15 feet thick, redirecting rainwater away from Bellingham Bay. The material will be covered with a waterproof sheet, reducing the amount of rainwater flowing through buried municipal solid waste at the Site. This will reduce the flow of contaminated groundwater to Bellingham Bay.

The Site is one of 12 cleanup sites in the Bellingham Bay Demonstration Pilot, a multi-agency initiative integrating sediment cleanup, control of pollution sources, habitat restoration and land use bay wide.

3. Next Steps

As a result of public comment Ecology has added some language to the Amendment as indicated in the responses to comment. These changes are insubstantial and do not warrant reissuance of the document for public review. Therefore the Amendment will be signed by the City of Bellingham, the Port of Bellingham and Ecology and the interim cleanup action will move forward.

Construction of the interim cleanup action is expected to begin in September 2011.

The interim action and will be incorporated into a remedial investigation and feasibility report which is anticipated to be issued for public review and comment in 2012. That report will consider what actions will be necessary for final cleanup of the Site.

4. Summary of Comments and Ecology Responses

This section provides a summary of the comments received and Ecology's responses to those comments.

4.1 Commenter # 1 (Harris, Wendy)

Wendy Harris submitted comments to Ecology by e-mails on June 11, 2011; June 24, 2011; June 28, 2011; and July 5, 2011.

Comment #1: Cornwall Landfill is an inappropriate place to dump dredged sediment contaminated with dioxin because there will be substantial residential, recreational and commercial redevelopment at the site.

Ecology's Response: That portion of the Site where the dredged material is proposed to be placed is slated to become a park. Such planned land use by the property owners determines the stringency of cleanup standards that will apply to this Site. In accordance with the MTCA Cleanup Regulation, the final Site cleanup will be based on the strictest standard assuming the highest potential for exposure (through residential or "unrestricted" use), and will eliminate potential human and environmental exposure to contamination given such expected use.

While Ecology has not yet made a final cleanup decision, based upon the planned land use, site investigations, and experience with landfill cleanups, the final cleanup is likely to include containment (isolating contamination under a layer of clean material) and use restrictions to eliminate exposure to contaminants. Under this scenario the interim action could be part of the final cleanup, and those using the Site for residential, recreational and commercial redevelopment will be protected from exposure.

Note that the Port and City must maintain the integrity of the proposed interim action, see response to Comment #11. Future signatories to the Consent Decree for the final cleanup will also be legally bound to maintain the integrity of the final cleanup action. Redevelopment that is not consistent with the cleanup action will be required to take additional cleanup measures to ensure continued protection of human health and the environment. Ecology oversight and approval will be required for such actions.

Comment #2: Cornwall Landfill is an inappropriate place to dump dredged sediment contaminated with dioxin because the site is already environmentally sensitive.

Ecology's Response: The dredged material is proposed to be placed on a portion of the upland area of the Site and will not enter Bellingham Bay.

The potential for dioxins to leach from the dredged material into groundwater which discharges to Bellingham Bay was evaluated in Exhibit A, Section 3.3 of the proposed Amendment. Based upon this evaluation, the dredged material is not expected to leach dioxins and furans to groundwater or surface water.

Comment #3: Cornwall Landfill is an inappropriate place to dump dredged sediment contaminated with dioxin because the site consists of unstable landfill and is geologically hazardous.

Ecology's Response: Stability can be an issue at landfills. However, two factors that make it less of an issue at Cornwall than at some other places are the length of time since waste has been added to the landfill (45 years) and the fact that relatively heavy loads (log piles and machinery) have been placed on the landfill since it closed. These concerns exist with or without the interim action and will be evaluated as part of the engineering design process for the final cleanup action.

Comment #4: Cornwall Landfill is an inappropriate place to dump dredged sediment contaminated with dioxin because the Lummi Nation has treaty fishing rights in adjacent waters and is concerned about environmental consequences of site development.

Ecology's Response: Ecology is aware that the Lummi Nation has Usual and Accustomed Fishing Rights in Bellingham Bay. The proposed Amendment places dredged material on a portion of the upland area of the Site, no material will be placed in Bellingham Bay. Also see response to Comment #2 above.

The Lummi Nation did not comment on the proposal so it would not be appropriate for Ecology to respond to a third party representation of their concerns.

Comment #5: Cornwall Landfill is an inappropriate place to dump dredged sediment contaminated with dioxin because the nearshore contains three species of salmon and three species of rockfish listed under the Endangered Species Act and because no consideration of or mitigation for other wildlife has been provided.

Ecology's Response: The proposed Amendment places dredged material on a portion of the upland area of the Site, no material will be placed in Bellingham Bay.

In-water work will be an element of the final cleanup of the Site and all appropriate evaluations will be conducted as required by the federal permitting process. Also see response to Comment #2 above.

Comment #6: Cornwall Landfill is an inappropriate place to dump dredged sediment contaminated with dioxin because the interim action will vest under Bellingham's outdated 1989 Shoreline Master Plan, which fails to incorporate the 2003 Shoreline Master Plan Guidelines, such as "no net loss" of shoreline ecological functions. The proposal is legally defective because the interim agreement fails to reflect the correct standards for compliance with substantive requirements of city and state laws, such as the Critical Area Ordinance and the Shoreline Management Act.

Ecology's Response: The interim action will comply with the correct local requirements. As indicated in Section 3.4.2 of Exhibit A of the proposed Amendment, the substantive provisions have been properly included.

The project will vest under the 1989 SMP. To comply with the Shoreline Management Act, the project must have no unreasonable adverse effects on the environment or other uses, no interference with public use of public shorelines, compatibility with surroundings, and no contradiction of purpose and intent of SMP designation. Ecology's Shoreline Management Program has determined that the proposal meets the conditions of the Urban Maritime shoreline designation and is consistent with the SMP.

Ecology's Shoreline Management Program anticipates that the project would be consistent with the pending SMP which has an additional requirement of "no net loss of existing shoreline ecological function". The existing ecological function of the Site is very limited due to the presence of contamination above state cleanup standards and the presence of municipal solid waste. Cleanup activities are a significant step towards

returning the shoreline to a useable land use condition and improving ecological function.

Comment #7: Cornwall Landfill is an inappropriate place to dump dredged sediment contaminated with dioxin because the interim action may negatively impact tourism and investment in the waterfront.

Ecology's Response: Issues surrounding a landowner's choice for how to use their land, and the impacts of land use on the local economy, are beyond the scope of Ecology's regulatory authority under the MTCA.

Comment #8: The proposal is technically inadequate because under MTCA, Method B is the only method available for establishing soil cleanup levels at the site and the dredged sediment cannot meet this level. If Method B cannot be met, and this is the appropriate cleanup level for dioxin/furans, why is the interim agreement even being considered?

Ecology's Response: The fact that some of the dredged material exceeds standards will not present a problem for the cleanup of this Site, nor will it pose a risk to human health or the environment. Given the cost of removing refuse from existing landfills, the final cleanup for any landfill typically involves containment of the refuse (covered by a "cap" that prevents exposure), gas extraction or control, and groundwater treatment or monitoring. It is likely (though not predetermined) that the final remedy selected for this Site will also involve containment, which means that contamination exceeding cleanup levels will stay on-site regardless. However, any exposures to that contamination would be eliminated.

Here, the dredged material will be covered by a waterproof cover liner which meets the strictest standards for residential use. In addition, the port is required to maintain the integrity of the cover liner (see response to Comment #11). As a result, there will be no direct contact exposure to contamination in the dredged material by anyone using the Site. Further, the levels in the dredged material were assessed and determined not to pose a threat of leaching to groundwater or surface water. In short, though additional low level contamination will be capped with the addition of this dredge material, it is not expected to exacerbate conditions at the Site, augment the actions necessary for final cleanup, or pose a risk to human health or the environment.

Comment #9: The proposal is technically inadequate because the interim action has been designed primarily as a stormwater proposal and lacks the long-term integrity required for a dioxin containment system. WAC 173-340-700(4).

Ecology's Response: Construction of the final cleanup action for the Site is anticipated to begin in 2013. As a result, the interim action cover liner life span of 4 to 5 years is expected to last until the final cleanup action is implemented. However, as indicated in the response to Comment #11, Ecology has added language to Exhibit A of the proposed Amendment to provide for long-term maintenance of the cover liner.

Also, note that under WAC 173-340-430(2) interim actions are not required to achieve cleanup standards.

Comment #10: The proposal is technically inadequate because it does not appear that the berms have been engineered at an adequate height.

Ecology's Response: As shown in Figure 3 of the proposed Amendment, the dredged sediments will be graded to gently slope down to the existing grade of the Site. As a result, an engineered containment berm is not proposed.

The purpose of the berm is to direct stormwater runoff to a new lined drainage ditch which connects to the existing stormwater basins located at the south end of the Site. The berm will not be in contact with the dredged sediments and does not serve the purpose of holding the dredged sediments in place. Therefore, the proposed berm height is adequate.

Comment #11: The proposal is technically inadequate because the life of the sheet covering is 4-5 years and there is no funded, approved final cleanup plan that will be implemented at the end of the 4-5 year period.

Ecology's Response: In response to this comment, the following language has been added to the bottom of Page 3-2 of Exhibit A of the proposed Amendment: The liner will be maintained, secured, and replaced as necessary to provide continuous protection from the elements.

Comment #12: The proposal is technically inadequate because it is unclear if there will be adequate performance monitoring both during and after construction.

Ecology's Response: Ecology believes that the compliance monitoring presented in Section 3.5 of Exhibit A of the Amendment is adequate.

The required monitoring addresses: worker safety concerns during construction, proper construction of the interim action, stormwater monitoring, evaluation of the amended dredge material at the G-P West site, provisions for groundwater monitoring wells, and regular post-construction inspections to ensure that the integrity of the interim action is maintained. Also, see response to Comment #11.

Comment #13: The proposal is technically inadequate because the City noted it might need to pierce the waterproof barrier to install pilings and other site developers may face a similar situation.

Ecology's Response: Ecology is not aware of the potential need to pierce the waterproof barrier. As described in Section 3.2.5 of Exhibit A of the proposed Amendment, the landing of the planned overwater walkway would terminate about 50 ft outside the footprint of the dredged sediment placement area. Furthermore, Ecology understands that the landing will be supported by fill material and transition to piles at the shoreline.

In any event, the Port is required to maintain the integrity of the interim cleanup action. See response to Comment #11.

Comment #14: Dredging, dewatering, and relocating contaminated sediment from water to land increases the risk of contamination. Allowing contaminated sediment in Bellingham Bay to be covered over by clean sediment deposited by the Nooksack River may be a more effective cleanup strategy.

Ecology's Response: Ecology understands that the Squalicum Harbor marina dredging project is being undertaken by the Port to maintain required water depths for navigation, and therefore cannot be left in place. The dredging is not being conducted for the purpose of cleanup.

Comment #15: The proposal is technically inadequate because dioxin has not been detected at the Landfill and it is not wise to introduce a new type of PBT to an existing MTCA site.

Ecology's Response: Please see response to Comment #8.

While dioxins and furans have not been investigated and found at the Cornwall Landfill site but they have at the adjacent R.G. Haley site. A plume of petroleum contamination containing dioxins and furans (released from former wood treatment operations at the R.G. Haley site) is

comingled with contamination at the Cornwall site.

Future remedial investigation/feasibility reports (RI/FS) for each site will include this information. The RI/FS's will be issued for public review.

Comment #16: The proposal is technically inadequate because dumping 25,000 to 41,000 cubic yards of contaminated sediment at Cornwall will make final cleanup more challenging and more complicated.

Ecology's Response: Please see response to Comment #8.

Comment #17: The proposal is technically inadequate because dioxin at the Cornwall Landfill could impact the Haley site.

Ecology's Response: Please see response to Comments #8 and #15.

Comment #18: The proposal is technically inadequate because the Port's desire to obtain an inexpensive upland disposal site is not an appropriate basis for approving the interim action.

Ecology's Response: The Port's dredging project costs are not relevant to Ecology's implementation of the MTCA at the Cornwall site. The interim action benefits conditions at this Site: It will reduce infiltration of rainwater through buried refuse, reducing the discharge of contaminated groundwater to Bellingham Bay. If containment is selected as the final cleanup action for the Site (see response to Comments #1 and #8) the interim action will also reduce the overall cost of cleanup. Also see response to Comment #21.

Comment #19: The proposal is legally defective because it would foreclose reasonable alternatives for the cleanup action in violation of WAC 173-340-430(3).

Ecology's Response: Ecology is not aware of reasonable alternatives that would be foreclosed by the interim action. The cost of removing the interim action will not be factored into the disproportionate cost analysis the Port and City will need to perform to weight the costs versus benefits of final cleanup alternatives. If full removal of landfill refuse is part of the final cleanup action, then the dredged material will also be removed. As noted above, though, the cost of removing the refuse itself may outweigh the benefits, leading to containment as the final remedy. This is typically the case for landfills, and one reason why it is anticipated (though not predetermined) that the interim action here will be consistent with the

final remedy ultimately selected for this Site.

Comment #20: The proposal is legally defective because it does not satisfy requirements for an interim action. It neither eliminates nor substantially reduces pathways for exposure to hazardous substances. WAC 173-340-430(1)(a).

Ecology's Response: The proposal substantially reduces one or more pathways for exposure by reducing infiltration of rainwater through the buried refuse. In addition, while an interim action need only satisfy one of the three prongs in WAC 173-340-430(1), the proposal satisfies a second prong. It corrects a problem that may cost substantially more to address in the future. Also, see response to Comment #21.

Comment #21: The proposal is legally defective because the most toxic groundwater and surface water pollution has already occurred. The situation will not become substantially worse or cost substantially more without the interim action. WAC 173-340-430(1)(b).

Ecology's Response: Soils, groundwater, and sediments at the Site contain contaminants above MTCA/SMS cleanup levels established to protect human health and the environment and must be addressed. If the final cleanup of the Site includes containment as anticipated (see response to Comment #1), the interim action will eliminate the need to import cover material, saving roughly \$1 million.

In addition, until the final cleanup is selected and implemented to address ongoing exposures, contaminants leaching from the refuse will continue to impact groundwater and enter Bellingham Bay. The addition of the dredged material is not expected to cause any additional leaching. Instead, it will substantially reduce one or more pathways for exposure by reducing infiltration of rainwater through the buried refuse.

Comment #22: The proposal is legally defective because the Port bears the burden of proving it satisfies the requirements for beneficial reuse under WAC 173-350-200.

Ecology's Response: Pursuant to WAC 173-350-020(8)(a), the requirements in Chapter 173-350 WAC (including section 200) do not apply to dredged material that is subject to the requirements of a permit issued by the U.S. Army Corps of Engineers or an approved state under section 404 of the Federal Water Pollution Control Act (33 U.S.C. 1344). The dredged material here is subject to the requirements of a Clean Water Act Section 404 permit issued by the U.S. Army Corps of Engineers. The

Amendment further addresses use of the dredged material for this interim action.

Notably, WAC 173-350-700(b) also exempts anyone who is performing remedial actions in order to comply with a state and/or federal cleanup order or consent decree, from needing to obtain permits (or any exemptions thereto) under Chapter 173-350 WAC. Issues surrounding the reuse of solid waste material are addressed in cleanup-related documents and agreements, as is the case here.

Comment #23: The proposal is legally defective because Ecology, the Port of Bellingham, and the City of Bellingham discussed, reviewed, and revised the interim agreement in the 7 months prior to the public comment period. It appears that a determination has already been made, in violation of WAC 173-340-600(1).

Ecology's Response: Ecology is charged with ensuring that the requirements of the MTCA are met. This is done through legal agreements that compel liable parties like the Port and City to implement a scope of work. The scope of work is negotiated with liable parties in order to develop a proposed plan that meets legal requirements, and that is sufficiently fleshed out for purposes of soliciting public comment. Ecology does not issue final approval until after public comment, and Ecology takes the public's comments into serious consideration at every cleanup site.

In the case of this proposed interim action, the Port sought Ecology's approval to apply dredged material to the Site to achieve benefits both in terms of cost and reducing leachate from the landfill that is impacting groundwater and surface water. Ecology determined the proposal had sufficient merit to warrant further review, and directed the Port to prepare a scope of work (Exhibit A to the Amendment). Ecology coordinated extensively with the Port to ensure the proposal was sufficiently developed to allow for appropriate review, and that the proposal as a threshold matter meets regulatory requirements. Once this threshold was achieved, from Ecology's perspective, the proposal was ready for public review. This is consistent with the public notice and participation requirements of the MTCA.

Comment #24: The proposal is legally defective because none of the documents drafted to inform the public indicate the dredged sediment is contaminated with dioxin or that the Port seeks to reduce cleanup levels. If Ecology will be allowing the reduced Method C standard for dioxins, why is this not clearly indicated to the public and what is the rationale for authorizing this? If the cleanup standard has not been determined, then this should also be clearly stated.

Ecology's Response: Section 3.3 and Table 1 of Exhibit A of the Amendment contain information about dioxins and furans in the dredge material. In addition, this was discussed at the June 8, 2011 public meeting.

The fact that the interim action is not intended to achieve particular cleanup levels is stated in Section 3.5.2, Page 3-15, of Exhibit A. The levels in Table 1 of Exhibit A are screening levels. Cleanup standards, which include cleanup levels and the location at which these levels must be met, will be determined during the development of the final cleanup action for the Site, and are expected to be based on more stringent standards than Method C, given the planned use of the interim action area as a park. However, containment of the landfill area is the likely (though not predetermined) final remedy for this Site. The interim action would be part of any containment remedy, will not exacerbate conditions or augment the cleanup necessary for the Site, and will not present any added risk to human health or the environment. See Response to Comment # 8.

Comment #25: Can you clarify the (dioxin) cleanup level that is being applied to the Interim Agreement? If Method B cannot be met, and this is the appropriate cleanup level for dioxin/furans, why is the interim agreement even being considered?

Ecology's Response: See response to Comments #8 and #24.

Comment #26: The interim agreement indicates, when discussing construction of a berm, that this is not an action intended to contain hazardous materials.

Ecology's Response: This is correct. Please see response to Comment #10.

Comment #27: Could you please confirm that dioxin is a priority contaminant of ecological concern pursuant to WAC 173-340-7494 and Table 749-2, and does this pertain only to terrestrial ecological evaluation?

Ecology's Response: Yes to both parts of the question.

Regarding the first part of the question, the general term "dioxin" includes a family of chemicals. Table 749-2 lists both chlorinated dibenzo-p-dioxins (total) and chlorinated dibenzofurans (total). Furans are dioxin-like chemicals. Under MTCA, mixtures of dioxins and/or furans are

considered a single hazardous substance for cleanup purposes.

When sampling, the concentration of each chemical in the family is weighted according to its toxicity, and these weighted concentrations are added together to arrive at a single concentration number. This is called the toxic equivalent concentration.

Regarding the second part of the question, as indicated by its lengthy title (Priority Contaminants of Ecological Concern for Sites that Qualify for the Simplified Terrestrial Ecological Evaluation Procedure) Table 749-2 is intended for a quite specific purpose. Therefore, the narrow answer to the question is that this does pertain only to terrestrial ecological evaluation.

Taken more broadly, however, there is at least one other list with the word “priority” in its name that includes dioxin. The U.S. Environmental Protection Agency maintains a list of “Priority Pollutants” and dioxin appears on that list.

Comment #28: Terrestrial ecological evaluation of the Cornwall Landfill should be required prior to considering the on-site containment of dioxin.

Ecology’s Response: Terrestrial ecological evaluation (TEE) is part of selecting the cleanup standards for the site, which will occur as part of developing the final cleanup action for the Site.

Since the dredged material will be covered as part of the interim action by a waterproof barrier that will be maintained by the Port, the potential pathways to terrestrial receptors is limited.

Comment #29: The interim agreement for the Cornwall Landfill should not be approved under MTCA or SEPA.

Ecology’s Response: Comment noted. The interim action is consistent with the requirements of MTCA.

Regarding SEPA, the Port is the lead agency for this proposal. They have issued a Mitigated Determination of Non-Significance which states the following: “The lead agency of the proposal determined that it does not have a probable significant adverse impact on the environment, provided that the proponent complies with mitigation measures. An environmental impact statement is not required under RCW 43.21C.303(2)(c).

Mitigation requirements include use of Best Management Practices to control erosion during construction, prevention of uncontrolled releases of dredged material from upland portions of the site Bellingham Bay, and suppression measures to control the release of airborne dust from dredged materials”.

Comment #30: The sediment currently is under water and therefore the affected media is water. Once brought on land, the affected media is soil with a new possibility of impacting both water and air. An interim action must be denied where it results in contamination of a new media.

Ecology’s Response: The dredged material will not result in contamination of a new media. Soils are already contaminated, and it is anticipated contamination in the landfill will be contained as part of final cleanup. As noted in previous responses, application of this dredged material will meet all legal requirements, will not exacerbate conditions or augment cleanup actions necessary, and will not pose any added risk to human health and the environment. Also see responses to Comments #2, 8 and #22.

Comment #31: Under WAC 173-340-360(2)(e)(iii), cleanup actions shall not rely primarily on institutional controls and monitoring where it is technically possible to implement a more permanent cleanup for a site.

Ecology’s Response: An interim action is not a cleanup action so this section of the rule does not apply. Removal of site contaminated soils and sediments will be evaluated as part of the future feasibility study for the Site cleanup.

- 4.2 Commenter # 2 (Perry, Randel J., U.S. Army Corps of Engineers)
Randel J. Perry submitted comments to Ecology by e-mail on July 6, 2011, requesting a response to Commenter #1’s comments. Please refer to Section 4.1 for Ecology’s response.
- 4.3 Commenter # 3 (Steffensen, Wendy, RE Sources for Sustainable Communities)
Wendy Steffensen submitted comments to Ecology by e-mail on July 6, 2011.

Comment #1: We believe the proposed plan is premature. Levels of dioxin above the residential/recreational cleanup level should not be used as cap and fill material in a proposed residential/recreational area.

Ecology's Response: See 4.1, response to Comments #2 and #8.

Comment #2: The interim action is not “technically necessary to reduce a threat to human health and the environment by eliminating or substantially reducing one or more pathways for exposure to a hazardous substance” per WAC 173-340-430(1)(a). The contamination has been known for some time. Nothing has changed to make this now necessary.

Ecology's Response: See 4.1, response to Comment # 20.

Comment #3: The argument that the cost of this project will be substantially less [WAC 173-340-430-(1)(b)] is technically correct, but I do not believe it meets the intent of the law. The rationale that allows the use of an economic cost savings to drive small piecemeal interim cleanups can result in the avoidance of full site cleanups.

Ecology's Response: See 4.1, response to Comment # 21, and 4.4, response to Comment #6.

Comment #4: We believe that a determination of whether the dredge material meets the beneficial use or re-use criteria should be done prior to its inclusion in an interim action. This must include an assessment of the threat to human health and the environment, which has not been done.

Ecology's Response: See 4.1, response to Comments #2 and # 22.

Comment #5: Calculations of leachability, using actual values from the site under a variety of conditions are needed.

Ecology's Response: Ecology had sufficient information to assess potential leachability without performing leachability tests. Sufficient literature is available on how cement (the dredged material will be amended with this to reduce the water content) binds contaminants so they are not leachable. For this reason, and based on the evaluations presented in Section 3.3 of Exhibit A of the Amendment, leachability testing will not be conducted.

Notably, there are also obstacles with leachability testing. The limits of laboratory analysis methods to measure these concentrations and the lack of permeability of the material (and resulting long leach times) are two of the obstacles.

Comment #6: Any material above the Method B cleanup level should not be

allowed. If the dredged sediments contain average dioxins above 11 parts per trillion, we ask that the sediment be contained elsewhere.

Ecology's Response: See 4.1, response to Comments #2, # 8, #15 and #24.

Comment #7: A plan is needed to ensure that citizens do not encounter this material while it is only marginally secured.

Ecology's Response: Site security and fencing is often an issue at cleanup sites, particularly ones that can be accessed by water. Access is currently restricted by a locked and gated fence near the small elbow beach north of the Site. Additional measures will be considered as part of developing the construction plans and specifications.

Comment #8: Language in the Agreed Order and Interim Action Plan should be more neutral and less prejudicial. Examples are the term "beneficial reuse" when Ecology has not actually made a decision that it qualifies and the bizarre characterization of dioxin levels as "relatively low level" when some of them exceed Method B levels.

Ecology's Response: Regarding "beneficial reuse", the commenter is correct that Ecology should not use a term generically (which was Ecology's intent) when the term also has a specific regulatory meaning. Also see 4.1, response to Comment #22.

Regarding characterization of the levels of dioxin, the commenter is correct that the levels in some of the dredged sediments exceed the more stringent Method B risk-based levels developed based on the toxicity of dioxin. But the levels are comparable to levels found in urban soils in Washington State. We have widespread distribution of dioxin at levels that are higher than risk-based levels. In any event, the final cleanup for this Site will meet more stringent standards for residential sites, but will likely do so through containment of contamination above applicable cleanup levels. See 4.1, response to Comment #8.

- 4.4 Commenter # 4 (Trim, Heather, People for Puget Sound)
Heather Trim submitted comments to Ecology by e-mail on July 6, 2011.

Comment #1: We support the dredging of material containing toxic material from Squalicum Harbor, but the material should be deposited at an approved upland site, not at the Cornwall site. Moving contaminated material around in the shorezone area of Puget Sound is not a protective removal.

Ecology's Response: As noted in Response to Comment 8, the dredge material does not pose a risk as direct contact is eliminated by the cover sheet and the material will not adversely impact groundwater and surface water (see Section 3.3 of Exhibit A of the Amendment). As a result, Ecology concludes that the interim action is protective.

Comment #2: All feasible safeguards must be implemented during the dredging, transport and placement process to minimize the escape of toxic material into Bellingham Bay. There is a new more protective dredging method being used at the Boeing Plant 2 site in the Duwamish River.

Ecology's Response: Thank you for the information. The approved method for dredging and best management practices applicable are covered under the Corps 404 permit issued to the Port, and is not regulated under MTCA. Ecology issues 401 water quality certifications for federal dredge and fill permits under the Clean Water Act, however, and this information may be helpful to Ecology staff. We will pass this on to the appropriate permitting staff.

Comment #3: We should be cleaning up and removing landfill material from the shorezone, not adding additional contaminated material.

Ecology's Response: Please see 4.1, response to Comment #1 and #8. Removal will be one of the alternatives considered during the Feasibility Study for the final cleanup action at Cornwall. However, Ecology anticipates that containment will be part of the final remedy.

Comment #4: The maintenance of the containment provisions over time is threatened by future potential funding and political will constraints and threat of future earthquake/tsunamis.

Ecology's Response: See 4.1, response to Comment #11. Regarding funding, sufficient funds are available to implement the interim action as well as the bulk of the anticipated final remedy for the Site.

Concerning political will, the Agreed Order, including the Amendment, is a legal document that binds the Port and the City to implement the interim action. Ecology has authority to enforce these provisions, or to undertake the actions required in the Agreed Order if the parties fail to perform them.

Earthquake and tsunamis are a concern and will be addressed as part of the engineering design process for the final cleanup action.

Comment #5: The Cornwall and Squalicum Harbor cleanup action plans should be evaluated as final cleanups, not interim actions, and should be protective, which the current plan is not.

Ecology's Response: The Squalicum Harbor marina dredging project is not a cleanup action regulated under MTCA. Ecology understands that it is being undertaken by the Port to maintain required water depths for navigation. Regarding the protectiveness of the interim action, Ecology concludes that it is protective, see response to Comment #1.

Comment #6: Ecology should move away from allowing interim actions that are done for expediency (in this case for the Port's other project) rather than requiring that the complete job be done. This piecemeal approach ends up using Ecology's staff resources for more extensive periods and results in poor/partial cleanups. Often we never get to the final cleanup.

Ecology's Response: The Port's dredging project presents an opportunity to improve the environment at a reduced cost, which warrants an interim action. Ecology remains committed to moving through the cleanup process in a timely way and implementing a final remedy.

While it is true that interim actions can be work-intensive for Ecology staff, they achieve partial cleanup and therefore are worth the effort.

The interim action provisions of the MTCA are a means of expediting cleanup where necessary/appropriate. They are not intended to be final cleanups and in some cases may not achieve cleanup standards.

- 4.5 Commenter # 5 (Doremus, Llyn, Sierra Club Mt. Baker Group)
Llyn Doremus submitted comments to Ecology by e-mail on July 6, 2011.

Comment #1: The basis for the interim action that it "reduces threat to the human health and the environment by eliminating or substantially reducing one or more pathways for exposure to a hazardous substance" is erroneous because the sediments themselves present risk, because their placement will impede one of the potential cleanup options (excavation and removal of the landfill debris), and because groundwater discharging through the site originates in large part from the upgradient watershed to the east of the site.

Ecology's Response: The dredge material does not pose a risk as direct

contact is eliminated by the cover membrane and the material will not adversely impact groundwater and surface water (see Section 3.3 of Exhibit A of the Amendment).

If removal is selected as the final cleanup action for the Site the interim action materials can also be removed. Lastly, infiltration and upgradient groundwater flow through the Site are both contributors to the discharge of contaminants to Bellingham Bay. Reducing infiltration will reduce contaminant discharge.

Also, see 4.1, response to Comment #8.

Comment #2: The basis for the interim action that it “corrects a problem that may become substantially worse or cost substantially more to address if the remedial action is delayed” is erroneous because excavation of landfill refuse will be made more costly by the need to first remove the sediments placed on top of the refuse.

Ecology’s Response: Please see 4.1, response to Comments #1, #8, and #19. While the final cleanup action has not yet been selected it is likely to include containment based upon the planned land use, site investigations, and Ecology’s experience with landfill cleanups. If excavation and removal is selected as the final cleanup remedy the sediments would need to be moved.

Comment #3: The collection of landfill gas emissions will contribute to safer conditions at the site and is supported. However, the storage, transport, and treatment of that gas is not discussed and that information is needed to assess the benefit of collecting the gas.

Ecology’s Response: Given the length of time since the landfill accepted waste (more than 45 years) it is not certain whether gas will be collected in sufficient volume to require treatment. If testing indicates treatment is needed, treatment will be conducted.

Comment #4: As proposed, this “key component of the final cleanup action” will lock in place the contaminants contributing to contamination of groundwater in perpetuity. This is not acceptable.

Ecology’s Response: The dredge material will not contribute to the existing Site groundwater contamination; see Section 3.3 of Exhibit A. Also, the final cleanup action for the Site has not yet been determined and could include removal of the interim action. See 4.1, response to Comment #8.

Comment #5: Groundwater monitoring necessary to make informed decisions on whether the interim action is effective is not included.

Ecology's Response: Section 3.5.2, page 3-16 of Exhibit A of the Amendment requires six monitoring wells to be installed at locations approved by Ecology subsequent to completion of the interim action.

Comment #6: The Sierra Club expects the cleanup of Cornwall Landfill will entail restoration to conditions that are conducive to public access, public recreation, and nearshore habitat and processes conducive to harvest and consumption of fish and shellfish from the site. We do not believe this will be facilitated by the proposed interim action. We recommend that this interim action be abandoned and that future remediation efforts be focused on the excavation and removal of the landfill debris from the site.

Ecology's Response: The final cleanup action will meet cleanup standards established to protect human health and the environment as required under the MTCA. The decision for how any parcel of land is developed, and whether that development allows for public access and recreation, is not under Ecology's purview pursuant to MTCA. Though permitting required for cleanup may require mitigation for habitat impacted by the cleanup activities, habitat restoration is also not directly under Ecology's purview pursuant to MTCA. MTCA primarily focuses on removing, treating, or containing contamination to eliminate exposure to human health and the environment. Ecology is, however, reserving its rights to seek recovery of natural resource damages for this site, which could be used for habitat improvements.

Beyond the formal MTCA regulatory framework, Ecology is involved with a multi-agency initiative (Bellingham Bay Demonstration Pilot) to integrate cleanup, habitat restoration, control of pollution sources, and land use on a bay-wide scale. This voluntary coordination effort will result in an integrated approach to the final cleanup of the Site.

As part of the future feasibility study phase of the cleanup process, a range of cleanup alternatives will be evaluated including excavation and removal, and containment options that leave contamination in place. Based upon the planned use (park) of the interim action area of the Site, previous Site investigations, and experience with landfill cleanups, the final cleanup is likely to include containment and use restrictions to eliminate exposure to contaminants. Under this scenario the interim action could be part of the final cleanup action. If excavation and removal

is selected as the final cleanup action for the Site, the interim action could also be excavated and removed.

4.6 Commenter # 6 (Johnson, Tip)

Tip Johnson submitted comments to Ecology by e-mail on July 5, 2011.

Comment #1: I object to the so-called “beneficial re-use” of dioxin-contaminated sediments as a cap for the Cornwall Avenue Landfill. Capping cannot work.

Ecology’s Response: Comment noted. While capping is anticipated to be part of the final cleanup action for the Site, the final cleanup action has not yet been selected (see 4.1, response to Comments #1 and #8). Note that capping has been used successfully throughout the United States and Puget Sound and is a proven method of containing contamination.

Comment #2: I also object to the Port and Department of Ecology brazenly lying to the public. This is not a clean-up. It is a cover up.

Ecology’s Response: Within the context of the MTCA, cleanup means any remedial action that reduces or eliminates exposure to hazardous substances that are present above cleanup levels established to protect human health and the environment. Containment of contamination can be an appropriate and authorized cleanup or interim cleanup action.

Comment #3: If an overlay of contaminated sediments is beneficial, I encourage regulators in favor of this plan to place several inches over the private property of their principal residences. I offer to truck ten yards of it to their homes. I would appreciate individual responses to this suggestion.

Ecology’s Response: This Site is approximately 16.5 acres of municipal solid waste and wood debris containing arsenic, copper, lead, mercury, silver, zinc, cyanide, PCB, phthalate, and PAH compounds above cleanup levels established to protect human health and the environment. Contaminants at the north end of the Site are comingled with dioxin and furan contaminated petroleum (see 4.1, response to Comments #15 and #17). The proposed interim action will improve existing conditions by reducing the amount of rainwater flowing through buried refuse, which will reduce the flow of contaminated groundwater to Bellingham Bay.

By contrast, private residences are typically clean and not designated state hazardous waste cleanup sites.

Comment #4: This plan's irrationality follows previous agency refusals to consider the highest and best use of the former Georgia Pacific Aerated Stabilization Basin (ASB).

Ecology's Response: Ecology is not sure how this comment specifically pertains to the proposed interim action. Land use decisions are outside of Ecology's MTCA authority. We suggest you contact the Port and City directly with comments on the planned use of the Site or other cleanup sites along the waterfront.

Comment #5: Bellingham ratepayers could be justified in pursuing actions against agencies for their refusal to consider alternatives beneficial to the public good. That should be considered constructive notice.

Ecology's Response: Ecology is unsure how to respond as no specific alternative has been suggested. Cleanup action alternatives will be assessed as part of selecting the final remedy for this Site, and are necessarily constrained by the MTCA, which provides for the cleanup of hazardous waste sites.

- 4.7 Commenter # 7 (Levine, Dr. Daniel)
Dr. Daniel Levine submitted comments to Ecology by e-mail on July 3, 2011.

Comment #1: I am opposed to your apparent intention to cap the Cornwall Landfill with dioxin-contaminated sediment from Squalicum Harbor. Please note my opposition in your public records.

Ecology's Response: Comment noted.

- 4.8 Commenter # 8 (Kaun, Susan)
Susan Kaun submitted comments to Ecology by e-mail on June 16, 2011.

Comment #1: I request the portion of the proposal regarding dioxin transport and usage be denied. My reading suggests dioxin is extremely toxic to humans. I did not know it was possible to beneficially re-use such a highly toxic material. It does not sound like the impacts from this interim measure have been well considered.

Ecology's Response: The toxicity of a chemical is an important piece of information but the amount of the material present (concentration) is equally important. Even more important is whether an exposure pathway exists. In other words, if a chemical is very toxic, but there is no exposure pathway, the human health risk will be eliminated. Since the dredged

material will be under a liner, any risk of direct contact to people using the site will be eliminated. In addition, Section 3.3 of Exhibit A of the Amendment evaluates dioxin mobility and concludes that groundwater and surface water will not be adversely impacted.

- 4.9 Commenter # 9 (Hamilton, Jean)
Jean Hamilton (Mrs. Kris Hamilton) submitted comments to Ecology by e-mail on June 7, 2011.

Comment #1: I would like to go on record supporting your plan to dredge the harbor and use the dredging to cap the landfill. We would very much like to see that property improved for public use.

Ecology's Response: Comment noted.

- 4.10 Commenter # 10 (Langei, Jim)
Jim Langei submitted comments to Ecology by e-mail on June 7, 2011.

Comment #1: Thank you for moving forward with this project. I fully support the project.

Ecology's Response: Comment noted.

Appendix A

Public Comments as received

From: [Kris Hamilton](#)

To: [Swackhamer, Robert D. \(ECY\)](#);

Subject: Cornwall Ave. Landfill

Date: Tuesday, June 07, 2011 7:22:57 AM

A couple of years ago my husband and I put our canoe in at Boulevard Park in Bellingham and headed toward downtown. We passed a large flat area that seemed to have grass and trees on it but a fence prevented us from seeing it up close. Later I asked a friend in his 90's what that parcel was and he told me it had been a landfill. At the time we thought what a terrific location that would be for waterfront access and wondered if it would ever be cleaned up and put to good use. We're hoping to come to the public meeting on June 8 but if we can't make it I would like to go on record heartily supporting your plan to dredge the harbor and use the dredgings to cap the landfill. We would very much like to see that property improved for public use. Thank you for your efforts in this matter.

Jean Hamilton (Mrs. Kris)

<khamilton104@comcast.net>

From: [Jim Langei](#)

To: [Swackhamer, Robert D. \(ECY\)](#);

Subject: Cornwall Ave Landfill site # 2913

Date: Tuesday, June 07, 2011 8:17:55 AM

Thank you very much for moving forward with this project. I fully support the project.

Jim Langei

M/V BreakWind

From: Swackhamer, Robert D. (ECY)
To: Wendy Harris;
cc: Petrovich, Brad (ECY);
Subject: RE: Cornwall Interim Agreement Cleanup Level
Date: Monday, June 13, 2011 8:10:18 AM
Ms. Harris,

Ecology considers your e-mail attached below to be a comment received during the comment period. Ecology's response will be delivered as part of the responsiveness summary following the end of the comment period.

Robert D. Swackhamer, PE
Department of Ecology
Toxics Cleanup Program
telephone: 360-407-7210
e-mail: robert.swackhamer@ecy.wa.gov

From: Wendy Harris [mailto:w.harris2007@comcast.net]
Sent: Saturday, June 11, 2011 11:43 PM
To: Swackhamer, Robert D. (ECY)
Subject: Cornwall Interim Agreement Cleanup Level

Can you please clarify the cleanup level that is being applied to the Cornwall Landfill Interim Agreement? The Interim Agreement notes that Method B cleanup levels and EPA Method 1613B can not be met. It then discusses the Method C cleanup level, and seems to indicate that it is relying upon the special provisions of the MTCA for onsite containment of hazardous materials to qualify for beneficial reuse. This muddles together issues. The beneficial reuse rules are governed by WAC 173-340-200, which are not discussed.

The interim agreement indicates, when discussing construction of a berm, that this is not an action intended to contain hazardous materials. The statements in the interim agreement are contradicted by facts and law. If Method B can not be met, and this is the appropriate cleanup level for dioxin/furans, why is the interim agreement even being considered? If DOE will be allowing the reduced Method C standard for dioxins, why is this not clearly indicated to the public and what is the rationale for authorizing this? If the cleanup standard has not yet been determined, then this should also be clearly stated.

Thank you for your anticipated clarification.

Sincerely,
Wendy Harris

INTERIM ACTION VIOLATES PUBLIC PROCESS

Public notice and community involvement are important components of the MTCA. DOE has failed to advise the public of important information pertaining to the Cornwall Landfill Interim Agreement. As a result, a meaningful opportunity for public participation was not provided to the public, as required under WAC 173-340-600.

1. DOE failed to state on its website, Site Register, Fact Sheet, or PowerPoint presentation that dredged material being used to cap the Cornwall Landfill is contaminated with dioxin. This is a rather relevant fact. The level of dioxin in the dredged sediment exceeds permitted levels for open water disposal, or appropriate levels for direct contact for unrestricted land use. The majority of the public is unaware of this fact, and therefore, has been left unaware of the potential impact of this

proposal on their health and the health of their children.

To find this information, the public must wade through the Amendment to the Consent Decree, a lengthy legal and technical document that incorporates the interim agreement. It is unlikely the general public will read the entire document. That is why the MTCA, enacted pursuant to Initiative, requires on-going and updated information in non-technical language in the biweekly Site Register. It is a significant oversight not to include this information in the materials drafted for public education.

2. Even if the Amendment to the Consent Decree is reviewed, it does not contain clear, unequivocal language that can be readily understood. (See Sec. 2.3.2 of the Amendment.) For example, the Amendment fails to indicate the cleanup level that will be applied. It notes that applicable Method B cleanup levels can not be met, but then discusses Method C. It suggests, without stating directly, that the Port is attempting to obtain approval to proceed with the interim action under less protective cleanup requirements. By failing to disclose whether normal or reduced cleanup standards will be applied, DOE is withholding important and relevant information that could impact public participation.

Method C is the cleanup standard applicable to industrial site, while Method B is normally applicable to residential and recreational use on marine shorelines and uplands. WAC 173-340-706. The Port carries the burden of proof establishing that a reduced environmental standard applies. It is hard to imagine how the availability of dioxin contaminated sediment is an adequate basis for authorizing lowered cleanup standards. This provides a benefit to the Port, not the public, and the public is not being advised of their unnecessary exposure to cancer and other diseases. Nevertheless, it appears that this matter will be resolved as a backroom deal, outside of public review.

3. Some relevant information is simply not contained in the Amendment to the Consent Decree. The public was not informed that DOE will need to authorize a permit exemption under the “beneficial reuse” provisions of WAC 173-350-200. Nor are the beneficial reuse provisions analyzed to establish they are being properly applied. Instead, the Amendment contains confusing, muddled language that seems to imply that nonapplicable MTCA provisions for engineered containment systems are justification for beneficial reuse. In what other circumstances has DOE or EPA authorized the beneficial reuse of sediment containing dioxin, a

persistent hazardous waste, on a site slated for high-use, medium density recreational, residential and commercial shoreline redevelopment?

4. Other information is not explained in a complete context. The public notice states that dredged material will be trucked to 300 W. Laurel for “handling” before being placed at the Cornwall site. In fact, this site will be used to dry and “de-water” the sediment, exposing dioxin to air and land, increasing the likelihood that dioxin will contaminate the environment. It is contrary to any waste management protocol to move dioxin contaminated sediment to multiple locations because it can move between water, air, and soil. In fact, even DOE has stated that dioxin site cleanup can be a potential source of dioxin contamination.

5. DOE was engaged in discussion and review of the interim agreement with the port, the city and their attorneys and consultants for the last 7 months, but provided public notice only in the last two weeks. Construction, which is due to begin in September, was scheduled to accommodate the port prior to the public comment period being opened. This indicates that public comment is not anticipated to have any impact on the interim agreement. While this may be “business as usual” for DOE, it does not comply with the clear intent and specific provisions of the WAC 173-340-600(1).

6. Nor was a public hearing scheduled on the interim action. The public meeting involved one-way communication from DOE to the public, although there was no reason that a public hearing could not have been included as part of the public meeting. Instead, the public was advised to submit concerns through the public comment process. However, because DOE refuses to publish its response to public comment, it has no enforceable obligation to review and consider what the public submits. This situation, in combination with facts in the above paragraphs, has left the public believing the system is rigged, and that public process is a required but empty formality. Problems with public process must be reviewed in the context of the potential and seriousness consequences of the proposed interim action. If approved, it will result in an increase in the type and amount of hazardous waste that exists at the Cornwall Landfill. Given the toxicity of dioxin, the temporary design of the interim action, which is inadequate for preventing dioxin exposure, and the high intensity, high contact future use of the Landfill, the public should be provided with notice of relevant facts and provided a meaningful

opportunity for input, including the right to receive an affirmative response to public comment.

Sincerely,

Wendy Harris

Bellingham Resident

From: Swackhamer, Robert D. (ECY)

To: Petrovich, Brad (ECY);

Subject: FW: Interim Clean-up Action for Cornwall Landfill

Date: Thursday, June 16, 2011 4:00:47 PM

From: SUSAN KAUN [mailto:kauns49@msn.com]

Sent: Thursday, June 16, 2011 3:59 PM

To: Swackhamer, Robert D. (ECY)

Subject: Interim Clean-up Action for Cornwall Landfill

TO: Department of Ecology

FROM: Susan Kaun

613 Donovan Avenue

Bellingham WA 98225

DATE: June 16, 2011

SUBJECT: Interim Clean-up Action for Cornwall Landfill

After reading about the fact that dioxin will be moved around Bellingham, then used in part of an interim clean-up action for capping the Cornwall Landfill, I am very concerned, that this action could constitute a public health threat for citizens living in Bellingham. I did not know it was possible to create a beneficial re-use of such a highly toxic material. Everything I've read about dioxin suggests it is extremely toxic to humans. In my opinion it doesn't sound like the impacts from this interim measure have been well considered, so I respectfully request the portion of the proposal regarding dioxin transport and usage be denied.

Thank you for this opportunity to comment on the proposed project.

From: Swackhamer, Robert D. (ECY)
To: Petrovich, Brad (ECY);
Subject: FW: Q regarding dioxin
Date: Friday, June 24, 2011 2:02:21 PM
[Another comment.](#)

From: Wendy Harris [mailto:w.harris2007@comcast.net]
Sent: Friday, June 24, 2011 1:42 PM
To: Swackhamer, Robert D. (ECY)
Subject: Q regarding dioxin

Mr. Swackhamer:

Could you please confirm that dioxin is a priority contaminant of ecological concern pursuant to WAC 173-340-7494 and Table 749-2, and does this pertain only to terrestrial ecological evaluation? Your anticipated response is appreciated.

Sincerely,
Wendy Harris

From: Swackhamer, Robert D. (ECY)
To: Petrovich, Brad (ECY);
Subject: FW: Cornwall cleanup level and on-site containment
Date: Wednesday, June 29, 2011 8:39:15 AM
[Cornwall comment.](#)

From: Wendy Harris [mailto:w.harris2007@comcast.net]
Sent: Tuesday, June 28, 2011 5:30 PM
To: Stoner, Mike; Swackhamer, Robert D. (ECY)
Cc: Taylor, Trevin; McInerney, Lucy (ECY); HaslamH@wsdot.wa.gov; Grout, Richard (ECY); DPike@cob.org; city council; O'Herron, Mary (ECY)
Subject: Cornwall cleanup level and on-site containment

The interim agreement for the Cornwall Landfill should not be approved under SEPA or the MTCA. A Method C cleanup level is

prohibited under the MTCA. The requirements for on-site containment of hazardous waste are not met. There is no other justification for the interim action and in fact, the interim action would foreclose reasonable and effective alternatives for the final cleanup plan. Cleanup Level Method B is the cleanup level applicable under state law. WAC 173-340-705. WAC 173-340-740(4) states that **Method B is the only method available for establishing soil cleanup levels at a MTCA site**, with the exception of qualifying industrial properties. Cornwall Landfill does not meet the characteristics of an industrial site under WAC 173-340-745(1)(a)(i). Therefore, cleanup levels **must** be determined based on Method B. However, as noted in the interim agreement, the sediment dredged from Gate 3 can not meet this cleanup level. The Port is requesting approval to use Method C. This is not authorized under the MTCA and beneficial reuse of Gate 3 sediment is not a viable option. The large discrepancy in the dioxin cleanup levels under Method B and Method C, as reflected in the interim report, should be noted. Under Method B, the TEQ is 11. Under Method C, the TEQ is 1500. Compared to Method B, Method C increases the human risk of developing cancer from exposure to a single hazardous substance ten fold. I do not think that the residents of Bellingham would willingly agree to accept this increased cancer risk. Cancer rates are already quite high in Whatcom County. On-Site Containment of Hazardous Soils.

Nor is it appropriate, as indicated by the Port, for the interim action to include containment of soils with hazardous substances above cleanup levels. Under WAC 173-340-700(4)(c), this is appropriate only when the compliance monitoring program is designed to ensure the long-term integrity of the containment system (and other requirements of the WAC are met). The design plans for the interim agreement lacks long term integrity. First, as reflected in the interim agreement, containment

of soils with hazardous substances is not the primary purpose of the interim action. It is, primarily, a stormwater proposal. This fact was emphasized by the Port to justify the low height of the berms that will surround the project area. Second, the waterproof sheet that will cover the Gate 3 sediment has a limited useful life of 4-5 years. There is no approved and funded cleanup plan that ensures proper handling of the dioxin contaminated soil within 4-5 years of the interim action.

The Port notes that Gate 3 sediment exceeds the Method B cleanup level by a small amount. There is no such thing as exceeding soil cleanup levels for dioxin “by only a little.” The Method B dioxin level is based on the reasonable maximum exposure scenario. Any amount above this level exposes humans to unsafe levels of a known carcinogen classified as a “priority contaminant of ecological concern” under WAC 173-340-7494 and Table 749-2. (See also WAC Chapter 173-333.) Either you meet human safety standards or you do not. In this case, the interim action does not.

Terrestrial ecological evaluation of the Cornwall Landfill should be required prior to considering the on-site containment of dioxin. Dioxin is a persistent, bioaccumulative toxin that enters the food chain, in part, through vegetation. For this reason, the MTCA requires a terrestrial ecological evaluation establishing site-specific cleanup standards for the protection of terrestrial plants and animals. WAC 173-340-7490. The Landfill will be developed as a park and shoreline trail, and will contain areas of grass and vegetated buffers. The interim report discusses on-site containment, but does not discuss standards for terrestrial protection. The redeveloped site will also include commercial and residential buildings. Residential land use is generally the site use requiring the most protective cleanup levels. Because of this future land use, and the toxicity and persistence of dioxin, it would

be appropriate for the Port to provide alternative proposals to on-site containment. WAC 173-340-430(7)(b)(ii).

Background Levels of Dioxin

The argument that background levels of dioxin justify on-site containment of hazardous substances overlooks a crucial point.

Although we are measuring the dioxin level of Gate 3 sediment, **this is sediment that is underwater, and therefore, the affected media is water.** Once the sediment is placed on top of the Cornwall Landfill, it has been brought on land and the affected media is soil (with a new possibility of impacting both water and air). An interim action must be denied where it results in contamination of a new media. A Sediment Site Characterization Evaluation of Bellingham Bay was conducted by DOE on June 26, 2007.

See <https://fortress.wa.gov/ecy/gsp/DocViewer.aspx?did=3287>.

Surface sediment dioxin concentrations in Bellingham Bay have decreased by a factor of 10 compared to previously reported concentrations. The decrease is the result of high rates of sedimentation deposition from the Nooksack River. If Gate 3 sediment is used to cap the Landfill, then, over time, this site's dioxin contamination will exceed the background level because it will not longer benefit from additional sediment deposition.

Foreclosure of Reasonable Alternatives

Pursuant to WAC 173-340-430(3), where there is no final cleanup action, an interim action may not foreclose reasonable alternatives. The placement of Gate 3 sediment over 3.6 acres of the Landfill, at the cost of 3 million dollars, is clearly not a temporary action. Removing the cap after it is in place would increase the chance of environmental contamination and is not prudent. Moreover, safely removing the temporary cap would also be expensive. As a practical matter, once the sediment cap is placed on the Landfill, this will force the results of the final cleanup plan. Under WAC 173-340-360(2)(e)(iii), cleanup

actions shall not rely primarily on institutional controls and monitoring where it is technically possible to implement a more permanent cleanup action for a site. The interim action requires the use of institutional controls and monitoring, but is optional in nature. A permanent cleanup plan would be easier to implement without the interim action because currently there is not dioxin at the Landfill.

R.G. Haley Site

The interim action ignores the fact that the Landfill forms one contiguous parcel with the R.G. Haley site. The R.G. Haley site has a higher hazard ranking and toxins from this site have contaminated the Landfill. An example of this is the commingled petroleum hydrocarbon plume. As a practical matter, cleanup of one site can not be achieved without coordinated cleanup of the other site. The interim action is being proposed, in part, to allow public use of the Cornwall Overwater Walkway prior to final cleanup, and the Consent Decree is being amended to reference the Overwater Walkway. The public must travel over the R.G. Haley site after exiting from the overwater bridge. The interim action does not recognize or address this interrelationship, and this could have public safety implications.

Thank you for consideration of my concerns.

Sincerely,

Wendy Harris

Bellingham Resident

From: Swackhamer, Robert D. (ECY)
To: Petrovich, Brad (ECY);
Subject: FW: Letter of Concern re: Capping Cornwall Landfill
Date: Tuesday, July 05, 2011 7:48:35 AM
[Comment received](#)

From: Daniel [mailto:daniel98226@yahoo.com]
Sent: Sunday, July 03, 2011 7:19 PM
To: Swackhamer, Robert D. (ECY)
Subject: Letter of Concern re: Capping Cornwall Landfill
July 3, 2011

Dear DOE Official,

I am opposed to your apparent intention to cap the Cornwall landfill with dioxincontaminated sediment from Squalicum Harbor. I am referencing the Letters to the Staff of the Cascadia Weekly, June 29, 2011, P.4.
Please note my opposition in your public records.

Thank you,
Dr. Daniel Levine
PO Box 28312
Bellingham, WA 98228
360-650-0671
daniel98226@yahoo.com

From: Swackhamer, Robert D. (ECY)
To: Petrovich, Brad (ECY);
Subject: FW: Dioxin disposal on waterfront MTCA site in Bellingham
Date: Wednesday, July 06, 2011 7:51:33 AM
Within the comment period.

-----Original Message-----

From: Wendy Harris [<mailto:w.harris2007@comcast.net>]

Sent: Tuesday, July 05, 2011 8:46 PM

To: Pendowski, Jim (ECY)

Cc: hoffman.erika@epa.gov; David.F.Fox@nws02.usace.army.mil; Lyshall, Linda (PSP); Inouye, Laura (ECY); sale461@ecy.wa.gov; Grout, Richard (ECY); Swackhamer, Robert D. (ECY); McInerney, Lucy (ECY); Stoner, Mike; DPike@cob.org; courtney.wasson@dnr.wa.gov; city council; Bradley, Dave (ECY); Elliott, Kristie Carevich (ATG); Warren, Bob (ECY); Nord, Tim (ECY); pkremen@co.whatcom.wa.us; council@co.whatcom.wa.us; Alan Chapman

Subject: Dioxin disposal on waterfront MTCA site in Bellingham
July 5, 2011

I am writing to express my dire concern regarding a proposal to use a Waterfront MTCA site, planned for residential and recreational redevelopment, as an upland confined disposal facility for dredged sediment contaminated with dioxin. This is part of an interim action proposed by the Port of Bellingham for a stormwater plan on the Cornwall Landfill in Bellingham, WA. The Department of Ecology plans to authorize the proposal under the beneficial reuse provisions of WAC 173-350-200, although I believe the proposal contains legal and technical defects. Cornwall Landfill is an inappropriate location to dump dredged sediment contaminated with dioxin for the following reasons:

*There will be substantial residential, recreational and commercial redevelopment on the site. Plans include multi-use buildings, a large public park, a shoreline trail, an overwater pedestrian bridge landing, and public water access.

- * The site is already environmentally sensitive. It contains critical areas and habitat conservation areas. It is a shoreline of statewide significance under the Shoreline Management Act. It is adjacent to 303(d) impaired marine waters.
- * The site consists of unstable landfill and is geologically hazardous. It is subject to earthquake, liquefaction, shoreline erosion, landslide and is within a 100 year flood plain. The interim agreement fails to analyze the risk of natural disaster or reflect a contingency plan.
- * The Lummi Nation has treaty fishing rights in the adjacent waters and is concerned about environmental consequences of a site development.
- * The nearshore contains three species of salmon and three species of rockfish listed under the ESA. WDFW construction windows are the only proposed mitigation for the fish.
- * No consideration of or mitigation for other wildlife has been provided. The site is an important stop of the Pacific Flyway for migrating shoreline birds. It is important winter habitat for dwindling seabirds. Harbor seals use this area. Blue Heron from Bellingham's only rookery forage in the Bay. Forage fish spawn in nearby locations. The 2nd largest breeding Caspian Tern colony on the Pacific Coast was located within a block, until the Port successfully dissuaded the terns from returning.
- * The interim action will vest under Bellingham's outdated 1989 SMP, which fails to incorporate the 2003 SMP Guidelines, such as "no net loss" of shoreline ecological functions. This is not addressed through SEPA mitigation.
- * Given the future uses planned for the site, the interim action may negatively impact tourism and investment in the Waterfront.

The Port's proposal is technically inadequate for the following reasons:

- * Under the MTCA, Method B is the only method available for establishing soil cleanup levels at the site. WAC 173-340-740(4). The interim agreement acknowledges that the dredged sediment can not meet this cleanup level. Therefore, the Port has requested, and DOE is considering, approval of a Method C cleanup level although there appears to be no authority for a lowered cleanup standard. An interim action is not appropriate where it will reduce the cleanup level that can be obtained at a MTCA site.
- * The interim action has been designed primarily as a stormwater proposal, and lacks the long-term integrity required for a dioxin containment system. WAC 173-340-700(4)(c).
- * It does not appear that the berms have been engineered at an adequate height.
- * The dredged sediment will be covered with a waterproof plastic sheet held in place with sandbags. The sheet has a useful life of 4-5 years. There is no funded, approved final cleanup plan that will be implemented at the end of the 4-5 year period.
- * It is unclear if there will be adequate performance monitoring both during and after construction.
- * The City noted that it might need to pierce the waterproof barrier to install pilings for an overwater bridge, and other site developers may face a similar situation. The Port asserts that each developer is responsible for adhering to maintenance protocols.
- * Dredging, dewatering and relocating contaminated sediment from water to land increases the possibility of contaminating new media, such as soil

or air. Water contamination could be increased through dredging, or new stormwater run-off. The dewatering process poses particular risk.

* Dioxin has not been detected at the Landfill, and it is not wise policy to introduce a new type of PBT to an existing MTCA site.

* Allowing contaminated sediment in Bellingham Bay to be covered over by clean sediment deposited by the Nooksack River may be a more effective cleanup strategy.

* Dumping 25,000 to 41,000 cubic yards of contaminated sediment (depending upon the bidding results for the Port's maintenance dredging) will make final cleanup more challenging and complicated.

* The landfill is connected to the R.G. Haley site, which is a higher ranked MTCA site. Both sites share a commingled petroleum plume and dioxin at the Cornwall Landfill could impact the Haley site.

* The interim action is being proposed because the Port can no longer dispose of dredged sediment at an open water site. The Port's desire to obtain an inexpensive upland disposal site is not an appropriate basis for approving the interim action.

The Port's proposal is legally defective for the following reasons:

* The proposal would foreclose reasonable alternatives for the cleanup action in violation of WAC 173-340-430(3). Capping the site with sediment contaminated with dioxin is, as a practical matter, a permanent action. It would not be safe or affordable to remove the cap once it is in place.

* The proposal does not satisfy requirements for an interim action. It neither eliminates nor substantially reduces pathways for exposure to hazardous substances. WAC 173-340-430(1)(a). The interim action, will, at best, reduce groundwater infiltration by 30%, and does not address surface water run-off.

- * The Landfill is closed. Therefore, the most toxic groundwater and surface water contamination has already occurred. Cleanup should occur as soon as possible, but the situation will not become substantially worse or costing substantially more without the interim action, as required under WAC 173-340- 430(1)(b).
- * The Port bears the burden of proving that it satisfies the requirements for beneficial reuse under WAC 173-350-200. No analysis or discussion has been released to the public.
- * DOE, the Port and the City of Bellingham discussed, reviewed and revised the interim agreement in the 7 months prior to the public comment period. Construction was scheduled prior to the public comment period. It appears that a determination has already been made, in violation of WAC 173-340-600(1).
- * None of the documents drafted to inform the public indicate that the dredged sediment is contaminated with dioxin, or that the Port seeks to reduce cleanup levels.
- * The interim agreement fails to reflect the correct standards for compliance with substantive requirements of city and state laws, such as the Critical Area Ordinance and the Shoreline Management Act. It is incomprehensible that the Department of Ecology would consider, much less allow, an interim action under these facts and circumstances. I understand that there are significant issues concerning the disposal of contaminated sediment throughout Puget Sound, but solutions should, first and foremost, protect the public's health, safety and welfare. The interim agreement proposed by the Port clearly does not. A better solution would be to use available funding to affect a full cleanup of a smaller area of the Landfill, completing the full cleanup when other funding sources are available. Redevelopment should not be permitted on a MTCA site where only an interim cleanup has been achieved.

Please excuse my lengthy email list. Some of my prior comments and questions have gone unanswered and I am hoping to find someone who will address these issues. Thank you for considering my concerns.

Sincerely,

Wendy Harris

3925 E. Connecticut Street

Bellingham, WA 98226

From: Swackhamer, Robert D. (ECY)

To: Petrovich, Brad (ECY);

Subject: FW: Comment: Facility Site ID #: 2913

Date: Wednesday, July 06, 2011 7:53:10 AM

[Within the comment period.](#)

From: Tip Johnson [mailto:tip@skookum.us]

Sent: Tuesday, July 05, 2011 11:50 PM

To: Swackhamer, Robert D. (ECY)

Cc: mikes@portofbellingham.com

Subject: Comment: Facility Site ID #: 2913

I strenuously object to the so-called "beneficial re-use" of dioxin contaminated sediments as a so-called "cap" for the so-called "clean-up" of the Cornwall avenue landfill. I also object to the Port and the Department of Ecology brazenly lying to to the public. Open information about risks to the public's health are the only thing being effectively capped. This is not a clean-up. It is a cover up. That's the only thing capping really accomplishes - covering things up. It is an alternative to cleaning things up. Capping, especially in this location, is known to be ineffective. It cannot work.

The re-use of dioxin contaminated sediments in an area slated for public and possibly residential land use cannot be beneficial. If an overlay of dioxin contaminated sediments is beneficial, I encourage regulators in favor of this plan to place several inches over the private property of their principal residences. I seriously doubt they would consider it under any circumstance. I offer to truck ten yards of it to their respective homes. I would appreciate their individual responses to this suggestion.

There is no reason to believe that capping is a reasonable or durable containment for dangerous toxins. The Chem-Fix Solidification Slab was capped long ago. The estimated fifteen tons of mercury in the slab has been shown to be significantly reduced from original levels by subsequent RI/F Studies. It went away -somewhere. Putting toxins where they will "go away" was a technique pioneered and mastered by Georgia-Pacific. It is disturbing to see the DOE following these same procedures. In 2007, I published "The Port's Plan to Poison", in which a graphic diagram showed why groundwater flows in the subject vicinity made capping ineffective. The article was focused on the nearby Chem-Fix slab but applies equally to the landfill. The article is still available at <http://www.nwcitizen.com/entry/the-portsplan-to-poison>. The associated graphic is disturbingly similar to a more recent graphic in the DOE's public presentation for this project. That document is available at <https://fortress.wa.gov/ecy/gsp/DocViewer.aspx?did=4722>. The exhibit under "Site Conceptual Model" displays the exact same hydrology, showing that groundwater flows from the South Hill gradient will wash toxins out from under any cap, into the bay. This discharge is unregulated. The fact that it escapes monitoring, or is masked by ambient conditions, is no excuse. Regulators know it has occurred, that it will continue to occur, but refuse to acknowledge that containing toxins can't be accomplished with a cap in this location. This plan therefore accepts that unregulated discharges of dangerous toxins will continue, but without recognition, regulation or permits. That is misfeasance. If measured levels decrease over time, regulators approving this plan should be liable. This comment constitutes constructive notice. This plan's irrationality follows previous agency refusals to consider the highest and best use of the former Georgia-Pacific Aerated Stabilization Basin (ASB). During the Port of Bellingham's environmental review of their "Waterfront District Redevelopment Project", comments addressed to this issue were categorically refused by the Port's SEPA administrator. The Port was and is intent on converting one of Washington State's largest water treatment facilities into a marina. The proposed marina, against the advice of the DOE, was originally sequestered within the No Action Alternative of the EIS and comments addressing other

beneficial reuses of the facility were rejected. After a time, the City and Port agreed on a new "Framework and Assumptions" that moved the marina proposal into the Preferred Alternative for final consideration. This significant re-scoping of the project was illegally accomplished without any reopening for public comment. As a result, many options of superior public health integrity have been systematically ignored. These include using a portion of the ASB as a repository for the subject contaminated sediments, while retaining a portion for water treatment, or filling all of it - consistent with sediment removal volumes indicated in the Bellingham Bay Action Plan Remedial Alternatives B through J – and establishing clarifier regimes for industrial, urban runoff and possibly CSO or sanitary treatment atop the filled site. None of these options have been officially considered. Notably, alternatives B through J were developed by technical representatives of 14 jurisdictions over 10 years of public meetings. Alternative K, the basis of the present plan, was adopted - without public involvement - within a month of the Port's purchase of the Georgia-Pacific site. Failure to consider these relevant options may eventually cost ratepayers in Bellingham many hundreds of millions of unnecessary dollars replacing treatment capacities to meet future treatment requirements, not to mention the costs of adverse effects to public health due to lessened standards for treatment and disposal of contaminated sediments. Bellingham ratepayers are already expecting approximately \$200 million in wastewater treatment improvement costs, not including anticipated mandates for stormwater treatment or future industrial needs. Ratepayers could be justified as a class in pursuing action against agencies involved in these decisions for their refusal to consider alternatives beneficial to the public good. That, too, should be considered constructive notice. Thank you for this opportunity to comment.

Sincerely,

Tip Johnson

2719 Donovan Avenue, Bellingham, WA 98225

Tel 360-255-1200

Fax 206-350-3664

tip@skookum.us

Mt Baker Group
2520 Jefferson St
Bellingham, WA 98225
July 6, 2011

Re: Comments on the Proposed Interim Cleanup Action for the Cornwall Avenue Landfill

The Sierra Club appreciates that the Washington Department of Ecology is taking public comment on its proposal for an interim cleanup action at the Cornwall Landfill site of the Bellingham Bay waterfront, as described in the First Amendment to Agreed Order No. 1778. We understand that the interim remedial action consists of placing sediments dredged from the Squalicum Harbor Gate 3 area, and mixed with fly ash, onto the existing contaminated materials on the approximately 1,200 foot length of shoreline of the Cornwall site along Bellingham Bay. The basis for the interim remedial action (according to the First Amendment) is that it “reduces threat to the human health and the environment by eliminating or substantially reducing one or more pathways for exposure to a hazardous substance”, and that it “corrects a problem that may become substantially worse or cost substantially more to address if the remedial action is delayed”. Both of these justifications are erroneous, for the reasons that follow.

1. The placement of between 24,000 and 40,000 cubic yards of sediment contaminated with dioxin and other constituents on the ground surface overlying the contaminated landfill materials increases the risk of exposure to and transport of contaminants to humans and the environment. While the contaminated sediments placed on the site will be capped with clean sediment, the placement of additional contaminated sediments in the shoreline area increases the potential for erosion and exposure from wave action, and for contact with groundwater moving through the site. The proposed interim remedial action will blanket the existing landfill refuse on the site, reducing the potential for existing landfill refuse contact with air and vegetation at the ground surface, but it cannot be justified as a means by which exposure to hazardous substances is reduced. Addition of over 20,000 cubic yards of contaminated sediments at the ground surface of the Cornwall Landfill site increases the materials that act as a source for contaminant exposure, and places them in a position more likely to be impacted by human and environmental action. Rather reducing the exposure pathways, as asserted, this action increases the potential for exposure and the pathways for exposure to a new source of contamination.

We agree that landfill materials subject to wave action over time have an increased likelihood of erosion and exposure to environmental and human contact. However, the wind and wave

action exposure processes are not mitigated or reduced by the placement of additional fill on the shoreward area of the Cornwall Landfill site, as proposed in the interim remedial action. Groundwater discharging through the site originates in large part from the up-gradient watershed to the east of the site. A very small fraction of the approximately 110-acre watershed area that collects precipitation and discharges to the Cornwall site shoreline will be treated through the proposed interim action. The 4.5 acre capped area represents less than 5% of the precipitation discharging through the site, and is very likely to have no measurable impact on the contaminant concentration in groundwater discharging to the shoreline.

The placement of large volumes of contaminated sediment over existing landfill refuse will impede one of the potential cleanup options for the site: the excavation and removal of the actual contaminated landfill debris. With the proposed interim action, cleanup of the site will be more difficult (the capped sediments will have to be removed before landfill refuse can be excavated), and more costly. The proposed interim remedial action does not “correct” the existing problem, and will make more convoluted one of the potential options for remediation of contaminants on the Cornwall Landfill site.

The assertion that the partial cleanup represented in the proposed interim action will accomplish the “establishing of site grades above the elevation needed to address long term sea level rise” ignores the fact that under the proposed interim action contaminated landfill refuse will remain at its existing elevation, and the placement of contaminated sediment on top of it will make more difficult its removal and placement to a location outside the exposure to existing sea level contact. Landfill debris detected at significant depths, of up to 38 feet below the ground surface, was report in the Landau RIFS. The increased sea level contact with existing landfill refuse resulting from future sea level rise is not in fact addressed or mitigated by the proposed interim action.

The construction of “LFG” to collect landfill gas emissions will contribute to safer conditions at the site, and is supported. However, the storage, transport and treatment of that gas is not described in the First Amendment document, and the actual benefit of collecting the gas cannot be assessed without that information. The plan to reduce stormwater infiltration through 65% of the 4.5 acre IPA area corresponds to a reduction in groundwater recharge through an area of about 3 acres, less than 3% of the watershed area that drains through the site. Groundwater below the site was found to contain copper, lead, fecal, coliform and petroleum hydrocarbons as reported in the *Remedial Investigation/Feasibility study Cornwall Avenue Landfill* completed by Landau in 2003. Site sediments were found to contain high levels of copper, lead, zinc, silver and PCBs. This IPA is heralded as the “first phase of groundwater remediation that is anticipated to be a key

component of the final cleanup action”. However, it proposes to reduce groundwater flow through the site by about 3%, and leave in place the contaminated sediments that are contributing to the discharge of contaminated groundwater to the nearshore environment. As proposed, this “key component of the final cleanup action” this will lock in place the contaminants and conditions contributing to contamination of groundwater in perpetuity.

This is not an acceptable means by which the Cornwall Landfill should be cleaned up. Further, the groundwater monitoring necessary to demonstrate whether the interim remedial action is effective is not included in the First Amendment document. The capacity to make informed decisions about the long-term site remediation and management based on the interim remedial action is thereby precluded. This is not the most efficient way to expend resources on site cleanup, nor ensure the outcome of a fully remediated site.

The Sierra Club expects that cleanup of the Cornwall Landfill site will entail restoration to conditions that are conducive to public access, public recreation and nearshore habitat and processes conducive to harvest and consumption of fish and shellfish from the site. We do not believe that cleanup of the Cornwall Landfill site to conditions that are safe for these activities will be facilitated by the proposed interim remedial action. In fact, the analyses presented in the First Amendment document do not take into account the criteria supporting these activities in determining that the proposed remedial action is protective of human health and the environment, and as such do not demonstrate that the proposed interim remedial action will generate conditions that are protective of the health of individuals who use the site. The calculations presented in the First Amendment document are based on the assumption of minimal human access to the site (MTCA Method C), proposing an interim remedial action predicated on no human contact and establishing conditions for long term site management without human access to the site. We are opposed to this long term outcome for the site, and by inference are then opposed to the interim remedial action, which sets up conditions for long term site management that restrict site access for the range of activities that should be included in determining appropriate cleanup procedures. The cleanup action for this site that is most protective of human and environmental health, the excavation and removal of landfill debris from the shoreline area of Bellingham Bay, is precluded by the implementation of the interim remedial action as proposed. As such we recommend that this interim remedial action be abandoned, and that future remediation efforts to be focused on the excavation and removal of the landfill debris from the Cornwall Landfill site.

Sincerely,

Llyn Doremus

Mt Baker Group Chairperson

From: Swackhamer, Robert D. (ECY)
To: Petrovich, Brad (ECY);
Subject: FW: Dioxin disposal on waterfront MTCA site in Bellingham (UNCLASSIFIED)
Date: Wednesday, July 06, 2011 1:42:49 PM
Within the comment period

-----Original Message-----

From: Perry, Randel J NWS [<mailto:Randel.J.Perry@usace.army.mil>]
Sent: Wednesday, July 06, 2011 1:39 PM
To: Blaine McRae; Gilbert, Norman
Cc: Padgett, Rebekah (ECY); Swackhamer, Robert D. (ECY); Pendowski, Jim (ECY); Gouran, Brian
Subject: FW: Dioxin disposal on waterfront MTCA site in Bellingham (UNCLASSIFIED) Classification: UNCLASSIFIED
Caveats: NONE

I have received the following comments on the proposed use of the Cornwall Avenue site for disposal of the Gate 3 dredge spoils.

I would appreciate a response to the issues raised.

Randel Perry
Army Corps of Engineers
Regulatory Branch, NW Field Office
360-734-3156 (Office)
360-393-2867 (Cell)

-----Original Message-----

From: Fox, David F NWS
Sent: Wednesday, July 06, 2011 6:50 AM
To: Perry, Randel J NWS
Subject: FW: Dioxin disposal on waterfront MTCA site in Bellingham (UNCLASSIFIED)
Classification: UNCLASSIFIED
Caveats: NONE

Randel - FYI. DFox

-----Original Message-----

From: Wendy Harris [<mailto:w.harris2007@comcast.net>]
Sent: Tuesday, July 05, 2011 8:46 PM

To: jpen461@ecy.wa.gov
Cc: hoffman.erika@epa.gov; Fox, David F NWS; linda.lyshall@psp.wa.gov;
lino461@ecy.wa.gov; sale461@ecy.wa.gov; rgro461@ecy.wa.gov;
Swackhamer, Robert D. (ECY); McInerney, Lucy (ECY); Stoner, Mike;
DPike@cob.org; courtney.wasson@dnr.wa.gov; city council;
dbra461@ecy.wa.gov; kristiec@atg.wa.gov; Warren, Bob (ECY);
tnor461@ecy.wa.gov; pkremen@co.whatcom.wa.us;
council@co.whatcom.wa.us; Alan Chapman
Subject: Dioxin disposal on waterfront MTCA site in Bellingham
July 5, 2011

I am writing to express my dire concern regarding a proposal to use a Waterfront MTCA site, planned for residential and recreational redevelopment, as an upland confined disposal facility for dredged sediment contaminated with dioxin. This is part of an interim action proposed by the Port of Bellingham for a stormwater plan on the Cornwall Landfill in Bellingham, WA. The Department of Ecology plans to authorize the proposal under the beneficial reuse provisions of WAC 173-350-200, although I believe the proposal contains legal and technical defects. Cornwall Landfill is an inappropriate location to dump dredged sediment contaminated with dioxin for the following reasons:

- * There will be substantial residential, recreational and commercial redevelopment on the site. Plans include multi-use buildings, a large public park, a shoreline trail, an overwater pedestrian bridge landing, and public water access.
- * The site is already environmentally sensitive. It contains critical areas and habitat conservation areas. It is a shoreline of statewide significance under the Shoreline Management Act. It is adjacent to 303(d) impaired marine waters.
- * The site consists of unstable landfill and is geologically hazardous. It is subject to earthquake, liquefaction, shoreline erosion, landslide and is within a 100 year flood plain. The interim agreement fails to analyze the risk of natural disaster or reflect a contingency plan.

* The Lummi Nation has treaty fishing rights in the adjacent waters and is concerned about environmental consequences of a site development.

* The nearshore contains three species of salmon and three species of rockfish listed under the ESA. WDFW construction windows are the only proposed mitigation for the fish.

* No consideration of or mitigation for other wildlife has been provided. The site is an important stop of the Pacific Flyway for migrating shoreline birds. It is important winter habitat for dwindling seabirds. Harbor seals use this area. Blue Heron from Bellingham's only rookery forage in the Bay. Forage fish spawn in nearby locations. The 2nd largest breeding Caspian Tern colony on the Pacific Coast was located within a block, until the Port successfully dissuaded the terns from returning.

* The interim action will vest under Bellingham's outdated 1989 SMP, which fails to incorporate the 2003 SMP Guidelines, such as "no net loss" of shoreline ecological functions. This is not addressed through SEPA mitigation.

* Given the future uses planned for the site, the interim action may negatively impact tourism and investment in the Waterfront. The Port's proposal is technically inadequate for the following reasons:

* Under the MTCA, Method B is the only method available for establishing soil cleanup levels at the site. WAC 173-340-740(4). The interim agreement acknowledges that the dredged sediment can not meet this cleanup level. Therefore, the Port has requested, and DOE is considering, approval of a Method C cleanup level although there appears to be no authority for a lowered cleanup standard. An interim action is not appropriate where it will reduce the cleanup level that can be obtained at a MTCA site.

* The interim action has been designed primarily as a stormwater

proposal, and lacks the long-term integrity required for a dioxin containment system. WAC 173-340-700(4)(c).

- * It does not appear that the berms have been engineered at an adequate height.

- * The dredged sediment will be covered with a waterproof plastic sheet held in place with sandbags. The sheet has a useful life of 4-5 years. There is no funded, approved final cleanup plan that will be implemented at the end of the 4-5 year period.

- * It is unclear if there will be adequate performance monitoring both during and after construction.

- * The City noted that it might need to pierce the waterproof barrier to install pilings for an overwater bridge, and other site developers may face a similar situation. The Port asserts that each developer is responsible for adhering to maintenance protocols.

- * Dredging, dewatering and relocating contaminated sediment from water to land increases the possibility of contaminating new media, such as soil or air. Water contamination could be increased through dredging, or new stormwater run-off. The dewatering process poses particular risk.

- * Dioxin has not been detected at the Landfill, and it is not wise policy to introduce a new type of PBT to an existing MTCA site.

- * Allowing contaminated sediment in Bellingham Bay to be covered over by clean sediment deposited by the Nooksack River may be a more effective cleanup strategy.

- * Dumping 25,000 to 41,000 cubic yards of contaminated sediment (depending upon the bidding results for the Port's maintenance dredging) will make final cleanup more challenging and complicated.

- * The landfill is connected to the R.G. Haley site, which is a higher

ranked MTCA site. Both sites share a commingled petroleum plume and dioxin at the Cornwall Landfill could impact the Haley site.

* The interim action is being proposed because the Port can no longer dispose of dredged sediment at an open water site. The Port's desire to obtain an inexpensive upland disposal site is not an appropriate basis for approving the interim action.

The Port's proposal is legally defective for the following reasons:

* The proposal would foreclose reasonable alternatives for the cleanup action in violation of WAC 173-340-430(3). Capping the site with sediment contaminated with dioxin is, as a practical matter, a permanent action. It would not be safe or affordable to remove the cap once it is in place.

* The proposal does not satisfy requirements for an interim action. It neither eliminates nor substantially reduces pathways for exposure to hazardous substances. WAC 173-340-430(1)(a). The interim action, will, at best, reduce groundwater infiltration by 30%, and does not address surface water run-off.

* The Landfill is closed. Therefore, the most toxic groundwater and surface water contamination has already occurred. Cleanup should occur as soon as possible, but the situation will not become substantially worse or costing substantially more without the interim action, as required under WAC 173-340-430(1)(b).

* The Port bears the burden of proving that it satisfies the requirements for beneficial reuse under WAC 173-350-200. No analysis or discussion has been released to the public.

* DOE, the Port and the City of Bellingham discussed, reviewed and revised the interim agreement in the 7 months prior to the public comment period. Construction was scheduled prior to the public comment period. It appears that a determination has already been made, in violation of WAC

173-340-600(1).

* None of the documents drafted to inform the public indicate that the dredged sediment is contaminated with dioxin, or that the Port seeks to reduce cleanup levels.

* The interim agreement fails to reflect the correct standards for compliance with substantive requirements of city and state laws, such as the Critical Area Ordinance and the Shoreline Management Act.

It is incomprehensible that the Department of Ecology would consider, much less allow, an interim action under these facts and circumstances. I understand that there are significant issues concerning the disposal of contaminated sediment throughout Puget Sound, but solutions should, first and foremost, protect the public's health, safety and welfare. The interim agreement proposed by the Port clearly does not. A better solution would be to use available funding to affect a full cleanup of a smaller area of the Landfill, completing the full cleanup when other funding sources are available. Redevelopment should not be permitted on a MTCA site where only an interim cleanup has been achieved.

Please excuse my lengthy email list. Some of my prior comments and questions have gone unanswered and I am hoping to find someone who will address these issues. Thank you for considering my concerns.

Sincerely,

Wendy Harris

3925 E. Connecticut Street

Bellingham, WA 98226

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

Bob Swackhamer, Site Manager
WA Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600
Phone: 360-407-7210
[via e-mail: robert.swackhamer@ecy.wa.gov]
RE: Cornwall Landfill Interim Action
July 6, 2011

Dear Mr. Swackhammer,

RE Sources North Sound Baykeeper exists to protect and preserve habitat and water quality in Whatcom and Skagit County. We have approximately 700 members, most residing and recreating in Bellingham. We believe that the proposed plan to amend the Cornwall Landfill with dioxin contaminated sediment is premature. Levels of dioxin above the residential/ recreational cleanup level should not be used as cap and fill material in a proposed recreational/ residential area. Please find our comments below. Thank you for taking them into consideration.

Sincerely,
Wendy Steffensen, Lead Scientist
North Sound baykeeper, RE Sources
[waters@re-sources.org]

Interim Action Applicability:

The use of an interim action does not appear appropriate. The Port states that this interim action will be done under the following WAC provision: WAC 173-340-430 (1) (a) "A Cornwall Landfill Interim Action Amendment to Agreed Order remedial action that is technically necessary to reduce a threat to human health or the environment by eliminating or substantially reducing one or more pathways for exposure to a hazardous substance at a facility," and (1) (b) "A remedial action that corrects a problem that may become substantially worse or cost substantially more to address if the remedial action is delayed." The proposed action is not technically necessary to reduce a threat; the contamination at the Cornwall Landfill has been known for some time and has

been leaching into our marine waters. There is nothing that has changed to make this action now necessary. As well, the problem will not become substantially worse. The potential for the Port to use its dredge waste product as part of the cleanup is the economic driver of this project.

The argument that the cost of this project will be substantially less is technically correct, but I do not believe meets the intent of the law. I believe that the law was intended to ensure that the site did not become worse not to take advantages in market fluctuations of goods and services. If taking advantage of cheap materials and economic opportunities is a rationale for an interim cleanups, cleanup will only happen by speculation, and when economically advantageous. That is not the intent of MTCA The intent of MTCA is “to accomplish effective and expeditious cleanups in a manner that protects human health and the environment.”

In fact, if economic opportunities are the drivers of cleanup, the community may see multiple interim actions at this site as other economic drivers present themselves, and not see full cleanup for many years. The greater concern is that full and timely cleanups will not occur Sound-wide if interim cleanup actions are permitted as a matter of course when economic opportunities come up.

The rationale that allows the use of an economic cost savings to drive small piecemeal interim cleanups can result in the avoidance of full site cleanups. In fact, if an entire cleanup were necessary in order to enable economic development and use of cheap materials, cleanups would happen faster. WAC 173-340-430 (4) (a) states that, “Interim actions may occur anytime during the cleanup process. Interim actions shall not be used to delay or supplant the cleanup process.” In my experience, I have observed that the use of interim cleanups are a routine practice and, in effect, delay cleanups because they allow small cleanup actions here and there when it is economically advantageous. Without them, full cleanups would need to occur before the PLP could take advantage of desirable land or cheap materials.

WAC 173-340-430 (3) (b) states, “If the cleanup action is not known, the interim action shall not foreclose reasonable alternatives for the cleanup action. This is not meant to preclude the destruction or removal of hazardous substances.” The placement of dredge material at the Cornwall Landfill predisposes the full cleanup to contain this material. It will become more difficult to argue for an alternative other than capping if cap material has already been placed upon it. While removal of the cap material is not impossible, it both prejudices the outcome by representing a partial cleanup and is a physical obstacle.

Beneficial use: The interim action document terms the dredge material “beneficial reuse material, but does not offer any evidence that use of the material has been approved as such. Beneficial use as defined in WAC 173-350-100 means “the use of solid waste as an ingredient in a manufacturing process, or as an effective substitute for natural or commercial products, in a manner that does not pose a threat to human health or the environment. Avoidance of processing or disposal cost alone does not constitute beneficial use.” Very little guidance appears to exist on how to determine “beneficial reuse.” It is clear, however, that a determination of beneficial use or reuse must include an assessment of the threat to human health and the environment. This has not been done. The material under consideration should be termed dredge sediment or contaminated dredge sediment. The use of “beneficial reuse or beneficial use should only be used after Ecology has made a separate determination on this specific issue and concurs with the Port that this material meets beneficial reuse standards. We believe that a determination of whether the dredge material meets the beneficial use or reuse criteria should be done prior to its inclusion in an interim action.

Shoreline Landfill: State and local governments no longer permit shoreline landfills. Cornwall Landfill is a remnant of past practices which are wholly recognized as detrimental to the health and ecology of the nearshore environment. Placing additional contaminated material on the existing Cornwall landfill constitutes a landfill activity. The landfill is within the shoreline zone and can be subject to inundation from tidal activity and sea level rise. The 1989 City of Bellingham Shoreline Master program promulgated regulations on landfills, one being, “Fill materials shall be used which do not pose a potential threat to water quality.” (Section 27 J3, 1989 SMP).

We believe that the fill material may pose a threat to water quality. The fill will introduce dioxin and other contaminants from fly ash or other absorbent materials at the site. The Port relies on reductions of infiltration and inundation to show that leachate from the landfill will be reduced. The estimates of infiltration and inundation are not rigorous. For example, the infiltration estimate relies on typical estimated reduction of 90-95% for HDPE liners combined with low hydraulic conductivity of the fill material to get an estimated 98% reduction in infiltration. Moreover the low hydraulic conductivity illustrated in Appendix A is 4×10^{-7} and 5×10^{-7} , not 4×10^{-8} cm/sec as noted in the text.

This estimate is mere speculation. The Port then compares the levels of dioxin expected using this estimate to the marine aquatic water quality criteria based on human consumption of fish, but gives no indication of the fish consumption rate. Any fish consumption rate should be that of tribal or subsistence fishers of 272 g/day or more.

The inundation pathway also contains estimates and not actual values with which to calculate amount of dioxin potentially leached. In making a proposal of placement of dioxin contaminated sediment in the shoreline zone, actual numbers are necessary.

Calculations of leachability, using actual values from the site and under a variety of conditions are needed to affirm whether leachability will be a problem at this site. Note that the chemfix site which was supposed to stabilize mercury at GP was later found to leach mercury at higher pH. It is important that a similar mistake not occur here.

Dioxin Levels:

The Amendment to the Agreed Order provides the Port's rationale for using contaminated sediment containing dioxin above cleanup standards. This rationale, however, is flawed. It states on page 2-4,-5 that, "Onsite containment of hazardous substances above cleanup levels can be a valid cleanup action component if the requirements of MTCA are met." While this is true, this applies to contaminants already onsite, not to moving contaminants above MTCA standards to another location, in a shoreline zone, and then subsequently capping.

The Port contends that Gate 3 sediment is appropriate for beneficial reuse, if the following conditions are met: 1) dioxins/furans or other contaminants are prevented from leaching into groundwater, 2) sediment is properly capped, and 3) the cap integrity is ensured through institutional controls." The list of necessary items to allow Gate 3 sediment to be reused is long and problematic. Each item needs to be engineered and monitored thoroughly. The risk of dioxin to humans and wildlife is too great to allow the placement of dioxincontaminated sediment above the Method B soil standard in recreational areas. In fact, dioxins are linked to cancer, endocrine, developmental, and immune diseases- in some cases, at levels close to background. Children are especially sensitive and will be the ones who are most exposed at the Cornwall Landfill shoreline park Any material with dioxin levels above Method B cleanup levels should not be allowed for placement at the Cornwall Landfill site. To this end, we ask for more adequate characterization of the different dredge units being considered. We note also that higher concentrations of dioxins were detected with another method. These results should be incorporated into any characterization of the sediment. If the dredge units contain average levels of dioxin above 11 ppt, we ask that the sediment be contained elsewhere.

Interim nature of plan: We note that the liner will be used on an access road and that

placement of the material as an interim measure may last up to 5 years. The stability of the design for the access road and interim measure is not clear. There also appears to be no plan for security of the area. The Cornwall Landfill area is frequented by walkers, hikers, and kayakers, regardless of the signage and fences that now exist. There needs to be a plan to ensure that citizens do not encounter this material while it is only marginally secured.

Concern of language used in the Agreement to the Agreed Order: The text of the Agreement, a Department of Ecology document, is prejudicial in some sections. For example, the term “beneficial reuse” in the Amendment to the Agreed Order interim colors the narrative and is misleading, since Ecology has not actually made a decision that the sediment qualifies for beneficial reuse. Characterization of dioxins as “relatively low level” is bizarre, given that their concentrations in some dredge units are greater than method B cleanup levels. Since this is an Ecology document, it would be appreciated if more effort were taken to use neutral language. Since Ecology is not the proponent of this action, it would be appreciated if the proposal were approached more scientifically in the text.

July 6, 2011
Bob Swackhamer
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WA Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600
Via E-mail: robert.swackhamer@ecy.wa.gov
RE: Draft Interim Cleanup Action, Cornwall Avenue Landfill

Dear Bob,

Thank you for the opportunity to comment on the proposed interim cleanup action for the Cornwall Avenue Landfill site, located at the south end of Cornwall Avenue in Bellingham, WA. People for Puget Sound is a nonprofit, citizens’ organization whose mission is to protect and restore the health of Puget Sound and the Northwest Straits. We view the interim landfill cleanup action from the perspective of restoring the Sound’s long-term characteristics. The potential flow of toxic chemicals from the landfill to the Sound must be reduced.

Background: Environmental investigations of the Cornwall site groundwater, surface water, soil, and/or sediments have confirmed the presence of hazardous substances, including arsenic, copper, lead, mercury, silver, zinc, cyanide, polychlorinated biphenyls (PCBs), bis(2-ethylhexyl)phthalate, polycyclic aromatic hydrocarbon (PAH) compounds, and fecal coliform, above state cleanup standards.

Our comments on the proposed interim action plan follow:

- **Upland disposal.** We support the work of Ecology, the Port of Bellingham, and the City of Bellingham to contribute to recovering the health of Puget Sound by dredging material containing toxic material from Bellingham's Squalicum Harbor marina, beginning this September. However, because of its relatively high content of toxic materials, e.g., dioxins/furans, this material should be deposited in an approved upland site, not at the Cornwall site. Moving contaminated material around in the shorezone area of Puget Sound is not a protective removal.

- **Dredge/transport process.** All feasible safeguards must be implemented during the dredging, transport, and placement process to minimize the escape of any toxic residue into Bellingham Bay. We understand that there is a new more protective dredging method being used at the Boeing Plant 2 site in the Duwamish River and this method should be considered for Squalicum Harbor dredge project as well. The dredge material, as noted above, though should be disposed of in an appropriate offsite landfill.

- **Dredge material impact to landfill.** The very act of depositing wet (even if dewatered, the material will still be moist and potentially even quite wet), contaminated dredge material into a landfill that already has contamination problems is not protective of Puget Sound. This does not make sense. Further, given that the landfill is in the shorezone, this action is problematic. We should be cleaning up and removing landfill material from the shorezone, not adding additional contaminated material.

- **Long term protection.** The proposed deposition of the dredged material at the Cornwall site poses unacceptable risks for introducing excessive amounts of dioxin/furans as runoff or impacts to groundwater that flows into Bellingham Bay, as stated in the three provisions in the last paragraph of Section 2.3.2, proposed Amendment to the 2005 Cornwall Avenue Landfill Site Agreed Order (preventing leaching into the groundwater, properly capping the sediment, providing cap integrity through institutional controls). The maintenance of these provisions over time are threatened by future potential funding and political will constraints and by the threat of future earthquakes/tsunamis of the magnitude of the March 11 Japan disaster (e.g., Economist, March 18, 2011, p. 40). Further, the existing landfill contains many different sorts of material which offgas or leach and move around – these materials could mobilize the contamination in the dredge material leading to impacts to groundwater and to the Bay.

- **Efficiencies.** The proposed Cornwall site and Squalicum Harbor Marina cleanup action plans should be evaluated with the work done to date on the on-going remedial investigation and feasibility studies to identify/correct any possible conflicts and take advantage of beneficial suggestions, but as final cleanups, not interim. In addition, the remedies should be protective (i.e., not the current proposed plan).

- **Interim Action.** As noted in the comment letter from ReSources, we also would like to see Ecology move away from allowing interim actions which are done for expediency (in this case for the Port's other project) rather than requiring that the complete job be done. This piecemeal approach ends up using Ecology's staff resources for more extensive periods and results in poor/partial cleanups. Often we never get to the final cleanup.

Thank you for your consideration. You can reach me at (206) 382-7007 X172/htrim@pugetsound.org or Tom Winter at (206) 723-5311/t2winterjr@yahoo.com if you have any questions or concerns.

Sincerely,
Heather Trim

Urban Bays and Toxics Program Manager