Item No._____6b Attach 1_____
Date of Meeting:_April 24, 2012_____

Memorandum of Understanding
Cruise Operations in
Washington State

Originally signed April 20, 2004
Amendment No. 5 dated XXX, XX, XXXX

Washington State Department of Ecology
North West & Canada Cruise Association
Port of Seattle

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding, originally signed on April 20, 2004 is amended by and between the State of Washington, the Port of Seattle, and the North West & Canada Cruise Association, hereinafter referred to as NWCCA, representing the international cruise lines identified in *Appendix i*.

Whereas the State of Washington is charged with the responsibility of protecting and conserving Washington's environmental resources in relation to the Cruise Industry's environmental practices in Washington; and

Whereas the United States Coast Guard, herein referred to as USCG, has Federal jurisdiction over environmental matters in navigable waters in the United States; and

Whereas the Port of Seattle is charged with providing the services and facilities to accommodate the transportation of passengers, including cruise ship passengers, while protecting and enhancing the environment of the Port of Seattle; and

Whereas, the NWCCA is a non-profit entity organized for the purpose of representing member cruise lines which operate in and about waters subject to this Memorandum of Understanding (MOU), whose current membership is identified in *Appendix i*; and

Whereas, the NWCCA has adopted the "**Cruise Industry Waste Management Practices and Procedures"** as promulgated by the Cruise Industry's trade association, the Cruise Lines International Association, herein referred to as CLIA, which practices and procedures are attached hereto as *Appendix ii*; and

Whereas, NWCCA cruise vessels operate in international waters and move passengers to destinations worldwide and, consequently, those cruise vessel waste management practices must take into account environmental laws and regulations in many jurisdictions and international treaties and conventions; and

Whereas, the NWCCA, the State of Washington as represented by the Washington Department of Ecology (Ecology), the USCG and the Port of Seattle have met to develop waste management practices that preserve a clean and healthy environment and demonstrate the Cruise Industry's commitment to be a steward of the environment; and

Whereas, research is ongoing to establish the impact of ships' wastewater discharges on the ocean environment, and the results of this research will be taken into account in periodic review of the wastewater discharge practices described in this Agreement; and

Whereas, the cruise industry recognizes Washington's fragile marine environment and is committed to help protect this environment;

Now therefore, based upon mutual understanding, the parties enter into this Memorandum of Understanding to implement the following environmental goals, policies and practices:

Definition of terms for the purpose of this agreement:

“blackwater” means waste from toilets, urinals, medical sinks and other similar facilities;

"cruise ship" means any vessel that is owned or operated by a member of the NWCCA;

“disinfection system upset” means disinfection below levels of four log (99.99%) inactivation of norovirus based on expected results assuming a minimum intensity of ultraviolet (UV) lights used for disinfecting effluent or other shipboard administrative controls as may be accepted by the Washington Department of Health..

“graywater” includes drainage from dishwasher, shower, laundry, bath, galley drains and washbasin drains;

“monitoring for disinfection effectiveness” means using measuring equipment to determine the intensity of ultraviolet (UV) lights used for disinfecting effluent, or other shipboard administrative controls as may be accepted by the Washington Department of Health.

“oily bilge water” includes bilge water that contains used lubrication oils, oil sludge and slops, fuel and oil sludge, used oil, used fuel and fuel filters, and oily waste.

“residual solids” includes grit or screenings, ash generated during the incineration of sewage sludge and sewage sludge, which is solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge.

“solid waste” means all putrescible and nonputrescible solid and semisolid wastes including, but not limited to, garbage, rubbish, ashes, industrial wastes, swill, sewage sludge, demolition and construction wastes and recyclable materials [RCW 70.95.030 (22), Solid Waste Management: Reduction and Recycling].

“waters subject to this Memorandum of Understanding (MOU)” include the Puget Sound and the Strait of Juan de Fuca south of the international boundary with Canada; and for off the west coast, the belt of the seas measured from the line of ordinary low water along that portion of the coast which is in direct contact with the open sea and the line marking the seaward limit of inland waters, and extending seaward a distance of three miles as illustrated in *Appendix iii*.

1. Applicability

1.1 The State of Washington agrees that the performance required by the NWCCA under the terms of this Memorandum of Understanding shall be directed only to its member cruise lines. The NWCCA acknowledges that its members operate cruise vessels engaged in

cruise itineraries greater than one day duration; and further that its members do not operate one-day attraction ships or casino gambling ships. This agreement only applies to voyages during which the commercial passenger vessel actually calls at a port in the State of Washington.

1.2 The State of Washington and Port of Seattle accepts the CLIA Industry Standard E-0l – 01, titled ***Cruise Industry Waste Management Practices and Procedures*** (updated at this link: [http://www2.cruising.org/industry/environment.cfm] and the latest version is attached) *(Appendix ii*) as CLIA member policy in the management of solid waste, hazardous wastes and wastewaters in waters subject to this MOU. In addition to the CLIA Practices, the member vessels of NWCCA operating in Washington agree to allow Ecology to conduct a minimum of one vessel inspection per season to verify compliance with the MOU and agree to comply with the following unique practices while operating in waters subject to this MOU:

2.1 Wastewater Management

In recognition of the sensitive nature of Washington's marine environment, the NWCCA agrees to the following:

2.1.1 to prohibit the discharge of untreated blackwater, untreated graywater, and solid waste within waters subject to this MOU (*Appendix iii*); and to prohibit the discharge of oily bilge water if not in compliance with applicable federal and state laws within waters subject to this MOU.

2.1.2 other than as set forth in section 2.1.3 below, to prohibit the discharge of treated blackwater and treated graywater in waters subject to this MOU.

2.1.3 the discharge of treated blackwater and treated graywater from ships equipped with advanced wastewater treatment systems (AWTS) which meet the higher standards and the testing regime set out in federal law, Title XIV, Certain Alaska Cruise Ship Operations, Section 1404 (c) (*Appendix vi*) is allowed under the following conditions:

A. For discharges if the ship is at least one nautical mile away from its berth at a port in Washington and is traveling at a speed of at least 6 knots:

1) No later than 60 days prior to the date the cruise ship wishes to commence discharge of AWTS-treated effluent, the cruise line shall submit the following vessel specific information to Ecology

a. Documentation on the type of treatment system in use on the ship including schematic diagrams of the system.
b. Documentation that the system is certified by the United States Coast Guard for continuous discharge in Alaska. If the certification has not yet been provided by the Coast Guard at the time the other documentation is submitted to Ecology, it may be submitted less than 60 days prior to

commencement of discharge but in no event less than 30 days prior to the commencement of discharge.

c. Provision for daily twenty-four hour continuous turbidity or equivalent monitoring of the quality of the effluent generated by the AWTS and, beginning in 2009, daily twenty-four hour continuous monitoring for disinfection effectiveness.
d. Documentation of system design that demonstrates the AWTS can be automatically shut down if monitoring of treated effluent indicates high turbidity or, beginning in 2009, a disinfection system upset; or documentation that demonstrates that operational controls exist to insure system shut down if monitoring of treated effluent indicates high turbidity or, beginning in 2009, a disinfection system upset. An example of an acceptable operational control is a system that has the continuous monitoring device alarmed as to immediately alert engineering staff on watch to shut down overboard discharges from the system in the event of high turbidity levels or disinfection ineffectiveness in the treated effluent.

B. For continuous discharge:

1) No later than 60 days prior to the date a cruise ship wishes to commence discharge of AWTS effluent, the cruise line shall submit the following vessel specific information to Ecology:

a. Documentation on the type of treatment system in use on the ship including schematic diagrams of the system.
b. Documentation that the system is certified by the United States Coast Guard for continuous discharge in Alaska. If the certification has not yet been provided by the Coast Guard at the time the other documentation is submitted to Ecology, it may be submitted less than 60 days prior to commencement of discharge but in no event less than 30 days prior to commencement of discharge.
c. Provision for daily twenty-four hour continuous turbidity or equivalent monitoring of the quality of the effluent generated by the AWTS and, beginning in 2009, daily twenty-four hour continuous monitoring for disinfection effectiveness.
d. Documentation of system design that demonstrates the AWTS can be automatically shut down if monitoring of treated effluent indicates high turbidity or, beginning in 2009, a disinfection system upset; or documentation that demonstrates that operational controls exist to insure system shut down if monitoring of treated effluent indicates high turbidity or, beginning in 2009, a disinfection system upset. An example of an acceptable operational control is a system that has the continuous monitoring device alarmed as to immediately alert engineering staff on watch to shut down overboard discharges from the system in the event of high turbidity levels or disinfection ineffectiveness in the treated effluent.
e. Documentation that all treated effluent will receive final polishing for disinfection immediately prior to discharge.

f. Copies of water quality tests results taken from the AWTS effluent during the preceding six months.
g. A vessel specific plan that: identifies how effluent will be stored until the AWTS is repaired and which indicates the storage capacity of holding tanks; and includes a notification protocol for notifying Ecology of system shut down which occurs while within waters subject to this MOU.

If Ecology determines that the documentation provided is insufficient, it shall so notify the cruise line. The cruise line shall provide supplemental documentation as requested by Ecology. If Ecology and the cruise line are unable to agree on the supplemental documentation and cruise line elects to discharge from the AWTS, cruise line understands that any such discharge will not have been approved by Ecology and further that Ecology may take appropriate action, including, but not limited to, publicizing, such fact.

Any cruise ship discharging from an AWTS in waters subject to this MOU operates within the shipping lanes and this effectively means that vessels are more than a half a mile from shellfish beds with the possible exception of President's Point, Apple Tree Cove and Tyee Shoal for the 2008 cruise season. For specific information relative to shellfish protection measures, see *appendix x*.

C. The vessels that have submitted documentation under A or B above agree to:

1) Not discharge within 0.5 nautical miles of bivalve shellfish beds that are recreationally harvested or commercially approved to harvest as identified annually by the Department of Ecology. This season's locations include President's Point, Apple Tree Cove and Tyee Shoal as referenced in *Appendix x*.
2) Immediately stop all discharges when high turbidity occurs and, beginning in 2009, when a disinfection system upset condition occurs.
3) Immediately notify the Washington State Department of Health in the event of a disinfection system upset at (360) 236-3330 during office hours or (360) 786-4183 after hours (24 hour pager). The agreement to provide this notice is based on the understanding by NWCCA that the Department of Health will not publicize the information provided unless it reasonably determines that a discharge presents a material public health risk.
4) Sample the quality of the treated effluent using a Washington state-certified laboratory at least one time per month while at port in Washington during each cruise season using the sampling requirements established per the United States Coast Guard, Captain of the Port, Southeast Alaska Policy for conventional pollutants continued compliance monitoring regime and as referenced in *Appendix vi*. Parameters sampled include pH, Biochemical Oxygen Demand (BOD), Fecal Coliform, Total Suspended Solids (TSS), and Residual Chlorine (RC).
5) Meet the limitations on discharge as set in Alaska regulations (*Appendix vi*) for BOD, TSS, pH, Fecal Coliform and Residual Chlorine.[1]

6) Split samples with Ecology upon Ecology's request when sampling is conducted in Washington waters.
7) For vessels that have submitted documentation under B above (continuous discharge), conduct Whole Effluent Toxicity (WET) Testing once every two years for vessels homeported[2] in Washington and once every 40 port calls or turnarounds to a port in Washington for all other vessels.
8) Provide Ecology with duplicates of test results obtained for and provided to the State of Alaska to enable Ecology to monitor the quality of the effluent from such systems.
9) Notify Ecology at least a week in advance of sampling and to allow Ecology staff access to the ship in order to observe sampling events.
10) Notify Ecology if any material changes are made to the system.

Note 1: There is a presumption that meeting Alaska's standards means that Washington's Water Quality Standards are likely being met and that if Alaska's standards are not being met, Washington's Water Quality Standards are not being met.
Note 2: A "homeported" vessel is a vessel that makes a call or does a turnaround at a port in Washington at least 20 times per year.

2.1.4 The discharge of residual solids from either a type 2 marine sanitation device or an advanced waste water treatment system is prohibited in waters subject to this MOU, within 12 nautical miles from shore, and within the entire boundaries of the Olympic Coast Marine Sanctuary. All parties acknowledge that most of the Olympic Coast National Marine Sanctuary lies beyond 3 miles of shore and therefore is outside the jurisdiction of the State of Washington.

2.2 Hazardous Waste Management

2.2.1 The CLIA in consultation with NWCCA has developed, in conjunction with the Environmental Protection Agency (EPA), a national practice for the assigning of an EPA Identification Number to each cruise ship as the "generator" of hazardous wastes, which recognizes the multi-jurisdictional itineraries of a cruise vessel. EPA also proposes that the state where company offices are located may issue the national identification numbers provided the criteria and information submitted required for obtaining the number is standard for the United States. The State of Washington and NWCCA agree to a uniform application procedure for the EPA national identification number in accordance with the Resource Conservation Recovery Act (RCRA) (*Appendix v*). The State of Washington shall have the right to inspect all such records upon written request to the cruise vessel operator. The State of Washington recognizes that in some cases EPA Identification Numbers may not be required under federal law for conditionally exempt small quantity generators.

2.2.2 *Appendix ii* includes the uniform procedure adopted by the NWCCA for the application of RCRA to cruise vessels disposing of hazardous wastes in the State of Washington. The State of Washington accepts this procedure as the appropriate process for vendor selection and management of hazardous wastes in Washington. NWCCA member lines agree to provide an annual report regarding the total hazardous waste offloaded in Washington by each cruise vessel.

2.2.3 The NWCCA acknowledges that the state of Washington regulates some hazardous wastes differently than EPA and agrees, within the waters subject to this MOU, to

comply with the guidelines for specific waste streams found in *Appendix vii*.

2.2.4 The State of Washington and NWCCA agree that all hazardous waste disposal records required by RCRA for cruise vessels entering a Washington port shall be available to the State of Washington upon written request to the cruise vessel operator.

3. The State of Washington and the NWCCA understand that the U.S. Coast Guard (USCG) has Federal jurisdiction over environmental matters in navigable waterways in the United States and conducts passenger ship examinations that include review of environmental systems, Safety Management System (SMS) documentation and such MARPOL-mandated documents as the Oil Record Book and the Garbage Record Book. Additionally, NWCCA member cruise vessels will integrate such industry standards into SMS documentation that ensure compliance through statutorily required internal and third party audits.

4. The USCG has developed guidelines relating to the inspection of waste management practices and procedures, which have been adopted by the cruise industry. The State of Washington accepts the USCG Navigation and Vessel Inspection Circular and Environmental Systems Checklist (*Appendix iv*), which will be incorporated into USCG 840 Guidebook as the procedure to conduct waste management inspections on board cruise vessels. To reduce administrative burden on the cruise ship industry, the State of Washington agrees to first request from the USCG any records for cruise vessels entering waters subject to this MOU to the extent that those records are covered by the Memorandum of Agreement, dated May 25th, 2001, between the State of Washington Department of Ecology and the USCG. Other USCG records will be provided to the State directly by the NWCCA member lines upon request.

5. The State of Washington recognizes that waste management practices are undergoing constant assessment and evaluation by cruise industry members. It is understood by the State of Washington and the NWCCA that the management of waste streams will be an on-going process, which has as its stated objectives both waste minimization and pollution prevention. Consequently, all parties agree to continue to work with each other in good faith to achieve the stated objectives. This may require additional meetings with the parties to this Agreement to discuss specific issues applicable to the cruise industry in the U.S.

6. The NWCCA acknowledges that its operating practices are required to comply with the applicable provisions of the Marine Mammal Protection Act, the Invasive Species Act and the State of Washington Ballast Water Management law, RCW Ch. 77.120. The NWCCA agrees to acknowledge and comply with appropriate rules and regulations related to the Olympic Coast National Marine Sanctuary, including but not limited to the regulations for implementing the National Marine Sanctuary Program (subparts A through E and subpart O of Title 15, Chapter IX, Part 922 of the Code of Federal Regulations) and the International Maritime Organization (IMO) “Area To Be Avoided” off the Washington Coast.

7. This agreement does not prohibit discharges made for the purpose of securing the vessel or saving life at sea, provided that all reasonable precautions have been taken for the purpose of preventing or minimizing the discharge.

8. All parties acknowledge that ongoing discussions of environmental goals are recognized as a necessary component to the successful implementation of management practices for waste minimization and reduction.

9. Compliance, Modification and Review of MOU: NWCCA members agree to immediately self-report non-compliance with any provision of this MOU to the Department of Ecology at the following 24-hour number: 425-649-7000. By December 1st of each year, a report shall be submitted to the Department of Ecology detailing the compliance with this MOU for each vessel within the NWCCA that calls to a port in Washington for the previous cruise season. The reports should follow the format included in *Appendix viii*. All parties acknowledge that this MOU is not inclusive of all issues, rules or programs that may arise in the future. The State of Washington reserves the right to enter into additional MOUs to address or refine such issues, to take enforcement action in response to violations of state law, or to pursue appropriate legislation. All parties agree to at least one annual meeting to review the effectiveness of the MOU, such meeting to be scheduled, if feasible, during October of each year. The State of Washington and NWCCA reserve the right to cancel this MOU upon 90 days written notice.

10. Amendments to the Memorandum of Understanding (MOU) will occur every three years starting in 2012. A request for proposed amendments will be posted on the Port of Seattle and Department of Ecology websites at the beginning of November of the year preceding the amendment adoption (e.g., in the beginning of November 2011 for 2012 adoption). All proposed amendments must be submitted within 21 calendar days of the posting.

A 45-day review period will follow for all of the MOU signatories to review and validate the proposed amendments (around mid January). This period is longer to account for the holiday period, if the timing is different, review periods may be adjusted accordingly.

Amendments that meet the criteria identified below will be then posted for a 30-day public comment period (around mid February).

At the end of the comment period, MOU signatories will review the comments and meet to decide which, if any, of the proposed amendments should be adopted.

Criteria for Proposed Amendments

All proposed amendments meeting the following criteria will be advanced for further review and comment:

- In order to be considered, proposed amendments must be submitted within three weeks of the posted request for proposed amendments.
- Proposed amendments should include only cruise ship activity within the boundaries of the MOU.

- The MOU, as amended, should not duplicate or replace existing regulations that govern cruise ships, however they may be more stringent.
- Proposed amendments must receive the sponsorship of one of the MOU signatories. *(Note**:** sponsorship does not necessarily mean that the signatory will support adoption of the proposed amendment.)*
- If none of the signatories support a proposed amendment, it will *not* be reviewed or considered for adoption.
- Proposed amendments must include
  - the basis for the amendment (e.g., what environmental concern it addresses)
  - how the amendment is applicable to or compatible with the MOU
  - the anticipated benefits of the amendment
  - potential impacts of the amendment
  - include scientific data that supports the proposed amendment as applicable
- In order for an amendment to be adopted, it must receive unanimous approval from the MOU signatories.

Exceptions

The only exception to this amendment process is an amendment proposed by one of the signatories and supported unanimously by the other two signatories.

11. The Port of Seattle and Ecology entered into an interagency agreement for the purpose of providing funding for Ecology personnel to further the intent of the MOU. The Port of Seattle is acting solely as a pass-through contracting entity to facilitate the collection of funds from the individual NWCCA members to provide payment to Ecology on behalf of the NWCCA members. The interagency agreement as included in *Appendix ix* may be amended or renewed separately from this MOU at any time by the parties of the agreement without amending the MOU.

Appendix xi includes a summary of amendments.

IN RECOGNITION OF THE MUTUAL UNDERSTANDINGS DISCUSSED HEREIN THE PARTIES HERETO AFFIX THEIR SIGNATURES. THIS AMENDMENT SHALL BE EFFECTIVE UPON THE DATE AND SIGNATURE OF THE FINAL SIGNING PARTY, THE DEPARTMENT OF ECOLOGY.

Washington State Department of Ecology Date

Port of Seattle

North West & Canada Cruise Association

APPENDICES
MEMORANDUM OF UNDERSTANDING

Appendix i	List of NWCCA Member Lines
Appendix ii	CLIA Standards
Appendix iii	Navigational Chart of the waters subject to this MOU
Appendix iv	USCG Navigation & Vessel Inspection Circular and Environmental Systems Checklist
Appendix v	Uniform application procedure for EPA National ID Number as per Resource Conservation Recovery Act.
Appendix vi	Alaska Regulations
Appendix vii	Washington Hazardous Waste Management Best Management Practices
Appendix viii	Boilerplate Compliance Letter
Appendix ix	Interagency Agreement (cost-recovery)
Appendix x	Bivalve Shellfish Beds
Appendix xi	Summary of Amendments

Appendix i

List of NWCCA Member Lines

Carnival Cruise Lines
Celebrity Cruises
Crystal Cruises
Disney Cruise Line
Holland America Line
Norwegian Cruise Line
Oceania Cruises
Princess Cruises
Regent Seven Seas Cruises
Royal Caribbean International
Silversea Cruises

Appendix ii

http://www2.cruising.org/industry/environment.cfm (for latest version)
CLIA INDUSTRY STANDARD

CRUISE INDUSTRY
WASTE MANAGEMENT
PRACTICES AND PROCEDURES

The members of the Cruise Lines International Association (CLIA) are dedicated to preserving the marine environment and in particular the pristine condition of the oceans and other waters upon which our vessels sail. The environmental standards that apply to our industry are stringent and comprehensive. Through the International Maritime Organization, the United States and flag and port states, CLIA has developed consistent and uniform international standards that apply to all vessels engaged in international commerce. These standards are set forth in the International Convention for the Prevention of Pollution from Ships (MARPOL). The international standards of MARPOL have in turn been adopted by the United States and augmented by additional national legislation and regulation. The U.S. has jurisdiction over both foreign and domestic vessels that operate in U.S. waters where U.S. laws, such as the Federal Water Pollution Control Act, the Act to Prevent Pollution from Ships, the Ports and Waterways Safety Act, and the Resource Conservation and Recovery Act - which applies to hazardous waste as it is landed ashore for disposal, apply. The U.S. Coast Guard enforces both international conventions and domestic laws.

The cruise industry commitment to protecting the environment is demonstrated by the comprehensive spectrum of waste management technologies and procedures employed on its vessels.

CLIA members are committed to:

a. **Designing, constructing and operating vessels, so as to minimize their impact on the environment;**

b. **Developing improved technologies to exceed current requirements for protection of the environment;**

c. **Implementing a policy goal of zero discharge of MARPOL, Annex V solid waste products (garbage) and equivalent US laws and regulations by use of more comprehensive waste minimization procedures to significantly reduce shipboard generated waste;**

d. **Expanding waste reduction strategies to include reuse and recycling to the maximum extent possible so as to land ashore even smaller quantities of waste products;**

e. **Improving processes and procedures for collection and transfer of hazardous waste; and**

f. Strengthening comprehensive programs for monitoring and auditing of onboard environmental practices and procedures in accordance with the International Safety Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code).

INDUSTRY WASTE MANAGEMENT STANDARDS: **CLIA member cruise vessel operators have agreed to incorporate the following standards for waste stream management into their respective Safety Management Systems.**

1. **Photo Processing, Including X-Ray Development Fluid Waste:** ***Member lines have agreed to minimize the discharge of silver into the marine environment through the use of best available technology that will reduce the silver content of the waste stream below levels specified by prevailing regulations.***

2. **Dry-cleaning waste fluids and contaminated materials:** ***Member lines have agreed to*** **prevent** ***the discharge of chlorinated dry-cleaning fluids, sludge, contaminated filter materials and other dry-cleaning waste byproducts into the environment***

3. **Print Shop Waste Fluids:** ***Member lines have agreed to prevent the discharge of hazardous wastes from printing materials (inks) and cleaning chemicals into the environment.***

4. **Photo Copying and Laser Printer Cartridges:** ***Member lines have agreed to initiate procedures so as to maximize the return of photo copying and laser printer cartridges for recycling. In any event, these cartridges will be landed ashore.***

5. **Unused And Outdated Pharmaceuticals:** ***Member lines have agreed to ensure that unused and/or outdated pharmaceuticals are effectively and safely disposed of in accordance with legal and environmental requirements.***

6. **Fluorescent And Mercury Vapor Lamp Bulbs:** ***Member lines have agreed to prevent the release of mercury into the environment from spent fluorescent and mercury vapor lamps by assuring proper recycling or by using other acceptable means of disposal.***

7. **Batteries:** ***Member lines have agreed to prevent the discharge of spent batteries into the marine environment.***

8. **Bilge and Oily Water Residues:** ***Member lines have agreed to meet or exceed the international requirements for removing oil from bilge and wastewater prior to discharge.***

9. **Glass, Cardboard, Aluminum and Steel Cans:** ***Member lines have agreed to eliminate, to the maximum extent possible, the disposal of MARPOL Annex V wastes into the marine environment. This will be achieved through improved reuse and recycling opportunities. They have further agreed that no waste will be discharged into the marine environment unless it has been properly processed and can be discharged in accordance with MARPOL and other prevailing requirements.***

10. **Incinerator Ash:** ***Member lines have agreed to reduce the production of incinerator ash by minimizing the generation of waste and maximizing recycling opportunities.***

11. **Graywater**: **[*For ships traveling regularly on itineraries beyond the territorial waters of coastal states], member lines have agreed that graywater will be discharged only while the ship is underway and proceeding at a speed of not less than 6 knots[1]; that graywater will not be discharged in port and will not be discharged within 4 nautical miles from shore or such other distance as agreed to with authorities having jurisdiction or provided for by local law except in an emergency, or where geographically limited. Member lines have further agreed that the discharge of graywater will comply with all applicable laws and regulations. For vessels whose itineraries are fully within US territorial waters, discharge shall comply fully with U.S. and individual state legislation and regulations.***

12. **Blackwater**: ***CLIA members have agreed that all blackwater will be processed through a Marine Sanitation Device (MSD), certified in accordance with U.S. or international regulations, prior to discharge. For ships traveling regularly on itineraries beyond territorial coastal waters, discharge will take place only when the ship is more than 4 miles from shore and when the ship is traveling at a speed of not less than 6 knots.[1] For vessels whose itineraries are fully within US territorial waters, discharge shall comply fully with U.S. and individual state legislation and regulations.***

Some member cruise lines are field-testing wastewater treatment systems that utilize advanced technologies. These onboard wastewater treatment systems, which are currently being referred to as advanced wastewater purification (AWP) systems, are designed to result in effluent discharges that are of a high quality and purity; for example, meeting or surpassing secondary and tertiary effluents and reclaimed water. Effluents meeting these high standards would not be subjected to the strict discharge limitations previously discussed.

Each CLIA cruise vessel operator has agreed to utilize one or more of the practices and procedures contained in the attached *"Cruise Industry Waste Management Practices and Procedures"* in the management of their shipboard waste streams. Recognizing that technology is progressing at a rapid rate, any new equipment or management practices that are equivalent to or better than those described, and which are shown to meet or exceed international and federal environmental standards, will also be acceptable. Member lines have agreed to communicate to CLIA the use of equivalent or other acceptable practices and procedures. As appropriate, such practices and procedures shall be included as a revision to the attached document. As an example, when improved systems for treating blackwater and graywater are perfected and shown to meet the requirements for MSDs and accepted by appropriate authorities, the new systems and associated technology will be included in the attachment as a revision.

CLIA and its Environmental Committee will continue to work with the U.S. Coast Guard, the U.S. Environmental Protection Agency and other appropriate agencies to further implement the above commitments.

[1] For vessels operating under sail, or a combination of sail and motor propulsion, the speed shall not be less than 4 knots.

ATTACHMENT: *CRUISE INDUSTRY WASTE MANAGEMENT PRACTICES AND PROCEDURES*

Revised: November 12, 2006
Effective for non-prior ICCL members:July 1, 2007

Appendix ix

INTERAGENCY AGREEMENT NO. 9F73-02

BETWEEN

THE STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

AND

PORT OF SEATTLE

THIS AGREEMENT is made and entered into by and between the DEPARTMENT OF ECOLOGY, hereinafter referred to as "Ecology", and the Port of Seattle, hereinafter referred to as the PORT.

IT IS THE PURPOSE OF THIS AGREEMENT to provide the funding for Ecology personnel to further the intent of the *Memorandum of Understanding, Cruise Operations in Washington State* (the "Cruise MOU") which was entered into between the Department of Ecology, the Port of Seattle, and the Northwest Cruiseship Association ("NWCA"). The parties further acknowledge that the Port is acting solely as a pass-through contracting entity to facilitate the collection of funds from the individual NWCA members and to provide payment to Ecology on behalf of the NWCA members.

THEREFORE, IT IS MUTUALLY AGREED THAT:

STATEMENT OF WORK

Ecology shall furnish the necessary personnel, equipment, material and/or service(s) and otherwise do all things necessary for or incidental to the performance of the work set forth in Attachment "A" attached hereto and incorporated herein.

PERIOD OF PERFORMANCE

Subject to its other provisions, the period of performance of this Agreement shall commence on January 1, 2010, and be completed on December 31, 2010, unless terminated sooner as provided herein.

PAYMENT

The parties have determined that the cost of accomplishing the work herein will not exceed $32,613.00 payment for satisfactory performance of the work shall not exceed this amount unless the parties mutually agree to a higher amount. Compensation for service(s) shall be based on the following rates or in accordance with the following terms, or as set forth in accordance with the budget in Attachment "B" which is attached hereto and incorporated herein.

Notwithstanding anything to the contrary in this Agreement, the Port's obligation to pay for the work set forth on Attachments A and B is expressly contingent on payment to the Port by NWCA and/or its members for such work.

BILLING PROCEDURE

Ecology shall submit an invoice to the Port for work accomplished during the year by March 1, 2011. Payment to Ecology for approved and completed work will be made by payment from excess funds from previous cruise seasons.

RECORDS MAINTENANCE

The parties to this Agreement shall each maintain books, records, documents and other evidence which sufficiently and properly reflect all direct and indirect costs expended by either party in the performance of the service(s) described herein. These records shall be subject to inspection, review or audit by personnel of both parties, other personnel duly authorized by either party, the Office of the State Auditor, and federal officials so authorized by law. All books, records, documents, and other material relevant to this Agreement will be retained for six years after expiration and the Office of the State Auditor, federal auditors, and any persons duly authorized by the parties shall have full access and the right to examine any of these materials during this period.

Records and other documents, in any medium, furnished by one party to this agreement to the other party, will remain the property of the furnishing party, unless otherwise agreed. The receiving party may be required to disclose records and documents, but will not disclose or make available this material to any third parties without first giving notice to the furnishing party and giving it a reasonable opportunity to respond. Each party will utilize reasonable security procedures and protections to assure that records and documents provided by the other party are not erroneously disclosed to third parties.

RIGHTS IN DATA

Unless otherwise provided, data which originates from this Agreement shall be "works for hire" as defined by the U.S. Copyright Act of 1976 and shall be owned by Ecology. Data shall include, but not be limited to, reports, documents, pamphlets, advertisements, books, magazines, surveys, studies, computer programs, films, tapes, and/or sound reproductions. Ownership includes the right to copyright, patent, register, and the ability to transfer these rights.

INDEPENDENT CAPACITY

The employees or agents of each party who are engaged in the performance of this Agreement shall continue to be employees or agents of that party and shall not be considered for any purpose to be employees or agents of the other party.

AGREEMENT ALTERATIONS AND AMENDMENTS

This Agreement may be amended by mutual agreement of the parties. Such amendments shall not be binding unless they are in writing and signed by personnel authorized to bind each of the parties.

TERMINATION

Either party may terminate this Agreement upon 30 days' prior written notification to the other party. If this Agreement is so terminated, the parties shall be liable only for performance rendered or costs incurred in accordance with the terms of this Agreement prior to the effective date of termination.

TERMINATION FOR CAUSE

If for any cause, either party does not fulfill in a timely and proper manner its obligations under this Agreement, or if either party violates any of these terms and conditions, the aggrieved party will give the other party written notice of such failure or violation. The responsible party will be given the opportunity to correct the violation or failure within 15 working days. If failure or violation is not corrected, this Agreement may be terminated immediately by written notice of the aggrieved party to the other.

DISPUTES

In the event that a dispute arises under this Agreement, it shall be determined by a Dispute Board in the following manner: Each party to this Agreement shall appoint one member to the Dispute Board. The

members so appointed shall jointly appoint an additional member to the Dispute Board. The Dispute Board shall review the facts, agreement terms and applicable statutes and rules and make a determination of the dispute. The determination of the Dispute Board shall be final and binding on the parties hereto. As an alternative to this process, either of the parties may request intervention by the Governor, as provided by RCW 43.17.330, in which event the Governor's process will control.

GOVERNANCE

This Agreement is entered into pursuant to and under the authority granted by the laws of the state of Washington and any applicable federal laws. The provisions of this Agreement shall be construed to conform to those laws.

In the event of an inconsistency in the terms of this Agreement, or between its terms and any applicable statute or rule, the inconsistency shall be resolved by giving precedence in the following order:

a. Applicable state and federal statutes and rules;
b. Statement of work; and
c. Any other provisions of the agreement, including materials incorporated by reference.

ASSIGNMENT

The work to be provided under this Agreement, and any claim arising thereunder, is not assignable or delegable by either party in whole or in part, without the express prior written consent of the other party, which consent shall not be unreasonably withheld.

WAIVER

A failure by either party to exercise its rights under this Agreement shall not preclude that party from subsequent exercise of such rights and shall not constitute a waiver of any other rights under this Agreement unless stated to be such in a writing signed by an authorized representative of the party and attached to the original Agreement.

SEVERABILITY

If any provision of this Agreement or any provision of any document incorporated by reference shall be held invalid, such invalidity shall not affect the other provisions of this Agreement which can be given effect without the invalid provision, if such remainder conforms to the requirements of applicable law and the fundamental purpose of this agreement, and to this end the provisions of this Agreement are declared to be severable.

ALL WRITINGS CONTAINED HEREIN

This Agreement contains all the terms and conditions agreed upon by the parties. No other understandings, oral or otherwise, regarding the subject matter of this Agreement shall be deemed to exist or to bind any of the parties hereto.

COUNTERPARTS

This Agreement may be executed in counterparts, each of which may have the signature of only one Party, but each of which shall be deemed to be an original, and all of which, when taken together, shall be deemed to be a single Agreement.

CONTRACT MANAGEMENT

The program manager for each of the parties shall be responsible for and shall be the contact person for all communications and billings regarding the performance of this Agreement.

The Contract/Program Manager for Ecology is: Kevin Fitzpatrick
Department of Ecology

Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008-5452
(425) 649-7033
E-mail: kfit461@ecy.wa.gov

The Contract/Program Manager for Port of Seattle is:

Michael McLaughlin
General Manager, Cruise and Dock Services
Port of Seattle
P.O. Box 1209
Seattle, WA U.S.A. 98111
Phone:(206)728-3453
E-mail: mclaughlin.m@portseattle.org

IN WITNESS WHEREOF, the parties have executed this Agreement.

State of Washington
Department of Ecology

2/9/10
Kelly Susewind, P.E., P.G. Date
~~Interim~~ Water Quality Program Manager

Port of Seattle

Tay Yoshitani, Date
Chief Executive Officer

APPROVED AS TO FORM:

ATTORNEY GENERAL'S OFFICE

Susan Ridgley, Senior Port Counsel

ATTACHMENT A

Department of Ecology/Port of Seattle

Cruise Ship Memorandum of Understanding Scope of Work

The Department of Ecology (Ecology), the Port of Seattle, and the NorthWest CruiseShip Association (NWCA) are signatory to the *Memorandum of Understanding, Cruise Operations in Washington State* (MOU). Originally the MOU was signed April 20, 2004 and thereafter annually amended. The member cruise lines of the NWCA agree to comply with practices, while operating in waters subject to the MOU, pertaining to the management of solid and hazardous wastes and wastewaters. Ecology is charged with protecting and conserving Washington's environmental resources in relation to the cruise industry's environmental practices in Washington. The NWCA has agreed to fund Ecology's costs to implement the MOU and to accomplish the tasks listed herein.

Task 01

Compliance Work:
Work with stakeholders on drafting necessary amendments to cruise MOU. Provide technical assistance for cruise lines and vessel staff. Field questions from the public, press, environmental groups, and cruise lines. Monitor compliance with the MOU. Work with other programs within Ecology on hazardous waste, biosolids, solid waste, spill prevention, and other MOU elements. Work with Ecology policy and fiscal staff on cruise related issues. Research issues related to vessel discharges. Evaluate, draft and update guidance on Whole Effluent Toxicity (WET) testing for cruise ships and evaluate WET testing results. Work with Department of Health Shellfish program on shellfish and virus related studies and issues. Manage and update Ecology's cruise ship website.

Task 02

Inspections:
Conduct annual inspections of cruise vessels to verify the operation of the treatment systems and to evaluate compliance with the MOU. Write up inspection reports and provide recommendations for improvement. Take samples from vessels and evaluate results.

Task 03

Wastewater Discharge Approvals:
Verify documentation submitted for approval of discharges. Evaluate documentation and treatment systems for requirements of MOU to discharge and based on the information submitted and an engineering review, provide approval for discharges as appropriate.

Task 04

Annual Reports:
Draft annual assessment of cruise ship environmental effects report. Evaluate monthly sampling data results and summarize annually.

Task 05

Project Management:
Oversee the cruise ship MOU program and assist as needed. Provides Administrative oversight for compliance with the MOU, represents senior program management in duties related to protection of water quality from cruise ship discharges including negotiations.

Task 06

Additional tasks may become part of this agreement by mutual concurrence of Ecology and the Port of Seattle, or upon extension of the agreement.

2010 Agreement

Attachment B

Department of Ecology / Port of Seattle

Cruise Vessel Wastewater Treatment Inspections
Budget, by Object

The following is a detail breakdown of the salary, benefits and other costs of the Department of Ecology staff who will be funded under this agreement.

OBJECT		COST
1. Salary:		
Environmental Specialist 5 (ES5) $66,420 x .25 FTE =		$16,605
WMS Band 2 (WMS2) 90,084 x .01 FTE =		$ 901
Total Salary:		$17,506
2. Benefits @ 28.3% of Salary:		$ 4,954
3. FY10 Indirect Costs @ 36.8% of Salary & Benefits (1):		$ 4,133
4. FY11 Indirect Costs @ ???% of Salary & Benefits (1):		$ 4,132
NOTE: The indirect rate for FY11 will probably be different from the FY10 amount but that has not been determined yet. For the purposes of this agreement let us assume the 36.8% rate for the full year. We'll have to amend the agreement once the indirect rate is determined.		
5. Goods & Services @ $4,377 per budgeted FTE:		
ES5 4,377 x .25 FTE =		$ 1,094
WMS2 4,377 x .01 FTE =		$ 44
Lab costs =		$ 750
Total Goods & Services:		$ 1,888
	TOTAL	$ 32,613

(1) Ecology's indirect rate, as approved by the federal cognizant agency (United States Environmental Protection Agency) will apply. The current rate for 7/1/09 through 6/30/2010 is 36.8% of salaries and benefits.

(2) Ecology's indirect rate, as approved by the federal cognizant agency (United States Environmental Protection Agency) will apply. The current rate for 7/1/10 through 6/30/2011 is ???% of salaries and benefits. (See note above)

Appendix x
Bivalve Shellfish Beds

Cruise ships that discharge treated sewage into Puget Sound under this MOU employ advanced systems that treat sewage to a very high degree using a combination of filtration, biological treatment, ultra-filtration, and disinfection. These systems are called Advanced Wastewater Treatment Systems (AWTS). The ultra-filtration process effectively removes nearly all bacteria from the treated sewage. However, viruses which tend to be smaller organisms may pass through the ultra-filtration membranes but are typically destroyed by the disinfection unit.

The Centers for Disease Control & Prevention reported 18 norovirus outbreaks on cruise ships in the Pacific Northwest since 2000. Cruise ships discharge into shallow waters along the shipping lanes, near some commercial shellfish beds. Today, national standards provide little guidance on setting shellfish closure zones based on viral risk and there is no reliable viral indicator standard in part due to difficulties in sampling and testing for norovirus.

Because shellfish in Puget Sound and Admiralty Inlet are valuable resources for Washington State, the Washington State Legislature commissioned the Washington State Department of Health (DOH) Office of Shellfish and Water Protection (OSWP) to study the potential risk to shellfish beds from virus contamination associated with cruise ship waste water discharges. DOH contracted with the University of Washington School of Public Health and Community Medicine to perform a risk assessment, which was completed in November 2007. The study used a quantitative microbial risk assessment method coupled with water quality modeling in Puget Sound. Some key findings of the study include:

- *When advanced wastewater treatment systems (AWTS) are functioning well, there is low concern for viral illness. Adequate disinfection is the key to effective norovirus inactivation.*
- *Loss of disinfection could lead to potentially unacceptable virus levels in water over shellfish beds, even with the large dilution provided by ships under sail. However, using minimum dilution factors for when ships are moving at least 6 knots along the current route, dilution is estimated at 1,500,000:1 between the ship and the shore.*
- *The UW study did not gather samples of norovirus concentrations in treated sewage from cruise ships or in the salt water over shellfish beds. Norovirus remains non-culturable, so there is very limited environmental data that is "norovirus specific." In response, UW researchers used data for norovirus "surrogates" from other studies in their analysis.*
- *Consumption data from Tribes that use shellfish beds closest to the path of cruise ships was used in the risk analysis. These rates are higher than for the general population. Raw oyster consumption rates were used as a conservative assumption for these areas.*

The study included many conservative assumptions, but nonetheless concluded that well functioning AWTSs would not lead to norovirus accumulation in shellfish beds such that the median annual risk of potential illness to shellfish consumers from cruise ship discharges in Puget Sound is less than 10,000,000:1. This compares quite favorably with the calculated annual risk of norovirus illness from consumption of raw oysters in the general population, which the UW researchers calculated as about 1,000:1.

As described above, the potential risk of viral contamination of shellfish beds from cruise ship is extremely low when AWTS systems are functioning well. Additionally the geography of Puget Sound and the configuration of shipping lanes provide most shellfish beds some protection from potential contamination from passing ships. However, the signatories to the MOU understand the importance of shellfish resources to Washington State and have agreed to take the actions outlined on page ___ of the MOU to protect shellfish beds and human health while operating in Washington MOU waters.

Appendix x
continued
Bivalve Shellfish Beds
2011 Season

2011 Cruise Season Boundary Points

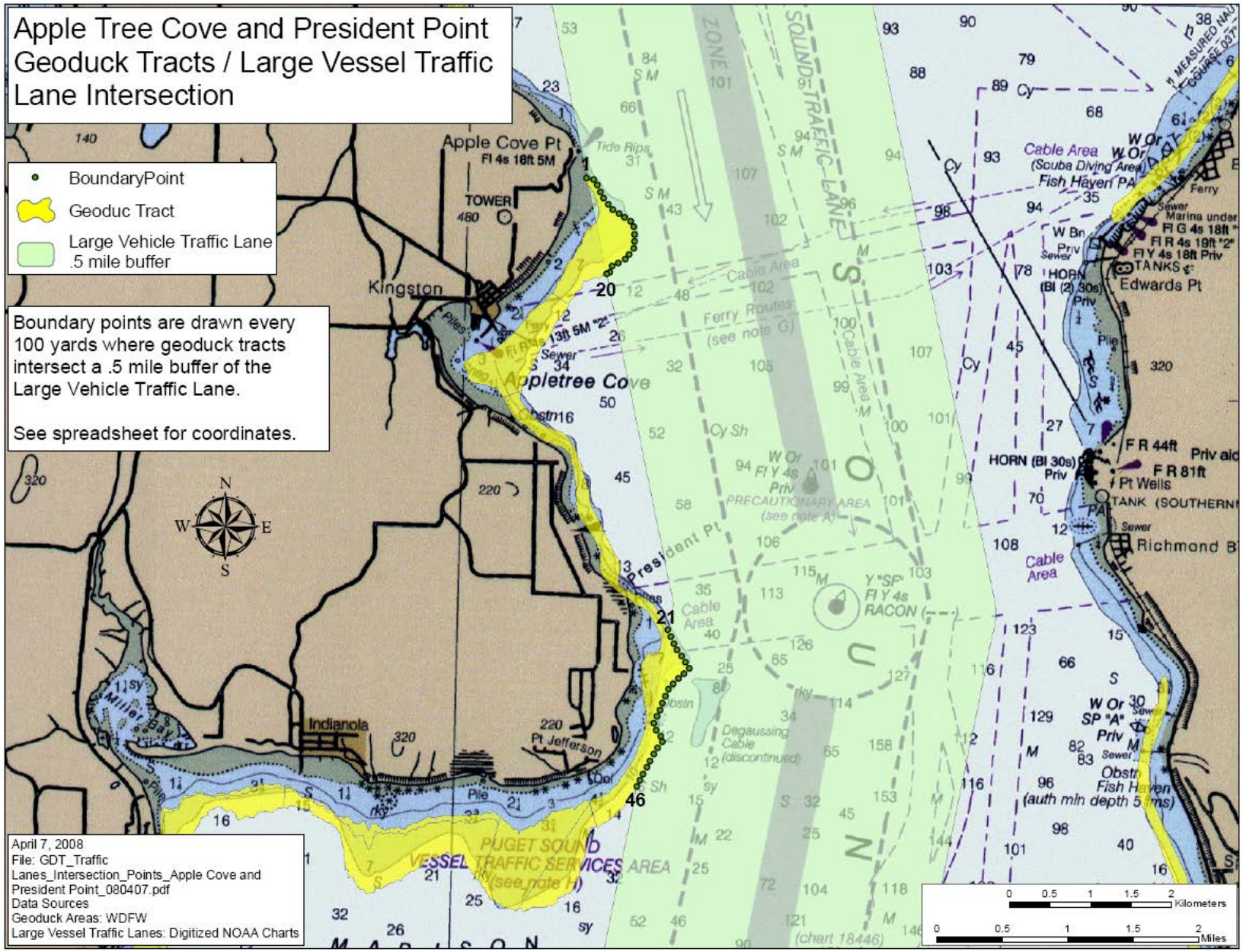
Id	Tract Name	LATITUDE	LONGITUDE
1	Apple Tree Cove	47.81274089040	-122.48047265700
2	Apple Tree Cove	47.81255672180	-122.47941651600
3	Apple Tree Cove	47.81197112760	-122.47872458000
4	Apple Tree Cove	47.81129443870	-122.47812835500
5	Apple Tree Cove	47.81056937740	-122.47758747000
6	Apple Tree Cove	47.80992145700	-122.47684781100
7	Apple Tree Cove	47.80931916930	-122.47604614700
8	Apple Tree Cove	47.80895286530	-122.47498673900
9	Apple Tree Cove	47.80852971000	-122.47419683400
10	Apple Tree Cove	47.80812779070	-122.47315426700
11	Apple Tree Cove	47.80748647770	-122.47257436300
12	Apple Tree Cove	47.80668065230	-122.47239303200
13	Apple Tree Cove	47.80586169470	-122.47237830900
14	Apple Tree Cove	47.80507505630	-122.47246917900
15	Apple Tree Cove	47.80443177020	-122.47321819700
16	Apple Tree Cove	47.80389497510	-122.47389983000
17	Apple Tree Cove	47.80348525790	-122.47492954200
18	Apple Tree Cove	47.80310261180	-122.47598949400
19	Apple Tree Cove	47.80237402570	-122.47638256900
20	Apple Tree Cove	47.80219450150	-122.47688158400

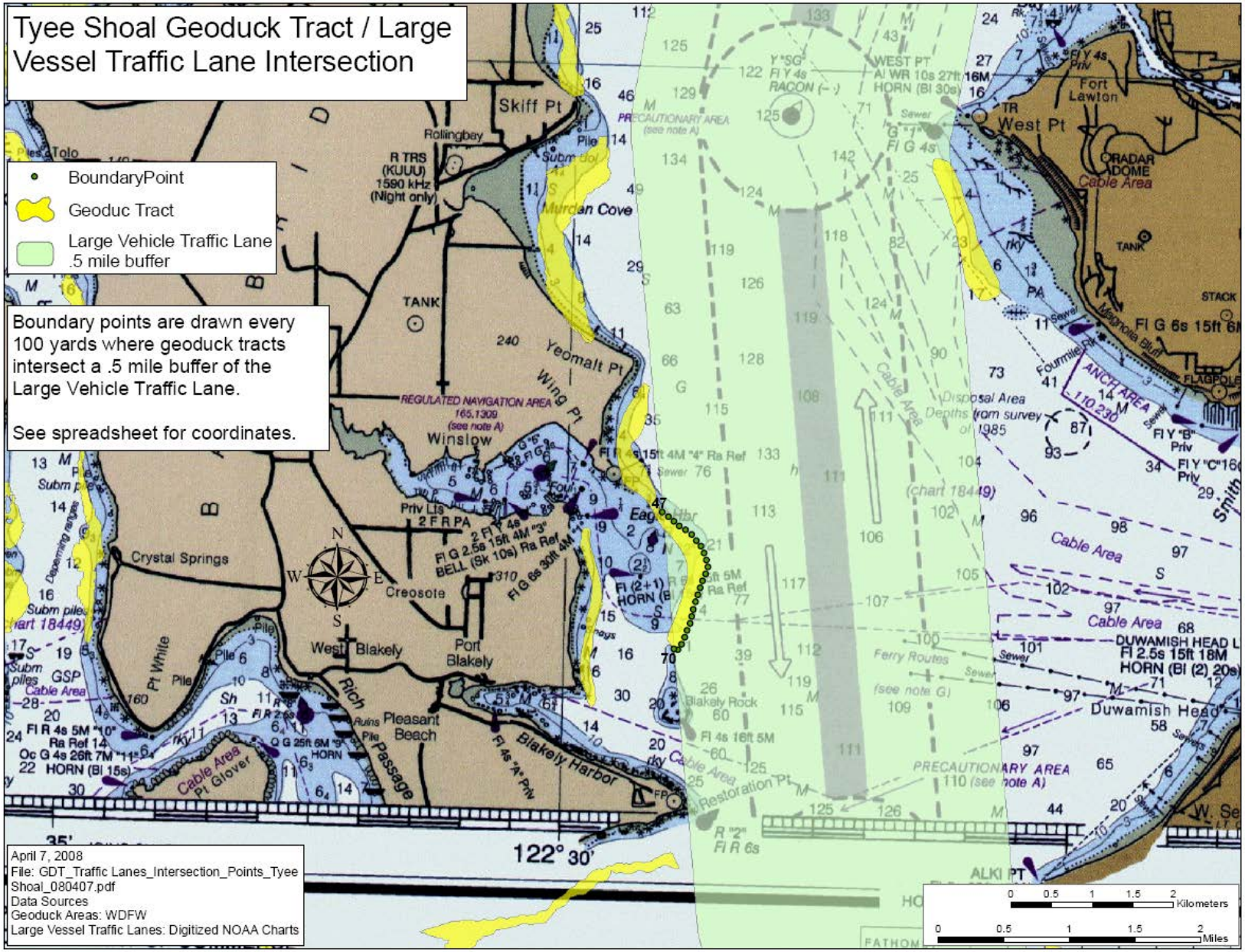
Id	Tract Name	LATITUDE	LONGITUDE
21	President Point	47.76301811440	-122.46531995900
22	President Point	47.76227795780	-122.46478860500
23	President Point	47.76153965240	-122.46425163200
24	President Point	47.76079984240	-122.46372318400
25	President Point	47.76012732540	-122.46302154800
26	President Point	47.75945808780	-122.46231363200
27	President Point	47.75877611500	-122.46163224400
28	President Point	47.75821701680	-122.46249970800
29	President Point	47.75769964180	-122.46344179800
30	President Point	47.75709757920	-122.46424411400
31	President Point	47.75642784290	-122.46495166300
32	President Point	47.75568013190	-122.46545052600
33	President Point	47.75491428200	-122.46589325600
34	President Point	47.75413762450	-122.46629389900
35	President Point	47.75340374390	-122.46683607100
36	President Point	47.75266140050	-122.46720422800
37	President Point	47.75189295980	-122.46684018600
38	President Point	47.75123556490	-122.46610769300
39	President Point	47.75058390610	-122.46579489800
40	President Point	47.74994707310	-122.46656628000
41	President Point	47.74921684450	-122.46711888700
42	President Point	47.74848682750	-122.46768011900
43	President Point	47.74775279740	-122.46822961800
44	President Point	47.74701858040	-122.46877863300
45	President Point	47.74627675290	-122.46930377000
46	President Point	47.74561278720	-122.46984543000

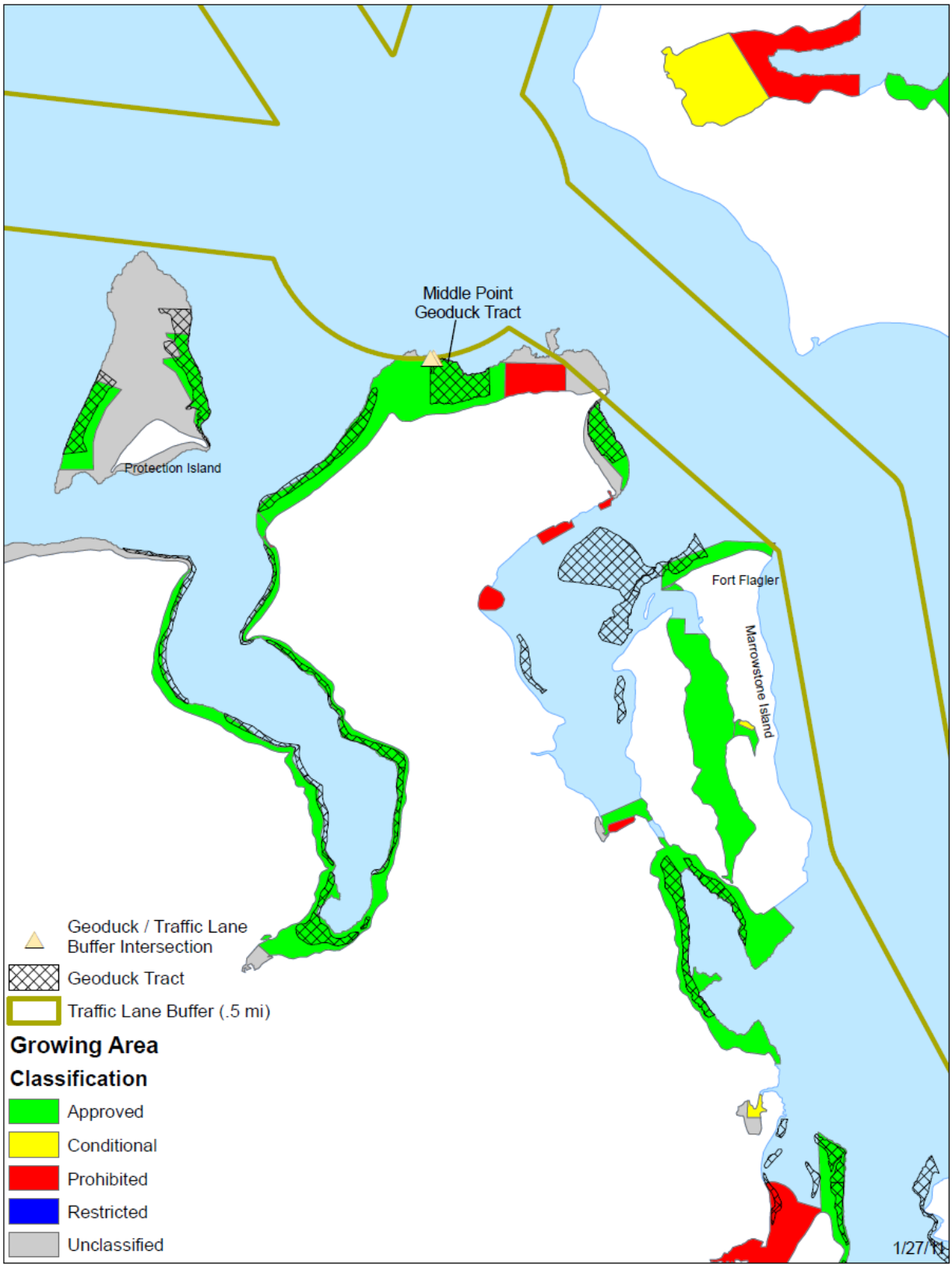
2011 Cruise Season Boundary Points continued

Id	Tract Name	LATITUDE	LONGITUDE
47	Tyee Shoal	47.61916098460	-122.48420272400
48	Tyee Shoal	47.61865190330	-122.48324910700
49	Tyee Shoal	47.61814655430	-122.48229042500
50	Tyee Shoal	47.61761807860	-122.48135871800
51	Tyee Shoal	47.61718007830	-122.48033341700
52	Tyee Shoal	47.61670845870	-122.47935532600
53	Tyee Shoal	47.61609072620	-122.47855854300
54	Tyee Shoal	47.61543441750	-122.47782569300
55	Tyee Shoal	47.61469777070	-122.47729421200
56	Tyee Shoal	47.61394668260	-122.47679893700
57	Tyee Shoal	47.61317098590	-122.47657100600
58	Tyee Shoal	47.61237442300	-122.47686659800
59	Tyee Shoal	47.61162109430	-122.47735159900
60	Tyee Shoal	47.61083929010	-122.47772883400
61	Tyee Shoal	47.61005751060	-122.47810617700
62	Tyee Shoal	47.60927581650	-122.47848390200
63	Tyee Shoal	47.60847990770	-122.47877353100
64	Tyee Shoal	47.60766507680	-122.47893589300
65	Tyee Shoal	47.60687831460	-122.47927979300
66	Tyee Shoal	47.60609769090	-122.47964967100
67	Tyee Shoal	47.60531536900	-122.48000498600
68	Tyee Shoal	47.60457213290	-122.48052049900
69	Tyee Shoal	47.60398226870	-122.48118881300
70	Tyee Shoal	47.60407102430	-122.48180079600
71	Middle Point	48.15109017620	-122.82296755300
72	Middle Point	48.15156870030	-122.82260588400
73	Middle Point	48.15125511720	-122.82167106000

DATUM =
HARN 83


Apple Tree Cove and President Point Geoduck Tracts / Large Vessel Traffic Lane Intersection
BoundaryPoint
Geoduc Tract
Large Vehicle Traffic Lane .5 mile buffer
Boundary points are drawn every 100 yards where geoduck tracts intersect a .5 mile buffer of the Large Vehicle Traffic Lane.
See spreadsheet for coordinates.
April 7, 2008
File: GDT_Traffic Lanes_Intersection_Points_Apple Cove and President Point_080407.pdf
Data Sources
Geoduck Areas: WDFW
Large Vessel Traffic Lanes: Digitized NOAA Charts
Apple Cove Pt
Fl 4s 18ft 5M
Kingston
Appletree Cove
President Pt
Indianola
Pt Jefferson
Miller Bay
PUGET SOUND VESSEL TRAFFIC SERVICES AREA
SOUTHBOUND TRAFFIC LANE
NORTHBOUND TRAFFIC LANE
Cable Area
Ferry Routes
Edwards Pt
Pt Wells
Richmond B
Fish Haven
Kilometers
Miles


Tyee Shoal Geoduck Tract / Large Vessel Traffic Lane Intersection
BoundaryPoint
Geoduc Tract
Large Vehicle Traffic Lane .5 mile buffer
Boundary points are drawn every 100 yards where geoduck tracts intersect a .5 mile buffer of the Large Vehicle Traffic Lane.
See spreadsheet for coordinates.
April 7, 2008
File: GDT_Traffic Lanes_Intersection_Points_Tyee Shoal_080407.pdf
Data Sources
Geoduck Areas: WDFW
Large Vessel Traffic Lanes: Digitized NOAA Charts
Skiff Pt
Rolling Bay
West Pt
Fort Lawton
Murden Cove
Yeomalt Pt
Wing Pt
Winslow
Crystal Springs
Creosote
West Blakely
Port Blakely
Pt White
Pleasant Beach
Blakely Harbor
Blakely Rock
Duwamish Head
Cable Area
PRECAUTIONARY AREA
ANCH AREA
Ferry Routes
122° 30'
Kilometers
Miles


Middle Point
Geoduck Tract
Protection Island
Fort Flagler
Marrowstone Island
Geoduck / Traffic Lane Buffer Intersection
Geoduck Tract
Traffic Lane Buffer (.5 mi)
Growing Area
Classification
Approved
Conditional
Prohibited
Restricted
Unclassified
1/27/11

Appendix xi

MEMORANDUM OF UNDERSTANDING
CRUISE OPERATIONS IN
WASHINGTON STATE
SUMMARY OF AMENDMENTS

AMENDMENT NO. 1

Signed July 8, 2005

1. Changing references to the Seattle being the only port berthed to all ports in Washington.
    - While the ships typically call only to Seattle, there is potential for port calls to other ports.
2. Adding a requirement for all vessels within the NWCCA to submit an annual report of compliance with MOU.
    - This requirement is being added due to the need to know if ships complied with the MOU whether or not they go through the process of authorization to discharge. For ships that choose to hold their discharge while in Washington waters, it is important to know if they complied.
3. Adding regulation language referenced in Appendix vi to show all effluent limits required for discharge.
    - Ships that discharge must meet the higher standards as set in Alaska which is referenced in the MOU and in appendix vi.

AMENDMENT NO. 2

Signed April 28, 2006

1. Adding a requirement to prohibit the discharge of oily bilge water and a definition was also added. The purpose of this addition is to include specific prohibition language on all major sources of potential pollutants from the vessels.
2. Adding a definition for residual solids. Residual Solids has gone undefined although we have had the requirement to prohibit the discharges. This has been added to clarify exactly what types of residual solids are being managed per this MOU.
3. Adding specific language about what limits must be met for monitoring results. The purpose of this addition is to make it clear to the cruise lines and to the public what limits need to be met.
4. Changing the requirement on WET testing from once per 2 years to once per 40 port calls or turnarounds for vessels that are not homeported due to the fact that vessels come and go from this route from year to year.
5. Other minor changes for organization of the document.

Appendix xi
continued

AMENDMENT NO. 3
Signed May 25, 2007

1. Changing all references and the appendix from the International Council of Cruise Lines (ICCL) to the Cruise Line International Association (CLIA) as the association changed.
2. Adding language about the interagency agreement for cost recovery and referencing the appendix.
3. Changing where residual solids (sludge) can be discharged to disallow any residual solids discharges in the entire Olympic Coast National Marine Sanctuary.
4. Clarifying the language to allow for inspections of all vessels, whether approved for discharge or not for compliance with the MOU. The language currently only allows for inspections of vessels discharging.
5. Clarifying the language to say that all vessels approved for discharge, not just those actually discharging agree to the sampling requirements set out in the MOU. The current language has been confusing for some vessels approved for discharge, but mostly holding discharges anyways.

AMENDMENT NO. 4

1. Incorporating recommendations from the Washington State Department of Health virus report:
    a) Not allow discharges within a half mile of shellfish beds. Include an appendix identifying the areas where bivalve shellfish beds that are recreationally harvested or commercially approved within half a mile of the shipping lanes and update annually. And include an appendix with background information on the virus related elements.
    b) Define a "disinfection system upset" condition as a disinfection below levels of four log (99.99%) inactivation of norovirus.
    c) Require immediate shutdown capability from an upset condition of disinfection below levels of four log (99.99%) inactivation of norovirus for all vessels that have submitted documentation to discharge.
    d) Require immediate notification to the Department of Health for an upset condition.

2. Require whole effluent toxicity testing for only those vessels that are have submitted documentation for continuous discharge.

3. Other minor changes for organization of the document.

AMENDMENT NO. 5

1. Including a process for amending the MOU including a public review process. Proposed amendments will be accepted for the 2012 cruise season and then every three years thereafter.
2. Updating the name of the cruise association. In 2010, the NorthWest CruiseShip Association changed its name to the North West & Canada Cruise Association (NWCCA).
3. Including an additional shellfish area to Appendix X.

Item No._____ 6b_Attach 2_____
Date of Meeting:__April 24, 2012_____

AMENDMENT PROCESS FOR MOU

Amendments to the Memorandum of Understanding (MOU) will occur every three years starting in 2012. A request for proposed amendments will be posted on the Port of Seattle and Department of Ecology websites at the beginning of November of the year preceding the amendment adoption (e.g., in the beginning of November 2011 for 2012 adoption). All proposed amendments must be submitted within 21 calendar days of the posting.

A 45-day review period will follow for all of the MOU signatories to review and validate the proposed amendments (around mid January). This period is longer to account for the holiday period, if the timing is different, review periods may be adjusted accordingly.

Amendments that meet the criteria identified below will be then posted for a 30-day public comment period (around mid February).

At the end of the comment period, MOU signatories will review the comments and meet to decide which, if any, of the proposed amendments should be adopted.

Criteria for Proposed Amendments

All proposed amendments meeting the following criteria will be advanced for further review and comment:

- In order to be considered, proposed amendments must be submitted within three weeks of the posted request for proposed amendments.
- Proposed amendments should include only cruise ship activity within the boundaries of the MOU.
- The MOU, as amended, should not duplicate or replace existing regulations that govern cruise ships, however they may be more stringent.
- Proposed amendments must receive the sponsorship of one of the MOU signatories. *(Note: sponsorship does not necessarily mean that the signatory will support adoption of the proposed amendment.)*
- If none of the signatories support a proposed amendment, it will *not* be reviewed or considered for adoption.
- Proposed amendments must include
  - the basis for the amendment (e.g., what environmental concern it addresses)
  - how the amendment is applicable to or compatible with the MOU
  - the anticipated benefits of the amendment
  - potential impacts of the amendment
  - include scientific data that supports the proposed amendment as applicable
- In order for an amendment to be adopted, it must receive unanimous approval from the MOU signatories.

Exceptions

The only exception to this amendment process is an amendment proposed by one of the signatories and supported unanimously by the other two signatories.

Amy Jankowiak
Department of Ecology
Northwest Regional Office
Water Quality Program
3190 160th Avenue SE
Bellevue, WA 98008
amy.jankowiak@ecy.wa.gov

21 November 2011

Re: Proposed Discharge Ban Amendment to the Cruise Ship MOU

Dear Ms. Jankowiak,

This letter is responsive to the 21-day comment period started on November 2, 2011 by the Washington State Department of Ecology (Ecology), Port of Seattle (Port) and North West & Canada Cruise Association (NWCCA) seeking proposed amendments to the Memorandum of Understanding (MOU) governing cruise ship discharges in Washington State waters and the Olympic Coast National Marine Sanctuary.[1]

Last year Ecology, the Port and NWCCA agreed to establish a process to solicit public suggestions for possible additions or changes to the 2004 Memorandum of Understanding (MOU) every three years. Therefore, this comment period is particularly important in that it will be the last time in three years the public will have any say in this growing potential introduction of nutrients, toxics, pharmaceuticals and disease into the Sound. We support the governor's initiative to restore the health of the Puget Sound ecosystem – an initiative which will cost millions of dollars. We need all partners, including Ecology and the Port of Seattle to help protect this investment.

The Port of Seattle reported that the 2011 cruise season was more robust than expected. The port counted 885,949 cruise passengers among 196 ship calls in the late-April-through-early-October cruise season. According to Ecology, four of the vessels had

[1] http://www.ecy.wa.gov/programs/wq/wastewater/cruise_mou/index.html.

traditional Marine Sanitation Devices, eight had Advanced Wastewater Treatment Systems (AWTS), and two were of unknown capability. It is troubling that despite Ecology's ability to board these vessels, they were unable to even ascertain the type of treatment system on two of the 12 vessels home-ported in Seattle. We are concerned that at the end of the eight cruise seasons (since the inception of the MOU) that complete data including this basic information has not yet been provided by the cruise ship industry.

The amendment proposed below is not intended to be punitive. Rather, it affords the MOU parties the opportunity to demonstrate their collective leadership in contributing to the region's economy while minimizing environmental impacts.

The fact that none of the homeported vessels, capable of carrying more 5,000 passengers and crew typically producing over 200,000 gallons of sewage (black water) and up to 1 million gallons of gray water per week,[2] sought permission to discharge in State waters this past season, demonstrates their ability to comply with a discharge ban. However, that could change annually they can simply seek permission from Ecology at the beginning of each new cruise season. For example, it is not clear what Disney will do next season when they will begin homeporting ships in Seattle.

We believe that it is imperative that our public agencies and responsible industry leaders do their part to assure that as this industry continues to enjoy rapid expansion, it takes all reasonable efforts to minimize their impacts.

The following proposed MOU amendments are to be considered in priority order or in combination:

Proposed MOU Amendments:

1) Ban the discharge of gray water and black water in MOU waters.
2) Ban the continuous discharge of gray water and sewage (black water), limiting to only discharge while the ship is greater than 1 mile offshore and traveling at least 6 knots or more.
3) Require observers (those required by Alaskan law) who already board ships in Seattle for the Alaska ocean ranger program to report to Ecology on the vessels' sanitation operations while in MOU waters.

Rationale for Proposed Amendments:

Information from a 2008 U.S. EPA report[3] indicates that regulated and unregulated discharges from cruise ships have the potential to harm the marine environment. For

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[2] *Cruise Ship Pollution: Background, Laws and Regulations, and Key Issues* RL32450, Congressional Research Service, Claudia Copeland, updated Nov. 17, 2008, at CRS-2.

[3] *Cruise Ship Discharge Assessment Report*, U.S. Environmental Protection Agency, Dec. 29, 2008, at 3-5 – 3-28, http://www.epa.gov/owow/oceans/cruise_ships/pdf/0812cruiseshipdischargeassess.pdf. (hereinafter Cruise Ship Report).

example, as demonstrated in greater detail below, the various pathogens and pollutants found in wastewater released into marine waters by cruise ships, even when treated by varying treatment systems, exceed state and federal standards, harm marine resources, and impair recreational opportunities.

The EPA report determined that standard on-board sewage treatment systems (known as Marine Sanitation Devices or MSDs) fail to adequately treat sewage before discharge,[4] and that more advanced systems (known as Advanced Wastewater Treatment Systems or AWTS) need improvements to become sufficiently protective of the marine environment and public health.[5] Testing has demonstrated that treated sewage from cruise ships may contain pathogens and pollutants that exceed federal performance and state water quality standards, thereby contributing to limits on recreational use of marine waters; contamination shellfish beds, finfish, and marine mammal as well as leading to eutrophication.[6] Furthermore, raw graywater also contains harmful contaminants, with levels higher than treated sewage in some cases.[7] Untreated cruise ship graywater concentrations have also exceeded federal Type II performance standards for fecal coliform and total suspended solids.[8]

The introduction of significant volumes of fecal coliform,[9] [10] nutrients,[11] chlorine,[12] and metals[13] through ship discharge is incompatible with the core elements of the of the Puget Sound Partnership's Action Agenda.

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[4] Cruise Ship Report, at 2-1, 2-9, 2-26, 2-27, 2-30, 2-31, 2-32, 2.36, 3-2, 3-3, 3-22, 3-25, 3-26, 3-27, and 3-29. EPA reported that treated effluent from conventional U.S. Coast Guard-approved Type II MSDs contain concentrations of bacteria, chlorine, nutrients, metals, and other pollutants that often far exceed federal ship effluent performance standards and EPA's 2006 National Recommended Water Quality Criteria (NRWQC). Effluent discharges from MSDs often also exceed secondary treatment standards for land-based domestic sewage.

[5] *Id.* EPA found that AWTS, while more effectively treating sewage, do not adequately remove all potentially harmful contaminants. Although AWTS produce cleaner wastewater, treated effluent often did not meet NRWQC for metals, chlorine or nutrients such as ammonia – all of which can harm the marine environment. *See also* federal regulations for the Channel Islands National Marine Sanctuary (74 Fed. Reg. 3216 (Jan. 16, 2009)) and the Cordell Bank, Gulf of the Farallones, and Monterey Bay National Marine Sanctuaries (73 Fed. Reg. 70488 (Nov. 20, 2008) & 74 Fed. Reg. 12088 (March 23, 2009)).

[6] *See also* U.S. Oceans Commission, Chapter 16, 241-242, available at http://oceancommission.gov/documents/full_color_rpt/16_chapter16.pdf (The Commission determined that waste stream discharges from ships "if not properly disposed of and treated can be a significant source of pathogens and nutrients with the potential to threaten human health and damage shellfish beds, coral reefs and other aquatic life," and that "of particular concern are the cumulative environmental impacts caused when cruise ships repeatedly visit the same environmentally sensitive areas.").

[7] Cruise Ship Report, at Section 3.

[8] *Id.*

[9] Cruise Ship Report, at 2-9. Of the 92 samples taken from 21 cruise ships in Alaska during voluntary sampling in 2000 and 2001, only 43 percent met fecal coliform standards and only 32 percent met total suspended solids standards for ship effluent. Only one sample of 70 met both.

The Puget Sound Partnership's Action Agenda and ecosystem targets, first developed in 2008, defines what a healthy Puget Sound is, describes the current state of Puget Sound, prioritizes cleanup and improvement efforts, and highlights opportunities for federal, state, local, tribal and private resources to invest and coordinate. By statute, the near-term strategies and actions described in the Action Agenda must be updated every two years. This proposed amendment specifically supports the Action Agenda's item C8.1 "Establish no discharge zones for commercial and recreational vessels in all or parts of Puget Sound that have nutrient and/or pathogen problems." Addressing cruise ship discharges is compatible with this Action Item.

Due to the above-mentioned concerns on November 1st the Olympic Coast National Marine Sanctuary published a Final Rule updating its Management Plan and regulations for the first time since its creation 17 years ago. The only revision to the regulations "is a ban on cruise ship discharges within the sanctuary, a preventative measure to protect water quality off the Washington coast with negligible economic impact to the industry."[14] The Olympic Coast Sanctuary joins the four National Marine Sanctuaries in California in adopting a vessel wastewater discharge ban.

Ecology states in their current public notice, "The MOU agreement supports the broader Puget Sound Initiative – a comprehensive effort by local, tribal, state and federal governments, business, agricultural and environmental interests, scientists, and the public to restore and protect the Sound, including the Strait of Juan de Fuca."

While it was disappointing not to see mention of support for the Puget Sound Partnership in the Port's Century Agenda, the success of the Partnership to recover the Sound by 2020 in light of increasing population pressures, requires that everyone does their part to be part of the solution. Growing concern about the impacts of ocean acidification on Pacific Northwest waters is further exacerbated by the addition of nutrient loading. The flexibility of mobile dischargers to hold their wastes until they are in less impaired waters makes for a win-win situation.

Thank you for your consideration of sponsoring and supporting these proposed amendments.

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[10] *Id*. at 2-35. For three pollutants – fecal coliform, total residual chlorine and ammonia – end-of-pipe discharge levels are high enough that they may not meet NRWQC after mixing when the vessel is at rest.
[11] *Id*. at 2-34. Average effluent concentrations of ammonia from traditional Type II MSDs and AWTS exceed all of the water body ammonia standards.
[12] *Id*. at 2-30. Both traditional Type II MSD and AWTS effluent concentrations exceed NRWQC for total residual chlorine at the end of the pipe.
[13] *Id*. at 2-31. Several dissolved metals that are common components of ship piping – copper, nickel, and zinc – were found at levels approximately one to four times above NRWQC for aquatic life.
[14] http://olympiccoast.noaa.gov.

If you have any questions, please contact Fred Felleman at (206) 595-3825 and felleman@comcast.net or Marcie Keever at (415) 544-0790 x 223 and mkeever@foe.org; Katelyn Kinn at (206) 297-7002 and katelyn@pugetsoundkeeper.org; and Heather Trim at htrim@pugetsound.org.

Sincerely,

Fred Felleman, Northwest Consultant
Marcie Keever, Oceans & Vessels Project Director
Friends of the Earth

Katelyn Kinn
Legal Affairs Coordinator
Puget Soundkeeper Alliance

Heather Trim
Director of Policy
People For Puget Sound

Cc: Port of Seattle Commission
Northwest & Canada Cruise Association

Amy Jankowiak
Department of Ecology
Northwest Regional Office
Water Quality Program
3190 160th Avenue SE
Bellevue, WA 98008
amy.jankowiak@ecy.wa.gov

13 February 2012

Re: Support Proposed Amendments to the Cruise Ship MOU

Dear Ms. Jankowiak,

Thank you for proposing two of the three amendments put forward by Friends of the Earth, People for Puget Sound and Puget Soundkeeper Alliance for the Memorandum of Understanding (MOU) governing cruise ship discharges in Washington State waters and the Olympic Coast National Marine Sanctuary.[1] We strongly support both proposed amendments and we urge the Washington State Department of Ecology (Ecology), Port of Seattle (Port) and North West & Canada Cruise Association (NWCCA) to adopt the most protective measures for Puget Sound as a part of the Cruise MOU—a full wastewater discharge ban for cruise ships in all MOU waters. Furthermore, more than 1,300 Friends of the Earth members and activists in Washington State submitted comments in support of a cruise ship wastewater no-discharge zone.[2]

I. Introduction

Last year Ecology, the Port and NWCCA agreed to establish a process to solicit public suggestions for possible additions or changes to the 2004 Memorandum of Understanding (MOU) every three years. Therefore, this comment period is particularly important in that it will be the last time in three years the public will have any say in the growing introduction of nutrients, toxics, pharmaceuticals, bacteria and disease into the Sound. We support the governor's initiative to restore the health of the Puget Sound ecosystem – an initiative which

[1] http://www.ecy.wa.gov/programs/wq/wastewater/cruise_mou/index.html.
[2] Letters from Friends of the Earth activists have been submitted electronically to the MOU parties under separate cover.

will cost millions of dollars. We need all partners, including the Department of Ecology and the Port of Seattle to help protect this investment.

The Port of Seattle reported that the 2011 cruise season was more robust than expected. The port counted 885,949 cruise passengers among 196 ship calls in the late-April-through-early-October cruise season. It is the express goal of the Port's Century Agenda to double the number of cruise ship calls within 20 years. According to Ecology, four of the vessels calling in 2011 had traditional Marine Sanitation Devices, eight had Advanced Wastewater Treatment Systems (AWTS), and two were of unknown capability. It is troubling that despite Ecology's ability to board these vessels, they were unable to even ascertain the type of treatment system on two of the 12 vessels home-ported in Seattle. We are concerned that at the end of the eight cruise seasons (since the inception of the MOU) that complete data including this basic information has not yet been provided by the cruise ship industry.

The amendments proposed by Friends of the Earth, People for Puget Sound and Puget Soundkeeper Alliance and those that were accepted by the MOU parties are not intended to be punitive. Rather, they afford the MOU parties the opportunity to demonstrate their collective leadership in contributing to the region's economy while minimizing environmental impacts.

The fact that none of the homeported vessels, capable of carrying more 5,000 passengers and crew typically producing over 200,000 gallons of sewage (black water) and up to 1 million gallons of gray water per week,[3] sought permission to discharge in State waters this past season, demonstrates their ability to comply with a discharge ban. However, that could change annually they can simply seek permission from Ecology at the beginning of each new cruise season. For example, it is not clear what Disney will do next season when they will begin homeporting ships in Seattle.

We believe that it is imperative that our public agencies and responsible industry leaders do their part to assure that as this industry continues to enjoy rapid expansion, it takes all reasonable efforts to minimize their impacts.

II. Cruise Ship Pollution Harms the Environment & Public Health

Information from a 2008 U.S. EPA report[4] indicates that regulated and unregulated discharges from cruise ships have the potential to harm the marine environment. For example, as demonstrated in greater detail below, the various pathogens and pollutants found in wastewater released into marine waters by cruise ships, even when treated by varying treatment systems, exceed state and federal standards, harm marine resources, and impair recreational opportunities. The introduction of significant volumes of fecal

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[3] *Cruise Ship Pollution: Background, Laws and Regulations, and Key Issues* RL32450, Congressional Research Service, Claudia Copeland, updated Nov. 17, 2008, at CRS-2.

[4] *Cruise Ship Discharge Assessment Report*, U.S. Environmental Protection Agency, Dec. 29, 2008, at 3-5 – 3-28, http://www.epa.gov/owow/oceans/cruise_ships/pdf/0812cruiseshipdischargeassess.pdf. (hereinafter Cruise Ship Report).

coliform,[5] [6] nutrients,[7] chlorine,[8] and metals[9] through ship discharge is incompatible with the core elements of the of the Puget Sound Partnership's Action Agenda.

The Puget Sound Partnership's Action Agenda and ecosystem targets, first developed in 2008, defines what a healthy Puget Sound is, describes the current state of Puget Sound, prioritizes cleanup and improvement efforts, and highlights opportunities for federal, state, local, tribal and private resources to invest and coordinate. By statute, the near-term strategies and actions described in the Action Agenda must be updated every two years. This proposed amendment specifically supports the Action Agenda's item C8.1 "Establish no discharge zones for commercial and recreational vessels in all or parts of Puget Sound that have nutrient and/or pathogen problems." Addressing cruise ship discharges, as described in this proposal, is also supported by the comments of the Environmental Caucus to the Action Agenda.

III. Banning Cruise Ship Discharges is Consistent with Recent Regulatory Actions by NOAA in the Olympic Coast Sanctuary and U.S. EPA in California

Due to the above-mentioned concerns on November 1st the Olympic Coast National Marine Sanctuary published a Final Rule updating its Management Plan and regulations for the first time since its creation over 17 years ago. The only revision to the regulations "is a ban on cruise ship discharges within the sanctuary, a preventative measure to protect water quality off the Washington coast with negligible economic impact to the industry."[10] The Olympic Coast Sanctuary joins the four National Marine Sanctuaries in California in adopting a vessel wastewater discharge ban.

In addition, just last week the state of California's application for a statewide No-Discharge Zone for large passenger ships and other ocean-going vessels 300 gross tons or larger was finally approved by the U.S. Environmental Protection Agency.[11] EPA's action will ban all sewage discharges from large cruise ships and most other large ocean-going ships to state marine waters along California's 1,624 mile coast from Mexico to Oregon and surrounding major islands. The action strengthens protection of California's coastal waters from the adverse effects of sewage discharges from a growing number of large vessels. EPA estimates that the rule will prohibit the discharge of over 22 million of the 25 million

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[5] Cruise Ship Report, at 2-9. Of the 92 samples taken from 21 cruise ships in Alaska during voluntary sampling in 2000 and 2001, only 43 percent met fecal coliform standards and only 32 percent met total suspended solids standards for ship effluent. Only one sample of 70 met both.
[6] *Id*. at 2-35. For three pollutants – fecal coliform, total residual chlorine and ammonia – end-of-pipe discharge levels are high enough that they may not meet NRWQC after mixing when the vessel is at rest.
[7] *Id*. at 2-34. Average effluent concentrations of ammonia from traditional Type II MSDs and AWTS exceed all of the water body ammonia standards.
[8] *Id*. at 2-30. Both traditional Type II MSD and AWTS effluent concentrations exceed NRWQC for total residual chlorine at the end of the pipe.
[9] *Id*. at 2-31. Several dissolved metals that are common components of ship piping – copper, nickel, and zinc – were found at levels approximately one to four times above NRWQC for aquatic life.
[10] http://olympiccoast.noaa.gov.
[11] http://www.epa.gov/region9/mediacenter/nodischarge/index.html.

gallons of treated vessel sewage generated by large vessels in California marine waters each year, which could greatly reduce the contribution of pollutants still found in treated vessel sewage.

IV. Conclusion

While it was disappointing not to see mention of support for the Puget Sound Partnership in the Port's own Century Agenda, the success of the Partnership to recover the Sound by 2020 in light of increasing population pressures, requires that everyone does their part to be part of the solution. The proposed MOU amendments provide Ecology, the Port and the NWCCA the opportunity to halt a significant and growing source of Sound pollution immediately. Growing concern about the impacts of ocean acidification on Pacific Northwest waters is further exacerbated by the addition of nutrient loading. The flexibility of mobile dischargers to hold their wastes until they are in less impaired waters makes for a win-win situation.

Thank you for your consideration of the proposed amendments.

If you have any questions, please contact Fred Felleman at (206) 595-3825 and felleman@comcast.net or Marcie Keever at (415) 544-0790 x 223 and mkeever@foe.org and Katelyn Kinn at (206) 297-7002 and katelyn@pugetsoundkeeper.org.

Sincerely,

Fred Felleman, Northwest Consultant
Marcie Keever, Oceans & Vessels Project Director
Friends of the Earth

Katelyn Kinn
Legal Affairs Coordinator
Puget Soundkeeper Alliance

Cc: Port of Seattle Commission
Northwest & Canada Cruise Association

Item No. _6d_Attach 5_____
Date of Meeting: _March 6, 2012_

PEOPLE FOR PUGET SOUND
pugetsound.org

February 13, 2012

Amy Jankowiak
Department of Ecology
Northwest Regional Office
Water Quality Program
3190 160th Avenue SE
Bellevue, WA 98008
Via email: amy.jankowiak@ecy.wa.gov

Re: Proposed Amendment to the Cruise Ship MOU

Dear Ms. Jankowiak,

We are writing to support the amendment - *Ban the discharge of [treated or untreated] gray water and black water in MOU waters* - proposed by Friends of the Earth, People for Puget Sound and Puget Soundkeeper Alliance for the Memorandum of Understanding (MOU) governing cruise ship discharges in Washington State waters and the Olympic Coast National Marine Sanctuary.

Many of the cruise lines operating in Puget Sound already have strong environmental practices in place. The Port expects that the cruise ship industry in Puget Sound will increase over the next 20 year, possibly doubling, which adds more reason for taking action now. While in Puget Sound and the MOU waters, we believe that the cruise ships already have the ability to hold their wastewater and that many of the companies already adopt this practice.

Last week, the U.S. Environmental Protection Agency adopted a federal rule that will ban all ships (cruise, container, and other ships) from discharging their treated or untreated waste or gray water into the ocean within 3 miles of California's coast. We would like to see Puget Sound have a similar level of protection.

Agreeing to a ban on discharge of sewage or grey water in Puget Sound will be a terrific way for Ecology, the Port of Seattle and the Cruise Industry to show environmental leadership and to help fulfill one of the strategies in the Puget Sound Partnership's Action Agenda.

Thank you for your consideration. You can reach me at (206) 382-7007 (X172) or htrim@pugetsound.org.

Sincerely,

Heather Trim
Director of Policy

PUGETSOUND.ORG

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DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

March 2, 2012

Ms. Stephanie Jones Stebbins
Director, Seaport Environmental
& Planning Programs
Port of Seattle
PO Box 1209
Seattle, WA 98111

Mr. Greg Wirtz, President
North West & Canada Cruise Association
100-1111 W. Hastings St
Vancouver, BC V6E 2J3

RE: Department of Ecology's position on the proposed amendments to the MOU for 2012.

Dear Ms. Stebbins and Mr. Wirtz:

Before the start of the 2011 Cruise Ship Season in Seattle, the Memorandum of Understanding for Cruise Operations in Washington State (MOU) signatories, the Port of Seattle (POS), the North West & Canada Cruise Association (NWCCA), and the Department of Ecology (Ecology) adopted a process by which we would consider amendments to the MOU from non-signatory stakeholders. The parties of the MOU developed criteria in the MOU to consider non-signatory amendments and determine if such should be issued for public comment. At least one party must support the proposed amendment for public review. The process also stipulates that amendments put forward by non-signatory stakeholders require the unanimous endorsement of all the signatories to the MOU if the amendments are to be adopted into the MOU.

In November of 2011, Ecology posted a call for proposed amendments to the MOU. One letter with three proposed amendments was received from People for Puget Sound, Friends of the Earth and Puget Soundkeeper Alliance. The parties of the MOU reviewed the amendments with the criteria laid out in the MOU and moved two of the amendments on for public comment. At least one party must support the proposed amendment for public review and Ecology supported

the amendments for public review. The proposed amendments for public comment as written are:

1. "Ban the discharge of gray water and black water in MOU waters."
2. "Ban the continuous discharge of gray water and sewage (black water), limiting to only discharge while the ship is greater than 1 mile offshore and traveling at least 6 knots or more."

The public comment period for this review ended on February 13, 2012. More than 1800 comments were received. Almost all of the comments were from two different form letters, although some were modified. All of the comments supported either the ban on all discharges of black water or gray water in MOU waters or supported both amendments.

The wording for the second proposed amendment (proposed amendment No. 2) is slightly different than the wording that is used in the MOU. The MOU currently allows for two different ways to discharge, continuously (including while sitting at port) or at least one nautical mile away from berth at a port in Washington and traveling at a speed of at least 6 knots (underway). There are additional requirements to discharge continuously. Ecology interprets the intent of the second proposed amendment is to ban the continuous discharge or discharge while at berth, and only allow for discharges while underway. Therefore, if this particular proposed amendment was adopted into the MOU, the MOU would be modified to only allow treated discharges from cruise ships that are at least one nautical mile away from their berths at a port in Washington State while traveling at a speed of 6 knots or more.

While some of the facts included with the proposed amendments are not correct, they do point to the need for consistency with Ecology's mission and the Puget Sound Partnership's action agenda as well as pointing to scientific data that has shown concerns for pollutants discharged from even the most advanced vessel wastewater technology.

Ecology, therefore, is supporting the proposed amendment to ban the discharge of gray water and black water in MOU waters (proposed amendment no. 1). The ban would coincide with the Puget Sound Partnership's Action Agenda to create a no-discharge zone for vessel sewage in all or parts of Puget Sound. Ecology, in conjunction with the National Estuary Program (NEP) funding and Washington State Department of Health (WDOH), as well as other partners, is leading a project that is evaluating a no-discharge zone and preparing a draft petition to EPA.

The ban would also eliminate treated graywater (untreated is currently banned by the MOU) discharges which can also contain pollutants of concern to water quality. Vessels that average

more than 3,000 passengers typically have large volumes of graywater as a percentage of wastewater volume.

Since the MOU was first put into place in 2004, Ecology has obtained sampling results of treated black water and treated gray water from the cruise vessels while in Alaskan waters under their program and while in Seattle. The treatment systems on board the vessels vary. Some vessels have the advanced wastewater treatment systems (AWTS) that are functioning , while others have either traditional marine sanitation devices (Type II MSD) for blackwater, no treatment for graywater (hold only) or AWTS's that are not operating properly and are not used. The sampling results vary by treatment type, but for the AWTS there have been results for fecal coliform, pH, ammonia, and metals that do not meet our water quality standards.

Whole effluent toxicity testing (WET) has also been conducted in Seattle with a number of vessels and the results showed toxicity from ammonia and possibly other toxicants or by synergistic toxicity with surfactants, detergents or metals that are present in the treated wastewater. AWTS on cruise vessels simply do not have the ability to remove ammonia to the quality needed. The other concern is that the vessels are a mobile discharge, so unlike on-shore wastewater treatment plants where a discharge outfall is fixed and shellfish harvesting is banned around it, the cruise ships move about the water and can potentially discharge near shellfish beds and sensitive waters. Fecal coliform is used as an indicator for bacteria and pathogens such as viruses that are a risk to public health. The MOU currently has a ban on any discharges within a half a mile from commercial shellfish beds; however, there are certain species that move throughout the water body. Discharges of ammonia can be toxic to fish and nutrients can cause low dissolved oxygen levels potentially harming aquatic life.

When Ecology first worked with NWCCA and the Port of Seattle on the MOU, it was our understanding that the vessels were investing in AWTS technology and that in order for the technology to work, the systems would need to be able to discharge continuously or at least more frequently. However, upon learning more about the systems and their capabilities over the years, the vessels can continue to use the treatment systems continuously and then hold the treated effluent. We also learned that all of the cruise ships under the MOU have the capability to hold their effluent for at least two full days, often more. The vessels are only in MOU waters for less than 24 hours. For the past three seasons, only two different vessels per year have requested discharge approval, and those have the capability to hold their discharges. The ban on discharges is feasible for all of the vessels under the MOU.

Ecology is also supporting the proposed amendment to ban discharges while at port (proposed amendment no. 2) for the same reasons as above and that it would specifically minimize the

impact of discharges while vessels are not moving (little diffusion) and the cumulative impacts of repeated discharges from multiple cruise ships at port.

The MOU has been and continues to be a great tool to protect water quality and human health. In the MOU, it is stated that we "recognize that waste management practices are undergoing constant assessment and evaluation by cruise industry members" and that "the management of waste streams will be an on-going process, which has as its stated objectives both waste minimization and pollution prevention." The MOU has been amended five times thus far in an effort to clarify and strengthen its requirements. The knowledge gained over the years about the vessels' capabilities, the feasibility to prevent the discharges, and the need to better protect public health and water quality all lead to Ecology's support of the two proposed amendments.

If you have any questions, please contact Ms. Amy Jankowiak, compliance specialist and Ecology technical lead for cruise ships, at ajan461@ecy.wa.gov or by phone at 425-649-7195.

Sincerely,

Kelly Susewind, P.E., P.G.
Water Quality Program Manager

Enclosure: (1) Proposed Amendment Letter from People for Puget Sound, Friends of the Earth and Puget Soundkeeper Alliance.

cc: Kevin C. Fitzpatrick, Water Quality Section Manager, Ecology
Mark Henley, Interim Municipal Unit Supervisor, Ecology
Amy Jankowiak, Compliance Specialist, Cruise Lead, Ecology
Larry Altose, PIO, Ecology

PugetSoundPartnership
our sound, our community, our chance

STATE OF WASHINGTON

March 13, 2012

Ms. Stephanie Jones Stebbins
Director, Seaport Environmental and Planning Programs
Port of Seattle
P.O. Box 1209
Seattle, WA 98111

Puget Sound Partnership Letter re: 2012 Cruise MOU Amendment

Dear Ms. Jones Stebbins:

The Puget Sound Partnership was created by the Governor and Legislature of Washington State to restore the health of Puget Sound by 2020. On behalf of this important regional effort, we offer the following:

Marine water quality is one of the key indicators of Puget Sound health. The Partnership recognizes and commends the voluntary no discharge practices many of the cruise ship companies have been following in Puget Sound. We ask that you use the opportunity of the current Memorandum of Understanding (MOU) to further advance these practices.

The Partnership supports proposed amendments to the MOU governing cruise ship discharges in Washington State waters and the Olympic Coast National Marine Sanctuary to improve marine water quality. We urge the Washington State Department of Ecology (Ecology), Port of Seattle (Port) and North West & Canada Cruise Association (NWCCA) to adopt a wastewater discharge ban for cruise ships in all MOU waters.

The Puget Sound Partnership's Action Agenda (section C.8) calls for establishing sewage No Discharge Zones for vessels in nutrient/pathogen sensitive areas of Puget Sound. If we are going to achieve Puget Sound recovery by 2020, we should act now to eliminate cruise ship wastewater discharges in Washington waters.

The MOU amendment proposed by Friends of the Earth, People for Puget Sound and the Puget Soundkeeper Alliance provides Ecology, the Port and the NWCCA the opportunity to eliminate a significant and growing source of pollution. This is especially important as we learn that impacts of ocean acidification on Pacific Northwest waters are exacerbated by nutrient loading. The requirement for mobile dischargers to hold their wastes until they are in less impaired waters seems to be a logical and positive step to take.

We appreciate your efforts on behalf of Puget Sound health, and look forward to future partnership opportunities.

Sincerely,

Gerry O'Keefe
Executive Director

cc: Ted Sturdevant, Director, Department of Ecology

326 East D Street | Tacoma, WA 98421-1801 www.pugetsoundpartnership.org
www.psp.wa.gov office: 360.464.1231

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
OFFICE of SHELLFISH and WATER PROTECTION
243 Israel Road SE • PO Box 47824 • Olympia, Washington 98504-7824
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March 26, 2012

Ms. Stephanie Jones Stebbins
Director, Seaport Environmental and Planning Programs
Port of Seattle
Post Office Box 1209
Seattle, Washington 98111

Subject: 2012 Cruise Ship Memorandum of Understanding Amendment

Dear Ms. Jones Stebbins:

The Washington State Department of Health, Office of Shellfish and Water Protection works to improve the health of people in Washington State by ensuring shellfish are safe to eat, beaches are safe for swimming, and on-site sewage and reclaimed water systems are properly managed. We support the proposed amendments to the Memorandum of Understanding (MOU) governing cruise ship discharges in Washington State waters and the Olympic Coast National Marine Sanctuary to improve marine water quality.

We have had a long association with the MOU parties. We evaluated potential human health impacts from virus discharges from large passenger vessels and provided language that went into the MOU between the Department of Ecology (Ecology) and the North West and Canada Cruise Association (NWCCA) allowing discharge of wastewater discharges into Puget Sound from member ships with advanced wastewater treatment systems. Even with advanced wastewater treatment systems, large passenger vessels have the potential of contaminating critical shellfish beds in Puget Sound. Shellfish are critical to the health of Washington's marine waters and the state's economy.

We were also granted funding from the Environmental Protection Agency (EPA) starting in 2011 to reduce, prevent, and control pathogens entering Puget Sound. We awarded a grant to Ecology to develop a No Discharge Zone petition to the EPA for all or parts of Puget Sound to minimize vessel discharges into Puget Sound. The proposed amendments to the MOU are consistent with this effort.

We urge the Port of Seattle, Ecology, and NWCCA to adopt a wastewater discharge ban for cruise ships in all MOU waters. We appreciate your efforts on behalf of Puget Sound health and look forward to future partnership opportunities.

Sincerely,

Jerrod Davis
Director

cc: Mary Toy, Department of Health
Amy Jankowiak, Department of Ecology

Item No._____6b_Attach 9_____
Date of Meeting:__April 24, 2012_____

Seattle Port Commission
2711 Alaskan Way
Seattle, WA 98121

Dear Department of Ecology, Port of Seattle and Northwest & Canada Cruise Ship Association:

I am writing today to urge you to support the amendment to the Cruise Memorandum of Understanding proposed by Friends of the Earth, Puget Soundkeeper Alliance and People for Puget Sound. Cruise ship wastewater dumping should be banned in all of Puget Sound and waters covered by the MOU.

The U.S. EPA has found that even with treatment systems, cruise ships can discharge wastewater in excess of federal water quality standards. Harmful pollutants, including fecal matter, bacteria and other hazardous wastes, are contained in sewage and gray water dumped from the increasing numbers of cruise ships. This pollution damages the aquatic life of Puget Sound and can also contaminate the shellfish and other seafood I consume.

The Puget Sound Partnership's Action Agenda calls for establishing a No Discharge Zone for all vessels in Puget Sound. If we are going to achieve Puget Sound recovery by 2020, you should act now to halt all cruise ship wastewater discharges.

Please adopt the proposed amendment to provide the strongest protection possible for the waters of Puget Sound and for the health of residents and visitors.

Sincerely,

Item No.____6b___ Attach 10_____
Date of Meeting:___April 24, 2012____

-----Original Message-----
From:
Sent: Thursday, February 23, 2012 5:59 AM
To: Jones Stebbins, Stephanie
Subject: I support the Cruise Ship MOU amendment

Dear Port of Seattle,

I am writing today to urge you to support an amendment to the Cruise Ship Memorandum of Understanding (MOU): ban the discharge of black or grey water in Puget Sound.

U.S. EPA has found that even with treatment systems, cruise ships can discharge wastewater in excess of federal water quality standards. This pollution can damage the aquatic life of Puget Sound and can also contaminate the shellfish and other seafood I consume.

Sincerely,

WASHINGTON STATE DEPARTMENT OF ECOLOGY

WATER QUALITY PROGRAM

Amy Jankowiak, Compliance Specialist, NWRO

(425) 649-7195

ajan461@ecy.wa.gov

- Ecology Website: http://www.ecy.wa.gov/ecyhome.html
- Cruise Ship Website: http://www.ecy.wa.gov/programs/wq/wastewater/cruise_mou/index.html

COMPLIANCE 2011

- Discharge Approvals
- Inspections
- Unauthorized Discharges
- Sampling Data
- Annual Compliance/Non-compliance notifications

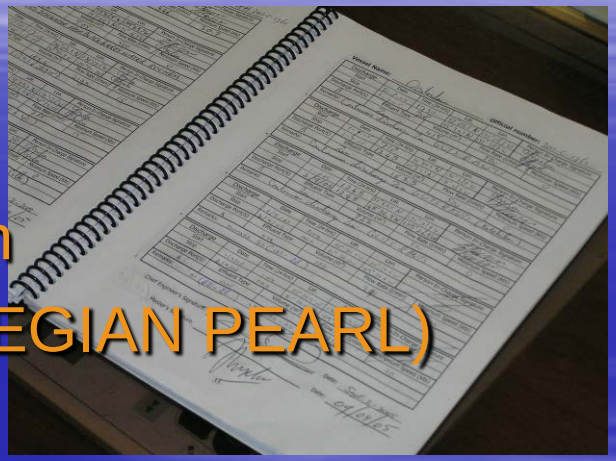
2011 Approvals

- *99% port calls from large cruise ships under the MOU, 2 vessels approved; 195 port calls*
- >1 nm and > 6 knots
  - NORWEGIAN PEARL (19)
  - NORWEGIAN STAR (18)
- Continuously
  - NONE
- No request/approval
  - CARNIVAL SPIRIT (19)
  - CELEBRITY CRUISES CENTURY (1)
  - CELEBRITY CRUISES INFINITY (20)
  - CELEBRITY CRUISES MILLENIUM (2)
  - CRYSTAL CRUISES CRYSTAL SYMPHONY (2)
  - HAL AMSTERDAM (13)
  - HAL OOSTERDAM (21)
  - HAL WESTERDAM (21)
  - HAL ZAANDAM (2)
  - GOLDEN PRINCESS (19)
  - SAPPHIRE PRINCESS (20)
  - ROYAL CARIBBEAN RHAPSODY OF THE SEAS (17)

(#) = PORT CALLS

COMPLIANCE EVALUATION

- Monthly Sampling Data
  - –Sampling done per MOU, submitted, meets requirements with exception of fecal coliform (NORWEGIAN PEARL)



- WET Testing
  - – None required for 2011
- Inspections
  - – Allowed for all vessels under MOU at least once/season to verify compliance with MOU
- Compliance/Non-Compliance Notifications
  - – Unauthorized graywater discharges Carnival Spirit
- Annual Compliance Reports

Inspections

- Typical Inspection includes
  - Introductions/overview of plan for the day (prior notification given)
  - Control room
    - Run-through of how system works
    - Variety of questions on staffing, training, protocols…
    - Review of records
  - Tour of treatment system(s)
  - Observations of other waste streams on the ship
  - Sampling
  - Conclude

  - Approximately 2-3 hours in length
  - Similar to inspections for on-land plants

AWTS sampling

UV disinfection

Inspections

Waste Minimization

Records Review

Discharge Ports

2011 Inspections

- Inspections Conducted
  - 5 inspections conducted
- Inspection findings
  - Discharge protocols thorough with verification
  - Practice of sending expired and unused medications to the blackwater system is not per CLIA or MOU (one vessel).
  - Discharge of untreated graywater violation of RCW/WAC and MOU (one vessel, one incident).
  - Recommendations made –
    - Continue to work towards high functioning wastewater treatment systems
    - Cruise line review its policies on the handling of expired and unused medications and comply with all regs and guidelines.
    - Policies and procedures for opening and closing discharge valves be reviewed and steps taken to ensure no unauthorized discharges occur.
- Copies of discharge documents requested/reviewed
  - Requested, Submitted, Reviewed, no issues found.

DATE OF INSPECTION	VESSEL
July 30, 2011	GOLDEN PRINCESS
August 14, 2011	HAL OOSTERDAM
September 3, 2011	NORWEGIAN STAR
September 13, 2011	CARNIVAL SPIRIT
September 26, 2011	CELEBRITY INFINITY

2011 Sampling

- Sampling data received and evaluated. Summary of data and data will be included in the 2011 annual report (and the draft data is on our website now).
  - pH all within 6.0-9.0
  - BOD max of 26 mg/l, TSS max of 12 mg/l
  - Chlorine all ND
  - Most 5 or less, although some higher fecals: 48, 174, 30, 32 #/100 ml
  - Ammonia ranged from 9.1 mg/l to 31 mg/l (avg = 20) – max lower than previous seasons
  - Dissolved Copper range = 2.7 ug/l to 18 ug/l (max lower than previous)
  - Dissolved Nickel range = 3.6 ug/l to 16 ug/l (~ the same as previous)
  - Dissolved Zinc range = 27 ug/l to 220 ug/l (~ the same as previous)

- Results above are for vessels approved to discharge and results are from Alaska and Seattle testing. Ammonia, Copper, Nickel, and Zinc required for Alaska only

2011 Sampling cont.

- Whole Effluent Toxicity Testing
- Purpose –to evaluate whether there are potential toxicity issues from vessel discharges
- Required for vessels approved for discharge continuously -once every 2 years for homeported vessels (20 calls) or 1/40 port calls or turnarounds.
- No vessels required to conduct WET testing in 2011

2011 Compliance Notifications

- Compliance notifications
  - One reported incident for 2011 season to date
    - Report Received on 9/6/11 for 9/5/11 incident with CARNIVAL SPIRIT.
    - Discharge of untreated graywater into MOU/State waters. Lasted 12 minutes while coming into Strait. 5.7 metric tons – conservative worst case scenario.
    - Vessel – Took all measures to stop discharges immediately, immediate review of procedures, investigation. Ecology inspection and follow-up.
    - Violation of state laws and rules and MOU.
    - Root cause – inadequate follow-up procedures by Deck and Engine Departments. Procedural changes.
  - Compliance letters
    - Received

2010 Assessment of Cruise Ship Environmental Effects in Washington

- Recommendations
  - Ecology recommends MOU continue to be used as a complement to environmental regulations until regulations specific to cruise ship waste management in Washington are put in place
  - Ecology continue to inspect ships that discharge, including closely looking at wastewater management and other waste streams
  - Parties of the MOU continue to work together on evaluating discharges from cruise ships into MOU waters.
  - The parties to the MOU will work together this year to re-evaluate the funding mechanism to provide funding beyond 2011.
  - Cruise lines review their policies and procedures related to outside vessel maintenance activities while in port and to ensure the BMPs are being followed.
  - Cruise lines continue to conduct a thorough review of records on an on-going basis and at end of season to evaluate compliance and inspection recommendations to be implemented


THE END

NORTH WEST & CANADA CRUISE ASSOCIATION

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Item No. 6b_attach_12
Meeting Date: April 24, 2012

April 20th, 2012

Kelly Susewind, P.E., P.G.
Water Quality Program Manager
State of Washington
Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Stephanie Jones-Stebbins
Director, Seaport Environmental
& Planning Program
Port of Seattle
P.O. Box 1209
Seattle, WA 98111

RE: Proposed Amendments to the WA MOU for 2012

Dear Ms. Susewind and Ms. Jones-Stebbins:

I would like to thank the WA DOE for the letter dated March 2, 2012 advising of its support for amendments the MOU proposed by non-signatory third parties.

The NWCCA Board met earlier this week and concluded its review of the proposed amendments. My purpose in writing to you at this time is to advise your organizations, as signatories to this MOU, of the NWCCA member line position respecting these proposed amendments.

I would also like to offer some context to our response, recognizing that first and foremost this MOU is a voluntary agreement intended to support the best discharge practices of our member cruise lines that have many millions of dollars invested in Advanced Wastewater Treatment Systems (AWTS).

The cruise industry's treated wastewater discharge footprint is exceptionally small in Washington State waters and our vessels are recognized as being among the best performers and cleanest of any of the myriad of discharge sources in WA waters, in large part as a result of the cruise industry's early adoption of AWTS technology. Our industry is encouraged to see that new land-based facilities such as Brightwater and Westport are now introducing the same AWTS technologies that our industry pioneered years ago; benefitting from the lessons learned from the cruise industry's investments in AWTS.

By continuing to work positively with the cruise industry in support of best discharge practices, the Department of Ecology has the opportunity to more effectively manage AWTS discharges in WA waters and help to support the larger Pacific North West ecosystem. The proposed alternative, a complete ban on cruise ship discharge within the WA waters, threatens the very existence of the MOU. Under this proposed amendment, the MOU and its provisions for managing the best discharge practices would be rendered irrelevant. This would also send a strong negative message to other industries that may be considering investing in AWTS technology in Washington State.

So, while the NWCCA and its member cruise lines cannot support the proposed amendments, we would encourage the Department of Ecology's holistic approach to discharge management in Puget Sound, starting with an inventory of all discharge sources, their relative discharge volumes and the impact on the areas identified by DOE as being most at risk. This inventory may provide the necessary context in which to better prioritize the discharge sources that need to be addressed.

As for the proposed amendment to ban continuous discharge at berth, we have been in consultation with the Port of Seattle, and understand that it is the Port's intention to include such language in their tariff. We respect that this is a commercial decision of the Port. The cruise industry will be required to abide by the Port's tariff stipulation regardless of whether we agree with it as representing a best practice universally with respect to the operations of AWTS. As such, the MOU amendment proposal is unnecessary and the industry need not agree to it within the context of a voluntary MOU.

Again I would like to thank the Department of Ecology and the Port of Seattle for continuing to work with our industry in support of best discharge practices in Washington State. We look forward to the 2012 cruise season.

Sincerely,

Greg Wirtz
President