

WASHINGTON STATE DEPARTMENT OF ECOLOGY

WATER QUALITY PROGRAM

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- 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

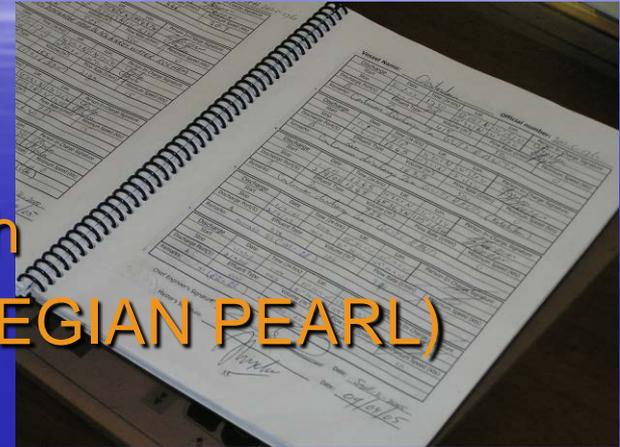
2011 Approvals

- *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

An aerial photograph of a vast, winding river system, likely the Amazon, showing a complex network of channels and floodplains. The water is a light, milky brown color, contrasting with the surrounding green and brown land. The text "THE END" is overlaid in the center in a bold, red, sans-serif font.

THE END