ORIGINAL

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

In the Matter of Remedial Action by:	AGREED ORDER for
The Port of Anacortes	**Remedial Investigation/Feasibility Study and Draft Cleanup Action Plan - Anacortes Port Log Yard**
	No. DE **10630**

TO: Port of Anacortes
100 CommercialAvenue
Anacortes, WA 98221

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I. INTRODUCTION

The mutual objective of the State of Washington, Department of Ecology (Ecology) and the Port of Anacortes (the Port) under this Agreed Order (Order) is to provide for remedial action at a facility where there has been a release or threatened release of hazardous substances. This Order requires the Port to conduct a Remedial Investigation/Feasibility Study (RI/FS) per WAC 173-340-350 and WAC 173-204-550, and develop a draft final Cleanup Action Plan (DCAP) per WAC 173-340-350 through 173-340-380 and WAC 173-204-550 through 173-204-570, addressing both in-water (i.e., adjacent marine sediment) and potential upland contamination for the Site. Ecology believes the actions required by this Order are in the public interest.

II. JURISDICTION

This Agreed Order is issued pursuant to the Model Toxics Control Act (MTCA), RCW 70.105D.050(1).

III. PARTIES BOUND

This Agreed Order shall apply to and be binding upon the Parties to this Order, their successors and assigns. The undersigned representative of each party hereby certifies that he or she is fully authorized to enter into this Order and to execute and legally bind such party to comply with this Order. The Port agrees to undertake all actions required by the terms and conditions of this Order. No change in ownership or corporate status shall alter the Ports's responsibility under this Order. The Port shall provide a copy of this Order to all agents, contractors, and subcontractors retained to perform work required by this Order, and shall ensure that all work undertaken by such agents, contractors, and subcontractors complies with this Order.

IV. DEFINITIONS

Unless otherwise specified herein, the definitions set forth in Chapter 70.105D RCW, Chapter 173-340 WAC, and Chapter 173-204 WAC shall control the meanings of the terms in this Order.

A. Site: The Site is referred to as the Anacortes Port Log Yard and is generally located at 718 4th Street Anacortes, WA. The Site is defined by the extent of contamination caused by the release of hazardous substances at the Site. Based upon factors currently known to Ecology, the Site is more particularly described in the Site Diagram, attached as Exhibit A to this Order. The Site constitutes a facility under RCW 70.105D.020(8).

B. Parties: Refers to the State of Washington, Department of Ecology and the Port of Anacortes.

C. Potentially Liable Person (PLP): Refers to the Port of Anacortes

D. Agreed Order or Order: Refers to this Order and each of the exhibits to this Order. All exhibits are integral and enforceable parts of this Order. The terms "Agreed Order" or "Order" shall include all exhibits to this Order.

E. In-Water Area: Refers to the intertidal (areas exposed to air at low tide) and subtidal (areas always covered by water) portions of the Site associated with adjacent marine waters, as generally depicted in Exhibit A, Figure 2.

F. Upland Area: Refers to areas of the Site that fall outside the In-Water Area. The Remedial Investigation will determine if the Site contains an Upland Area component.

V. FINDINGS OF FACT

Ecology makes the following findings of fact, without any express or implied admissions of such facts by the Port:

A. The Site is generally located Northwest of 718 4th Street, Anacortes, Washington 98221, at the northern terminus of T Avenue and bound by the Guemes Channel to the North. The Site is listed on the Department of Ecology's Confirmed and Suspected Contaminated Sites List as Anacortes Port Log Yard. The Facility Site ID No. is 21898438 and the Cleanup Site ID is 3604.

B. The Site was historically used for log handling from the mid-1960's to about 2004. Operations at the Site included log rafting and transfer of logs from the water (hauling out) to upland sorting and handling areas on Pier 2 (*see* Exhibit C, Figure 1). The historical use of the

Site has resulted in deposits of wood debris in the marine sediments located at the Site. Surficial marine sediments at the Site have been shown to contain up to 75 percent wood debris by volume. The wood debris, which is decomposing, is contained in a matrix of silt and fine sand (*see* Exhibit C).

C. The Port purchased the Site in 1965 for use as a log handling and bulk product storage and loading facility. The Site was used as a log handling facility from 1965 to 2004. During this period, the Port leased portions of the Site to a series of log handling businesses. From 1978 to 1979 the Port leased the area bound by R Avenue to the West, T Avenue to the East, 4th Street to the South and the Guemes Channel to the North, to Forest Sales, Inc., for use as a facility for loading and unloading of logs, storage of logs, and handling logs to vessels.

D. The Port performed a due diligence investigation in 2004 after the Port's closure of the Pier 2 log handling facility, to assess potential impacts that may have resulted from historical log handling activities. Eight (8) test pits in the marine sediments confirmed the presence of wood debris. The estimated wood content observed in four (4) test pits exceeded the recommended screening level for sediments of 50 percent wood waste by weight[1]. In addition, two (2) surface sediment samples were collected from the Site. The percentage total volatile solids in one of the samples and the percentage of total organic carbon measured in both of the sediment samples exceeded the recommended screening level for wood waste in sediments. Detection limits for the following contaminants: benzene derivatives (1,2,4-trichlorobenzene, 2,4-dimethylphenol, hexachlorobenzene), hexachlorobutadiene and N-nitrosodiphenylamine exceeded their respective Sediment Management Standards (SMS) Sediment Cleanup Objective (SCO) criteria for benthic invertebrate community health (benthic). Attached as Exhibit C is the 2004 is the Due Diligence Investigation Results.

[1] Kendall, D. and Michelsen, T., 1997. Management of wood waste under Dredged Material Management Programs (DMMP) and the Sediment Management Stardards (SMS) cleanup program DMMP clarification paper SMS technical information memorandum. Ecology Publication No. 07-09-096.

E. The Port conducted a sediment characterization study in 2008 to further evaluate the potential for sediment contamination. Two (2) surface sediment samples were submitted for chemical and biological testing. One (1) sample failed to meet the promulgated benthic SCO and Cleanup Screening Level (CSL) criteria for the 10-day amphipod acute toxicity test. Both samples failed to meet the benthic SCO criteria for the Microtox porewater test. Zinc was detected at concentrations exceeding the benthic SCO but less than the benthic CSL in both samples. Attached as Exhibit D is the 2008 Sediment Characterization Results.

F. In 2009 the Port collected five (5) surface sediment samples to confirm the presence or absence of contaminants. One (1) sample failed to meet benthic SCO criteria for the larval development test and all sediment samples failed to meet benthic SCO criteria for the Microtox porewater test. One (1) sample failed to meet CSL criteria for the amphipod acute toxicity test. One (1) sample collected in 2009 was analyzed for dioxins/furans, which exceeded the probable human health risk based sediment cleanup levels. Attached as Exhibit E is the 2008-2009 Sediment Characterization Results.

G. In 2010 additional supplemental sediment characterization was conducted for chemical analysis and benthic abundance testing. Samples from one location exceeded the benthic invertebrate abundance CSL criteria. Attached as Exhibit F is the 2010 Benthic Evaluation results.

H. The following is a list of the environmental characterization investigations that have been conducted at the Anacortes Port Log Yard area:

- *Port of Anacortes Log Haul Out Site – Benthic Evaluation.* Prepared by NewFields, December 2010.
- *Pier 2 Log Haul Out Facility Due Diligence Report.* Prepared by Floyd | Snider, September 2004.
- *Sediment Characterization, Log Haul Out Site Report.* Prepared by GeoEngineers, December 5, 2008.

- *Sediment Characterization 2008-2009 Report, Log Haul Out site Anacortes, Washington.* Prepared by GeoEngineers, January 4, 2010.
- *Sampling and Analysis Plan, Former Port of Anacortes Pier 2, Log Haul Out Sediment Study.* Prepared by GeoEngineers, August 14, 2009.
- *Port of Anacortes, Log Haul Out Site – Benthic Evaluation.* Prepared by Newfields, December 2010.
- *Supplemental Sediment Characterization Report, Pier 2 Log Haul Out Facility Anacortes, Washington.* Prepared by GeoEngineers, February 25, 2011.
- Washington State Department of Ecology, *Sediment Management Standards*, Sediment Quality Criteria: http://www.ecy.wa.gov/

VI. ECOLOGY DETERMINATIONS

Ecology makes the following determinations, without any express or implied admissions of such determinations (and underlying facts) by the Port.

A. The Port is an "owner or operator" as defined in RCW 70.105D.020(22) of a "facility" as defined in RCW 70.105D.020(8).

B. Based upon all factors known to Ecology, a "release" or "threatened release" of "hazardous substance(s)" as defined in RCW 70.105D.020(32) and (13), respectively, has occurred at the Site.

C. Based upon credible evidence, Ecology issued a PLP status letter to the Port dated October 27, 2011 pursuant to RCW 70.105D.040, .020(26), and WAC 173-340-500. By letter dated November 15, 2011, the Port voluntarily waived its rights to notice and comment and accepted Ecology's determination that the Port is a PLP under RCW 70.105D.040. On March 21, 2014 Ecology issued a determination letter to the Port that it is a PLP under RCW 70.105D.040.

D. Pursuant to RCW 70.105D.030(1) and .050(1), Ecology may require PLPs to investigate or conduct other remedial actions with respect to any release or threatened release of hazardous substances, whenever it believes such action to be in the public interest. Based on the

foregoing facts, Ecology believes the remedial actions required by this Order are in the public interest.

E. Under WAC 173-340-430, an interim action is a 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, that corrects a problem that may become substantially worse or cost substantially more to address if the remedial action is delayed, or that is needed to provide for completion of a site hazard assessment, remedial investigation/feasibility study, or design of a cleanup action plan. Either party may propose interim actions under this Order . If the parties are in agreement concerning the interim action, the Parties will follow the process in Section VII.D. If the Parties are not in agreement, Ecology reserves its authority to require interim action(s) under a separate order or other enforcement action under RCW 70.105D, or to undertake the interim action itself.

VII. WORK TO BE PERFORMED

Based on the Findings of Fact and Ecology Determinations, it is hereby ordered that the Port take the following remedial actions at the Site and that these actions be conducted in accordance with Chapter 173-340 WAC and WAC 173-204 unless otherwise specifically provided for herein:

A. The Port shall conduct the remedial actions as fully described in Exhibit B, "Scope of Work and Schedule," to this Order. Each deliverable, once approved by Ecology, becomes an integral and enforceable part of this Order. Generally, the Port shall develop a draft Cleanup Action Plan (dCAP) for the Site and prior to developing the dCAP, perform a Remedial Investigation and Feasibility Study (RI/FS), including, but not limited to, the following tasks:

1. Develop a RI/FS work plan that includes a scope of work to delineate and quantify (i.e., identify levels of contamination) the potential contaminants in all media (i.e. soil, groundwater, surface water, and adjacent marine sediments), other deleterious substances in the aquatic environment, and any toxic effects to aquatic receptors. The work plan shall also address the proper handling of all

wastes generated from the Site during the RI/FS (e.g. soil cuttings, groundwater development and purge water, excess sediment sample material, free-product, ect.). The RI/FS work plan shall address both upland and in-water areas of the Site and summarize the past investigations.

Perform an RI/FS study. The Port shall provide Ecology with the results of the field investigation in the form of a Data Report Technical Memorandum so that a determination can be made with regard to whether additional investigation is required to define the full nature and extent of contamination.

2. Prepare an RI/FS report.
3. Develop a draft cleanup action plan (DCAP) for the Site.

B. The Port shall perform the remedial actions required by this Order according to the schedule set forth in Exhibit B.

C. The Port shall submit to Ecology a progress report the first week of each month regarding the progress of RI/FS work until such time as the Port has completed the work required in the RI/FS Work Plan. The monthly progress report shall include work completed to date, problems encountered and how they were resolved, and work scheduled for the subsequent month. Electronic submittals of progress reports are acceptable. A sampling and analysis plan, for Ecology's review and approval, and a health and safety plan, for Ecology's review and comment, are also required, as specified in Exhibit B, per WAC 173-340-350(7)(c)(iv).

D. If the Parties agree on an interim action under Section VI.E, the Port shall prepare and submit to Ecology an Interim Action Work Plan, including a scope of work and schedule, by the date determined by Ecology. Ecology will provide public notice and opportunity to comment on the Interim Action Work Plan in accordance with WAC 173-340-600(16). The Port shall not conduct the interim action until Ecology approves the Interim Action Work Plan. Upon approval by Ecology, the Interim Action Work Plan becomes an integral and enforceable part of this

Order, and the Port is required to conduct the interim action in accordance with the approved Interim Action Work Plan.

E. If, at any time after the first exchange of comments on drafts, Ecology determines that insufficient progress is being made in the preparation of any of the deliverables required by this section, Ecology may complete and issue the final deliverable.

VIII. TERMS AND CONDITIONS

A. Remedial Action Costs

The Port shall pay to Ecology costs incurred by Ecology pursuant to this Order and consistent with WAC 173-340-550(2). These costs shall include work performed by Ecology or its contractors for, or on, the Site under Chapter 70.105D RCW, including remedial actions and Order preparation, negotiation, oversight, and administration. These costs shall include work performed both prior to and subsequent to the issuance of this Order. Ecology's costs shall include costs of direct activities and support costs of direct activities as defined in WAC 173-340-550(2). Ecology has not accumulated costs related to remedial action at this Site as of 12/31/2013. For all costs incurred subsequent to12/31/2013, the Port shall pay the required amount within thirty (30) days of receiving from Ecology an itemized statement of costs that includes a summary of costs incurred, an identification of involved staff, and the amount of time spent by involved staff members on the project. A general statement of work performed will be provided upon request. Itemized statements shall be prepared quarterly. Pursuant to WAC 173-340-550(4), failure to pay Ecology's costs within ninety (90) days of receipt of the itemized statement of costs will result in interest charges at the rate of twelve percent (12%) per annum, compounded monthly.

In addition to other available relief, pursuant to RCW 19.16.500, Ecology may utilize a collection agency and/or, pursuant to RCW 70.105D.055, file a lien against real property subject to the remedial actions to recover unreimbursed remedial action costs.

B. Implementation of Remedial Action

If Ecology determines that the Port has failed without good cause to implement the remedial action, in whole or in part, Ecology may, after notice to the Port, perform any or all portions of the remedial action that remain incomplete. If Ecology performs all or portions of the remedial action because of the Port's failure to comply with its obligations under this Order, the Port shall reimburse Ecology for the costs of doing such work in accordance with Section VIII.A (Remedial Action Costs), provided that the Port is not obligated under this section to reimburse Ecology for costs incurred for work inconsistent with or beyond the scope of this Order.

Except where necessary to abate an emergency situation, the Port shall not perform any remedial actions at the Site outside those remedial actions required by this Order, unless Ecology concurs, in writing, with such additional remedial actions.

C. Designated Project Coordinators

The project coordinator for Ecology is:

Susannah Edwards
Aquatic Lands Unit/HQ – Toxics Cleanup Program
P.O. Box 47600, Olympia, Washington 98504-7600
(360) 407-6798
Email: Sued461@ecy.wa.gov

The project coordinator for the Port is:

Chris Johnson
Port of Anacortes
First and Commercial Avenue
100 Commercial Avenue
Anacortes, Washington 98221

Each project coordinator shall be responsible for overseeing the implementation of this Order. Ecology's project coordinator will be Ecology's designated representative for the Site. To the maximum extent possible, communications between Ecology and the Port, and all documents, including reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Order shall be directed through the project

coordinators. The project coordinators may designate, in writing, working level staff contacts for all or portions of the implementation of the work to be performed required by this Order.

Any party may change its respective project coordinator. Written notification shall be given to the other party at least ten (10) calendar days prior to the change.

D. Performance

All geologic and hydrogeologic work performed pursuant to this Order shall be under the supervision and direction of a geologist or hydrogeologist licensed by the State of Washington or under the direct supervision of an engineer registered by the State of Washington, except as otherwise provided for by Chapters 18.220 and 18.43 RCW.

All engineering work performed pursuant to this Order shall be under the direct supervision of a professional engineer registered by the State of Washington, except as otherwise provided for by RCW 18.43.130.

All construction work performed pursuant to this Order shall be under the direct supervision of a professional engineer or a qualified technician under the direct supervision of a professional engineer. The professional engineer must be registered by the State of Washington, except as otherwise provided for by RCW 18.43.130.

Any documents submitted containing geologic, hydrologic, or engineering work shall be under the seal of an appropriately licensed professional as required by Chapters 18.220 and 18.43 RCW.

The Port shall notify Ecology in writing of the identity of any engineer(s) and geologist(s), contractor(s) and subcontractor(s), and others to be used in carrying out the terms of this Order, in advance of their involvement at the Site.

E. Access

Ecology or any Ecology authorized representative shall have access to enter and freely move about all property at the Site that the Port either owns, controls, or has access rights to at all reasonable times for the purposes of, *inter alia*: inspecting records, operation logs, and contracts related to the work being performed pursuant to this Order; reviewing the Port's

progress in carrying out the terms of this Order; conducting such tests or collecting such samples as Ecology may deem necessary; using a camera, sound recording, or other documentary type equipment to record work done pursuant to this Order; and verifying the data submitted to Ecology by the Port. The Port shall make all reasonable efforts to secure access rights for those properties within the Site not owned or controlled by the Port where remedial activities or investigations will be performed pursuant to this Order. Ecology or any Ecology authorized representative shall give reasonable notice before entering any Site property owned or controlled by the Port unless an emergency prevents such notice. All persons who access the Site pursuant to this section shall comply with any applicable health and safety plan(s). Ecology employees and their representatives shall not be required to sign any liability release or waiver as a condition of Site property access.

F. Sampling, Data Submittal, and Availability

With respect to the implementation of this Order, the Port shall make the results of all sampling, laboratory reports, and/or test results generated by it or on its behalf available to Ecology. Pursuant to WAC 173-340-840(5), all sampling data shall be submitted to Ecology in both printed and electronic formats in accordance with Section VII (Work to be Performed), Ecology's Toxics Cleanup Program Policy 840 (Data Submittal Requirements), and/or any subsequent procedures specified by Ecology for data submittal.

If requested by Ecology, the Port shall allow Ecology and/or its authorized representative to take split or duplicate samples of any samples collected by the Port pursuant to implementation of this Order. The Port shall notify Ecology seven (7) days in advance of any sample collection or work activity at the Site. Ecology shall, upon request, allow the Port and/or its authorized representative to take split or duplicate samples of any samples collected by Ecology pursuant to the implementation of this Order, provided that doing so does not interfere with Ecology's sampling. Without limitation on Ecology's rights under Section VIII.E (Access), Ecology shall notify the Port prior to any sample collection activity unless an emergency prevents such notice.

In accordance with WAC 173-340-830(2)(a), all hazardous substance analyses shall be conducted by a laboratory accredited under Chapter 173-50 WAC for the specific analyses to be conducted, unless otherwise approved by Ecology.

G. Public Participation

A Public Participation Plan is required for this Site. Ecology shall review any existing Public Participation Plan to determine its continued appropriateness and whether it requires amendment, or if no plan exists, Ecology shall develop a Public Participation Plan alone or in conjunction with the Port.

Ecology shall maintain the responsibility for public participation at the Site. However, the Port shall cooperate with Ecology, and shall:

1. If agreed to by Ecology, develop appropriate mailing lists and prepare drafts of public notices and fact sheets at important stages of the remedial action, such as the submission of work plans, remedial investigation/feasibility study reports, cleanup action plans, and engineering design reports. As appropriate, Ecology will edit, finalize, and distribute such fact sheets and prepare and distribute public notices of Ecology's presentations and meetings.

2. Notify Ecology's project coordinator prior to the preparation of all press releases and fact sheets, and before major meetings with the interested public and local governments. Likewise, Ecology shall notify the Port prior to the issuance of all press releases and fact sheets, and before major meetings with the interested public and local governments. For all press releases, fact sheets, meetings, and other outreach efforts by the Port that do not receive prior Ecology approval, the Port shall clearly indicate to its audience that the press release, fact sheet, meeting, or other outreach effort was not sponsored or endorsed by Ecology.

3. When requested by Ecology, participate in public presentations on the progress of the remedial action at the Site. Participation may be through attendance at public meetings to assist in answering questions or as a presenter.

Section VIII.A (Remedial Action Costs), the Parties shall utilize the dispute resolution procedure set forth below.

a. Upon receipt of Ecology's project coordinator's written decision or the itemized billing statement, the Port has fourteen (14) days within which to notify Ecology's project coordinator in writing of its objection to the decision or itemized statement.

b. The Parties' project coordinators shall then confer in an effort to resolve the dispute. If the project coordinators cannot resolve the dispute within fourteen (14) days, Ecology's project coordinator shall issue a written decision.

c. The Port may then request regional management review of the decision. This request shall be submitted in writing to the Headquarters Toxics Cleanup Section Manager within seven (7) days of receipt of Ecology's project coordinator's written decision.

d. The Section Manager shall conduct a review of the dispute and shall endeavor to issue a written decision regarding the dispute within thirty (30) days of the Port's request for review. The Section Manager's decision shall be Ecology's final decision on the disputed matter.

2. The Parties agree to only utilize the dispute resolution process in good faith and agree to expedite, to the extent possible, the dispute resolution process whenever it is used.

3. Implementation of these dispute resolution procedures shall not provide a basis for delay of any activities required in this Order, unless Ecology agrees in writing to a schedule extension.

J. Extension of Schedule

1. An extension of schedule shall be granted only when a request for an extension is submitted in a timely fashion, generally at least thirty (30) days prior to expiration of the deadline for which the extension is requested, and good cause exists for granting the extension. All extensions shall be requested in writing. The request shall specify:

a. The deadline that is sought to be extended;

b. The length of the extension sought;

c. The reason(s) for the extension; and

d. Any related deadline or schedule that would be affected if the extension were granted.

2. The burden shall be on the Port to demonstrate to the satisfaction of Ecology that the request for such extension has been submitted in a timely fashion and that good cause exists for granting the extension. Good cause may include, but may not be limited to:

a. Circumstances beyond the reasonable control and despite the due diligence of the Port including delays caused by unrelated third parties or Ecology, such as (but not limited to) delays by Ecology in reviewing, approving, or modifying documents submitted by the Port;

b. Acts of God, including fire, flood, blizzard, extreme temperatures, storm, or other unavoidable casualty; or

c. Endangerment as described in Section VIII.L (Endangerment).

However, neither increased costs of performance of the terms of this Order nor changed economic circumstances shall be considered circumstances beyond the reasonable control of the Port.

3. Ecology shall act upon any written request for extension in a timely fashion. Ecology shall give the Port written notification of any extensions granted pursuant to this Order. A requested extension shall not be effective until approved by Ecology. Unless the extension is a substantial change, it shall not be necessary to amend this Order pursuant to Section VIII.K (Amendment of Order) when a schedule extension is granted.

4. An extension shall only be granted for such period of time as Ecology determines is reasonable under the circumstances. Ecology may grant schedule extensions exceeding ninety (90) days only as a result of:

a. Delays in the issuance of a necessary permit which was applied for in a timely manner;

b. Other circumstances deemed exceptional or extraordinary by Ecology; or

c. Endangerment as described in Section VIII.L (Endangerment).

K. Amendment of Order

The project coordinators may verbally agree to minor changes to the work to be performed without formally amending this Order. Minor changes will be documented in writing by Ecology within seven (7) days of verbal agreement.

Except as provided in Section VIII.M (Reservation of Rights), substantial changes to the work to be performed shall require formal amendment of this Order. This Order may only be formally amended by the written consent of both Ecology and the Port. The Port shall submit a written request for amendment to Ecology for approval. Ecology shall indicate its approval or disapproval in writing and in a timely manner after the written request for amendment is received. If the amendment to this Order represents a substantial change, Ecology will provide public notice and opportunity to comment. Reasons for the disapproval of a proposed amendment to this Order shall be stated in writing. If Ecology does not agree to a proposed amendment, the disagreement may be addressed through the dispute resolution procedures described in Section VIII.I (Resolution of Disputes).

L. Endangerment

In the event Ecology determines that any activity being performed at the Site under this Order is creating or has the potential to create a danger to human health or the environment on or surrounding the Site, Ecology may direct the Port to cease such activities for such period of time as it deems necessary to abate the danger. The Port shall immediately comply with such direction.

In the event the Port determines that any activity being performed at the Site under this Order is creating or has the potential to create a danger to human health or the environment, the Port may cease such activities. The Port shall notify Ecology's project coordinator as soon as

possible, but no later than twenty-four (24) hours after making such determination or ceasing such activities. Upon Ecology's direction, the Port shall provide Ecology with documentation of the basis for the determination or cessation of such activities. If Ecology disagrees with the Port's cessation of activities, it may direct the Port to resume such activities.

If Ecology concurs with or orders a work stoppage pursuant to this section, the Port's obligations with respect to the ceased activities shall be suspended until Ecology determines the danger is abated, and the time for performance of such activities, as well as the time for any other work dependent upon such activities, shall be extended in accordance with Section VIII.J (Extension of Schedule) for such period of time as Ecology determines is reasonable under the circumstances.

Nothing in this Order shall limit the authority of Ecology, its employees, agents, or contractors to take or require appropriate action in the event of an emergency.

M. Reservation of Rights

This Order is not a settlement under Chapter 70.105D RCW. Ecology's signature on this Order in no way constitutes a covenant not to sue or a compromise of any of Ecology's rights or authority. Ecology will not, however, bring an action against the Port to recover remedial action costs paid to and received by Ecology under this Order. In addition, Ecology will not take additional enforcement actions against the Port regarding remedial actions required by this Order, provided the Port complies with this Order.

Ecology nevertheless reserves its rights under Chapter 70.105D RCW, including the right to require additional or different remedial actions at the Site should it deem such actions necessary to protect human health and the environment, and to issue orders requiring such remedial actions. Ecology also reserves all rights regarding the injury to, destruction of, or loss of natural resources resulting from the release or threatened release of hazardous substances at the Site.

By entering into this Order, the Port does not admit to any liability for the Site. Although the Port is committing to conducting the work required by this Order under the terms of this

Order, the Port expressly reserves all rights available under law, including but not limited to the right to seek cost recovery or contribution against third parties, and the right to assert any defenses to liability in the event of enforcement.

N. Transfer of Interest in Property

No voluntary conveyance or relinquishment of title, easement, leasehold, or other interest in any portion of the Site shall be consummated by the Port without provision for continued implementation of all requirements of this Order and implementation of any remedial actions found to be necessary as a result of this Order.

Prior to the Port's transfer of any interest in all or any portion of the Site, and during the effective period of this Order, the Port shall provide a copy of this Order to any prospective purchaser, lessee, transferee, assignee, or other successor in said interest; and, at least thirty (30) days prior to any transfer, the Port shall notify Ecology of said transfer. Upon transfer of any interest, the Port shall notify all transferees of the restrictions on the activities and uses of the property under this Order and incorporate any such use restrictions into the transfer documents.

O. Compliance with Applicable Laws

1. All actions carried out by the Port pursuant to this Order shall be done in accordance with all applicable federal, state, and local requirements, including requirements to obtain necessary permits, except as provided in RCW 70.105D.090. At this time, no federal, state, or local requirements have been identified as being applicable to the actions required by this Order.

2. Pursuant to RCW 70.105D.090(1), the Port is exempt from the procedural requirements of Chapters 70.94, 70.95, 70.105, 77.55, 90.48, and 90.58 RCW and of any laws requiring or authorizing local government permits or approvals. However, the Port shall comply with the substantive requirements of such permits or approvals. At this time, no state or local permits or approvals have been identified as being applicable but procedurally exempt under this section.

The Port has a continuing obligation to determine whether additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the remedial action under this Order. In the event either Ecology or the Port determines that additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the remedial action under this Order, it shall promptly notify the other party of its determination. Ecology shall determine whether Ecology or the Port shall be responsible to contact the appropriate state and/or local agencies. If Ecology so requires, the Port shall promptly consult with the appropriate state and/or local agencies and provide Ecology with written documentation from those agencies of the substantive requirements those agencies believe are applicable to the remedial action. Ecology shall make the final determination on the additional substantive requirements that must be met by the Port and on how the Port must meet those requirements. Ecology shall inform the Port in writing of these requirements. Once established by Ecology, the additional requirements shall be enforceable requirements of this Order. The Port shall not begin or continue the remedial action potentially subject to the additional requirements until Ecology makes its final determination.

3. Pursuant to RCW 70.105D.090(2), in the event Ecology determines that the exemption from complying with the procedural requirements of the laws referenced in RCW 70.105D.090(1) would result in the loss of approval from a federal agency that is necessary for the state to administer any federal law, the exemption shall not apply and the Port shall comply with both the procedural and substantive requirements of the laws referenced in RCW 70.105D.090(1), including any requirements to obtain permits.

P. Indemnification

To the extent allowed by law, the Port agrees to indemnify and save and hold the State of Washington, its employees, and agents harmless from any and all claims or causes of action (1) for death or injuries to persons, or (2) for loss or damage to property, to the extent arising from or on account of acts or omissions of the Port, its officers, employees, agents, or contractors in entering into and implementing this Order. However, the Port shall not indemnify the State of

Washington nor save nor hold its employees and agents harmless from any claims or causes of action to the extent arising out of the negligent acts or omissions of the State of Washington, or the employees or agents of the State, in entering into or implementing this Order.

IX. SATISFACTION OF ORDER

The provisions of this Order shall be deemed satisfied upon the Port's receipt of written notification from Ecology that the Port has completed the remedial activity required by this Order, as amended by any modifications, and that the Port has complied with all other provisions of this Agreed Order.

X. ENFORCEMENT

Pursuant to RCW 70.105D.050, this Order may be enforced as follows:

A. The Attorney General may bring an action to enforce this Order in a state or federal court.

B. The Attorney General may seek, by filing an action, if necessary, to recover amounts spent by Ecology for investigative and remedial actions and orders related to the Site.

C. A liable party who refuses, without sufficient cause, to comply with any term of this Order will be liable for:

1. Up to three (3) times the amount of any costs incurred by the State of Washington as a result of its refusal to comply.

2. Civil penalties of up to twenty-five thousand dollars ($25,000) per day for each day it refuses to comply.

D. This Order is not appealable to the Washington Pollution Control Hearings Board.

This Order may be reviewed only as provided under RCW 70.105D.060.

Effective date of this Order: November 3, 2014

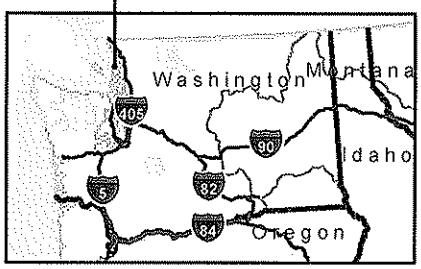
PORT OF ANACORTES

Chris Johnson
Deputy Executive Director
Port of Anacortes
(360) 299-1800

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Barry Rogowski
Section Manager
Toxics Cleanup Program
Headquarters Office
(360) 407-7226

EXHIBIT – A



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Feet

Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
3. It is unlawful to copy or reproduce all or any part thereof, whether for personal use or resale, without permission.

Data Sources: ESRI Data & Maps, Street Maps 2005

Transverse Mercator, Zone 10 N North, North American Datum 1983
North arrow oriented to grid north

Vicinity Map

Port of Anacortes - Log Haul Out Site
Anacortes, Washington

GeoEngineers

Figure 1

Map Revised: November 20, 2008 mm2

Office: SEA Path: P:\51\47016\GIS\F1-514701600_F1.mxd

Legend

LH0-REF (REF) ○ Sample Location (2010)

S-2 ◐ Sample Location (2008 & 2010)

S-4 ⊗ Sample Location (2009)

S-1 ● Sample Location (2008)

SMS = Sediment Management Standards

SQS = SMS Sediment Quality Standards

CSL = SMS Cleanup Screening Level

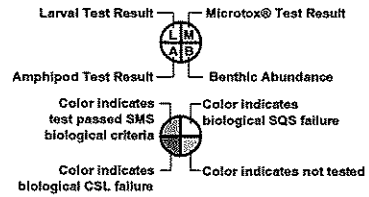
LAET = Puget Sound Lowest Apparent Effects Threshold

ER = Exceedance Ratio

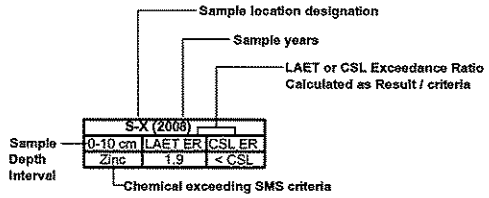
Chemical and Biological Sample Result Summary

Location has no exceedance	○	◐	⊗	●
Location has SQS failure	○	◐	⊗	●
Location has CSL failure	●	◐	⊗	●

Biological Toxicity Testing



Chemical Testing



Notes

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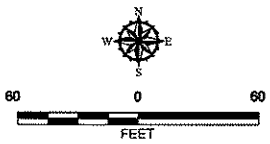
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Reference: Base map source Port of Anacortes, 2007.



Chemical and Biological Testing Results

Port of Anacortes - Log Haul Out Site
Anacortes, Washington

GeoEngineers

Figure 2

P:\15\14.7016\021\CAD\15k7016021 Fig 2 Rev 1-19-11.dwg\TAB:Fig 2 MODIFIED BY CVANSLYKE ON JAN 31, 2011 - 15:20

EXHIBIT – B

ANACORTES LOG YARD SITE

AGREED ORDER FOR RI/FS AND DRAFT CLEANUP ACTION PLAN

SCOPE OF WORK AND SCHEDULE

Pursuant to the Agreed Order to which this Scope of Work and Schedule is attached, the Port of Anacortes (Port) shall take the following remedial actions at the Anacortes Port Log Yard (Site) and these actions shall be conducted in accordance with Chapters 173-340 and 173-204 WAC unless otherwise specifically provided herein.

The anticipated schedule for major project milestones and deliverables is outlined below. The final schedule will be determined by Ecology based on project progress and conditions. Documents become final upon written approval by Ecology.

A. Remedial Actions to be Performed

1. Preparation of a Remedial Investigation/Feasibility Study Work Plan (Work Plan).

The Port shall develop an RI/FS Work Plan (including draft, draft final, and final versions) that includes a scope of work to delineate and quantify (i.e., identify the levels of contamination) the potential contaminants in all media (i.e., soil, groundwater, surface water, and adjacent marine sediments), other deleterious substances in the aquatic environment, and any toxic effects to aquatic receptors. The work plan shall also address the proper handling of all wastes generated from the Site during the RI/FS (e.g., soil cuttings, groundwater development and purge water, excess sediment sample material, free-product, etc.). Note that all draft documents for Ecology review may be submitted in redline strike-out format (preferably in Microsoft® WORD format) to facilitate the review. The RI/FS Work Plan shall be conducted meeting the requirements of WAC 173-340-350 for upland areas and WAC 173-240-550 for in-water areas, and should include the elements listed below. The RI/FS work plan shall also

evaluate whether an Interim Action is appropriate for the Site, following the requirements of WAC 173-340-430. An Interim Action may be identified and implemented at any point during the RI/FS process, subject to the procedures in Sec. VI(E) and Sec. VII(D) of the Agreed Order.

a. Investigation of Site Background and Setting

This section will include detailed descriptions of the following:

(i) The property and site operational/industrial history (including current and previous ownership).

(ii) Historical sources and releases of contamination to upland (if applicable) and in-water areas (include a review of historical photos, Sanborn Maps, and available information on Site fill).

(iii) Current site conditions (including descriptions of surface features, geology, soil and the vadose zone, surface water hydrology, hydrogeology, and meteorology).

(iv) Current and future land and water use, including both human and ecological uses and services.

(v) The terrestrial/aquatic ecological setting including a description of onsite and surrounding habitat types and conditions, ecological receptors and natural resources, and potentially threatened/endangered species.

b. Previous Investigations

A summary of environmental investigations performed to date, including media sampled and types of analyses performed, both upland and in-water, shall be included in the RI/FS Work Plan. In addition, data gaps that need to be filled to fully define the

nature and extent of contamination/toxicity associated with all media of concern at the Site should be identified.

c. Development of Preliminary Conceptual Site Model (CSM)

The CSM should describe general release mechanisms from the potential primary sources of hazardous substances to secondary and tertiary sources, the exposure media and routes, and potential receptors, both human and ecological, upland and offshore. The CSM should reflect historical and current conditions as well as potential future development in assessing exposure pathways. In accordance with WAC 173-340-720(2), rationale should be included to substantiate that groundwater at the Site cannot be used, or has an extremely low probability to be used, for potable purposes (i.e., as viable drinking water aquifer).

d. Establishment of Screening Levels

Identify appropriate screening levels consistent with the exposure pathways and receptors (both human and ecological) identified in the CSM per WAC 173-340-700 through 173-340-760 and WAC 173-204-560. Note that the screening levels must consider all applicable pathways including direct contact (including inhalation); media transfer pathways (e.g., leaching to groundwater, groundwater migration to surface water, and sediment, etc.); and exposure by terrestrial and/or aquatic ecological and human receptors. Sediment screening levels shall include both the chemical and biological standards of Chapter 173-204 WAC, and should take into account the presence of dioxins/furans, polychlorinated biphenyls (PCBs), and other potential bioaccumulative contaminants of concern. In addition, the presence of wood waste deposits should be addressed as a deleterious substance/solid waste. Further, bioaccumulative pathways to higher trophic levels and human receptors must be considered, along with potential toxicity due to deleterious substances without chemical cleanup standards under SMS.

e. Evaluation of Existing Data and Identification of Preliminary Hazardous Substances

The existing analytical data should be plotted as accurately as possible on a base map using geo-referencing techniques to depict identified sources and areas where suspected releases have occurred. Review the sample locations with respect to identified sources and areas where suspected releases (e.g., outfalls, spills, dumping, leaks, etc.) have occurred. All of the existing analytical data collected at the Site should be evaluated in terms of data usability (analytical methods used to evaluate the effectiveness of a cleanup action shall comply with the requirements in WAC 173-340-830) and be screened against the screening levels identified based on the conceptual site model (CSM) for the Site (*see* Sections A.1.c and A.1.d above). Both non-detect and detected data should be included in the screening. Identify sampling points containing exceedances on a map, and also discuss the adequateness of the reporting limits (i.e., Method Detection and Practical Quantification Limits) in terms of achieving the screening levels for the Site. Constituents exceeding the screening levels should be identified as preliminary indicator hazardous substances for the Site. Additionally, preliminary indicator hazardous substances will be identified based on historical site use where no existing and or valid data is available.

f. RI Study Approach

This section of the RI/FS Work Plan shall provide an overview of the methods that will be used in conducting the RI for the Site. Based on the background information gathered and the evaluation of existing data, discuss by medium (e.g., soil, sediment, surface water, etc.) the data required to complete an RI for the Site. The RI approach shall be consistent with WAC 173-340-350 and WAC 173-204-550. Identify data gaps and the overall approach for conducting the RI. The SAPs (*see* Section A.1.h below) will

provide the details on numbers and locations of samples for each medium and associated analytical or toxicity testing requirements. Data gaps will be formulated to facilitate integration of cleanup and natural resource damage activities. The RI field investigation will be designed to identify the full nature and extent of contaminants and toxic and bioaccumulative effects in upland and in-water areas. To the extent possible, the RI shall also provide data needed to identify and quantify natural resource injuries at the Site, for the purposes of developing restoration alternatives in conjunction with the FS. In addition to examining the nature and extent of contamination, the Port should indentify and quantify to the extent possible: aquatic habitats including, but not limited to, intertidal and subtidal habitats, forage fish spawning areas and other important resources in relation to and in proximity to contamination at the site. Work to identify and quantify natural resources and potential injuries to these resources is anticipated to be similar to the work typically completed for compliance with natural resource agency permit requirements, such as species and existing habitat data reviews, investigations and mapping. Additionally, any known or potential restoration opportunities may also be identified. The Port shall provide Ecology with the results of the field investigation in the form of a Data Report Technical Memorandum so that a determination can be made with regard to whether additional investigation is required to define the full nature and extent of contamination. The information provided to Ecology should describe the analytical results of the field activities including the identification of indicator hazardous substances, the affected media, preliminary cleanup levels, the extent of contamination (plotted on maps), and any data gaps that need to be filled to define the nature and extent of contamination and toxic/bioaccumulative effects. Note that the preliminary cleanup levels may be different than the screening levels used in the RI/FS Work Plan based on a better understanding of the CSM (e.g., contaminants in soil may not be impacting Site groundwater) for the Site. Additional field investigation (if necessary, based on initial

results) will be conducted to further define the nature and extent of contamination and toxic/bioaccumulative effects based on findings during the initial investigation.

g. FS Approach

This section of the RI/FS Work Plan shall provide an overview of the methods that will be used in conducting the FS for the Site. The FS approach shall be consistent with WAC 173-340-350 and WAC 173-204-550 and should consist of the following sections:

(i) **Establishment of Cleanup Levels, Points of Compliance, and Remediation Levels.**

The Port will work with Ecology to develop preliminary cleanup levels and points of compliance consistent with MTCA and SMS regulations. The Port will work with Ecology to identify the appropriate points of compliance and hazardous substances to complete this scope element. The Port may also consider establishing potential remediation levels as defined per WAC 173-340-355. Cleanup levels, site boundaries, and site units for aquatic areas should be established in accordance with WAC 173-204-560 and -570.

(ii) **Applicable or Relevant and Appropriate Requirements.**

The FS should include additional information or analyses to comply with the State Environmental Policy Act (SEPA) or other applicable laws to make a threshold determination per WAC 197-11-335(1) or to integrate the RI/FS with an environmental impact statement per WAC 197-11-262.

(iii) **Delineation of Media Requiring Remedial Action.**

Based on the results of the RI, determine areas and/or volumes of affected media to which remedial action objectives might be applied. To the extent possible, also identify injured natural resources for which primary restoration may be needed as part of the remedial action to return natural resources to baseline conditions.

(iv) **Development of Remedial Action Objectives.**

Remedial Action Objectives should provide general descriptions of what the Site cleanup is designed to accomplish, which is media-specific. Remedial action objectives are established on the basis of extent and magnitude of the contamination, the resources that are currently and potentially threatened, and the potential for human and ecological (both terrestrial and aquatic) exposures at the Site. Clearly define a basis and rationale for Remedial Action Objectives for each medium at the Site.

(v) **Screening and Evaluation of Cleanup Action Alternatives.**

A reasonable number and type of cleanup action alternatives should be evaluated, taking into account the characteristics and complexity of the Site, including current site conditions and physical constraints. Evaluation of cleanup action alternatives and the selection of preferred cleanup alternative must meet the requirements of WAC 173-340-360, WAC 173-204-550, WAC 173-204-560 and WAC 173-204-570. A detailed evaluation of the following criteria should be included in the RI/FS report for each cleanup alternative:

- Compliance with cleanup standards and applicable laws
- Protection of human health

- Protection of the environment
- Provision for a reasonable restoration time frame
- Use of permanent solutions to the maximum extent practicable
- The degree to which recycling, reuse, and waste minimization are employed
- Short-term effectiveness
- Long-term effectiveness
- Net environmental benefit
- Implementability
- Provision for compliance monitoring
- Cost-effectiveness
- Prospective community acceptance

The remedial alternative that is judged to best satisfy the evaluation criteria will be identified. Justification for the selection will be provided, and the recommended remedial alternative further developed, in the RI/FS report.

(vi) **Habitat Restoration.**

Opportunities to perform remedial actions in an integrated manner with restoration of natural resources should be presented as an integral part of the description and evaluation of cleanup alternatives, including consideration of the logistics, cost effectiveness, and environmental benefits associated with integrating cleanup and restoration actions. Such restoration activities may include both primary and compensatory restoration.

h. Development of a Site-Specific Health and Safety Plan (HSP) and Sampling and Analysis Plan (SAP)

A site-specific HSP describing worker safety during the project will be developed in accordance with WAC 173-340-810 and included in the RI/FS Work Plan. A site-specific SAP, which includes quality assurance/quality control requirements, will be included in the RI/FS Work Plan. The SAP should be based on the type, quality, and quantity of data necessary to support selection of a cleanup action. The SAP should provide the details on numbers and locations of samples for each media and the analytical requirements. The SAP shall conform to the requirements specified in WAC 173-340-820. Sediment sampling is required under the Sediment Management Standards (SMS; Chapter 173-204 WAC) to fully investigate the nature and extent of potential marine sediment contamination released at the Site. A separate sediment SAP (i.e., separate from the upland SAP) must be submitted to Ecology for review and approval before any sampling is conducted. In addition, any sampling of the marine sediments must be done in accordance with the SMS and the Sediment Sampling and Analysis Plan Appendix, Ecology Publication No. 03- 03-043. Site-specific sampling and analysis plans and health and safety plans shall be submitted for Ecology's review and comment, per WAC 173-340-350(7)(c)(iv).

i. Public Involvement

This section of the RI/FS Work Plan shall present the general process for public involvement (in accordance with WAC 173-340-600). See '**Section G. Public Participation**' of the Order.

j. Project Management

This section of the RI/FS work plan will discuss project staffing and coordination associated with the RI/FS activities for the Site. The organizational structure and responsibilities are designed to provide project control and quality assurance for the duration of the project.

k. Schedule & Reporting

This section should contain the schedule and reporting requirements for the RI/FS project as defined in this Order.

2. Data Report Technical Memorandum.

The PLPs shall provide Ecology with the results of the field investigation in the form of a Data Report Technical Memorandum so that a determination can be made with regard to whether additional investigation is required to define the full nature and extent of contamination. The information provided to Ecology should describe the analytical results of the field activities, the affected media, the extent of contamination (plotted on maps and screened against preliminary cleanup levels (if appropriate), and identification of data gaps that need to be filled to complete the RI/FS with respect to the nature and extent of contamination and toxic/bioaccumulative effects.

3. Prepare Draft RI/FS Report.

A draft, draft final, and final RI/FS report that meets the requirements of WAC 173-340-350, WAC 173-340-560, WAC 173-204-550 and WAC 173-204-560 shall be prepared. The RI/FS report shall contain the results of the RI and will provide information regarding the full extent and magnitude of soil, groundwater, surface water, and/or adjacent marine sediment contamination including toxic and bioaccumulative effects. The FS portion of the report will present and evaluate cleanup action alternatives

to address the identified contamination at the Site. Based on the evaluation of alternatives (WAC 173-340-350(8) and WAC 173-204-570), the FS will identify a preferred cleanup action alternative for the Site in compliance with WAC173-340-360 and WAC 173-204-560. To the extent possible, preferred habitat restoration actions will be integrated into the preferred cleanup action alternative.

4. Develop a Draft Cleanup Action Plan (CAP).

Upon Ecology approval of the draft final RI/FS report, the PLPs shall prepare a draft and draft final CAP in accordance with WAC 173-340-380 and WAC 173-204-570 that provides proposed cleanup action alternatives to address potential contamination at all impacted media in the upland and in-water portions of the Site, respectively, based on the results of the RI/FS. The draft CAP shall include a general description of the proposed cleanup actions along with the following sections:

- A general description of the proposed cleanup action and restoration alternatives and the rationale for selection, including results of any remedial technology pilot studies, if necessary.
- A summary of the other alternatives evaluated in the RI/FS.
- A summary of applicable local, state, and federal laws pertinent to the proposed cleanup and restoration actions.
- Cleanup standards and rationale regarding their selection for each hazardous substance and for each medium of concern at the Site based on the results of the RI/FS.
- Descriptions of any institutional/engineering controls, if proposed.
- A preliminary schedule for implementation of field construction work and subsequent maintenance and monitoring.

B. Schedule

The Port shall perform the actions required by this Order according to the schedule below. The Port shall address Ecology comments on all deliverables through written responses. Note, when Ecology provides comments in red-line strikeout format (i.e., comments made directly within the electronic version of the document), the Port may respond to those comments directly within the electronic document. Ecology will strive to review documents within 45 calendar days of receipt from the Port. If Ecology determines additional time for review is necessary, it will attempt to notify the Port within 10 calendar days of the close of the 45 day deadline.

1. Project Schedule

RI/FS Work Plan
The Draft RI/FS Work Plan shall be submitted to Ecology within 120 calendar days of the effective date of this order.
The Final RI/FS Work Plan shall be submitted to Ecology within 90 calendar days of the receipt of Ecology's comments. The Port shall confer with Ecology about its comments and the Port shall incorporate all of Ecology's final comments into the Final RI/FS Work Plan.
The total time for Ecology review of the RI/FS Work Plan is no more than 90 calendar days, unless Ecology determines that additional review time is necessary. Ecology will attempt to review and provide comments on the draft within 45 calendar days. Ecology will attempt to review and approve the final within 45 calendar days.
Field RI
Field RI activities shall be commenced within 60 calendar days of Ecology approval of the Final RI/FS work plan. Separate mobilizations and field schedules may be required to complete the Site investigation as approved by Ecology.
Data Report Technical Memorandum The field RI results shall be provided to Ecology 60 calendar days after the validation of all RI/FS analytical data.
Additional field RI activities (if needed) Additional field RI activities may be required to adequately delineate the nature and extent of contamination at the Site, and/or to conduct pilot testing of a remedial alternative. The scope, schedule, and submittal requirements for additional field RI activities shall be developed by the Port, and shall be submitted to Ecology for review and concurrence within 60 calendar days of Ecology's determination that the Data Report Technical Memorandum warrants additional RI activities.
RI/FS Report (Depending on the site, Ecology and the Port may choose to combine the RI and FS reports. Ecology encourages the Port to begin work on the feasibility study during the remedial investigation.)
RI/FS Report
The Draft RI/FS Report shall be submitted within 180 calendar days of Ecology approval of the Final RI/FS Work Plan. If

Ecology review of the Data Report Technical Memorandum finds that significant data gaps have not been filled, at Ecology's discretion, the date of the Draft RI/FS Report submittal may be extended.
The Final RI Report shall be submitted to Ecology within 45 calendar days from the date of issuance of Ecology comments to the Draft RI/FS Report. The final RI/FS report will undergo a 30-day public comment period. Ecology will complete a responsiveness summary to public comment on the final RI/FS Report before approving the document.
The total time for Ecology review of the RI Report is no more than 90 days, unless Ecology determines that additional review time is necessary. Ecology will attempt to review and provide comments on the draft within calendar 45 days. Ecology will attempt to review and approve the final within 45 calendar days.
Draft Cleanup Action Plan
The preliminary Draft Cleanup Action Plan shall be submitted within 120 calendar days after the RI/FS report is finalized.
The Final Draft Cleanup Action Plan shall be submitted within 60 calendar days from the date of issuance of Ecology comments to the preliminary Draft Cleanup Action Plan. The Final Draft Cleanup Action Plan will then undergo a 30-day public comment review period.
The total time for Ecology review of the Draft CAP is no more than 90 days, unless Ecology determines that additional review time is necessary. Ecology will attempt to review and provide comments on the draft within calendar 45 days. Ecology will attempt to to review and approve the final within 45 calendar days.

2. Environmental Data Submittals

- All sampling data (including any historical data described in 'Section V. Findings of Fact' in the Agreed Order that is used in the RI for decision purposes) shall be submitted to Ecology in both printed (e.g., summarized in report tables) and electronic formats in accordance with Ecology's Toxics Cleanup Program Policy 840 (Data Submittal Requirements) and/or any subsequent procedures specified by Ecology for data submittal.
- Historical data that is used in the RI/FS Work Plan and/or RI/FS Report, to the extent available and determined to be suitable for cleanup action decision-making, shall be supplied to Ecology in electronic format (i.e., EIM) as part of the first draft RI/FS Work Plan deliverable.
- New data collected as part of the initial or first phase of the RI/FS, shall be supplied to Ecology in electronic format (i.e., EIM) 60 calendar days after the new data has been validated. Data collected as part of additional RI/FS activities

shall also be supplied to Ecology in electronic format (i.e., EIM) 60 calendar days after the data has been validated.

Based on the work schedule presented above, the Port shall develop an overall cleanup schedule for the site starting from the RI/FS Work Plan to final cleanup construction and long-term compliance monitoring. The Port shall provide Ecology with an updated cleanup schedule on an as needed basis. The project schedule will be updated when events are identified that may result in significant project schedule changes, or at a minimum, on April 1st and October 1st. It is important that Ecology maintains updated cleanup schedules for project planning, and for periodically updating the public, tribes, and resources/permitting agencies.

EXHIBIT – C

FLOYD | SNIDER
strategy • science • engineering

83 South King Street, Suite 614
Seattle, Washington 98104
tel: 206.292.2078 fax: 206.682.7867

September 9, 2004

Bob Elsner
Director of Projects and Planning
Port of Anacortes
First and Commercial Avenue
P.O. Box 297
Anacortes, WA 98221

SUBJECT: PIER 2 LOG HAUL OUT FACILITY DUE DILIGENCE REPORT
PROJECT NUMBER: POA-PIER2LH

Dear Bob:

This report presents the results of the limited environmental due diligence investigation conducted by the Port of Anacortes (Port) for the intertidal sediment area of the former Pier 2 Log Haul Out located in Anacortes, Washington (Figure 1). Surficial sediment sampling was performed at the Pier 2 Log Haul Out to evaluate the potential impacts that may have resulted from historical log handling activities at the site. This work was completed as part of the Port's closure of the Pier 2 log handling facility.

The intertidal areas of the Log Haul Out were investigated by the Port in May 2004 and by Floyd|Snider in July 2004. The results of these field investigations show that chemicals of concern as defined by the Washington Sediment Management Standards (SMS; WAC 173-204) were not detected above the Sediment Quality Standard (SQS). Portions of the site do not however, meet the Washington State Department of Ecology (Ecology) recommended wood waste management guidelines for total organic carbon (TOC), total volatile solids (TVS), and estimated percent of sample comprised of wood debris and therefore, may merit additional investigation.

FIELD INVESTIGATION

In May 2004, the Port completed eight hand-dug test pit explorations along a longitudinal transect of the site to visually characterize the near surface intertidal sediments. The test pit locations are identified as #1 through #8 on Figure 1. At each test pit, sediments were excavated to approximately 2 feet below mudline and were visually characterized for sediment type and percent of wood debris present.

Floyd|Snider collected two surface sediment quality samples in the vicinity of test pit Locations #1 and #5 on July 13, 2004. The sediment quality sample locations are identified as LP-1 and LP-2 in Figure 1. Each of the samples was collected from the upper 10 centimeters of sediment. Sampling activities were conducted in general accordance with Puget Sound Estuary Program protocols. Each of the two sediment samples was collected using a decontaminated stainless steel spoon and bowl. On collection, the sediment samples were visually

Table 1
Port of Anacortes Test Pit Field Descriptions

Exploration Location	Description
#1	Approximately 40% wood waste to 11 inches. Gravel and sand mixture present below 11 inches.
#2	Approximately 70% wood waste to 11 inches. Gravel, sand, and cobble present below 11 inches.
#3	Approximately 75% wood waste to 16 inches. Sand and gravel present below 16 inches.
#4	Approximately 75% wood waste to 24 inches. Due to water level the lower extent of wood waste was not identified.
#5	Approximately 75% wood waste to 24 inches. Due to water level the lower extent of wood waste was not identified.
#6	Approximately 10% wood waste to 24 inches. Sparse wood waste uniform to depth, with some larger pieces.
#7	Upper 4 inches of substrate comprised of sediment without wood. Wood waste present below 4 inches extending to 24 inches.
#8	Upper 4 inches of substrate comprised of sediment without wood. Below 4 inches, sparse wood waste uniform with depth up to 24 inches, with larger pieces.

Table 2
Analytical Results for Sediment Samples

Analyte	LAET/(SQS)	LP-1 (7/13/04)	LP-2 (7/13/04)
Conventionals (percent)			
Total Solids	NA	49	38.8
Total Solids (preserved)	NA	59.4	38
Total Volatile Solids (TVS)	NA	10.1	**28.7**
Total Organic Carbon (TOC)	NA	15	10.3
Sulfide in mg/kg	NA	520	1900
Ammonia (total as mg-N/kg)	NA	47.9	22.5
Grain Size (percent)			
<10 Phi Clay	NA	2.5	5.2
8-9 Phi Clay	NA	0.1	1
9-10 Phi Clay	NA	0.7	0.9
Coarse Sand	NA	7.5	4.6
Coarse Silt	NA	5	9.1
Fine Sand	NA	6.2	9.6
Fine Silt	NA	1.4	3.2
Gravel	NA	53.9	28.8
Medium Sand	NA	6.5	6.2
Medium Silt	NA	2.4	13.2
Very Coarse Sand	NA	9	3.5
Very Fine Sand	NA	4.3	13.6
Very Fine Silt	NA	0.5	1.1
Metals (mg/kg)			
Arsenic	57	10 U	10 U
Cadmium	5.1	0.5 U	0.5 U
Chromium	260	12	29
Copper	390	17.1	31.7
Lead	450	5 U	8
Silver	6.1	0.8 U	0.8 U

Table 2
Analytical Results for Sediment Samples

Analyte	LAET/(SQS)	LP-1 (7/13/04)	LP-2 (7/13/04)
Zinc	410	35	69
Mercury	0.41	0.1 U	0.09 U
Semivolatiles (µg/kg)			
1,2,4-Trichlorobenzene	31	**32 U**	20 U
1,2-Dichlorobenzene	35	32 U	20 U
1,3-Dichlorobenzene	170	32 U	20 U
1,4-Dichlorobenzene	110	32 U	20 U
Hexachlorobenzene	22	**32 U**	20 U
Hexachlorobutadiene	11	**32 U**	**20 U**
N-Nitrosodiphenylamine	28	**32 U**	20 U
Dibenzofuran	540	32 U	20 U
Benzoic acid	650	320 U	200 U
Benzyl alcohol	57	32 U	20 U
HPAHs (µg/kg)			
Benzo(a)anthracene	1300	32 U	40
Benzo(a)pyrene	1600	32	38
Benzo(b)fluoranthene	NA	44	77
Benzo(g,h,i)perylene	670	32 U	20 U
Benzo(k)fluoranthene	NA	38	48
Benzofluoranthenes (total)	3200	82	125
Chrysene	1400	38	73
Dibenzo(a,h)anthracene	230	32 U	20 U
Fluoranthene	1700	110	320
Indeno(1,2,3-cd)pyrene	NA	32 U	20 U
Pyrene	2600	48	130
Total HPAHs	12000	310	930
LPAHs (µg/kg)			
2-Methylnaphthalene	670	32 U	20 U

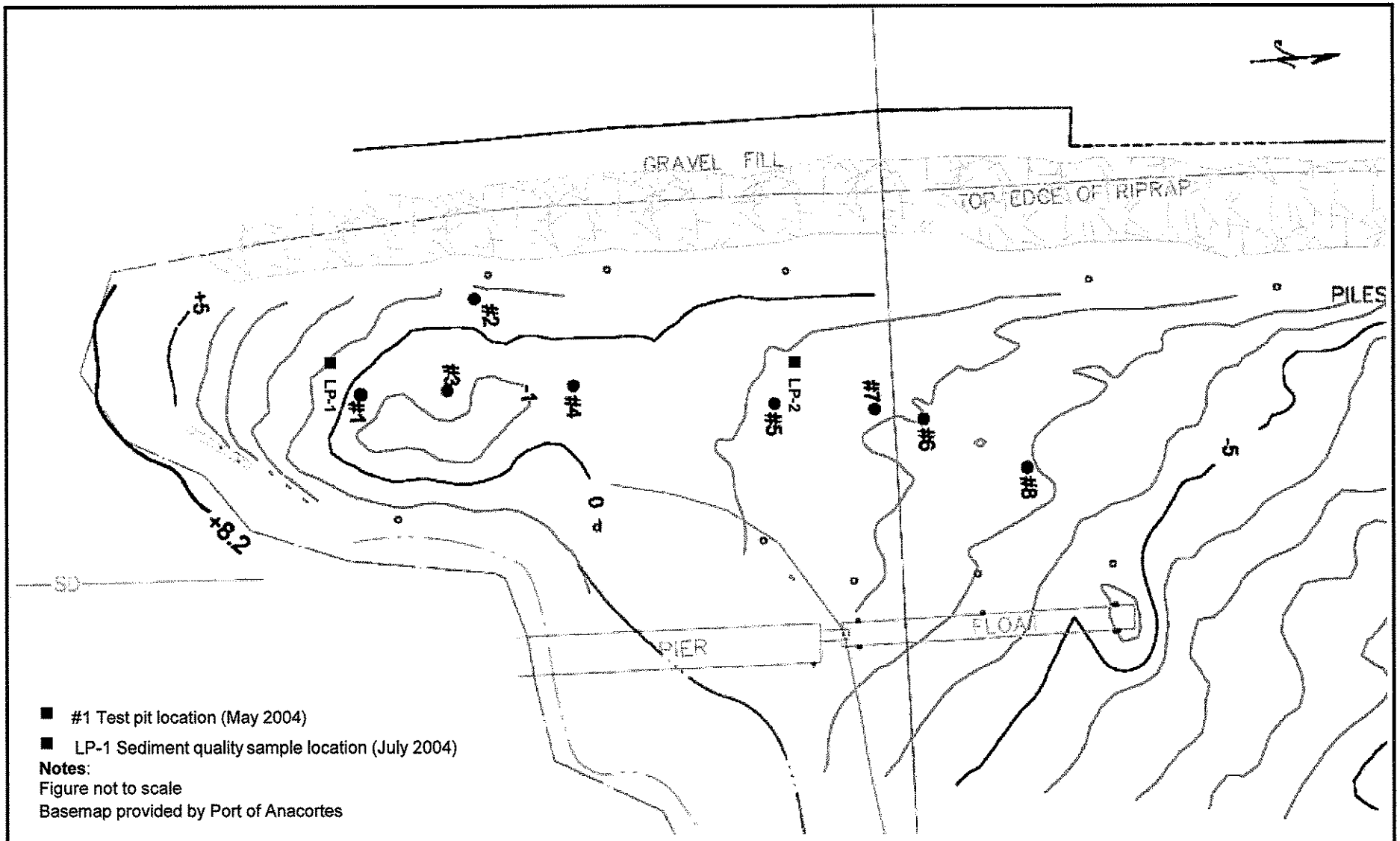
Table 2
Analytical Results for Sediment Samples

Analyte	LAET/(SQS)	LP-1 (7/13/04)	LP-2 (7/13/04)
Acenaphthene	500	32 U	28
Acenaphthylene	1300	32 U	20 U
Anthracene	960	32 U	55
Fluorene	540	32 U	27
Naphthalene	2100	32 U	20 U
Phenanthrene	1500	32 U	94
Total LPAHs	12000	32 U	204
Phthalates (µg/kg)			
bis(2-ethylhexyl)phthalate	1300	32 U	25
Butyl benzyl phthalate	63	32 U	20 U
Diethylphthalate	200	32 U	20 U
Dimethyl phthalate	71	32 U	20 U
Di-n-butyl phthalate	1400	32 U	20 U
Di-n-octyl phthalate	6200	32 U	20 U
Phenols (µg/kg)			
2-Methylphenol	63	32 U	20 U
2,4-Dimethylphenol	29	**32 U**	20 U
4-Methylphenol	670	32 U	70
Pentachlorophenol	360	160 U	99 U
Phenol	420	32 U	20 U
PCBs (µg/kg)			
PCB-1016	NA	16 U	16 U
PCB-1221	NA	16 U	16 U
PCB-1232	NA	16 U	16 U
PCB-1242	NA	16 U	16 U
PCB-1248	NA	16 U	16 U
PCB-1254	NA	16 U	16 U
PCB-1260	NA	16 U	16 U

Table 2
Analytical Results for Sediment Samples

Analyte	LAET/(SQS)	LP-1 (7/13/04)	LP-2 (7/13/04)
Total PCBs	130	16 U	16 U

Notes:
U = Compound not detected at the reported concentration.
NA = Not applicable
Reporting Limits greater than LAET/(SQS) criteria shown in bold.



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Port of Anacortes
Pier 2 Log Haul Out Facility
Due Diligence Report

Figure 1
Sample Location Plan

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09/09/04

EXHIBIT – D

REPORT
SEDIMENT CHARACTERIZATION
LOG HAUL OUT SITE
ANACORTES, WASHINGTON

DECEMBER 5, 2008

FOR
PORT OF ANACORTES

GeoEngineers

TABLE 1
BIOASSAY TEST RESULTS[1] RELATIVE TO SMS CRITERIA[2]
PORT OF ANACORTES LOG HAUL OUT SITE SEDIMENT INVESTIGATION
PORT OF ANACORTES, WASHINGTON

Table 1a. 10-Day Amphipod Acute Toxicity Bioassay Test - SMS Comparison for Eohaustorius estuarius.

Treatment	Mean Mortality (%)	Statistically More than Reference?	Mortality Comparision to Reference M_T-M_R	Fails SQS?	Fails CSL?
Control	2	--	--	--	--
Reference CR-1	15	--	--	--	--
S-1	100	Yes	85	Yes	Yes
S-2	8	No	7	No	No

SQS: Statistical Significance and MT-MR >25%

CSL: Statistical Significance and MT-MR >30%

Table 1b. Larval Development Bioassay - SMS Comparison for Dendraster excentricus.

Treatment	Mean Normal Survival (%)	Statistically Less than Reference and >20% Difference?	Normal Survival Comparison to Reference $(N_T/N_C)/(N_R/N_C)$	Fails SQS?	Fails CSL?
Control	89	--	--	--	--
Reference CR-1	87.3	--	--	--	--
S-1	85	No	0.97	No	No
S-2	97.1	No	1.11	No	No

SQS: Statistical Significance and $N_{ST}<0.85*N_{CR}$

CSL: Statistical Significance and $N_{ST}<0.70*N_{CR}$

Table 1c. SMS Comparison for Microtox® Porewater Test.

	5-minute reading		15 minute reading		
Treatment	Mean % Output	Statistically Less than Reference and >20% Difference?	Mean % Output	Statistically Less than Reference and >20% Difference?	Fails SQS?
Control	90 ± 1	--	80 ± 3	--	--
Reference CR-1	102 ± 2	--	102 ± 2	--	--
S-1	0 ± 0	Yes	0 ± 0	Yes	Yes
S-2	35 ± 6	Yes	32 ± 4	Yes	Yes

SQS: > 20% difference and statistically significant difference ($p<0.05$) relative to the reference.

CSL: No failure criteria for Microtox under SMS rule.

Notes:

[1] Bioassay testing performed by Newfields laboratory of Port Gamble, Washington. Newfields subcontracted to Nautilus Environmental for the Microtox® porewater test.

[2] SMS = Sediment Management Standards Criteria; SQS = Sediment Quality Standards; CSL = Cleanup Screening Level.

-- = Not available or not applicable.

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TABLE 2
SUMMARY OF BIOASSAY TEST RESULTS[1] RELATIVE TO SMS CRITERIA[2]
PORT OF ANACORTES LOG HAUL OUT SITE SEDIMENT INVESTIGATION
PORT OF ANACORTES, WASHINGTON

Sample	Amphipod Acute Toxicity Test	Larval Toxicity Test	Microtox® Porewater Test	Bioassay Testing Result
S-1	CSL Failure	Pass	SQS Failure[1]	CSL Failure [2]
S-2	Pass	Pass	SQS Failure[1]	SQS Failure

Notes:

[1]There is no promulgated SMS CSL criteria for the Microtox® test.

[2]WAC 173-204-520(3)(d) states "The cleanup screening level and minimum cleanup level is exceeded when any two of the biological tests exceed the criteria of WAC 173-204-320(3).

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TABLE 3

SUMMARY OF CHEMICAL ANALYTICAL RESULTS[1] RELATIVE TO PUGET SOUND LAET CRITERIA[2]

PORT OF ANACORTES LOG HAUL OUT SITE SEDIMENT INVESTIGATION
PORT OF ANACORTES, WASHINGTON

Chemical	Sample Identification S-1		S-2		LAET
Conventionals					
Total Solids (%)	42.5		47.5		--
Total Volatile Solids (%)	--		--		--
Total Organic Carbon (%)	4.47		6.64		--
Ammonia (mg/kg)	53.4		14.4		--
Total Sulfides (mg/kg)	3210		1890		--
Metals (mg/kg dry weight)					
Arsenic	4.52		5.3		85
Cadmium	0.698		0.642		5.8
Chromium	31.2		31.9		--
Copper	28.5		29.7		310
Lead	9.29		9.32		300
Mercury	0.0330		0.037		0.41
Silver	0.15		0.1		0.56
Zinc	**784**	3	**711**	2.7	260
LPAHs (ug/kg dry weight)					
Acenaphthylene	13.00		69		560
Acenaphthene	8.8	J	7	J	500
Anthracene	73		47		960
Fluorene	18		19		540
Naphthalene	16		10		2100
Phenanthrene	160		140		1500
2-Methylnaphthalene	13		10	J	670
Total LPAH[3]	301.80		302		5200
HPAHs (ug/kg dry weight)					
Benzo(a)anthracene	140		320		1300
Benzo(a)pyrene	100		330		1600
Benzo(b)fluoranthene	180		310		--
Benzo(k)fluoranthene	61		88		--
Total Benzofluoranthenes[4]	241		398		3200
Benzo(g,h,i)perylene	54		150		670
Chrysene	280		430		1400
Dibenzo(a,h)anthracene	19.00		44		230
Fluoranthene	490.0		560		1700
Indeno(1,2,3-cd)pyrene	66		160		600
Pyrene	310.0		790		2600
Total HPAHs[5]	1941		3580		12000
Chlorinated Hydrocarbons (ug/kg dry weight)					
Hexachlorobenzene	1.5	U	1.3	U	70
Hexachlorobutadiene	3	U	2.7	U	120
1,2-Dichlorobenzene	3.5	U	3.1	U	35
1,4-Dichlorobenzene	3.5	U	3.1	U	110
1,2,4-Trichlorobenzene	3.1	U	2.8	U	31
Phthalates (ug/kg dry weight)					
Diethyl phthalate	10	J	1.4	U	48
Dimethyl phthalate	5.9	J	10	J	71
Di-n-butyl phthalate	22		26	U	1400
Di-n-octyl phthalate	2	U	1.8	U	420
Bis (2-ethylhexyl) phthalate	75	BJ	44	BJ	1900
Butyl benzyl phthalate	3.8	U	3.4	U	63
Phenols & Misc. (µg/kg dry weight)					
Pentachlorophenol	32	J	22	U	140
Phenol	12		2.2	U	420
2 Methylphenol	1.8	U	1.6	U	63
4 Methylphenol	130		26		670
2,4-Dimethylphenol	6.5	U	5.8	U	29
Miscellaneous Compounds (µg/kg dry weight)					
Benzoic acid	120	J	110	U	650
Benzyl alcohol	2.5	U	2.3	U	57
Dibenzofuran	9	J	7.3	J	540
N-Nitrosodiphenylamine	1.9	U	1.7	U	40
PCBs (µg/kg dry weight)					
Arochlor 1016	6.8	U	3.8	U	
Arochlor 1221	14	U	7.2	U	
Arochlor 1232	12	U	2.2	U	
Arochlor 1242	6.4	U	4.3	U	
Arochlor 1248	4.7	U	4.9	U	
Arochlor 1254	5.3	U	7.5	U	
Arochlor 1260	3.5	U	3.4	U	
Total PCBs	14	U	7.5	U	130

Notes:

[1] Chemical analysis performed by Columbia Analytical Services of Kelso, Washington.

[2] LAET = Puget Sound lowest apparent effects thresholds, dry weight.

[3] Total LPAHs = The sum of Acenaphthalene, Acenaphthene, Anthracene, Fluorene, Napthalene and Phenanthrene.

[4] Total benzofluoranthenes = The sum of the "b," "j" and "k" isomers.

[5] Total HPAHs = The sum of Benzo(a)anthracene, Benzo(a) pyrene, Total Benzofluoranthenes, Benzo(g,h,i)perylene, Chrysene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-c,d)pyrene and pyrene.

U = Laboratory data qualifier indicating analyte undetected at given reporting limit.

B = Indicates analyte detected in laboratory blank.

J = Indicates an estimated concentration that is less than the methord reporting limit but greater then the method detection limit.

Bold indicates that the detected concentration exceeds the LAET.

-- = Not available or not applicable.

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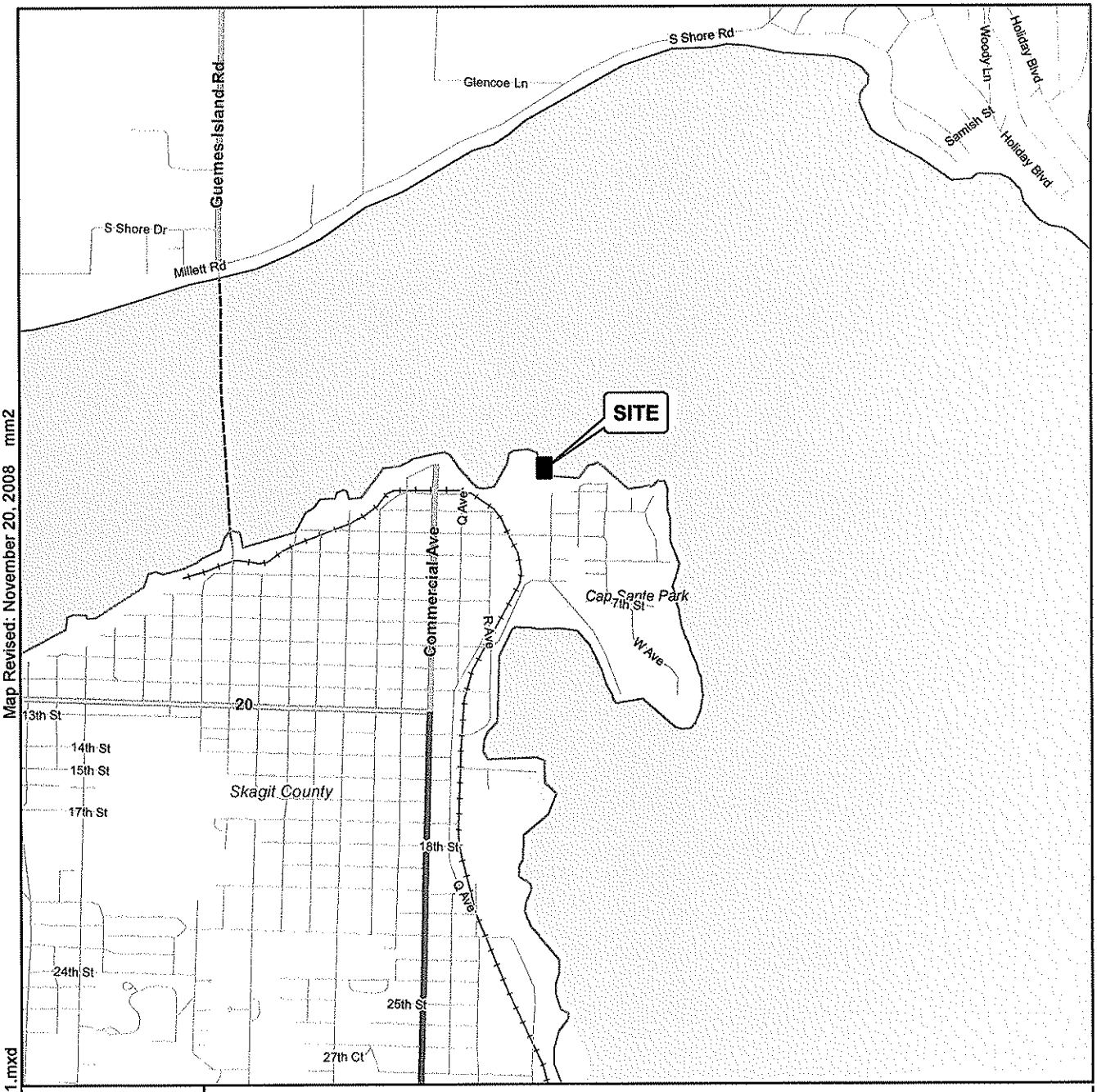

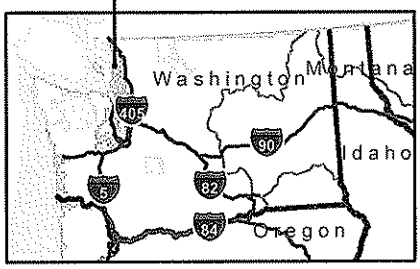

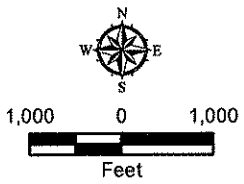

Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
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Data Sources: ESRI Data & Maps, Street Maps 2005

Transverse Mercator, Zone 10 N North, North American Datum 1983
North arrow oriented to grid north

Vicinity Map

Port of Anacortes - Log Haul Out Site
Anacortes, Washington

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Figure 1

Map Revised: November 20, 2008 mm2

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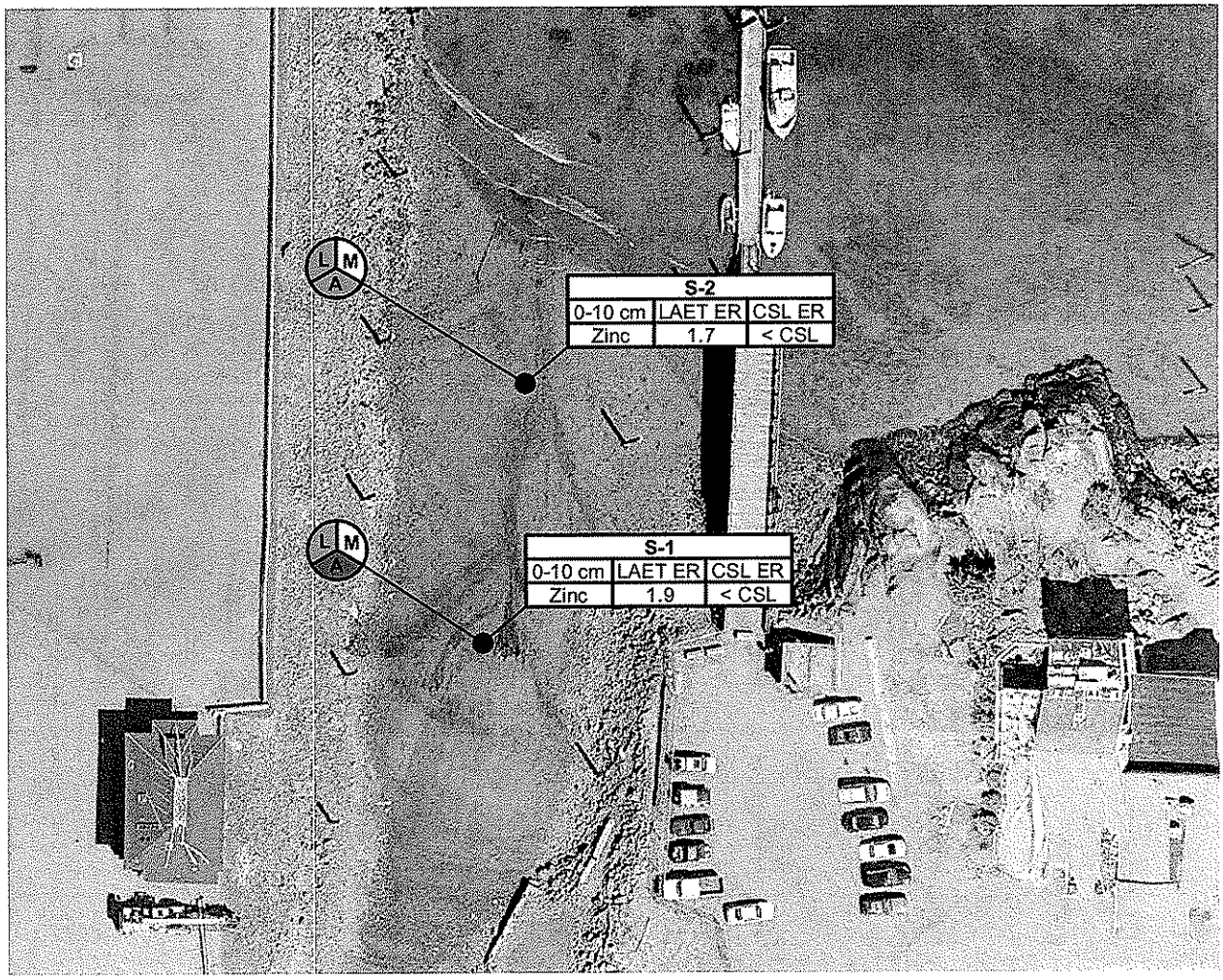
Office: SEA



Legend

S-1 ● Sample Location

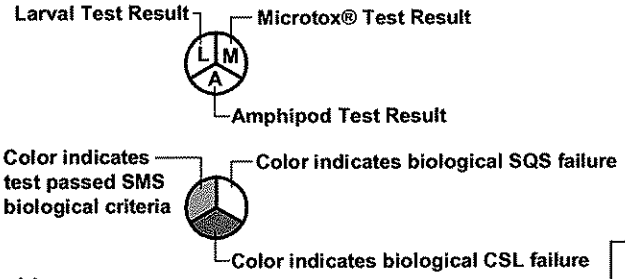
SMS = Sediment Management Standards

SQS = SMS Sediment Quality Standards

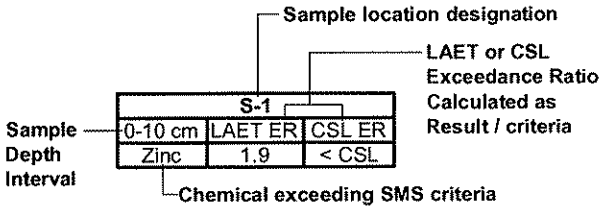
CSL = SMS Cleanup Screening Level

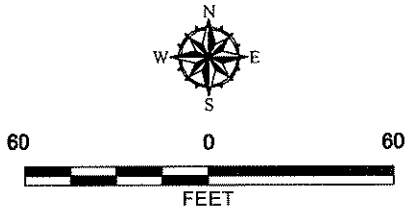
LAET = Puget Sound Lowest Apparent Effects Threshold

Biological Toxicity Testing



Chemical Testing





Notes

1. The locations of all features shown are approximate.
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Reference: Base map source Port of Anacortes, 2007.

Chemical and Biological Testing Results

Port of Anacortes - Log Haul Out Site
Anacortes, Washington

GeoEngineers

Figure 2

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EXHIBIT – E

Sediment Characterization 2008-2009 Report

Log Haul Out Site
Anacortes, Washington

for
Port of Anacortes

January 4, 2010

GeoEngineers

Plaza 600 Building
600 Stewart Street, Suite 1700
Seattle, Washington 98101
206.728.2674

TABLE 1

BIOASSAY TEST RESULTS[1] RELATIVE TO SMS CRITERIA[2] - 2008-2009

PORT OF ANACORTES LOG HAUL OUT SITE SEDIMENT INVESTIGATION 2008-2009

PORT OF ANACORTES, WASHINGTON

Table 1a. 10-Day Amphipod Acute Toxicity Bioassay Test - SMS Comparison for Eohaustorius estuarius.

Treatment	Mean Mortality (%)	Statistically More than Reference?	Mortality Comparison to Reference M_T-M_R	Fails SQS?	Fails CSL?
2008 Investigation					
Control	2	--	--	--	--
Reference CR-1	15	--	--	--	--
S-1	100	Yes	85	Yes	Yes
S-2	8	No	7	No	No
2009 Investigation					
Control	1	--	--	--	--
Reference CR-3	4	--	--	--	--
S-3	2	No	-2	No	No
S-4	4	No	0	No	No
S-5	15	No	11	No	No
S-6	4	No	0	No	No
S-7	2	No	-2	No	No

SQS: Statistical Significance and MT-MR >25%

CSL: Statistical Significance and MT-MR >30%

Table 1b. Larval Development Bioassay - SMS Comparison for Dendraster excentricus.

Treatment	Mean Normal Survival (%)	Statistically Less than Reference and >20% Difference?	Normal Survival Comparison to Reference $(N_T/N_C)/(N_R/N_C)$	Fails SQS?	Fails CSL?
2008 Investigation					
Control	89	--	--	--	--
Reference CR-1	87.3	--	--	--	--
S-1	85	No	0.97	No	No
S-2	97.1	No	1.11	No	No
2009 Investigation					
Control	98.7	--	--	--	--
Reference CR-3	85.2	--	--	--	--
S-3	79.1	No	0.93	No	No
S-4	78.7	No	0.92	No	No
S-5	79.1	No	0.93	No	No
S-6	65.3	No	0.77	Yes	No
S-7	87.6	No	1.03	No	No

SQS: Statistical Significance and $N_{CT}<0.85*N_{CR}$

CSL: Statistical Significance and $N_{CT}<0.70*N_{CR}$

Table 1c. SMS Comparison for Microtox® Porewater Test.

	5-minute reading		15-minute reading		
Treatment	Mean % Output	Statistically Less than Reference and >20% Difference?	Mean % Output	Statistically Less than Reference and >20% Difference?	Fails SQS?
2008 Investigation					
Control	90 ± 1	--	80 ± 3	--	--
Reference CR-1	102 ± 2	--	102 ± 2	--	--
S-1	0 ± 0	Yes	0 ± 0	Yes	Yes
S-2	35 ± 6	Yes	32 ± 4	Yes	Yes
2009 Investigation					
Control	101 ± 1	--	98 ± 2	--	--
Reference CR-3	102 ± 1	--	102 ± 1	--	--
S-3	74 ± 3	Yes	71 ± 2	Yes	Yes
S-4	37 ± 3	Yes	34 ± 3	Yes	Yes
S-5	24 ± 3	Yes	16 ± 2	Yes	Yes
Control	99 ± 4	--	98 ± 4	--	--
Reference CR-3	103 ± 2	--	100 ± 1	--	--
S-6	46 ± 2	Yes	45 ± 5	Yes	Yes
S-7	34 ± 4	Yes	20 ± 9	Yes	Yes

SQS: > 20% difference and statistically significant difference ($p<0.05$) relative to the reference.

CSL: No failure criteria for Microtox under SMS rule.

Notes:

[1] Bioassay testing performed by Newfields laboratory of Port Gamble, Washington. Newfields subcontracted to Nautilus Environmental for the Microtox® porewater test.

[2] SMS = Sediment Management Standards Criteria; SQS = Sediment Quality Standards; CSL = Cleanup Screening Level.

-- = Not available or not applicable.

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TABLE 2

SUMMARY OF BIOASSAY TEST RESULTS[1] RELATIVE TO SMS CRITERIA[2]- 2008-2009

PORT OF ANACORTES LOG HAUL OUT SITE SEDIMENT INVESTIGATION 2008-2009

PORT OF ANACORTES, WASHINGTON

Sample	Amphipod Acute Toxicity Test	Larval Toxicity Test	Microtox® Porewater Test	Bioassay Testing Result
2008 Investigation				
S-1	CSL Failure	Pass	SQS Failure[1]	CSL Failure[2]
S-2	Pass	Pass	SQS Failure[1]	SQS Failure
2009 Investigation				
S-3	Pass	Pass	SQS Failure[1]	SQS Failure
S-4	Pass	Pass	SQS Failure[1]	SQS Failure
S-5	Pass	Pass	SQS Failure[1]	SQS Failure
S-6	Pass	SQS Failure	SQS Failure[1]	CSL Failure[2]
S-7	Pass	Pass	SQS Failure[1]	SQS Failure

Notes:

[1]There is no promulgated SMS CSL criteria for the Microtox® test.

[2]WAC 173-204-520(3)(d) states "The cleanup screening level and minimum cleanup level is exceeded when any two of the biological tests exceed the criteria of WAC 173-204-320(3).

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TABLE 3

SUMMARY OF CHEMICAL ANALYTICAL RESULTS[1] RELATIVE TO SEDIMENT MANAGEMENT STANDARDS[2] - 2009

PORT OF ANACORTES LOG HAUL OUT SITE SEDIMENT INVESTIGATION 2008-2009

PORT OF ANACORTES, WASHINGTON

Sample ID: / Date Sampled:	CR-3 Ref 9/10/2009		SQS Exceedance Ratio	S-3 9/1/2009		SQS Exceedance Ratio	S-4 9/1/2009		SQS Exceedance Ratio	S-5 9/1/2009		SQS Exceedance Ratio	S-7 9/1/2009		SQS Exceedance Ratio	SMS Criteria	
																SQS	CSL
CONVENTIONALS																	
Ammonia (mg/kg)	15.9			11.8			24.2			61.3			67.3			--	--
Preserved Total Solids (Percent)	67.7			50			41.7			48.6			40.2			--	--
Sulfide (mg/kg)	181			2320			1720			2370			3340			--	--
Total Organic Carbon (Percent)	.581			2.35			2.36			2.33			2.96			--	--
Total Solids (Percent)	70.8			47.3			40.8			40.4			46			--	--
Total Volatile Solids (Percent)	--			15.15			16.01			17.35			14.29			--	--
Total Metals by SW6010B/SW7471A (mg/kg Dry Weight)																	
Arsenic	7	U	0.12	10	U	0.18	10	U	0.18	10	U	0.18	9	U	0.16	57	93
Cadmium	.3		0.06	0.6		0.12	.7		0.14	1		0.20	.9		0.18	5.1	6.7
Chromium	25.3		0.10	33		0.13	51		0.20	39		0.15	36.6		0.14	260	270
Copper	14.5		0.04	40.8		0.10	248		0.64	38.2		0.10	33.9		0.09	390	390
Lead	4		0.01	8		0.02	23		0.05	10		0.02	11		0.02	450	530
Mercury	0.03	U	0.07	.07		0.17	.06		0.15	.08		0.20	.07		0.17	0.41	0.59
Silver	0.4	U	0.07	0.6	U	0.10	0.7	U	0.11	0.7	U	0.11	0.6	U	0.10	6.1	6.1
Zinc	38		0.09	79		0.19	105		0.26	102		0.25	78		0.19	410	960
SVOCs by SW8270D/8270-SIM (mg/kg OC)																	
Naphthalene	1.16	U	0.01	4.7	U	0.05	4.72	U	0.05	4.66	U	0.05	5.92	U	0.06	99	170
Acenaphthylene	1.16	U	0.02	2.35	J	0.04	4.72	U	0.07	3.03	J	0.05	5.92	U	0.09	66	66
Acenaphthene	1.16	U	0.07	4.7	U	0.29	4.72	U	0.30	2.80	J	0.17	5.92	U	0.37	16	57
Fluorene	1.16	U	0.05	3.76	J	0.16	3.30	J	0.14	4.43	J	0.19	5.92	U	0.26	23	79
Phenanthrene	1.16	U	0.01	28.2		0.28	40.12		0.40	44.27		0.44	18.35		0.18	100	480
Anthracene	1.16	U	0.01	10.58		0.05	7.316		0.03	10.25		0.05	5.032	J	0.02	220	1,200
2-Methylnaphthalene	1.16	U	0.03	4.7	U	0.12	4.72	U	0.12	4.66	U	0.12	5.92	U	0.16	38	64
1-Methylnaphthalene	1.16	U	--	4.7	U		4.72	U		4.66	U		5.92	U		--	--
Total LPAH	1.16	U	0.00	117.97		0.32	139.24		0.38	148.19		0.40	105.97		0.29	370	780
Fluoranthene	1.16	U	0.01	108.1		0.68	106.2		0.66	**174.75**		1.09	76.96		0.48	160	1,200
Pyrene	1.16	U	0.00	47		0.05	30.68		0.03	48.93		0.05	25.75		0.03	1,000	1,400
Benzo(a)anthracene	1.16	U	0.01	19.27		0.18	12.27		0.11	19.57		0.18	14.21		0.13	110	270
Chrysene	1.16	U	0.01	35.25		0.32	23.6		0.21	34.95		0.32	20.72		0.19	110	460
Benzo(b)fluoranthene	1.16	U	--	28.2			21			32.62			14.8			--	--
Benzo(k)fluoranthene	1.16	U	--	23.5			21.48			32.62			14.8			--	--
Total Benzofluoranthenes	1.16		0.01	51.7		0.22	42.48		0.18	65.24		0.28	29.6		0.13	230	450
Benzo(a)pyrene	1.16	U	0.01	16.92		0.17	11.8		0.12	21.44		0.22	10.36		0.10	99	210
Indeno(1,2,3-cd)pyrene	1.16	U	0.03	8.70		0.26	6.37		0.19	10.49		0.31	4.14	J	0.12	34	88
Dibenzo(a,h)anthracene	1.16	U	0.10	3.76	J	0.31	4.72	U	0.39	4.66		0.39	5.92	U	0.49	12	33
Benzo(ghi)perylene	1.16	U	0.04	10.34		0.33	7.55		0.24	11.18		0.36	4.14	J	0.13	31	78
Total HPAH	1.16	U	0.00	301.04		0.31	245.68		0.26	391.21		0.41	191.81		0.20	960	5,300

Sample ID: / Date Sampled:	CR-3 Ref 9/10/2009		SQS Exceedance Ratio	S-3 9/1/2009		SQS Exceedance Ratio	S-4 9/1/2009		SQS Exceedance Ratio	S-5 9/1/2009		SQS Exceedance Ratio	S-7 9/1/2009		SQS Exceedance Ratio	SMS Criteria	
SVOCs cont.																	
1,2-Dichlorobenzene	0.34	U	0.15	1.41	U	0.61	1.46	U	0.64	1.4	U	0.61	1.78	U	0.77	2.3	2.3
1,3-Dichlorobenzene	1.16	U		4.7	U		4.72	U		4.66	U		5.92	U		--	--
1,4-Dichlorobenzene	0.34	U	0.11	1.41	U	0.45	1.46	U	0.47	1.40	U	0.45	1.78	U	0.57	3.1	9
1,2,4-Trichlorobenzene	0.34	U	0.42	**1.41**	U	1.74	**1.46**	U	1.81	**1.40**	U	1.73	**1.78**	U	2.19	0.81	1.8
Hexachlorobenzene	0.34	U	0.90	**1.41**	U	3.71	**1.46**	U	3.85	**1.40**	U	3.68	**1.78**	U	4.67	0.38	2.3
Dimethyl phthalate	1.16	U	0.02	15.75		0.30	4.72	U	0.09	4.66	U	0.09	5.92	U	0.11	53	53
Diethyl phthalate	1.16	U	0.02	4.7	U	0.08	4.72	U	0.08	4.66	U	0.08	5.92	U	0.10	61	110
Dibutyl phthalate	1.16	U	0.01	4.7	U	0.02	4.72	U	0.02	4.66	U	0.02	5.92	U	0.03	220	1,700
Butyl benzyl phthalate	0.87	U	0.18	0.47	U	0.10	3.78	U	0.77	3.5	U	0.71	4.44	U	0.91	4.9	64
Bis(2-Ethylhexyl) Phthalate	1.16	U	0.02	23.5		0.50	**160.48**		2.06	**90.87**		1.17	32.56		0.69	47	78
Di-N-Octyl Phthalate	1.16	U	0.02	4.7	U	0.08	4.72	U	0.08	4.66	U	0.08	38.48		0.66	58	4,500
Dibenzofuran	1.16	U	0.08	3.53	U	0.24	2.36	J	0.16	2.80	J	0.19	5.92	U	0.39	15	58
Hexachlorobutadiene	0.34	U	0.09	1.41	U	0.36	1.46	U	0.38	1.4	U	0.36	1.78	U	0.46	3.9	6.2
N-Nitrosodiphenylamine	0.34	U	0.03	1.41	U	0.13	1.46	U	0.13	1.4	U	0.13	1.78	U	0.16	11	11
Phenols (ug/kg Dry Weight)																	
Phenol	20	U	0.05	20	U	0.05	20	U	0.05	15		0.04	20	U	0.05	420	1,200
o-Cresol (2-methylphenol)	5.9	U	0.09	6	U	0.10	6.2	U	0.10	6	U	0.10	6	U	0.10	63	63
p-Cresol (4-methylphenol)	20	U	0.03	48		0.07	47		0.07	82		0.12	55		0.08	670	670
2,4-Dimethylphenol	5.9	U	0.20	6.6		0.23	6.2	U	0.21	6	U	0.21	6	U	0.21	29	29
Pentachlorophenol	29	U	0.08	30	U	0.08	31	U	0.09	30	U	0.08	30	U	0.08	360	690
Miscellaneous Compounds (ug/kg Dry Weight)																	
Benzyl Alcohol	29	U	0.51	30	U	0.53	31	U	0.54	30	U	0.53	30	U	0.53	57	73
Benzoic Acid	200	U	0.31	200	U	0.31	200	U	0.31	200	U	0.31	200	U	0.31	650	650
PCB Aroclors by SW8082																	
PCB-aroclor 1016 (mg/kg Dry Weight)	.004	U	--	0.0039	U	--	.004	U		.004	U		.004	U		--	--
PCB-aroclor 1221 (mg/kg Dry Weight)	.004	U	--	0.0039	U	--	.004	U		.004	U		.004	U		--	--
PCB-aroclor 1232 (mg/kg Dry Weight)	.004	U	--	0.0039	U	--	.004	U		.004	U		.004	U		--	--
PCB-aroclor 1242 (mg/kg Dry Weight)	.004	U	--	0.0039	U	--	.004	U		.004	U		.004	U		--	--
PCB-aroclor 1248 (mg/kg Dry Weight)	.004	U	--	0.0039	U	--	.004	U		.004	U		.004	U		--	--
PCB-aroclor 1254 (mg/kg Dry Weight)	.004	U	--	0.0039	U	--	.004	U		.004	U		.004	U		--	--
PCB-aroclor 1260 (mg/kg Dry Weight)	.004	U	--	0.0039	U	--	.004	U		.004	U		.004	U		--	--
PCB-aroclor 1262 (mg/kg Dry Weight)	.004	U	--	0.0039	U	--	.004	U		.004	U		.004	U		--	--
PCB-aroclor 1268 (mg/kg Dry Weight)	.004	U	--	0.0039	U	--	.004	U		.004	U		.004	U		--	--
Total PCBs (mg/kg OC)	0.2324	U	0.02	0.9165	U	0.08	0.944	U	0.08	0.932	U	0.08	1.184	U	0.10	12	65

Sample ID: / Date Sampled:	CR-3 Ref 9/10/2009	SQS Exceedance Ratio		S-3 9/1/2009		SQS Exceedance Ratio	S-4 9/1/2009		SQS Exceedance Ratio	S-5 9/1/2009		SQS Exceedance Ratio	S-7 9/1/2009		SQS Exceedance Ratio	SMS Criteria	
Dioxins/Furans by SW1613 (ng/kg Dry Weight)																	
2,3,7,8-TCDD	--	--	--	0.341	U	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDD	--	--	--	1.38		--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDD	--	--	--	2		--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDD	--	--	--	13.4		--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDD	--	--	--	6.4		--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-HpCDD	--	--	--	258		--	--	--	--	--	--	--	--	--	--	--	--
OCDD	--	--	--	2210		--	--	--	--	--	--	--	--	--	--	--	--
Total Dioxin Congener TEQ (ND=0.5DL)	--	--	--	6.9735		--	--	--	--	--	--	--	--	--	--	--	--
Total Dioxin Congener TEQ (ND=0.5DL) - Birds	--	--	--	3.7095		--	--	--	--	--	--	--	--	--	--	--	--
Total Dioxin Congener TEQ (ND=0.5DL) - Fish	--	--	--	5.3835		--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDF	--	--	--	1.22		--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDF	--	--	--	0.578		--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,7,8-PeCDF	--	--	--	0.916		--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDF	--	--	--	1.43		--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDF	--	--	--	1.04		--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,6,7,8-HxCDF	--	--	--	1.44		--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDF	--	--	--	0.619		--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-HpCDF	--	--	--	23.8		--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8,9-HpCDF	--	--	--	1.59		--	--	--	--	--	--	--	--	--	--	--	--
OCDF	--	--	--	80.3		--	--	--	--	--	--	--	--	--	--	--	--
Total Furan Congener TEQ (ND=0.5DL)	--	--	--	1.14503		--	--	--	--	--	--	--	--	--	--	--	--
Total Furan Congener TEQ (ND=0.5DL) - Birds	--	--	--	2.90863		--	--	--	--	--	--	--	--	--	--	--	--
Total Furan Congener TEQ (ND=0.5DL) - Fish	--	--	--	1.26273		--	--	--	--	--	--	--	--	--	--	--	--
Total Dioxin/Furan TEQ (ND=0.5DL)	--	--	--	**8.11853**		--	--	--	--	--	--	--	--	--	--	--	--

Notes:

[1] Chemical analysis performed by Analytical Resources, Inc in Tukwila, Washington.

[2] Washington State Sediment Management Standards, Sediment Quality Standard (SQS) and Cleanup Screening Level (CSL) criteria.

[3] Total LPAHs = The sum of Acenaphthalene, Acenaphthene, Anthracene, Fluorene, Napthalene and Phenanthrene.

[4] Total benzofluoranthenes = The sum of the "b," "j" and "k" isomers.

[5] Total HPAHs = The sum of Benzo(a)anthracene, Benzo(a) pyrene, Total Benzofluoranthenes, Benzo(g,h,i)perylene, Chrysene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-c,d)pyrene and pyrene.

U = Laboratory data qualifier indicating analyte undetected at given reporting limit.

Q = Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% Drift or minimum RRF).

J = Indicates an estimated concentration that is less than the methord reporting limit but greater than the method detection limit.

TEQ = Toxicity equivalency quotient

ND=0.5DL : One-half the dioxins/furans non-detection concentrations are used to calculate the total TEQ dioxins/furans concentrations

Bold indicates that the concentration exceeds the SQS.

Shading indicates that the concentration exceeds the SQS and the CSL.

-- = Not available or not applicable.

SEAT:\5\5147016\02\Finals\514701602 SedCharReport Tables 1-4 .xlsx

TABLE 4

SUMMARY OF CHEMICAL ANALYTICAL RESULTS[1] RELATIVE TO PUGET SOUND LAET CRITERIA[2] - 2008-2009

PORT OF ANACORTES LOG HAUL OUT SITE SEDIMENT INVESTIGATION 2008-2009

PORT OF ANACORTES, WASHINGTON

Sample ID: / Date Sampled:	Units	S-3 9/1/2009	Exceedance Ratio	S-4 9/1/2009	Exceedance Ratio	S-5 9/1/2009	Exceedance Ratio	S-6 9/1/2009		Exceedance Ratio	S-7 9/1/2009	Exceedance Ratio	SMS Criteria SQS	SMS Criteria CSL
Conventionals														
Ammonia (mg/kg)	mg/kg	--		--		--		29.6			--		--	--
Preserved Total Solids (Percent)	Percent	--		--		--		50			--		--	--
Sulfide (mg/kg)	mg/kg	--		--		--		3440			--		--	--
Total Organic Carbon (Percent)	Percent	--		--		--		4.35			--		--	--
Total Solids (Percent)	Percent	--		--		--		44.4			--		--	--
Total Volatile Solids (Percent)	Percent	--		--		--		17.78			--		--	--
Total Metals by SW6010B/SW7471A (mg/kg Dry Weight)														
Arsenic	mg/kg	--		--		--		10	U	0.18	--		57	93
Cadmium	mg/kg	--		--		--		1		0.20	--		5.1	6.7
Chromium	mg/kg	--		--		--		41		0.16	--		260	270
Copper	mg/kg	--		--		--		39.8		0.10	--		390	390
Lead	mg/kg	--		--		--		11		0.02	--		450	530
Mercury	mg/kg	--		--		--		.08		0.20	--		0.41	0.59
Silver	mg/kg	--		--		--		0.7	U	0.11	--		6.1	6.1
Zinc	mg/kg	--		--		--		96		0.23	--		410	960
SVOCs by SW8270D/8270-SIM (ug/kg Dry Weight)													LAET	
Naphthalene	ug/kg	--		--		--		20	U	0.01	--		2100	
Acenaphthylene	ug/kg	--		--		--		15	J	0.03	--		560	
Acenaphthene	ug/kg	--		--		--		14	J	0.03	--		500	
Fluorene	ug/kg	--		--		--		26		0.05	--		540	
Phenanthrene	ug/kg	--		--		--		180		0.12	--		1500	
Anthracene	ug/kg	--		--		--		48		0.05	--		960	
2-Methylnaphthalene	ug/kg	--		--		--		12		0.02	--		670	
1-Methylnaphthalene	ug/kg	--		--		--		20	U		--		--	
Total LPAH		--		--		--		295	J	0.06	--		5200	
Fluoranthene	ug/kg	--		--		--		630		0.37	--		1700	
Pyrene	ug/kg	--		--		--		170		0.07	--		2600	
Benzo(a)anthracene	ug/kg	--		--		--		94		0.07	--		1300	
Chrysene	ug/kg	--		--		--		160		0.11	--		1400	
Benzo(b)fluoranthene	ug/kg	--		--		--		170			--		--	
Benzo(k)fluoranthene	ug/kg	--		--		--		150			--		--	
Total Benzofluoranthenes		--		--		--		320		0.10	--		3200	
Benzo(a)pyrene	ug/kg	--		--		--		100		0.06	--		1600	
Indeno(1,2,3-cd)pyrene	ug/kg	--		--		--		44		0.07	--		600	
Dibenzo(a,h)anthracene	ug/kg	--		--		--		20	U	0.09	--		230	
Benzo(ghi)perylene	ug/kg	--		--		--		44		0.07	--		670	
Total HPAH		--		--		--		1582		0.13	--		12000	

Sample ID: / Date Sampled:		S-3 9/1/2009		Exceedance Ratio	S-4 9/1/2009		Exceedance Ratio	S-5 9/1/2009		Exceedance Ratio	S-6 9/1/2009		Exceedance Ratio	S-7 9/1/2009		Exceedance Ratio	SMS Criteria	
SVOCs cont.																		
1,2-Dichlorobenzene	ug/kg	--			--			--			6.1	U	0.17	--			35	
1,3-Dichlorobenzene	ug/kg	--			--			--			20	U	0.12	--			170	
1,4-Dichlorobenzene	ug/kg	--			--			--			6.1	U	0.06	--			110	
1,2,4-Trichlorobenzene	ug/kg	6	U	0.19	6.2	U	0.20	6	U	0.19	6.1	U	0.20	6	U	0.19	31	
Hexachlorobenzene	ug/kg	6	U	0.09	6.2	U	0.09	6	U	0.09	6.1	U	0.09	6	U	0.09	70	
Dimethyl phthalate	ug/kg	--			--			--			20	U	0.28	--			71	
Diethyl phthalate	ug/kg	--			--			--			20	U	0.42	--			48	
Dibutyl phthalate	ug/kg	--			--			--			20	U	0.01	--			1400	
Butyl benzyl phthalate	ug/kg	--			--			--			20		0.32	--			63	
Bis(2-Ethylhexyl) Phthalate	ug/kg	--			--			--			150		0.08	--			1900	
Di-N-Octyl Phthalate	ug/kg	--			--			--			20	U	0.05	--			420	
Dibenzofuran	ug/kg	--			--			--			20		0.04	--			540	
Hexachlorobutadiene	ug/kg	--			--			--			6.1	U	0.05	--			120	
N-Nitrosodiphenylamine	ug/kg	--			--			--			6.1	U	0.15	--			40	
Phenols (ug/kg Dry Weight)																		
Phenol	ug/kg	--			--			--			20	U	0.05	--			420	
o-Cresol (2-methylphenol)	ug/kg	--			--			--			6.1	U	0.10	--			63	
p-Cresol (4-methylphenol)	ug/kg	--			--			--			66		0.10	--			670	
2,4-Dimethylphenol	ug/kg	--			--			--			6.1	U	0.21	--			29	
Pentachlorophenol	ug/kg	--			--			--			71	Q	0.51	--			140	
Miscellaneous Compounds (ug/kg Dry Weight)																		
Benzyl Alcohol	ug/kg	--			--			--			30	U	0.53	--			57	
Benzoic Acid	ug/kg	--			--			--			200	U	0.31	--			650	
PCB Aroclors by SW8082 (mg/kg Dry Weight)																		
PCB-aroclor 1016	mg/kg	--			--			--			0.004	U		--			--	
PCB-aroclor 1221	mg/kg	--			--			--			0.004	U		--			--	
PCB-aroclor 1232	mg/kg	--			--			--			0.004	U		--			--	
PCB-aroclor 1242	mg/kg	--			--			--			0.004	U		--			--	
PCB-aroclor 1248	mg/kg	--			--			--			0.004	U		--			--	
PCB-aroclor 1254	mg/kg	--			--			--			0.004	U		--			--	
PCB-aroclor 1260	mg/kg	--			--			--			0.004	U		--			--	
PCB-aroclor 1262	mg/kg	--			--			--			.0046	J		--			--	
PCB-aroclor 1268	mg/kg	--			--			--			0.004	U		--			--	
Total PCBs ug/kg Dry Weight	mg/kg	--			--			--			4.6		0.04	--			130	

Sample ID: / Date Sampled:		S-3 9/1/2009	Exceedance Ratio	S-4 9/1/2009	Exceedance Ratio	S-5 9/1/2009	Exceedance Ratio	S-6 9/1/2009	Exceedance Ratio	S-7 9/1/2009	Exceedance Ratio	SMS Criteria	
Dioxins/Furans by SW1613 (ng/kg Dry Weight)													
2,3,7,8-TCDD	ng/kg	--		--	--	--	--	--	--	--	--	--	
1,2,3,7,8-PeCDD	ng/kg	--		--	--	--	--	--	--	--	--	--	
1,2,3,4,7,8-HxCDD	ng/kg	--		--	--	--	--	--	--	--	--	--	
1,2,3,6,7,8-HxCDD	ng/kg	--		--	--	--	--	--	--	--	--	--	
1,2,3,7,8,9-HxCDD	ng/kg	--		--	--	--	--	--	--	--	--	--	
1,2,3,4,6,7,8-HpCDD	ng/kg	--		--	--	--	--	--	--	--	--	--	
OCDD	ng/kg	--		--	--	--	--	--	--	--	--	--	
Total Dioxin Congener TEQ (ND=0.5DL)	ng/Kg	--		--	--	--	--	--	--	--	--	--	
Total Dioxin Congener TEQ (ND=0.5DL) - Birds	ng/Kg	--		--	--	--	--	--	--	--	--	--	
Total Dioxin Congener TEQ (ND=0.5DL) - Fish	ng/Kg	--		--	--	--	--	--	--	--	--	--	
2,3,7,8-TCDF	ng/kg	--		--	--	--	--	--	--	--	--	--	
1,2,3,7,8-PeCDF	ng/kg	--		--	--	--	--	--	--	--	--	--	
2,3,4,7,8-PeCDF	ng/kg	--		--	--	--	--	--	--	--	--	--	
1,2,3,4,7,8-HxCDF	ng/kg	--		--	--	--	--	--	--	--	--	--	
1,2,3,6,7,8-HxCDF	ng/kg	--		--	--	--	--	--	--	--	--	--	
2,3,4,6,7,8-HxCDF	ng/kg	--		--	--	--	--	--	--	--	--	--	
1,2,3,7,8,9-HxCDF	ng/kg	--		--	--	--	--	--	--	--	--	--	
1,2,3,4,6,7,8-HpCDF	ng/kg	--		--	--	--	--	--	--	--	--	--	
1,2,3,4,7,8,9-HpCDF	ng/kg	--		--	--	--	--	--	--	--	--	--	
OCDF	ng/kg	--		--	--	--	--	--	--	--	--	--	
Total Furan Congener TEQ (ND=0.5DL)	ng/Kg	--		--	--	--	--	--	--	--	--	--	
Total Furan Congener TEQ (ND=0.5DL) - Birds	ng/Kg	--		--	--	--	--	--	--	--	--	--	
Total Furan Congener TEQ (ND=0.5DL) - Fish	ng/Kg	--		--	--	--	--	--	--	--	--	--	
Total Dioxin/Furan TEQ (ND=0.5DL)	ng/Kg	--		--	--	--	--	--	--	--	--	--	

Notes:

[1] Chemical analysis performed by Analytical Resources, Inc in Tukwila, Washington.

[2] LAET = Puget Sound lowest apparent effects thresholds, dry weight.

[3] Total LPAHs = The sum of Acenaphthalene, Acenaphthene, Anthracene, Fluorene, Napthalene and Phenanthrene.

[4] Total benzofluoranthenes = The sum of the "b," "j" and "k" isomers.

[5] Total HPAHs = The sum of Benzo(a)anthracene, Benzo(a) pyrene, Total Benzofluoranthenes, Benzo(g,h,i)perylene, Chrysene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-c,d)pyrene and pyrene.

U = Laboratory data qualifier indicating analyte undetected at given reporting limit.

Q = Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% Drift or minimum RRF).

J = Indicates an estimated concentration that is less than the methord reporting limit but greater than the method detection limit.

Bold indicates that the detected concentration exceeds the LAET.

-- = Not available or not applicable.

SEAT:\5\5147016\02\Finals\514701602 SedCharReport Tables 1-4 .xlsx

EXHIBIT – F

Port of Anacortes

Log Haul Out Site - Benthic Evaluation

DECEMBER 2010

PREPARED FOR:
GEOENGINEERS INC.
PLAZA 600 BUILDING
600 STEWART STREET, SUITE 1700
SEATTLE, WA 98101

PREPARED BY:
NEWFIELDS
PO BOX 216
4729 VIEW DRIVE
PORT GAMBLE, WASHINGTON 98364

NEWFIELDS

INTRODUCTION

Sediment sampling and analyses for the Port of Anacortes Log Haul Out site benthic evaluation was conducted as part of a sediment characterization being performed at the site in Anacortes, Washington. Sediments were collected for benthic invertebrate evaluation in accordance with published guidelines for Puget Sound (PSEP 1987; Ecology 2008). Biological effects for benthic invertebrates were evaluated following guidance provided by the Washington State Department of Ecology (WDOE) Sediment Management Standards (SMS) under the Washington Administrative Code (WAC) 173-204-320 and 173-204-520.

FIELD COLLECTION

Samples were collected aboard the marine vessel *Salty Belle* on October 14, 2010 between 1120 and 1700. Mr. Bill Gardiner, Mr. Jay Word, and Ms. Mary Bacon (NewFields) were responsible for the benthic infauna sampling, chemistry sampling and chain of custody procedures. Mr. Abhijit Joshi from GeoEngineers, Inc. delivered the chemistry sample jars and received the chemistry samples at the end of the sampling event. The vessel captain was Mr. Michael Blanton.

Sampling locations consisted of six sites, one reference site and five sites sampled at 1.7 to 4.5 m depths (Table 1 and Figure 1). Sampling stations at the site were located by labeled pipes put in place by GeoEngineers. A planned reference station was also designated by GeoEngineers, however visual examination of a sample collected from the designated location showed highly anaerobic sediments, heavy macroalgae, and a lack on invertebrates in the sample. A more suitable local reference site was located to the west of the planned site in an area with depth and sediment grain size similar to that of the site samples (Figure 1).

Weather conditions were acceptable for sampling, calm with a slight wind (<5 knots) and overcast. Benthic sediment samples were collected using a 6"×6" (0.023 m^2) Petite Ponar grab sampler. Six discrete samples were collected at each station; five samples for benthic infaunal analysis, the sixth for chemical analysis. Sediment depths in the grabs ranged from 5 to 9 cm (Table 1). Field logs are included as Appendix A.

Prior to sampling, the grab sampler was washed with Alconox® and rinsed with clean seawater. Once on station with 2-point anchors in place, the grab sampler was rinsed with site seawater, the Pinch-Pin™ set in place and deployed by hand off the side of the M/V *Salty Belle*. The sampler was then lowered slowly through the water column in order to impact the sediment surface without a bow wave. The sample was retrieved to the surface and all contents in the grab were rinsed into a holding tray with filtered site seawater prior to sieving. Sample replicates at each station were collected by moving along the side of the vessel to ensure distinct samples.

The benthic grab samples used for biological analyses were sieved through a 0.5 mm screen in the field, retained in plastic containers with sea water and a seawater formalin mixture of approximately 10%. Samples were retained in 10% formalin solution for 5 to 12 days and then transferred to 70% ethyl alcohol. The preserved samples were shipped to Columbia Science for processing.

Chemistry samples for each station were collected after the overlying water was removed from the grab sampler. Sediment from the upper 2 cm was collected with a clean stainless-steel spoon and placed into two 450 mL clear glass containers. An additional replicate sample was collected from the reference (Ref) sample. Sample containers were labeled and stored in a cooler at approximately 4°C. Sediment subsamples for chemistry were packed with blue ice and were relinquished to Mr. Joshi at the end of the sampling day.

Table 1. Sample locations and depths for the Log Haul Out benthic evaluation.

Station	Grab	Type	Latitude	Longitude	Depth (m) [1]	Sediment depth (cm)
Ref	1	infauna	48° 31.285'	122° 36.412'	4.5	8
	2	infauna				8
	3	infauna				6
	4	infauna				8
	5	infauna				8
	6	chemistry				8
S2	1	infauna	48° 31.266'	122° 36.404'	2.5	NR [3]
	2	infauna				NR [3]
	3	infauna				NR [3]
	4	chemistry				NR [3]
	5	infauna				NR [3]
	6	infauna				NR [3]
S3	1	infauna	48° 31.263'	122° 36.401'	3.0	7
	2	infauna				8
	3	chemistry				NR [3]
	4	infauna				9
	5	infauna				8
	6	infauna				8
S4	1 [2]	infauna	48° 31.260'	122° 36.412'	1.7	6
	2	infauna				7
	3	infauna				7
	4	chemistry				8
	5	infauna				8
	6	infauna				8
	7	infauna				7
S5	1	infauna	48° 31.254'	122° 36.405'	2.2	6
	2	infauna				7
	3	infauna				8
	4	infauna				8
	5	chemistry				8
	6	infauna				6
S7	1	infauna	48° 31.244'	122° 36.408'	1.7	6
	2	infauna				5
	3	infauna				6
	4	infauna				6
	5	infauna				5
	6	chemistry				NR [3]

[1] All sample depths recorded from fathometer.

[2] First grab rejected due to large presence of macro algae.

[3] Sediment depth data not recorded for this grab sample.

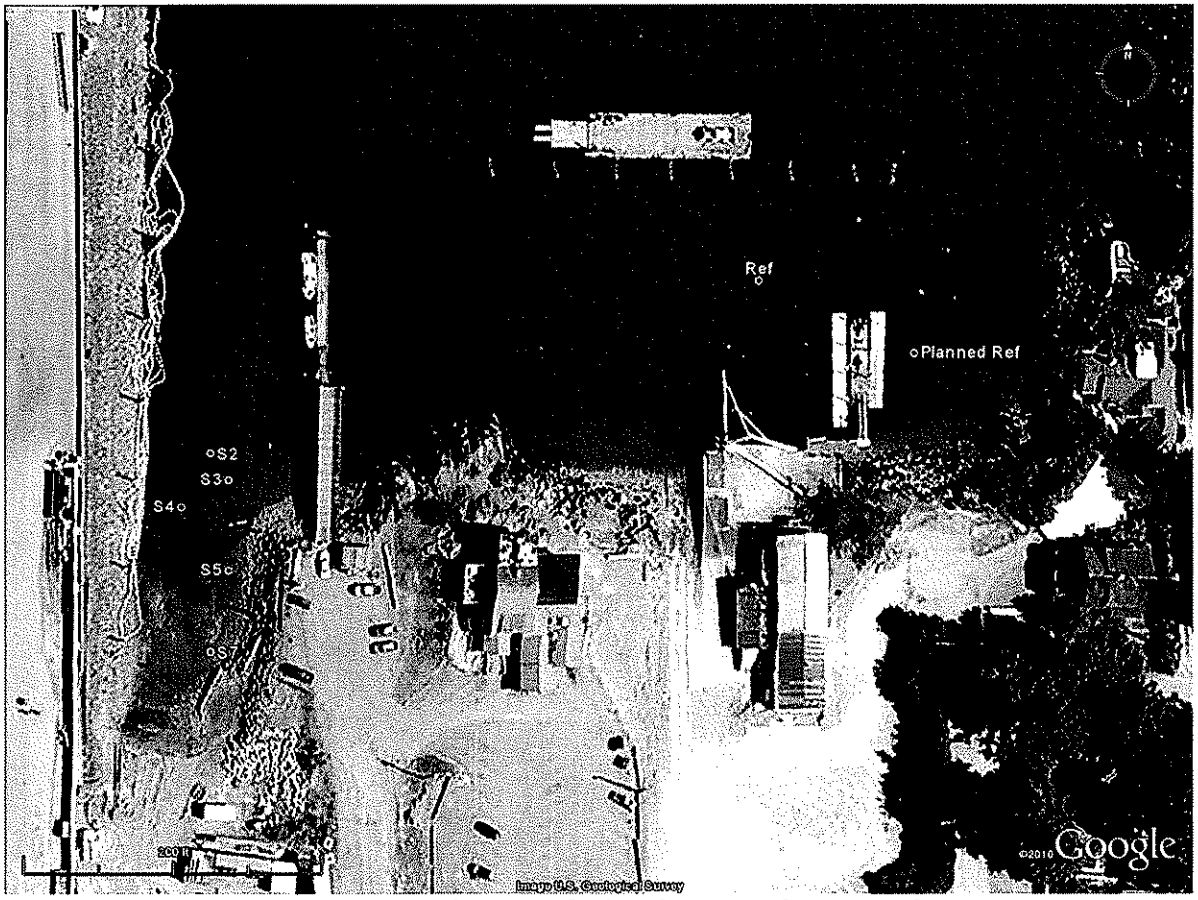


Figure 1. Station locations for benthic invertebrate samples.

BENTHIC INVERTEBRATE SAMPLE ANALYSIS

Benthic invertebrate organisms retained on the 0.5 mm sieve were sorted into major taxonomic groups and identified to lowest possible taxon by Columbia Science for the reference (Ref) station and Station S2. Quality assurance on the sorting was performed on 20% of the sediment fraction. No sorting errors were detected. The sorting quality assurance report is included as Appendix B.

Abundances of major taxonomic groups are shown in Table 2 for the reference station and Station S2 along with total abundance and number of species. A complete list of species and abundances in each replicate sample is provided as Appendix C. Both stations were dominated by polychaetes with abundances at the reference station approximately four times higher than at Station S2. The main difference between the two stations was that most of the polychaetes found at Station S2 were the pollution tolerant species *Capitella capitata;* whereas *Aphelochaeta glandaria* and *Aphelochaeta monilaris* were dominant at the reference station. No specimens of *C. capitata* were observed at the reference station. Nematodes were very abundant in the S2 replicates ranging from 175 to 275 per sample (Appendix B); nematodes were a minor component of the reference replicates ranging from 4 to 13 per sample.

Species diversity was also much higher at the reference station than at Station S2 with mean number of species of 20 at the reference compared to a mean of 4.2 at Station S2.

Table 2. Abundance and Number of Species of Major Taxa.

Station	Replicate	Abundance				
		Crustacea	Mollusca	Polychaeta	Oligochaeta	Total
Ref	1	5	18	111	16	150
	2	16	17	65	1	99
	3	3	1	96	3	103
	4	13	3	101	11	128
	5	5	4	19	3	31
	Mean	8.4	8.6	78.4	6.8	102.2
	St Dev	5.7	8.2	37.4	6.4	44.8
S2	1	16	2	31	2	51
	2	4	0	14	1	19
	3	0	0	15	0	15
	4	1	1	24	0	26
	5	0	2	1	0	3
	Mean	4.2	1.0	17.0	0.6	22.8
	St Dev	6.8	1.0	11.3	0.9	17.8
Station	Replicate	Number of Species				
		Crustacea	Mollusca	Polychaeta	Oligochaeta	Total
Ref	1	3	4	14	1	22
	2	5	5	14	1	25
	3	3	1	12	1	17
	4	3	2	14	1	20
	5	2	3	10	1	16
	Mean	3.2	3.0	12.8	1.0	20.0
	St Dev	1.1	1.6	1.8	0.0	3.7
S2	1	2	2	2	1	7
	2	2	0	3	1	6
	3	0	0	2	0	2
	4	1	1	2	0	4
	5	0	1	1	0	2
	Mean	1.0	0.8	2.0	0.4	4.2
	St Dev	1.0	0.8	0.7	0.5	2.3

COMPARISON TO SEDIMENT MANAGEMENT STANDARDS

The abundances of crustacean, molluscan, and polychaete taxa at Station S2 were compared to those at the reference station to determine compliance with Sediment Management Standards (WAC 173-204-320(3) and 173-204-520(3)). A station exceeds sediment quality standards (SQS) when the test sediment has less than 50 percent of the reference sediment mean abundance for one of the major taxa and test sediment abundance is statistically different ($P \leq 0.05$) from the reference sediment abundance. Cleanup screening levels (CSL) are exceeded if two of the major taxa have abundances less than 50 percent of the reference sediment and are statistically different from the reference station.

SMS suitability determinations were made according to SAPA (Ecology 2008) and Fox et al. (1998). Data were tested for normality using the Wilk-Shapiro test and equality of variance using Levene's test. Determinations of statistical significance were based on one-tailed Student's t-tests with an alpha of 0.05. For samples failing to meet assumptions of normality, a Mann-Whitney test was conducted to determine significance. Results of the comparisons are shown in Table 3 and statistical results are shown in Appendix D.

Abundance at Station S2 exceeds CSL criteria with polychaete and mollusc abundances below 50 percent of the reference abundance (22% and 12%, respectively) and significantly different abundances compared to the reference at $p \leq 0.05$. Because of this exceedance for Station S2, no further sample analysis was performed.

Table 3. Results of Comparison to Sediment Management Standards.

Taxa	Reference Mean	S2 Mean	S2 Proportion of Reference	Prob Normal Distribution	Prob Equal Variance	Test	One-Tailed Prob	Significant ($P \leq 0.05$)	One-Tailed Test Result
Crustacea	8.4	4.2	0.50	0.021	0.940	Mann-Whitney	0.10	No	Treatment >= Comparison
Mollusca	8.6	1.0	0.12	0.348	0.000	T-test Unequal Var	0.05	Yes	Treatment < Comparison
Polychaeta	78.4	17.0	0.22	0.287	0.044	T-test Unequal Var	0.01	Yes	Treatment < Comparison

REFERENCES

Ecology 2008. Sediment Sampling and Analysis Plan Appendix: Guidance on the Development of Sediment Sampling and Analysis Plans Meeting the Requirements of the Sediment Management Standards (Chapter 173-204 WAC), Sediment Management Unit, Department of Ecology, Bellevue, Washington. Revised February 2008.

Fox, D, DA Gustafson, and TC Shaw. 1998. Biostat Software for the Analysis of DMP/SMS. Presented at the 10th Annual Sediment Management Annual Review Meeting.

PSEP. 1987. Recommended protocols for sampling and analyzing subtidal benthic macroinvertebrate assemblages in Puget Sound. Final Report. Prepared for U.S. Environmental Protection Agency, Seattle, WA.

EXHIBIT – G

Supplemental Sediment Characterization Report

Pier 2 Log Haul Out Facility
Anacortes, Washington

for
Port of Anacortes

February 25, 2011

GeoEngineers

Plaza 600 Building
600 Stewart Street, Suite 1700
Seattle, Washington 98101
206.728.2674

30 YEARS 2010

characterization study are summarized in the "Pier 2 Log Haul Out Facility Due Diligence Report" by Floyd/Snider dated September 9, 2004. The results of the 2008 Site sediment characterization are summarized in the "Sediment Characterization, Log Haul Out Site" report by GeoEngineers, Inc., dated December 5, 2008. The results of the 2009 Site sediment characterization are summarized in the "Sediment Characterization 2008-2009 Report, Log Haul Out Site" report by GeoEngineers, Inc., dated January 4, 2009.

As part of previous characterizations completed at the Site, seven locations (S-1 through S-7) within the sediment areas impacted by wood debris were sampled and tested for chemical analytical and biological toxicity testing. Detections of chemical of concern (COC) and biological toxicity exceeding CSL and/or Sediment Quality Standards (SQS) was identified at six locations. Each of the sampling locations was identified to exceed the SQS and two of the sampling locations (S-1 and S-6) were identified to exceed the CSL.

The extent of SMS criteria exceedances identified in the previous Site characterization studies is summarized in Figure 2.

Correction to the Existing Site Data

Review of the 2008-2009 Sediment Characterization Report identified an error in reported organic carbon normalized results for the sediment samples described. The 2009 sampling and analysis results are corrected in this report and presented in Table 1. Correction of the organic carbon normalization for these samples resulted in the following changes:

- The organic carbon normalized detections of Fluoranthene in sample S-5 previously reported to be exceeding the SQS criteria was corrected and is below the SQS criteria.
- The organic carbon normalized detections of Bis(2-ethylhexyl)phthalate in sample S-4 and S-5 previously reported to be exceeding the CSL and SQS criteria was corrected and is below the CSL and SQS criteria.
- The organic carbon normalized reporting limits for 1,2-dichlorobenzene, 1,2,4-trichlorobenzene and hexachlorobenzene in samples S-3 through S-7 previously reported to be exceeding the SQS criteria were corrected and is below the SQS criteria.
- The dry weight reporting limits for 1,2,4-trichlorobenzene and hexachlorobenzene with organic carbon normalized elevated detection (reporting) limits exceeding SQS criteria in sample CR-3 Ref were compared to the applicable Puget Sound Lowest Apparent Effects Threshold (LAET) dry weight criteria. All of the dry weight reporting limits meet the LAET criteria for those COCs.

FIELD SAMPLE COLLECTION

Field samples for the Supplemental Sediment Characterization were collected on October 14, 2010.

Sediment samples were collected from five existing locations designated S-2, S-3, S-4, S-5, and S-7. The samples were collected from locations previously established at the Site where SQS exceedances were identified based on previous sampling and analysis. Existing locations (S-1 and S-6) where CSL exceedances had previously been identified were not sampled since the

TABLE 1

SUMMARY OF CHEMICAL ANALYTICAL RESULTS[1] RELATIVE TO SEDIMENT MANAGEMENT STANDARDS - 2010
PORT OF ANACORTES LOG HAUL OUT SITE SEDIMENT INVESTIGATION 2008-2010
PORT OF ANACORTES, WASHINGTON

Sample ID: / Date Sampled:	CR-3 Ref 9/10/2009	SQS Exceedance	LHO-REF (Ref) 10/14/2010	SQS Exceedance	DUP (Duplicate Sample of LHO-REF) 10/14/2010	SQS Exceedance	S-3 9/1/2009	SQS Exceedance	S-4 9/1/2009	SQS Exceedance	S-5 9/1/2009	SQS Exceedance	S-7 9/1/2009	SQS Exceedance	SMS Criteria[2] SQS	SMS Criteria[2] CSL
CONVENTIONALS																
Ammonia (mg/kg)	15.9	NA	--	NA	--	NA	11.8	NA	24.2	NA	61.3	NA	67.3	NA	NE	NE
Preserved Total Solids (Percent)	67.7	NA	--	NA	--	NA	50	NA	41.7	NA	48.6	NA	40.2	NA	NE	NE
Sulfide (mg/kg)	181	NA	--	NA	--	NA	2320	NA	1720	NA	2370	NA	3340	NA	NE	NE
Total Organic Carbon (Percent)	0.58	NA	2.2	NA	2.4	NA	2.35	NA	2.36	NA	2.33	NA	2.96	NA	NE	NE
Total Solids (Percent)	70.8	NA	--	NA	--	NA	47.3	NA	40.8	NA	40.4	NA	46	NA	NE	NE
Total Volatile Solids (Percent)	--	NA	--	NA	--	NA	15.15	NA	16.01	NA	17.35	NA	14.29	NA	NE	NE
Total Metals by SW6010B/SW7471A (mg/kg Dry Weight)																
Arsenic	7 U	0.12 U	10 U	0.18 U	11 U	0.19 U	10 U	0.18 U	10 U	0.18 U	10 U	0.18 U	9 U	0.16 U	57	93
Cadmium	0.3	0.06	1 U	0.20 U	1.1 U	0.22 U	0.6	0.12	0.7	0.14	1	0.20	0.9	0.18	5.1	6.7
Chromium	25.3	0.10	39	0.15	41	0.16	33	0.13	51	0.20	39	0.15	36.6	0.14	260	270
Copper	14.5	0.04	42	0.11	120	0.31	40.8	0.10	248	0.64	38.2	0.10	33.9	0.09	390	390
Lead	4	0.01	11	0.02	14	0.03	8	0.02	23	0.05	10	0.02	11	0.02	450	530
Mercury	0.03 U	0.07 U	0.1 U	0.24 U	0.11 U	0.27 U	0.07	0.17	0.06	0.15	0.08	0.20	0.07	0.17	0.41	0.59
Silver	0.4 U	0.07 U	1 U	0.16 U	1.1 U	0.18 U	0.6 U	0.10 U	0.7 U	0.11 U	0.7 U	0.11 U	0.6 U	0.10 U	6.1	6.1
Zinc	38	0.09	79	0.19	73	0.18	79	0.19	105	0.26	102	0.25	78	0.19	410	960
SVOCs by SW8270D/8270-SIM (mg/kg OC)																
Naphthalene	3.44 U	0.03 U	0.64 U	0.01 U	0.58 U	0.01 U	0.85 U	0.01 U	0.85 U	0.01 U	0.86 U	0.01 U	0.68 U	0.01 U	99	170
Acenaphthylene	3.44 U	0.05 U	0.64 U	0.01 U	0.58 U	0.01 U	0.43 J	0.01 J	0.85 U	0.01 U	0.56 J	0.01 J	0.68 U	0.01 U	66	66
Acenaphthene	3.44 U	0.22 U	0.64 U	0.04 U	0.58 U	0.04 U	0.85 U	0.05 U	0.85 U	0.05 U	0.52 J	0.03 J	0.68 U	0.04 U	16	57
Fluorene	3.44 U	0.15 U	0.64 U	0.03 U	0.67	0.03	0.68 J	0.03 J	0.59 J	0.03 J	0.82 J	0.04 J	0.68 U	0.03 U	23	79
Phenanthrene	3.44 U	0.03 U	2.82	0.03	5.83	0.06	5.11	0.05	7.20	0.07	8.15	0.08	2.09	0.02	100	480
Anthracene	3.44 U	0.02 U	1.82	0.01	3.38	0.02	1.91	0.01	1.31	0.01	1.89	0.01	0.57 J	0.003 J	220	1,200
2-Methylnaphthalene	3.44 U	0.09 U	0.64 U	0.02 U	0.58 U	0.02 U	0.85 U	0.02 U	0.85 U	0.02 U	0.86 U	0.02 U	0.68 U	0.02 U	38	64
1-Methylnaphthalene	3.44 U	NA	--	NA	--	NA	0.85 U	NA	0.85 U	NA	0.86 U	NA	0.68 U	NA	NE	NE
Total LPAH[3]	20.65 U	0.06 U	7.18	0.02	11.63	0.03	9.83	0.03	11.65	0.03	12.79	0.03	5.37	0.01	370	780
Fluoranthene	3.44 U	0.02 U	9.09	0.06	13.75	0.09	19.57	0.12	19.07	0.12	32.19	0.20	8.78	0.05	160	1,200
Pyrene	3.44 U	0.003 U	10.91	0.01	12.08	0.01	8.51	0.01	5.51	0.01	9.01	0.01	2.94	0.003	1,000	1,400
Benzo[a]anthracene	3.44 U	0.03 U	3.59	0.03	4.17	0.04	3.49	0.03	2.20	0.02	3.61	0.03	1.62	0.01	110	270
Chrysene	3.44 U	0.03 U	7.27	0.07	7.92	0.07	6.38	0.06	4.24	0.04	6.44	0.06	2.36	0.02	110	460
Benzo[b]fluoranthene	3.44 U	NA	5.45	NA	5.83	NA	5.11	NA	3.77	NA	6.01	NA	1.69	NA	NE	NE
Benzo[k]fluoranthene	3.44 U	NA	5.45	NA	4.00	NA	4.26	NA	3.86	NA	6.01	NA	1.69	NA	NE	NE
Total Benzofluoranthenes[4]	6.88	0.03	10.91	0.05	9.83	0.04	9.36	0.04	7.63	0.03	12.02	0.05	3.38	0.01	230	450
Benzo[a]pyrene	3.44 U	0.03 U	4.45	0.04	3.71	0.04	3.06	0.03	2.12	0.02	3.95	0.04	1.18	0.01	99	210
Indeno[1,2,3-c,d]pyrene	3.44 U	0.10 U	2.50	0.07	2.46	0.07	1.57	0.05	1.14	0.03	1.93	0.06	0.47 J	0.01 J	34	88
Dibenzo[a,h]anthracene	3.44 U	0.29 U	0.64 U	0.05 U	0.58 U	0.05 U	0.68 J	0.06 J	0.85 U	0.07 U	0.86	0.07	0.68 U	0.06 U	12	33
Benzo[g,h,i]perylene	3.44 U	0.11 U	2.50	0.08	2.13	0.07	1.87	0.06	1.36	0.04	2.06	0.07	0.47 J	0.02 J	31	78
Total HPAH[5]	34.42 U	0.04 U	51.86	0.05	56.63	0.06	54.51	0.06	44.11	0.05	72.06	0.08	21.89	0.02	960	5,300

Notes are listed on Page 3

TABLE 1

SUMMARY OF CHEMICAL ANALYTICAL RESULTS[1] RELATIVE TO SEDIMENT MANAGEMENT STANDARDS - 2010
PORT OF ANACORTES LOG HAUL OUT SITE SEDIMENT INVESTIGATION, 2008-2010
PORT OF ANACORTES, WASHINGTON

Sample ID: / Date Sampled:	CR-3 Ref 9/10/2009	SQS Exceedance	LHO-REF (Ref) 10/14/2010	SQS Exceedance	DUP (Duplicate Sample of LHO-REF) 10/14/2010	SQS Exceedance	S-3 9/1/2009	SQS Exceedance	S-4 9/1/2009	SQS Exceedance	S-5 9/1/2009	SQS Exceedance	S-7 9/1/2009	SQS Exceedance	SMS Criteria[2] SQS	SMS Criteria[2] CSL
SVOCs cont. (mg/kg OC)																
1,2-Dichlorobenzene	1.02 U	0.44 U	1.59 U	0.69 U	1.46 U	0.63 U	0.26 U	0.11 U	0.26 U	0.11 U	0.26 U	0.11 U	0.20 U	0.09 U	2.3	2.3
1,3-Dichlorobenzene	3.44 U	NA	1.59 U	NA	1.46 U	NA	0.85 U	NA	0.85 U	NA	0.86 U	NA	0.68 U	NA	NE	NE
1,4-Dichlorobenzene	1.02 U	0.33 U	1.59 U	0.51 U	1.46 U	0.47 U	0.26 U	0.08 U	0.26 U	0.08 U	0.26 U	0.08 U	0.20 U	0.07 U	3.1	9
1,2,4-Trichlorobenzene	1.02 U	1.25 U	1.59 U	1.96 U	1.46 U	1.80 U	0.26 U	0.32 U	0.26 U	0.32 U	0.26 U	0.32 U	0.20 U	0.25 U	0.81	1.8
Hexachlorobenzene	1.02 U	2.67 U	1.59 U	4.19 U	1.46 U	3.84 U	0.26 U	0.67 U	0.26 U	0.69 U	0.26 U	0.68 U	0.20 U	0.53 U	0.38	2.3
Dimethyl phthalate	3.44 U	0.06 U	1.59 U	0.03 U	1.46 U	0.03 U	2.85	0.05	0.85 U	0.02 U	0.86 U	0.02 U	0.68 U	0.01 U	53	53
Diethyl phthalate	3.44 U	0.06 U	7.73 U	0.13 U	7.50 U	0.12 U	0.85 U	0.01 U	0.85 U	0.01 U	0.86 U	0.01 U	0.68 U	0.01 U	61	110
Di-n-butyl phthalate	3.44 U	0.02 U	1.59 U	0.01 U	1.46 U	0.01 U	0.85 U	0.004 U	0.85 U	0.004 U	0.86 U	0.004 U	0.68 U	0.003 U	220	1,700
Butyl benzyl phthalate	2.58 U	0.53 U	1.59 U	0.32 U	1.46 U	0.30 U	0.64 U	0.13 U	0.68 U	0.14 U	0.64 U	0.13 U	0.51 U	0.10 U	4.9	64
Bis(2-ethylhexyl)phthalate	3.44 U	0.07 U	2.23	0.05	1.46 U	0.03 U	4.26	0.09	28.81	0.61	16.74	0.36	3.72	0.08	47	78
Di-n-octyl phthalate	3.44 U	0.06 U	1.59 U	0.03 U	1.46 U	0.03 U	0.85 U	0.01 U	0.85 U	0.01 U	0.86 U	0.01 U	4.39	0.08	58	4,500
Dibenzofuran	3.44 U	0.23 U	1.59 U	0.11 U	1.46 U	0.10 U	0.85 U	0.06 U	0.42 J	0.03 J	0.52 J	0.03 J	0.68 U	0.05 U	15	58
Hexachlorobutadiene	1.02 U	0.26 U	1.59 U	0.41 U	1.46 U	0.37 U	0.26 U	0.07 U	0.26 U	0.07 U	0.26 U	0.07 U	0.20 U	0.05 U	3.9	6.2
N-nitrosodiphenylamine	1.02 U	0.09 U	1.59 U	0.14 U	1.46 U	0.13 U	0.26 U	0.02 U	0.26 U	0.02 U	0.26 U	0.02 U	0.20 U	0.02 U	11	11
Phenols (ug/kg Dry Weight)																
Phenol	20 U	0.05 U	240	0.57	35 U	0.08 U	20 U	0.05 U	20 U	0.05 U	15	0.04	20 U	0.05 U	420	1,200
o-Cresol (2-Methylphenol)	5.9 U	0.09 U	35 U	0.56 U	35 U	0.56 U	6 U	0.10 U	6.2 U	0.10 U	6 U	0.10 U	6 U	0.10 U	63	63
p-Cresol (4-Methylphenol)	20 U	0.03 U	35 U	0.05 U	35 U	0.05 U	48	0.07	47	0.07	82	0.12	55	0.08	670	670
2,4-Dimethylphenol	5.9 U	0.20 U	35 U	1.21 U	35 U	1.21 U	6.6	0.23	6.2 U	0.21 U	6 U	0.21 U	6 U	0.21 U	29	29
Pentachlorophenol	29 U	0.08 U	170 U	0.47 U	180 U	0.50 U	30 U	0.08 U	31 U	0.09 U	30 U	0.08 U	30 U	0.08 U	360	690
Miscellaneous Compounds (ug/kg Dry Weight)																
Benzyl Alcohol	29 U	0.51 U	35 U	0.61 U	35 U	0.61 U	30 U	0.53 U	31 U	0.54 U	30 U	0.53 U	30 U	0.53 U	57	73
Benzoic Acid	200 U	0.31 U	35 U	0.05 U	35 U	0.05 U	200 U	0.31 U	200 U	0.31 U	200 U	0.31 U	200 U	0.31 U	650	650
PCB Aroclors by SW8082																
PCB-aroclor 1016 (mg/kg Dry Weight)	0.004 U	NA	0.1 U	NA	0.11 U	NA	0.0039 U	NA	0.004 U	NA	0.004 U	NA	0.004 U	NA	NE	NE
PCB-aroclor 1221 (mg/kg Dry Weight)	0.004 U	NA	0.1 U	NA	0.11 U	NA	0.0039 U	NA	0.004 U	NA	0.004 U	NA	0.004 U	NA	NE	NE
PCB-aroclor 1232 (mg/kg Dry Weight)	0.004 U	NA	0.1 U	NA	0.11 U	NA	0.0039 U	NA	0.004 U	NA	0.004 U	NA	0.004 U	NA	NE	NE
PCB-aroclor 1242 (mg/kg Dry Weight)	0.004 U	NA	0.1 U	NA	0.11 U	NA	0.0039 U	NA	0.004 U	NA	0.004 U	NA	0.004 U	NA	NE	NE
PCB-aroclor 1248 (mg/kg Dry Weight)	0.004 U	NA	0.1 U	NA	0.11 U	NA	0.0039 U	NA	0.004 U	NA	0.004 U	NA	0.004 U	NA	NE	NE
PCB-aroclor 1254 (mg/kg Dry Weight)	0.004 U	NA	0.1 U	NA	0.11 U	NA	0.0039 U	NA	0.004 U	NA	0.004 U	NA	0.004 U	NA	NE	NE
PCB-aroclor 1260 (mg/kg Dry Weight)	0.004 U	NA	0.1 U	NA	0.11 U	NA	0.0039 U	NA	0.004 U	NA	0.004 U	NA	0.004 U	NA	NE	NE
PCB-aroclor 1262 (mg/kg Dry Weight)	0.004 U	NA	--	NA	--	NA	0.0039 U	NA	0.004 U	NA	0.004 U	NA	0.004 U	NA	NE	NE
PCB-aroclor 1268 (mg/kg Dry Weight)	0.004 U	NA	--	NA	--	NA	0.0039 U	NA	0.004 U	NA	0.004 U	NA	0.004 U	NA	NE	NE
Total PCBs (mg/kg OC)	0.69 U	0.06 U	4.55 U	0.38 U	4.58 U	0.38 U	0.17 U	0.01 U	0.17 U	0.01 U	0.17 U	0.01 U	0.14 U	0.01 U	12	65

Notes are listed on Page 3

TABLE 1

SUMMARY OF CHEMICAL ANALYTICAL RESULTS[1] RELATIVE TO SEDIMENT MANAGEMENT STANDARDS - 2010
PORT OF ANACORTES LOG HAUL OUT SITE SEDIMENT INVESTIGATION 2008-2010
PORT OF ANACORTES, WASHINGTON

Sample ID: / Date Sampled:	CR-3 Ref 9/10/2009	SQS Exceedance	LHO-REF (Ref) 10/14/2010	SQS Exceedance	DUP (Duplicate Sample of LHO-REF) 10/14/2010	SQS Exceedance	S-3 9/1/2009	SQS Exceedance	S-4 9/1/2009	SQS Exceedance	S-5 9/1/2009	SQS Exceedance	S-7 9/1/2009	SQS Exceedance	SMS Criteria[2] SQS	SMS Criteria[2] CSL
Dioxins/Furans by SW1613 (ng/kg Dry Weight)																
2,3,7,8-TCDD	--	NA	--	NA	--	NA	0.34 U	NA	--	NA	--	NA	--	NA	NE	NE
1,2,3,7,8-PeCDD	--	NA	--	NA	--	NA	1.38	NA	--	NA	--	NA	--	NA	NE	NE
1,2,3,4,7,8-HxCDD	--	NA	--	NA	--	NA	2	NA	--	NA	--	NA	--	NA	NE	NE
1,2,3,6,7,8-HxCDD	--	NA	--	NA	--	NA	13.4	NA	--	NA	--	NA	--	NA	NE	NE
1,2,3,7,8,9-HxCDD	--	NA	--	NA	--	NA	6.4	NA	--	NA	--	NA	--	NA	NE	NE
1,2,3,4,6,7,8-HpCDD	--	NA	--	NA	--	NA	258	NA	--	NA	--	NA	--	NA	NE	NE
OCDD	--	NA	--	NA	--	NA	2210	NA	--	NA	--	NA	--	NA	NE	NE
Total Dioxin Congener TEQ (ND=0.5DL)	--	NA	--	NA	--	NA	6.97	NA	--	NA	--	NA	--	NA	NE	NE
Total Dioxin Congener TEQ (ND=0.5DL) - Birds	--	NA	--	NA	--	NA	3.71	NA	--	NA	--	NA	--	NA	NE	NE
Total Dioxin Congener TEQ (ND=0.5DL) - Fish	--	NA	--	NA	--	NA	5.38	NA	--	NA	--	NA	--	NA	NE	NE
2,3,7,8-TCDF	--	NA	--	NA	--	NA	1.22	NA	--	NA	--	NA	--	NA	NE	NE
1,2,3,7,8-PeCDF	--	NA	--	NA	--	NA	0.58	NA	--	NA	--	NA	--	NA	NE	NE
2,3,4,7,8-PeCDF	--	NA	--	NA	--	NA	0.92	NA	--	NA	--	NA	--	NA	NE	NE
1,2,3,4,7,8-HxCDF	--	NA	--	NA	--	NA	1.43	NA	--	NA	--	NA	--	NA	NE	NE
1,2,3,6,7,8-HxCDF	--	NA	--	NA	--	NA	1.04	NA	--	NA	--	NA	--	NA	NE	NE
2,3,4,6,7,8-HxCDF	--	NA	--	NA	--	NA	1.44	NA	--	NA	--	NA	--	NA	NE	NE
1,2,3,7,8,9-HxCDF	--	NA	--	NA	--	NA	0.62	NA	--	NA	--	NA	--	NA	NE	NE
1,2,3,4,6,7,8-HpCDF	--	NA	--	NA	--	NA	23.8	NA	--	NA	--	NA	--	NA	NE	NE
1,2,3,4,7,8,9-HpCDF	--	NA	--	NA	--	NA	1.59	NA	--	NA	--	NA	--	NA	NE	NE
OCDF	--	NA	--	NA	--	NA	80.3	NA	--	NA	--	NA	--	NA	NE	NE
Total Furan Congener TEQ (ND=0.5DL)	--	NA	--	NA	--	NA	1.15	NA	--	NA	--	NA	--	NA	NE	NE
Total Furan Congener TEQ (ND=0.5DL) - Birds	--	NA	--	NA	--	NA	2.91	NA	--	NA	--	NA	--	NA	NE	NE
Total Furan Congener TEQ (ND=0.5DL) - Fish	--	NA	--	NA	--	NA	1.26	NA	--	NA	--	NA	--	NA	NE	NE
Total Dioxin/Furan TEQ (ND=0.5DL)	--	NA	--	NA	--	NA	8.12	NA	--	NA	--	NA	--	NA	NE	NE

Notes:

[1] Chemical analysis for samples obtained in 2009 was performed by Analytical Resources, Inc in Tukwila, Washington. Chemical analysis for samples obtained in 2010 was performed by OnSite Environmental, Inc in Redmond, Washington.

[2] Washington State Sediment Management Standards, Sediment Quality Standard (SQS) and Cleanup Screening Level (CSL) criteria.

[3] Total LPAHs = The sum of Napthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene and Anthracene.

[4] Total Benzofluoranthenes = The sum of the concentrations of the "B" and "K" isomers. "J" isomer not reported.

[5] Total HPAHs = The sum of Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Total Benzofluoranthenes, Benzo(a)pyrene, Indeno(1,2,3-c,d)pyrene, Dibenzo(a,h)anthracene and Benzo(g,h,i)perylene.

SQS Exceedance Ratio is a ratio of listed concentration by the respective SQS Criteria.

U = Laboratory data qualifier indicating analyte undetected at given reporting limit.

J = Laboratory data qualifier indicating that the value is an estimate.

B = Indicates analyte detected in laboratory blank.

TEQ = Toxicity equivalency quotient

ND=0.5DL : One-half the dioxins/furans non-detection concentrations are used to calculate the total TEQ dioxins/furans concentrations

NE = not established

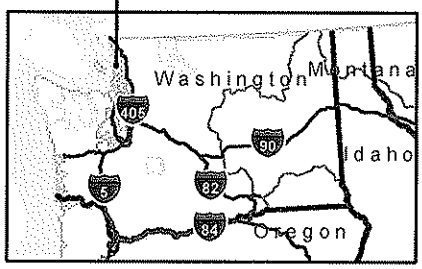
NA = not applicable

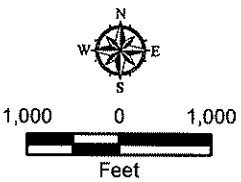
-- = not analyzed

Yellow bordering indicates that the concentration exceeds the SQS.

Red bordering indicates that the concentration exceeds the SQS and the CSL.

SEAT:\5\5147016\02\Finals\514701602 Table 1.xlsx





Notes:
1. The locations of all features shown are approximate.
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Data Sources: ESRI Data & Maps, Street Maps 2005

Transverse Mercator, Zone 10 N North, North American Datum 1983
North arrow oriented to grid north

Map Revised: November 20, 2008 mm2

Path: P:\51\47016\GIS\F1-514701600_F1.mxd

Office: SEA

Vicinity Map

Port of Anacortes - Log Haul Out Site
Anacortes, Washington

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Figure 1

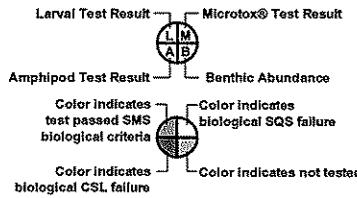
Legend

LH0-REF (REF) ○ Sample Location (2010)
S-2 ◐ Sample Location (2008 & 2010)
S-4 ⊗ Sample Location (2009)
S-1 ● Sample Location (2008)
SMS = Sediment Management Standards
SQS = SMS Sediment Quality Standards
CSL = SMS Cleanup Screening Level
LAET = Puget Sound Lowest Apparent Effects Threshold
ER = Exceedance Ratio

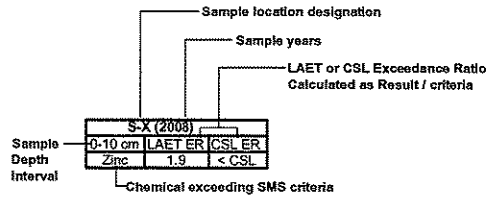
Chemical and Biological Sample Result Summary

Location has no exceedance	○	◐	⊗	●
Location has SQS failure	○	◐	⊗	●
Location has CSL failure	●	◐	⊗	●

Biological Toxicity Testing



Chemical Testing



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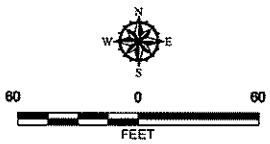
Reference: Base map source Port of Anacortes, 2007.



Chemical and Biological Testing Results

Port of Anacortes - Log Haul Out Site
Anacortes, Washington

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Figure 2