CROWLEY
People Who Know

Consolidated Additional Observations

This questionnaire combines all standard Additional Observation Questions in one condensed questionnaire.
1. SOx Emissions Controls
2. Ballast Water Project
3. Combustion Source Project
4. Food Waste Project
5. Sea Intake Project

Findings can be reported in the spaces provided for each item; feel free to use additional space for notes and information. Sketches, diagrams, photos of handwritten notes, or copies of schematics are welcome.

Several questions are checks on previous Additional Observations, check these against the previous observations. If a ship is required to have an additional observation project on a section below, skip the section below. For example if a combustion source project is required leave the section in this project blank.

A: General Information

Report Start Date:	May 26, 2018
Ocean Ranger starting report:	wesley.whittier
Ship Name:	Silver Seas Silver Shadow
Ship Code:	SSH
Is this a revision of a previous report (Y/N)?	No

1: SOx Emissions Controls

1.1 Describe the SECA compliance plan.	Vessel is only burning low sulfur MGO in Alaska. Last bunker in Dutch Harbor at 0.00016%.
1.1 Completed by:	Wesley Whittier (wesley.whittier)
1.2 How does the vessel control SOX emissions in the ECA? Provide description. If the vessel used low sulfur fuels in AK describe the fuel switches and which combustion sources are operated on low fuel sulfur, and when.	Ship uses low sulfur MGO exclusively in Alaska. April 10 at 0200 - switched from HFO to low sulfur fuel April 23 at 0039 - vessel entered ECA
1.2 Completed by:	Wesley Whittier (wesley.whittier)
1.3 Is the vessel operating or installing an exhaust gas scrubber system in the 2018 Alaska Cruise Season? If yes, complete section 1A. Otherwise skip to section 2.	No

1.a: SOx Emissions Controls

2: Ballast Water

2.1 Check the previous Additional Observation Reports (section 1.1) list of tanks used for Ballast Water storage. Including volumes and locations. List any changes.	No change from previous ballast water report in 2017
2.1 Completed by:	Wesley Whittier (wesley.whittier)
2.2 Are ballast water tanks used for wastewater storage?	Yes; as per VSSP
2.2 Completed by:	Wesley Whittier (wesley.whittier)
2.3 Ballast Water system: brief description of the combined piping system if tanks used for both.	Wastewater system and ballast water system use two different piping, however, once the wastewater has to be transferred into ballast tanks (holding tanks) due to retention purposes, the ballast system piping will be used.
2.3 Completed by:	Wesley Whittier (wesley.whittier)
2.4 Ballast Water treatment installation? If yes, describe operation/system specifics.	No; USCG "Extension of Implementation Schedule for Approved Ballast Water

	Management Methods" extended until next scheduled drydocking after February 2017. Predicted next drydock is 2020.
2.4 Completed by:	Wesley Whittier (wesley.whittier)
2.5 Ballast Water operations in AK waters (overboard intake/discharge, etc.)? Include the last date of ballast water discharges. Typically in the ballast water logs.	No; no ballasting in Alaska waters. Last ballast operation was May 18 2018 at 1641
2.5 Completed by:	Wesley Whittier (wesley.whittier)

3: Combustion Sources

3.1 Are there any changes from the previous Additional Observation projects (Section 2.1) on the propulsion system question on brief description of propulsion and power systems used on board (Diesel direct/reduction gears/PTO's DE, FP, CPP Azipod, etc.)?	No changes to any of the propulsion system found.
3.1 Completed by:	Robert Layko (robert.layko)
3.2 Are there any changes from the previous Additional Observation projects (Section 1.1) on the list of the combustion equipment used for Power/Propulsion (make/model/output)?	No changes made.
3.2 Completed by:	Robert Layko (robert.layko)
3.3 Are there any changes from the previous Additional Observation projects (section 3) on the incinerators make, model, fuel used, capacity?	No changes made to this equipment.
3.3 Completed by:	Robert Layko (robert.layko)
3.4 Average Hotel power (kW) in port and underway?	Average hotel power in port would be 1500kw, Underway 3300kw
3.4 Completed by:	Robert Layko (robert.layko)
3.5 Average fuel consumption in port and underway?	Average fuel consumption in port would be approximately 12m3. And underway would be 42m3
3.5 Completed by:	Robert Layko (robert.layko)

4: Food Waste Garbage Handling

4.1 How is food waste handled and disposed of?	All food waste is being collected in small garbage cans. It is then processed through a pulper system one deck down in the garbage handling area. Here it is pulped and dewatered. It then goes back in small yellow garbage cans to later be discharged through the food chute when the ship is >12 nm from any land. Notification from the bridge will be given to the Incinerator operator and ships security Officer once the ship is outside 12nm The key for the chute will then be given to the ships security who will then go down and unlock the chute. He will stand by while the incinerator operator dumps the food waste through the chute. This will be done until all of the food waste accumulated is discharged or the ship is Within 12 nm from land. The chute is then closed and padlocked with the key being returned to the bridge by the security officer. There is also a key log kept on the bridge. There is no food waste silo on board. Everything collected is being discharged through this chute. This includes banana peals, fish scales, and bones. These are also being stored in small yellow garbage cans in the cold room until they can be discharged.
4.1 Completed by:	Robert Layko (robert.layko)
4.2 Average food waste production per day (kgs/day)?	Less than 1 m3 of food waste is being produced per day.

4.2 Completed by:	Robert Layko (robert.layko)
4.3 Is the food waste de-watered? If yes, provide dewatering volumes and handling information.	All food waste goes through a water press and is again collected in small yellow garbage cans until it can be discharged >12nm The water from this press is being discharged to 4 GW2C holding tank. It too will be discharged with the GW once outside 12 nm Volumes of water collected can not be measured accurately so no information is available for this.
4.3 Completed by:	Robert Layko (robert.layko)
4.4 How are glass bottles, broken crockery, and ceramics handled?	Glass bottles are being crushed and offloaded in Vancouver. Ceramics and broken crockery are being collected and also being offloaded in Vancouver. Nothing is being discharged overboard.
4.4 Completed by:	Robert Layko (robert.layko)
4.5 How is food waste monitored and/or recorded?	Environmental Officer records all food waste discharges in the Garbage record book. He is also using a spread sheet on his computer to keep track of food waste generated.
4.5 Completed by:	Robert Layko (robert.layko)

5: Sea Water Intakes

5.1 List all of the seawater intakes (chests); include the locations, frame, side (PS/SB) or compartment.	6 sea chests in total: - (1) Engine Chemical Locker: Deck-1, Zone-4, Port Side; - (2) Boiler Room: Deck-1, Zone-4, Stbd Side; (covering 3 Diesel Generators/Aux. Engines and general service components such as compressors etc.) - (3) Fuel Treatment Room: Deck-1, Zone-3, Port Side; - (4) Evaporator Room: Deck-1, Zone-3, Stbd Side; (covering 2 Main Engines, Fire Pump No.2, 2 Evaporators) - (5) Compressor Room: Deck-1, Zone-3, Port Side; - (6) Osmosis Room: Deck-1, Zone-3, Stbd Side; (covering A/C – Air Conditioning system, Fire Pump No.1, 2 Osmosis plants, Sprinkler system)
5.1 Completed by:	Chris Schneider (chris.schneider)
5.2 List filtration systems for each intake. Describe how filter systems are maintained. What is the frequency of cleaning? Is this performed in Alaska?	The filters are stainless steel grid/net/mesh filtration type, one for each sea chest; Filters are cleaned once per week independently of the area of the vessel's operation (also in Alaska);
5.2 Completed by:	Chris Schneider (chris.schneider)
5.3 How is debris and mud from filtration/strainers handled?	Debris and mud are collected within the Engine Compartment/Garbage Room and later on disposed to shore reception facility as per local segregation categories and regulations;
5.3 Completed by:	Chris Schneider (chris.schneider)
5.4 Marine Growth Protection Systems in the sea intakes. Description of the control systems and information on checmicals if used.	Ultrasonic Antifouling System (S.E.M. Molecular Energy System) is covering all sea

	chests; The system does NOT use any chemicals;
5.4 Completed by:	Chris Schneider (chris.schneider)
5.5 Hull cleaning in place in Alaska 2018?	The vessel does not perform any underwater hull cleaning within Alaska State Waters. The cleaning of the underwater hull area is performed during the calls in Port of Vancouver, BC as per previous seasons and will be the practice for the reporting season 2018 as well; Last dry dock and underwater hull cleaning: January 15th 2017 – January 28th 2018 – Sembawang, Singapore; Last Underwater inspection: August 03rd 2017 – Vancouver, BC; Antifouling equipment/paint: - TBT Free fouling release coating Sigmaglide system (January-2017) - JOTUN – IMPRESSED CURRENT CATHODIC PROTECTION SYSTEM (PROPPELER SHAFT) - ENRICO POLIPODIO – IMPRESSED CURRENT CATHODIC PROTECTION – SYSTEM FONP-MATIC (UNDERWATER HULL) - Ultrasonic Antifouling System (S.E.M. Molecular Energy System) – sea chests
5.5 Completed by:	Chris Schneider (chris.schneider)

6: General

6.1 Is vessel crew cooperative on this project?	Yes, Chief Engineer gave me the figures for fuel being used and hotel power load.
6.1 Completed by:	Robert Layko (robert.layko)
6.2 Do you feel the vessel has a clear understanding of compliance requirements?	Yes, they are only using Low Sulfur fuels in all of there equipment being used.
6.2 Completed by:	Robert Layko (robert.layko)
6.3 Are there other remarks/ comments the OR wants to share?	EO Michael is very helpful with this information.
6.2 Completed by:	robert.layko

Z: Signature & Submit

Ocean Rangers contributing to this report:	Robert Layko (robert.layko) Wesley Whittier (wesley.whittier) Chris Schneider (chris.schneider)
Ocean Ranger Signature: