



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000  
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May 18, 2020

Vigor Industrial LCC  
ATTN: Eagle Hilton  
1801 16th Ave  
Seattle WA 98122

RE: Water Quality Certification Order No. **18138** Corps Public Notice No. **NWS-2019-00336**  
Vigor Industrial Fender Pile Replacement, King County, Washington

Dear Eagle Hilton:

On March 17, 2020, Vigor Industrial LCC submitted a request for a Section 401 Water Quality Certification (WQC) to the Department of Ecology (Ecology) for Vigor Industrial Fenderpile Replacement, King County, Washington.

The proposed project entails in-water repair and maintenance of fender piles on Piers 3, 4, 5, and 6 at the Vigor facility. Up to 248 fender piles would be replaced with a maximum of 100 piles per year.

On behalf of the State of Washington, Ecology certifies that the work described in the JARPA and the public notice complies with applicable provisions of Sections 301, 302, 303, 306, and 307 of the Clean Water Act, as amended and applicable state laws. This certification is subject to the conditions contained in the enclosed Order.

If you have any questions, please contact Laura Inouye at 360-407-6165 or [laura.inouye@ecy.wa.gov](mailto:laura.inouye@ecy.wa.gov). The enclosed Order may be appealed by following the procedures described in the Order.

Sincerely,

A handwritten signature in blue ink, appearing to read "Brenden", is written over a horizontal line.

Brenden McFarland, Section Manager  
Environmental Review and Transportation Section  
Shorelands and Environmental Assistance Program

Enclosure

E-CC: ECY RE FEDPERMITS

Rory Lee, Corps of Engineers

Erin Murray, Floyd/Snider

Loree' Randall – HQ, SEA

**IN THE MATTER OF GRANTING A ) ORDER # 18138**  
**WATER QUALITY ) Corps Reference No. NWS-2019-0336**  
**CERTIFICATION TO ) Vigor Industrial Fender Pile replacement, Elliott**  
**Vigor Industrial, LCC ) Bay, in King County, Washington.**  
in accordance with 33 U.S.C. 1341 )  
(FWPCA § 401), RCW 90.48.120, RCW )  
90.48.260 and Chapter 173-201A WAC )

Vigor Industrial LCC  
ATTN: Eagle Hilton  
1801 16th Ave  
Seattle WA 98122

On March 17, 2020, the Department of Ecology (Ecology) received Vigor Industrial's request for a Section 401 Water Quality Certification (WQC) for the Vigor Industrial Fender Pile Removal. Ecology issued a public notice on April 1, 2020.

The proposed project entails in-water repair and maintenance of fender piles on Piers 3, 4, 5, and 6 at the Vigor facility. Up to 248 fender piles would be replaced with a maximum of 100 piles per year.

This project is located in section NW7, township 24N, and range 4E and in section NW12, township 24N, and range 3E, WRIA 9 in Elliott Bay.

## **AUTHORITIES**

In exercising authority under 33 U.S.C. § 1341, RCW 90.48.120, and RCW 90.48.260, Ecology has reviewed this application pursuant to the following:

1. Conformance with applicable water quality-based, technology-based, and toxic or pretreatment effluent limitations as provided under 33 U.S.C. §§1311, 1312, 1313, 1316, and 1317 (FWPCA §§ 301, 302, 303, 306 and 307)
2. Conformance with the state water quality standards contained in Chapter 173-201A WAC and authorized by 33 U.S.C. §1313 and by Chapter 90.48 RCW, and with other applicable state laws; and
3. Conformance with the provision of using all known, available and reasonable methods to prevent and control pollution of state waters as required by RCW 90.48.010.

## **WATER QUALITY CERTIFICATION CONDITIONS**

Through issuance of this Order, Ecology certifies that it has reasonable assurance that the activity as proposed and conditioned will be conducted in a manner that will comply with applicable water quality standards and other appropriate requirements of state law. In view of the foregoing and in accordance with 33 U.S.C. §1341, RCW 90.48.120, RCW 90.48.260 Chapter 173-200

WAC and Chapter 173-201A WAC, water quality certification is granted to the Applicant subject to the conditions within this Order.

Certification of this proposal does not authorize Vigor Industrial, LCC to exceed applicable state water quality standards (Chapter 173-201A WAC), ground water quality standards (Chapter 173-200 WAC) or sediment quality standards (Chapter 173-204 WAC). Furthermore, nothing in this certification absolves Applicant from liability for contamination and any subsequent cleanup of surface waters, ground waters or sediments resulting from project construction or operations.

#### **A. General Conditions**

1. In this Order, the term “Applicant” shall mean the Vigor Industrial, LCC (Vigor) and its agents, assignees, and contractors.
2. All submittals required by this Order shall be sent to Headquarters Office, Attn: Federal Permit Manager, PO Box 47600 Olympia, WA 98504-7600 or via e-mail to [fednotification@ecy.wa.gov](mailto:fednotification@ecy.wa.gov) and cc to [laura.inouye@ecy.wa.gov](mailto:laura.inouye@ecy.wa.gov). The submittals shall be identified with Order No. 18138 and include the Applicant name, project name, project contact, and the contact phone number.
3. Work authorized by this Order is limited to the work described in the Joint Aquatic Resource Permit Application (JARPA) received by Ecology on March 17, 2020.
4. The Applicant shall obtain Ecology review and approval before undertaking any changes to the proposed project that might significantly and adversely affect water quality, other than those project changes required by this Order.
5. Within 30 days of receipt of any updated information, Ecology will determine if the revised project requires a new public notice and Water Quality Certification or if a modification to this Order is required.
6. This Order is not effective until the US Army Corps of Engineers issues a permit for this project.
7. The Applicant shall send (per A.2.) a copy of the final Corps permit to Ecology’s Federal Permit Manager within two weeks of receiving it.
8. The Applicant shall keep copies of this Order on the job site and readily available for reference by Ecology personnel, the construction superintendent, construction managers and lead workers, and state and local government inspectors.
9. The Applicant shall provide access to the project site and all mitigation sites upon request by Ecology personnel for site inspections, monitoring, and/or necessary data collection, to ensure that conditions of this Order are being met.

10. Nothing in this Order waives Ecology's authority to issue additional orders if Ecology determines that further actions are necessary to implement the water quality laws of the state. Further, Ecology retains continuing jurisdiction to make modifications hereto through supplemental order, if additional impacts due to project construction or operation are identified (*e.g.*, violations of water quality standards, downstream erosion, etc.), or if additional conditions are necessary to further protect water quality.
11. In the event of changes or amendments to the state water quality, ground water quality, or sediment standards, or changes in or amendments to the state Water Pollution Control Act (RCW 90.48) or the federal Clean Water Act, Ecology may issue an amendment to this Order to incorporate any such changes or amendments applicable to this project.
12. The Applicant shall provide to Ecology a signed statement (see Attachment A for an example) that s/he has read and understands the conditions of this Order and any permits, plans, documents and approvals referenced herein. The signed statement shall be submitted to Ecology per Condition A2 at least 7 days prior to start of in-water work.
13. This Order does not authorize direct, indirect, permanent, or temporary impacts to waters of the state or related aquatic resources, except as specifically provided for in conditions of this Order.
14. Failure of any person or entity to comply with the Order may result in the issuance of civil penalties or other actions, whether administrative or judicial, to enforce the terms of this Order.
15. This Order will automatically transfer to a new owner or operator if:
  - a. A written agreement between the Applicant and new owner or operator with the specific transfer date of the Order's obligations, coverage, and liability is submitted to Ecology per condition A.2.;
  - b. A copy of this Order is provided to the new owner or operator; and
  - c. If Ecology does not notify the new Applicant that this Order must be modified to complete the transfer.
16. Conditions in this Order apply to all planned phases of the construction and the mitigation for this project.

## **B. Notification Requirements**

1. The following notification shall be made via phone or e-mail (e-mail is preferred) to Ecology's Federal Permit Manager via e-mail to [fednotification@ecy.wa.gov](mailto:fednotification@ecy.wa.gov) and cc to [laura.inouye@ecy.wa.gov](mailto:laura.inouye@ecy.wa.gov). Notifications shall be identified with Order No. 18138 and include the Applicants name, project name, project location, project contact and the contact's phone number.

- a. Immediately following a violation of state water quality standards or when the project is out of compliance with any of this Orders conditions.
  1. In addition to the phone or e-mail notification, the Applicant shall submit a detailed written report to Ecology within five (5) days that describes the nature of the event, corrective action taken and/or planned, steps to be taken to prevent a recurrence, results of any samples taken, and any other pertinent information.
- b. At least ten (10) days prior to all pre-construction meetings
- c. At least ten (10) days prior to conducting initial in-water work activities for each in-water work window.
- d. At least seven (7) days within project completion for each in-water work window.

### **C. Timing**

1. This Order shall remain in effect for a period of five (5) years from the date of issuance of this certification. Continuing this project beyond the five-year term of this Order will require the Applicant to obtain review and written approval by Ecology to extend the project for an additional five (5) years. The total term of this Order shall not exceed a total of ten (10) years total.
2. In-water work shall be conducted between August 1 to February 15 of any year, unless otherwise approved by Ecology.
3. Any project change that requires a new or revised Hydraulic Project Approval (HPA) from the Department of Fish and Wildlife should be sent to Ecology for review.

### **D. Water Quality Monitoring & Criteria**

1. Elliott Bay is categorized excellent aquatic life use designation per the standards and the criteria of the categorization apply as described in WAC 173-201A-210 (1), except as specifically modified by this Order.
2. This Order does not authorize the Applicant to exceed applicable turbidity standards beyond the limits established in WAC 173-201A 210(1)(e)(i)
3. The Applicant shall conduct water quality monitoring as described in the approved draft Water Quality Monitoring and Protection Plan (hereafter referred to as the WQMPP) prepared by Erin Murray (Floyd/Snider) submitted April 17, 2020. The draft WQMPP will be updated with contractor-specific information and provided at least 2 weeks prior to each in-water work window.
4. The Applicant must provide, in writing, any changes or additions to the WQMPP and obtain approval from Ecology's Federal Permit Manager prior to implementation of the changes or additions.

5. Monitoring results shall be submitted monthly to the Ecology Federal Permit Manager, per condition A.2.
6. Mitigation and/or additional monitoring may be required if the monitoring results indicate that the water quality standards have not been met.
7. Visible turbidity anywhere beyond the temporary area of mixing (point of compliance) from the activity shall be considered an exceedance of the standard.
8. If water quality exceedances for turbidity are observed outside the point of compliance, work shall cease immediately and the Applicant or the contractor shall assess the cause of the water quality problem and take immediate action to stop, contain, and correct the problem and prevent further water quality turbidity exceedances.

#### **E. Pile Removal and Placement**

1. The Applicant shall prepare a **Work Plan** and a **Spills Prevention Control and Countermeasures Plan** for submittal to Ecology for review and approval at least 2 weeks prior to each in-water work window.
2. The piling removal BMPs in Attachment B will be implemented, unless otherwise approved by Ecology, with the following exceptions:
  - a. If a pile breaks and cannot be fully pulled, then it shall be cut off at mudline.
  - b. A minimum 1 foot clean sand will be placed over the disturbed area unless applicant provides documentation that 1 ft. clean sand cover is still present.
3. Within 30 days from project completion (each work window), the Applicant shall report the number and location of piles removed and placed, and provide the GIS coordinates for any piles that were cut at the mudline and left in place.
4. The Applicant shall only conduct transloading at a facility that has a National Pollutant Discharge Elimination System (NPDES) permit, unless otherwise authorized by Ecology.
5. No petroleum products, fresh concrete, lime or concrete, chemicals, or other toxic or deleterious materials shall be allowed to enter waters of the state.
6. An absorbent boom will be deployed around the work area during removal of piles.
7. All debris, excess sediment, and other solid waste material shall be properly managed and disposed of in an upland disposal site approved by the appropriate regulatory authority.
8. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into state waters.

9. Barges shall not be allowed to groundout during in-water construction.
10. Barges shall be kept free of material that could be blown into water.
11. Return water discharged from the barges into waters of the state at the project site shall be filtered through appropriate media to remove turbidity and sheens.
12. Barges shall not dewater or otherwise discharge during transit or at the location where piles transloading facility

**F. Emergency/Contingency Measures**

1. The Applicant shall have adequate and appropriate spill cleanup material available on site at all times during construction.
2. The Applicant shall have adequate and appropriate spill response materials on hand to respond to emergency release of petroleum products or any other material into waters of the state.
3. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into state waters.
4. Work causing distressed or dying fish, discharges of oil, fuel, or chemicals into state waters or onto land with a potential for entry into state waters, is prohibited. If such work, conditions, or discharges occur, the Applicant shall notify the Ecology Federal Permit Manager per condition B.1. and immediately take the following actions:
  - a. Cease operations at the location of the non-compliance.
  - b. Assess the cause of the water quality problem and take appropriate measures to correct the problem and/or prevent further environmental damage.
  - c. In the event of a discharge of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state waters, containment and cleanup efforts shall begin immediately and be completed as soon as possible, taking precedence over normal work. Cleanup shall include proper disposal of any spilled material and used cleanup materials.
  - d. Immediately notify Ecology's Regional Spill Response Office and the Washington State Department of Fish & Wildlife with the nature and details of the problem, any actions taken to correct the problem, and any proposed changes in operation to prevent further problems.
  - e. Immediately notify the National Response Center at 1-800-424-8802, for actual spills to water only.



5. Notify Ecology's Regional Spill Response Office immediately if chemical containers (e.g. drums) are discovered on-site or any conditions present indicating disposal or burial of chemicals on-site that may impact surface water or ground water.

#### YOUR RIGHT TO APPEAL

You have a right to appeal this Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do both of the following within 30 days of the date of receipt of this Order:

- File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Order on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

#### ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
<b>Department of Ecology</b> Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	<b>Department of Ecology</b> Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
<b>Pollution Control Hearings Board</b> 1111 Israel Road SW STE 301 Tumwater, WA 98501	<b>Pollution Control Hearings Board</b> PO Box 40903 Olympia, WA 98504-0903

#### CONTACT INFORMATION

Please direct all questions about this Order to:

Laura Inouye  
Department of Ecology  
Headquarters  
PO Box 47600  
Olympia WA 98504-7600  
360-407-6165  
[laura.inouye@ecy.wa.gov](mailto:laura.inouye@ecy.wa.gov)

#### MORE INFORMATION

- **Pollution Control Hearings Board Website**  
<http://www.eluho.wa.gov/Board/PCHB>
- **Chapter 43.21B RCW - Environmental and Land Use Hearings Office – Pollution Control Hearings Board**  
<http://app.leg.wa.gov/RCW/default.aspx?cite=43.21B>
- **Chapter 371-08 WAC – Practice And Procedure**  
<http://app.leg.wa.gov/WAC/default.aspx?cite=371-08>
- **Chapter 34.05 RCW – Administrative Procedure Act**  
<http://app.leg.wa.gov/RCW/default.aspx?cite=34.05>
- **Chapter 90.48 RCW – Water Pollution Control**  
<http://app.leg.wa.gov/RCW/default.aspx?cite=90.48>
- **Chapter 173.204 WAC – Sediment Management Standards**  
<http://apps.leg.wa.gov/WAC/default.aspx?cite=173-204>
- **Chapter 173-200 WAC – Water Quality Standards for Ground Waters of the State of Washington**  
<http://apps.leg.wa.gov/WAC/default.aspx?cite=173-200>
- **Chapter 173-201A WAC – Water Quality Standards for Surface Waters of the State of Washington**  
<http://apps.leg.wa.gov/WAC/default.aspx?cite=173-201A>

#### SIGNATURE

Dated this 18th day of May 2020 at the Department of Ecology, Olympia, Washington



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Brenden McFarland, Section Manager  
Environmental Review and Transportation Section  
Shorelands and Environmental Assistance Program

**Attachment A**  
**Statement of Understanding**  
**Water Quality Certification Conditions**

Vigor Industrial Fender Pile replacement  
Vigor Industrial LCC  
Water Quality Certification Order No. **18138**  
and  
Corps Reference No. **NWS-2019-00366**

I, \_\_\_\_\_, state that I will be involved as an agent or contractor for Vigor Industrial LCC in the site preparation and/or construction of the Vigor Industrial Fender Pile replacement located in Elliott Bay, King County, Washington. I further state that I have read and understand the relevant conditions of Washington Department of Ecology Water Quality Certification Order No. 18138 and the applicable permits and approvals referenced therein which pertain to the project-related work for which I am responsible.

I have and will continue to ensure that all project engineers, contractors, and other workers at the project site with authority to direct work have read and understand the conditions of this Order and any permits, plans, documents, and approvals referenced in the Order.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Title

\_\_\_\_\_  
Phone

\_\_\_\_\_  
Company

**EPA Region 10  
Best Management Practices  
For Piling Removal and Placement in Washington State**

**February 18, 2016**

The following Best Management Practices (BMPs) developed by the Environmental Protection Agency (EPA) are listed by each activity associated with piling removal and placement and are applicable to projects conducted in marine and freshwater environments of Washington State as well as piling “repair” which includes aspects of both pile removal and placement. A project may include multiple methods of removal or placement. Furthermore, these BMPs may be used for projects in other states as long as they are consistent with any relevant requirements of the appropriate state and federal agencies.

**The purpose of these BMPs is to protect water, sediment and habitat quality by minimizing turbidity, sediment disturbance and debris re-entry to the water column and benthic zone during pile removal/placement activities.** These BMPs are applicable, regardless of the degree of sediment contamination that may be present, to all types of piling (wood, steel, concrete, plastic) or piling combinations (e.g., dolphins), and for any location (freshwater or saltwater) regardless of tide or sediment makeup (silt, sand, etc.). Additional BMPs that may be particularly applicable for permitted projects co-located with contaminated sediments, or within the boundaries of a regulated sediment clean-up site, are called out in text boxes.

Several agencies have published BMPs related to minimizing the introduction and spread of contaminants associated with pile placement and/or removal (e.g., WDNR<sup>1</sup>, WDFW<sup>2</sup>, NOAA<sup>3</sup>). Additionally, there are BMPs focused on impacts beyond those covered in this document that are applicable to all in-water construction involving piling. An example is adherence to site specific work windows. One overriding BMP, applicable to all in-water piling removal/placement, is adherence to the approved work windows for Endangered Species Act (ESA) fish protection as described in the US Army Corps of Engineers (USACE) Permit Guidebook:

<http://www.nws.usace.army.mil/Missions/CivilWorks/Regulatory/PermitGuidebook.aspx>

Furthermore, National Marine Fisheries Service (NMFS) and the US Fish and Wildlife Service (USFWS) have specific conservation measures that must be followed in order to avoid and/or minimize the effects of underwater noise generated during pile driving and removal operations on ESA-listed fish, marbled murrelets, and marine mammals. It is recommended that the

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<sup>1</sup> WA Department of Natural Resources Derelict Creosote Piling Removal BMPs see [http://wa-dnr.s3.amazonaws.com/publications/aqr\\_rest\\_pilingremoval\\_bmp.pdf](http://wa-dnr.s3.amazonaws.com/publications/aqr_rest_pilingremoval_bmp.pdf)

<sup>2</sup> WA Department of Fish and Wildlife Hydraulic Code rules (WAC 220-660-140 and 380) for residential and public recreational docks, pier, ramps, floats, watercraft lifts, and buoys in freshwater and saltwater areas. <http://apps.leg.wa.gov/wac/default.aspx?cite=220-660>

<sup>3</sup> National Oceanic and Atmospheric Administration, 2009. The Use of Treated Wood Products in Aquatic Environments: Guidelines to West Coast NOAA Fisheries Staff for Endangered Species Act and Essential Fish Habitat Consultations in the Alaska, Northwest and Southwest Regions. Prepared by NOAA Fisheries –Southwest Region, October 12, 2009.

applicant contact NMFS and USFWS to determine if there are ESA-listed species in the project area, and to request technical assistance on conservation measures that could be incorporated into the project to minimize noise-related impacts to listed species.

### **PILING REMOVAL – General BMPs**

The following general BMPs (see also Debris Control BMPs) apply to all piling removal activities regardless of the extraction or cutting technique:

1. Prior to commencement of the work the project engineer or contractor should assess the condition of the piling, and identify whether piling will be removed using a barge or upland equipment. The contractor's work plan must include procedures for extracting and handling piling that break off during removal. In general, complete extraction of piling is always preferable to partial removal.
2. When possible, removal of treated wood piling should occur in the dry or during low water conditions. Doing so increases the chances that the piling won't be broken (greater visibility by the operator) and increases the chances of retrieval in the event that piling are broken.
3. The crane operator shall remove piling slowly. This will minimize turbidity in the water column as well as sediment disturbance.
4. The operator shall minimize overall damage to treated wood piling during removal. In particular, treated wood piling must not be broken off intentionally by twisting, bending or other deformation. This will help reduce the release of wood-treating compounds (e.g., creosote) and wood debris to the water column and sediments.
5. Upon removal from the substrate and water column, the piling shall be moved expeditiously into the containment area for processing, and disposal at an approved off-site, upland facility (see #24 and #25 below).
6. The piling shall not be shaken, hosed-off, stripped or scraped off, left hanging to drip or any other action intended to clean or remove adhering material from the piling. Any sediment associated with removed piling must not be returned to the waterway. Adhered sediments associated with treated piling are likely contaminated and may, along with piling, require special handling and disposal.
7. The operator shall make multiple attempts to remove a pile before resorting to cutting (See Piling Removal BMPs).

### **PILING REMOVAL - Vibratory Extraction Specific BMPs**

Vibratory extraction is the preferred method of piling removal because it causes the least disturbance to the seabed, river or lake bed and it typically results in the complete removal of the piling from the aquatic environment.

8. The operator should “wake up” piling by vibrating to break the skin friction bond between piling and sediment. This bond breaking avoids pulling out a large block of sediment and possibly breaking off the piling in the process.

### **PILING REMOVAL - Direct Pull Extraction Specific BMPs**

Direct pull extraction refers to the removal of piling by grabbing or wrapping the piling and then directly pulling the piling from the sediment – using a crane or other large machinery. For example, piling are wrapped with a choker cable or chain and then removed by crane with a direct upward pull. Another method could involve an excavator with a pincer attachment that can grasp a pile and remove it with a direct upward pull. The use of direct pull can be combined with initial vibratory extraction.

9. Excavation of sediment from around the base of a pile may be required to gain access to portions of the pile that are sound, and to allow for extraction using direct pull methods. Excavation may be performed in-the-dry at low tide or in the water using divers. Hydraulic jetting devices should not be used to move sediment away from piling, in order to minimize turbidity and releases to the water column and surrounding sediments.

### **PILING REMOVAL - Clamshell Bucket Extraction Specific BMPs**

Clamshell removal of piling uses a barge-based or upland excavator-mounted clamshell bucket. The clamshell is lowered from a crane and the jaws grasp the piling stub as the crane pulls up. Clamshell bucket extraction has the potential to disturb sediments if deployed close to the sediment surface and increases the likelihood of damaging piling which can result in incomplete removal of a pile. However, a clamshell bucket may be needed when broken or damaged piling cannot be removed using vibratory or direct pull extraction methods. Extraction with a clamshell might be the best way to remove piling that were cut at or below the mudline previously and have little or no stub accessible above the mudline.

10. To the extent possible, clamshell extraction should be performed in the dry during low tide, low river flows, or reservoir draw-down. Under these conditions, the operator can see the removal site and piling, improving the chance for full removal of piling.

11. Since sediment management is potentially a larger concern when using a bucket, every effort should be made to properly size the bucket to the job and operate it in ways that minimize sediment disturbance.
12. Excavation of sediment from around the base of a pile may be needed to gain access to portions of the pile that are sound, and to allow for extraction using a clam shell. Excavation may be performed in-the-dry at low tide or in the water using divers. Hydraulic jetting devices should not be used to move sediment away from piling, in order to minimize turbidity and releases to the water column and surrounding sediments.
13. Because clamshell extraction has a higher potential to generate debris, it is particularly important that an offshore boom be in place with this removal technique. If treated wood piling are being removed, extracted piles shall be transferred to the containment basin without leaving the boomed area to prevent loss of treated wood chemicals (e.g., creosote) and debris to the water column and sediments.
14. The operator must minimize pinching of treated wood and overall damage to treated wood piling during removal. This will help reduce the potential for releasing treated wood chemicals (e.g., creosote) and debris to the water column and sediments.
15. No grubbing for broken piling is allowed.

#### **Additional Pile Removal BMPs for Locations with Contaminated Sediments**

- During project planning, consider that the best tidal condition for piling removal will be dictated by the specifics of the removal. For example, in some circumstances water access for removal equipment at high tide may be less disturbing to the sediment than access in the dry at low tide. In others, removal in the dry is the best option.
- During project planning, consider the pros/cons of each method and its potential to disturb contaminated sediments. For example, while a clamshell bucket may be more feasible for removal of buried or broken piling, it is also more likely to disturb sediments. It may be preferable to manually excavate and remove by direct pull.
- Based on EPA's experience at numerous Superfund cleanup sites (e.g., Pacific Sound Resources, Olympic View, Ketchikan Pulp Mill and Lockheed), extraction of piling is not expected to result in exposure to subsurface contaminated sediments via an exposed "hole". Therefore EPA does not require placement of sand prior to or after pile pulling, unless it is part of an overall project design, such as a cap. Undocumented placement of clean sand may complicate future characterization efforts at cleanup sites.
- If piling removal results in exceedance of turbidity or other water quality standards at the compliance boundary, reconsider the timing of removal to a more restricted time frame, for example, the lowest practical tide condition or around slack water.

### **PILING REMOVAL - Pile Cutting Specific BMPs**

Pile cutting shall be considered a last resort following multiple attempts to fully extract piling using vibratory, direct pull, and/or clamshell bucket extraction. On a project-specific basis, pile cutting may be appropriate to maintain slope stability or if a pile is broken and cannot be removed by other methods. A pneumatic underwater chainsaw, shearing equipment, or other equipment should be used to cut a pile.

16. Piling shall be cut below the mudline, with consideration given to the mudline elevation, slope and stability of the site.

17. In intertidal and shallow subtidal areas (shallower than -10 ft MLLW) seasonal accretion and erosion of the nearshore and/or beach can expose cutoff piling. In these locations, piling should be cut off at least 2-feet below the mudline. In deeper subtidal areas (deeper than -10 ft MLLW), piling should be cut off at least 1-foot below the mudline.

18. Hand excavation of sediment (with divers in subtidal areas) is needed to gain access for cutting equipment. To minimize turbidity and releases to the water column and surrounding sediments, hydraulic jetting devices shall not be used to move sediment away from piling.

19. As a condition of their permit, the permittee will be required to provide a post-construction drawing/map to the Corps of Engineers for the Administrative Record, which shows the location and number of piling left in place (above and below mudline) with the GPS location(s) in NAD 83. The permittee will also be required to provide this information to the property owner(s).



### **Additional Pile Cutting BMPs for Locations with Contaminated Sediments:**

- Complete removal of piling from the environment is preferred. When necessary, project-specific requirements (including equipment selection) for cutting shall be set by the project engineer, and coordinated with EPA and any other appropriate resource agencies, considering the mudline elevation, slope and stability of the site and the condition of the piling.
- If cutting is required, the appropriate depth below mudline for cutting should be made on a project-specific basis, with the goal of minimizing both the resuspension of contaminated sediments and release of wood treatment chemicals.
- For projects with derelict treated pile stubs which can't be removed, consideration should be given to either leaving these in place or, if possible, cutting them below the mudline. Cutting the pile at the mudline may release PAHs into the water column. If a sand cover is placed over the cut pile this may help contain the PAHs, however the new sediment may move over time and the pile may be exposed again. WDNR is currently testing other methods to fully extract piling stubs.
- The decision to leave piling in place that were originally slated for removal must be coordinated with EPA and any other appropriate resource agencies. For example, if the work is being performed as part of a State or Federal cleanup, the decision to leave piling in place, as well as documentation, must be coordinated with the agency with cleanup oversight.
- Any piling left in place (including those below mudline) must be mapped with GPS coordinates (in NAD 83) and characterized by the project engineer. This information must be provided to the Federal or State agency with cleanup oversight, or in the case of a Corps permit, the permittee will be required to provide a post-construction map to the Corps of Engineers for the Administrative Record, which shows the location and number of piling left in place (above and below mudline) with the GPS location(s) in NAD 83. This information will also be provided to the property owner(s).

### **PILING REMOVAL - Debris Control BMPs**

The following BMPs apply to all piling removal activities regardless of the extraction/cutting technique:

20. All work should be confined to within a floating containment boom. The need for, type and size of the boom should be determined on a project-specific basis considering project size, habitat, water flow conditions, sediment quality, etc. A description of boom placement and management must be included in the permit application. A small boat should be available at all times during active construction to manage the boom and captured debris. If used, anchors must be removed once the project is complete.

21. For projects removing treated wood piling or a pier with wood components (like decking), a floating boom with absorbent pads must be installed to capture floating surface debris and any creosote sheen.

- a) The boom shall be located at a sufficient distance from all sides of the structure or piling that are being removed to ensure that contaminated materials are captured.
- b) Extracted piles shall be transferred to the containment basin without leaving the boomed area to prevent loss of treated wood chemicals (e.g., creosote) and debris to the water column and sediments.
- c) The boom shall stay in its original location until any sheen present from removed piling has been absorbed by the boom or removed utilizing absorbent material.

22. Any shavings, sawdust, woody debris (splintered wood, fragments, loose piling) on the water or sediment surface must be retrieved and placed in the containment area. Likewise any pile-associated sediment and adhered organisms must be collected daily, contained on site, and ultimately disposed at an approved upland disposal site along with the extracted piling and decking.

23. When asphalt or other decking is removed, the contractor shall prevent asphalt grit or other debris on the pier from entering the water. Prior to demolition, the contractor shall remove as much of the surface asphalt grit and debris as possible. Floating platforms, suspended tarps, or other means should be deployed under and around the structure to capture grit and debris.

#### **PILING REMOVAL - Piling Storage, Handling and Disposal BMPs**

The following BMPs apply to all piling and associated piling-derived debris.

24. Upon removal from the substrate, the piling and associated sediments shall be moved expeditiously from the water into a containment area on the barge deck, adjacent pier, or upland area.

25. The containment area shall be constructed in such a fashion as to restrict any release of contaminants or debris to the aquatic environment. Containment areas on barges, piers and upland areas shall have continuous sidewalls and controls as necessary (e.g., straw bales, oil absorbent boom, ecology blocks, durable plastic sheeting or lining, covers, etc.) to contain all sediment, wood-treating compounds, organisms and debris, and to prevent re-entry of these materials into the aquatic environment.

26. Any floating debris, splintered wood, or sediment removed during pile pulling must be placed in a containment area.

27. Creosote-treated wood piling/sections shall be disposed of in a manner that precludes their further use. Piling will be cut into manageable lengths (4-foot or less) for transport and disposal at an approved upland location that meets the liner and leachate standards of the

Minimum Functional Standards, Chapter 173-304 WAC. In all cases, the permittee must be prepared to provide documentation of disposal.

28. Any sediments, construction debris/residue and plastic sheeting from the containment basin shall be removed and disposed in accordance with applicable federal and state regulations. For disposal, this will require shipment to an approved Subtitle D Landfill.

**Additional Pile Storage, Handling and Disposal BMPs for Locations with Contaminated Sediments:**

- Pre-project planning shall include measures to minimize water contact with piling and associated contaminated sediments. For example, the containment area can be designed to be covered during precipitation and when not in use, and/or piling and associated sediment can be quickly moved to a final disposal location and not retained at the project site.
- Water collected in a containment area may require special management or treatment depending on project specifics. In some cases, water may be stored in Baker tanks and treated off site. In others, a treatment system may be constructed on site. Discharge water must meet the requirements of the Clean Water Act, including the requirements of a National Pollution Discharge and Elimination System permit (or substantive requirements) in order to discharge to surface water.

**PILING PLACEMENT - Piling Material BMPs**

29. Piling may be made of steel, concrete, plastic, treated or untreated wood. For large structural replacements, EPA encourages installation of piling made of concrete, steel, or plastic.

30. If treated wood is used, piling must be treated with wood preservatives in compliance with the Registration Documents issued by EPA under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), and following the Western Wood Preservers Institute (WWPI) guidelines and BMPs to minimize the preservative migrating from treated wood into aquatic environments (see [http://www.wwpinstitute.org/documents/BMP\\_Revise\\_4.3.12.pdf](http://www.wwpinstitute.org/documents/BMP_Revise_4.3.12.pdf)). Rub strips are required if treated wood is to be used for fender piling.

31. Note that WDFW Hydraulic Code rules prohibit use of wood treated with oil-type preservatives (creosote, pentachlorophenol) in both marine (WAC 220-660-400 6b) and freshwater environments (WAC 220-660-120 6f). Wood treated with waterborne-type preservatives (e.g., ACZA, ACQ) may be used if these are manufactured and installed according to WWPI guidelines and BMPs. WDNR does not allow use of creosote or

otherwise treated (ACZA and CCA) wood for new construction on state-owned aquatic land in both marine and freshwater environments.

## **PILING PLACEMENT – General BMPs**

32. Wood, concrete, steel or plastic piling may be installed using vibratory methods and/or an impact hammer. Vibratory methods are typically preferred as they reduce impacts to fish listed under the Endangered Species Act (ESA), though this method may be combined with impact hammer for proofing. At the design phase, it is recommended that the applicant contact the U.S. Fish and Wildlife Service and National Marine Fisheries Service to determine if there are ESA-listed species in the project area, and to request technical assistance on conservation measures that could be incorporated into the project to minimize impacts to listed species.

33. Hydraulic jetting devices shall not be used to place piling.

34. When a pile is being repaired using splicing or other methods, the permittee shall prevent the introduction of construction-related materials into the aquatic environment. For example, wet concrete must be prevented from entering waters of the state, and forms/sleeves made of impervious materials must remain in place until concrete is cured. Additionally, when a maintenance or repair method requires cleaning of piling, e.g. removal of encrusting organisms, any removed material must be captured and disposed upland.

35. When steel or plastic piling are being reused in the aquatic environment, any sediment adhered to piling or remaining inside of hollow piling must first be removed and disposed of upland at an appropriate location. Creosote-treated piling may not be reused.

36. When proposing to reuse piling, the applicant must evaluate whether there is the potential to transport invasive species from the source area, and must ensure their complete removal such that there is no opportunity for transport/transfer of invasive species. For more information on areas of concern for the spread of invasive species and procedures for minimizing the spread of invasive species through de-contamination see:

<http://www.ecy.wa.gov/programs/eap/InvasiveSpecies/AIS-PublicVersion.html>.