

# 2023 Small Commercial Passenger Vessel Report

COMMERCIAL PASSENGER VESSEL  
ENVIRONMENTAL COMPLIANCE (CPVEC)  
PROGRAM



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*Cover photo: Lindblad's NG Venture docked at STO dock in Sitka on September 2<sup>nd</sup>, 2023*

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## INTRODUCTION

This report summarizes wastewater sampling and compliance information for all small commercial passenger vessels (CPVs) that operated in Alaska in 2023. CPVs are defined in Alaska Statute (AS 46.03.490(2)) as vessels that carry passengers for hire and that have overnight accommodations for more than 49 passengers. CPVs are split into two categories, small (50 to 249 passengers) and large (over 250 passengers). These small CPVs accounted for only 1.3% of the total cruise ship passengers to Alaska aboard all vessels in 2023. This report also includes the Alaska Marine Highway System (AMHS) M/V Columbia which also discharged to Alaska waters in 2023.

During 2023, 18 small CPVs (16 cruise ship vessels and 2 AMHS ferries) registered with the Alaska Department of Environmental Conservation (DEC or Department), with 13 of those CPVs intending to discharge to Alaska waters (due to schedule changes only one of the registered AMHS vessels operated this season). DEC staff performed a total of thirteen (13) in-port inspections aboard small CPVs this summer.

**Table 1. Small cruise vessels registered in Alaska in 2023.**

Vessel Operator	Vessel Name	Passenger Capacity	Completed Voyages	Registered to Discharge
American Cruise Lines	American Constellation	173	11	Yes
Alaska Dream Cruises	Chichagof Dream	76	16	Yes
Hapag Lloyd Cruises	Hanseatic Nature	240	4	No
Lindblad Expeditions	NG Resolution	148	1	No
Lindblad Expeditions	NG Quest	106	18	Yes
Lindblad Expeditions	NG Sea Bird	66	24	Yes
Lindblad Expeditions	NG Sea Lion	66	24	Yes
Lindblad Expeditions	NG Venture	108	20	Yes
American Queen Voyages	Ocean Victory	199	14	Yes
UnCruise Adventures	Safari Endeavor	86	21	Yes
Scenic Luxury Cruises and Tours	Scenic Eclipse	228	3	No
Aurora Expeditions	Sylvia Earle	144	1	No
UnCruise Adventures	Wilderness (SS) Legacy	88	17	Yes
UnCruise Adventures	Wilderness Adventurer	60	0	No
UnCruise Adventures	Wilderness Discoverer	76	6	Yes
UnCruise Adventures	Wilderness Explorer	76	23	Yes

*\* “Voyage” is defined at Alaska Statute 46.03.490(17) to mean “a vessel trip to or from one or more ports of call in the state with the majority of the passengers for hire completing the entire vessel trip; a vessel trip involving stops at more than one port of call is considered a single voyage so long as the majority of the passengers for hire complete the entire trip.”*

Small discharging CPVs are required to sample according to the 2021 sampling regime schedule and AMHS vessels sample every 3 months of operation (4 samples total, assuming year-round operation). Sampling is a requirement to:

- Verify that marine sanitation devices (MSD) onboard are achieving good effluent quality in accordance with their Best Management Practices (BMP) Plans;
- Document treatment system performance for future BMP plan development; and
- Gather information on potential environmental impacts from small CPVs operating in Alaska waters.

Small CPVs are subject to 33 CFR 159.53 requiring that vessels produce an effluent having a fecal coliform (FC) bacteria count not greater than 200 per 100 milliliters and suspended solids not greater than 150

milligrams per liter. If an exceedance of FC or TSS occurs, the vessels BMP Plan directs the operator to take corrective action, report the exceedance to the Department, and resample to confirm compliance. To ensure quality data is obtained, each vessel must have a Vessel Specific Sampling Plan (VSSP) and a Quality Assurance Project Plan (QAPP), both of which must be approved by the Department. The QAPP can be based on the current year Cruise Lines International Association (CLIA) QAPP, or vessel operators can submit their own individual sampling QAPP.

Reports and summaries for prior years can be found on the cruise program's report webpage (<https://dec.alaska.gov/water/cruise-ships/cruise-reports/>)

## BACKGROUND

CPVs produce two types of wastewater: blackwater and graywater. Blackwater is wastewater from ship's toilets and medical facilities. Graywater is wastewater from accommodations (showers/sinks), galley areas, and laundry. Any combination of blackwater and graywater will be referred to as mixed wastewater in this report, but technically it is considered blackwater.

All wastewater, whether blackwater or graywater, must be treated, prior to discharge in Alaska waters. Large CPVs typically utilize advanced wastewater treatment systems (AWTS) for treatment, while small CPVs process and treat wastewater through a marine sanitation device (MSD). Onboard MSD systems on small CPVs must be properly operated and maintained (AS 46.03.463) and must meet performance requirements for US Coast Guard approval of Type II MSD systems for vessels operating in US waters (33 CFR 159).

Large CPVs have more technically advanced and costly AWTS that are capable of producing higher quality wastewater more consistently; however, they are significantly larger and more costly to operate and maintain than MSD systems. To obtain authorization to discharge, the Department developed and issued a general permit specifically for large CPV vessels (2013DB004 Large Commercial Passenger Vessel Wastewater Discharge Permit) while small vessels are required to submit an alternative plan and BMP Plan. Small CPVs, including the AMHS ferries, are required to meet standard terms and conditions, or seek alternative terms and conditions with BMP plans, in order to discharge wastewater in Alaska marine waters (within 3 miles of shore and the entirety of the Alexander archipelago). Standard terms and conditions for treated blackwater, graywater, and other wastewater (AS 46.03.463, Prohibited discharges; limitations on discharges) align with the USCG limits for approved Type II MSDs, 33 CFR 159.53(b).

A properly operated and maintained MSD system should be capable of producing wastewater with no more than 200 FC per 100 milliliters and no more than 150 milligrams per liter of total suspended solids (TSS). Ships with separate graywater discharges are required to sample graywater for conventional parameters in accordance with the sampling regime schedule and VSSP.

The Department ensures the compliance with these wastewater standards by requiring sampling of discharging vessels and performing scheduled or unscheduled inspections of all small CPVs. DEC inspectors performed inspections of small CPV's throughout the season reviewing paperwork, discharge logs, and inspecting machinery spaces to ensure compliance of vessels. These inspection reports are public documents and can be viewed at <https://dec.alaska.gov/Applications/Water/EDMS/ncore/external/home>

In 2023, there were 3 small CPVs which did not get inspected.

- Wilderness Discoverer had an engine room fire in early June and left before the Department's inspection took place.

- NG Resolution and Sylvia Earle did not get inspected. Each vessel only had one voyage in Alaska and only called in ports in northwestern Alaska.

## METHODS

Wastewater sampling consists of grab samples taken from the MSD overboard discharge pipe (described in the VSSP) while the vessel is discharging. The VSSP also describes appropriate sampling event times, and sample port and location, to ensure samples are representative of wastewater discharges into Alaska waters. Additionally, the VSSP ensures that samples are collected in a consistent manner during the season and year over year, regardless of if vessel staff change.

Sampling follows the requirements in the vessels approved QAPP. In 2023, all four cruise lines operators (representing 16 vessels) and AMHS developed and used their own Department approved QAPPs. The QAPP specifies minimum quality requirements for sample collection, field test handling, and analysis of wastewater samples in the laboratory. It also includes a list of approved methods and data quality objectives. All samples in this report were taken in Southeast Alaska in 2023, with most samples obtained in or near Juneau to meet sample holding times requirements.

Most laboratory analysis was conducted locally, with some samples being shipped to the lower 48 for analysis by a subcontractor. Some vessels receive training at the beginning of the season and take their grab samples themselves, while the majority opt to have their samples collected for them. DEC staff review results submitted by the cruise ship operators for compliance with the QAPPs and VSSPs either as they are submitted to the Department or as a component of inspections.

## SAMPLE RESULTS

Table 4 outlines reported exceedances from sample events. During the 2023 season 58%, of the discharging vessels had at least one exceedance of fecal coliform on their initial sampling event. All vessels, except for Chichagof Dream and Ocean Victory, were able to meet the parameters on their first resample event. Overall, the percent of vessels with exceedances was very similar to results from 2022. There were also few outstanding circumstances regarding vessel resampling, which caused the number of vessels with fecal exceedances on resample events to seem lower than in 2022 (see Table 3).

- Ocean Victory registered as a discharging vessel for 2023; however, they failed their initial pre-season sample events. This vessel is a newer build and has never been able to meet sampling criteria (failed all sample events in 2022) and was thus denied discharge status by the Department. This vessel operated as a non-discharging vessel and was no longer required to sample as all discharges took place outside of State waters.
- Wilderness Discoverer had a fecal coliform exceedance on their initial sample, but before a resample event could be conducted, the vessel had an engine room fire and abruptly left Alaska for the season.
- Admiralty Dream, which was unable to pass any sample events from the 2022 season, changed their USCG certificate of inspection between the 2022 and 2023 seasons to reflect a lower berth count. This change dropped the vessel below the requirements for small CPVs and the vessel no longer sampled (although the vessel continued to operate in Alaska with similar passenger counts).
- As a result of a Notice of Enforcement issued by the Department following the 2022 season, the American Constellation installed a new AWTs. This new treatment system was far superior to the previous treatment system and the vessel had no exceedances during their sampling events during the 2023 season.

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AMHS ferries had several schedule changes this year, and as a result, the M/V Columbia was the only ferry operating that met the requirements for small CPVs. Little emphasis in this report was placed on the ferries for 2023 as they had no sample exceedances, no issues or noncompliance items were found during vessel inspections, and since AMHS has a history of exceptional compliance.

There has been an increase in the number of small CPVs, and this trend is likely to increase, as more newly built expedition class vessels enter service in Alaska. The newer vessels are usually equipped with more technical AWTs; thus, they are more similar in design to larger CPVs than to other aging small CPVs. These vessels also have larger holding tank capacity, which small CPVs typically lack, allowing the newer vessels to function as a non-discharging vessel and hold all wastewater until they are outside Alaska waters. This has not been an option for the smaller vessels in the past as most of the smaller vessels have little to no capacity to hold wastewater and must treat it and discharge it continuously. This season all the expedition class vessels (Hanseatic Nature, NG Resolution, Ocean Victory, Scenic Eclipse, and Sylvia Earle) operated as non-discharging vessels.

**Table 2. Small CPV wastewater treatment systems and 2023 discharge status**

2023 Registration Number	Vessel Name	Wastewater Treatment System	Discharging	BMP Plan
2022-CS-0097 v1.0	American Constellation	Innovative Treatment Products miniMBR	Yes	00-038-2023
2022-CS-0096 v1.0	Chichagof Dream	Orca II A-500 (x1)	Yes	00-018A-2023
2022-CS-0083 v1.0	Hanseatic Nature	Scanship AWP8	No	None
2022-CS-0105 v1.0	NG Resolution		No	None
2022-CS-0106 v1.0	NG Quest	G&O Bioreactor BR-37000 BG-V (x1)	Yes	CO-039-2023
2022-CS-0104 v1.0	NG Sea Bird	Omnipure 12M (x1)	Yes	CO-025-2021
2022-CS-0103 v1.0	NG Sea Lion	Omnipure 12M (x1)	Yes	CO-026-2021
2022-CS-0107 v1.0	NG Venture	G&O Bioreactor BR-37000 BG-V (x1)	Yes	CO-040-2023
2022-CS-0066 v1.0	Ocean Victory	JETS Ecomotive Model 16.65 (x1)	No	Denied
2022-CS-0099 v1.0	Safari Endeavor	Omnipure 12M5508 (x2)	Yes	CO-036B-2021
2022-CS-0045 v1.0	Scenic Eclipse		No	None
2022-CS-0084 v1.0	Sylvia Earle		No	None
2022-CS-0101 v1.0	Wilderness (SS) Legacy	Red Fox RF-2000-FP (x1)	Yes	CO-036A-2021
2022-CS-0102 v1.0	Wilderness Discoverer	Headhunter TW-HMX-6004LP (x2)	Yes	CO-036D-2021
2022-CS-0100 v1.0	Wilderness Explorer	Headhunter TW-HMX-6004LP (x2)	Yes	CO-036E-2021

**Table 3. Total number of vessels with exceedances**

Vessels (n=individual CPVs sampled)	2023 (n=12)	Percentage	2022 (n=15)	Percentage
Total vessels with fecal exceedances (>200FC/100mL)	7	58%	8	53%
Vessels with second fecal exceedance, resampled vessels	2	17%	6	40%
Vessels with TSS exceedances (>150 mg/L)	3	25%	3	20%

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**Table 4. Sampling and exceedance summary**

Vessel Name	Type of Wastewater Sampled: (Black, Gray or Mixed)	Number of Samples Taken (total)	Number of Times Fecal Coliform Was Exceeded (>200FC/100ml)	Number of Times Total Suspended Solids Was Exceeded (>150mg/L)	Number of Times Total Residual Chlorine Was Exceeded (>0.01mg/L)	Vessel Resample (Y=Yes, N=No, NR=Not Required)
AMHS Columbia	Mixed	1	0	0	0	NR
Wilderness Discoverer	Mixed	2	1	1	2	Y
NG Venture	Mixed	2	1	1	1	Y
NG Quest	Mixed	1	0	1	0	NR
American Constellation	Mixed	1	0	0	0	NR
Chichagof Dream	Blackwater	3	3	1	2	Y
Safari Endeavor	Blackwater	2	1	0	2	Y
NG Sea Lion	Blackwater	2	1	0	0	Y
NG Sea Bird	Blackwater	1	0	0	1	NR
Wilderness Explorer	Blackwater	2	1	0	2	Y
Wilderness Legacy	Blackwater	2	0	0	1	NR
Ocean Victory	Blackwater	2	2	0	0	N
Chichagof Dream	Graywater	3	1	1	0	Y
Safari Endeavor	Graywater	1	0	0	0	NR
NG Sea Bird	Graywater	1	0	0	1	NR
NG Sea Lion	Graywater	1	0	0	0	NR
Wilderness Legacy	Graywater	1	0	0	0	NR
Totals		28	11	5	12	
Percent of Samples			39.3	17.9	42.9	

**Table 5. Wastewater data summary**

Blackwater Effluent		Number of Times Measured	Lowest Measured Value	Highest Measured Value
Analyte	Units			
Temp	C	11	8.4	16.6
pH	SU	11	6.2	8.41
Free Chlorine	mg/L	12	0	6.4
Total Chlorine	mg/L	12	0	9
Fecal Coliform Bacteria	FC/100ml	12	0	1,100,000
Total Suspended Solids	mg/L	12	12	172
Biochemical O2 Demand	mg/L	5	24	850
Mixed Effluent		Number of Times Measured	Lowest Measured Value	Highest Measured Value
Analyte	Units			
Temp	C	7	9.9	30.6
pH	SU	7	6.37	7.93
Free Chlorine	mg/L	7	0	5.1
Total Chlorine	mg/L	7	0	5.4
Fecal Coliform Bacteria	FC/100ml	7	0	1900
Total Suspended Solids	mg/L	7	0	288
Biochemical O2 Demand	mg/L	5	0	360
Graywater Effluent		Number of Times Measured	Lowest Measured Value	Highest Measured Value
Analyte	Units			
Temp	C	10	13.9	26.2
pH	SU	10	6.21	7.37
Free Chlorine	mg/L	9	0	> 8.8
Total Chlorine	mg/L	9	0	> 8.8
Fecal Coliform Bacteria	FC/100ml	10	0	640,000
Total Suspended Solids	mg/L	8	34.6	3,500
Biochemical O2 Demand	mg/L	5	60	11,000

*(Priority/ nutrients sampling results are not provided in this report but are available upon request)*

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### SAMPLING SUMMARY

The Division of Water continues to work with small CPVs to improve the operation of the vessels MSD systems. MSD systems balance bacterial digestion with chlorine disinfection. Excess chlorine is toxic to marine organisms and several of the vessels have repeatedly shown high chlorine results. Both high fecal coliform and high chlorine levels are indicative of an MSD that is not functioning properly.

### SAMPLING VIOLATIONS

Table 6 below provides details on vessel exceedances and compliance measures taken by the Department. In 2023, four Notices of Violations (NOVs) were issued for sampling exceedances and two Notice of Enforcement (NOEs) were issued. All vessels with exceedances were issued NOVs, except for Ocean Victory (both of Ocean Victory's sample events took place out of the State and the vessel never discharged into Alaskan waters, thus no violation was warranted).

**Table 6. Exceedance results and compliance actions**

Vessel Operator	Vessel Name	Sample Date	Sample ID	Parameter Exceeded	Parameter Limit	Parameter Measured Value	Compliance Action
Lindblad	NG Venture	5/20/2023	AE 31806	Fecal Coliform	200 FC/100ml	270 FC/100ml	Notice of Violation Issued
		6/3/2023	AE 32138	Total Chlorine	0.0075 mg/L	4.4 mg/L	
	NG Quest	5/28/2023	AE 31929	TSS	150 mg/L	210 mg/L	Notice of Violation Issued
	NG Sea Bird	5/23/2023	AE 31808	Total Chlorine	0.0075 mg/L	6.4 mg/L	Notice of Violation Issued
				Total Chlorine	0.0075 mg/L	8.8 mg/L	
	NG Sea Lion	5/21/2023	AE 31807	Fecal Coliform	200 FC/100ml	1,100,000 FC/100ml	Notice of Violation Issued
Alaska Dream Cruises	Chichagof Dream	5/26/2023	AE 32082	Fecal Coliform	200 FC/100ml	23,000 FC/100ml	Notice of Enforcement Issued
		5/26/2023	AE 32081	Fecal Coliform	200 FC/100ml	210,000 FC/100ml	
		6/9/2023	AE 32367	Fecal Coliform	200 FC/100ml	640,000 FC/100ml	
				TSS	150 mg/L	3,500 mg/L	
		6/9/2023	AE 32368	Total Chlorine	0.0075 mg/L	0.16 mg/L	
		6/9/2023	AE 32369	Fecal Coliform	200 FC/100ml	630 FC/100ml	
		6/23/2023	AE 32540	Fecal Coliform	200 FC/100ml	300,000 FC/100ml	
		6/23/2023	AE 32542	Total Chlorine	0.0075 mg/L	7.9 mg/L	
UnCruise Adventures	Wilderness Discoverer	4/23/2023	AE 31774	Total Chlorine	0.0075 mg/L	0.6 mg/L	Notice of Enforcement Issued
				Fecal Coliform	200 FC/100ml	1,900 FC/100 ml	
				TSS	150 mg/L	288 mg/L	
	Safari Endeavor	4/30/2023	AE 31857	Total Chlorine	0.0075 mg/L	0.29 mg/L	
				Total Chlorine	0.0075 mg/L	5.4 mg/L	
				Fecal Coliform	200 FC/100ml	2,210 FC/100 ml	
	Wilderness Explorer	4/25/2023	AE 31688	Total Chlorine	0.0075 mg/L	0.62 mg/L	
				Total Chlorine	0.0075 mg/L	7.4 mg/L	
				Fecal Coliform	200 FC/100ml	9,500 FC/100ml	
	Wilderness Legacy	4/23/2023	AE 31775	Total Chlorine	0.0075 mg/L	6.3 mg/L	
		4/30/2024	AE 31858	Total Chlorine	0.0075 mg/L	3.4mg/L	
		4/29/2023	AE 31818	Total Chlorine	0.0075 mg/L	1.7 mg/L	
		4/14/2023	AE 31672	Total Chlorine	0.0075 mg/L	0.73 mg/L	
American Queen Voyages	Ocean Victory	4/29/2023	AE 31819	Total Chlorine	0.0075 mg/L	0.42mg/L	
		5/2/2023	AE 31802	Fecal Coliform	200 FC/100ml	1,341 FC/100ml	None
		5/6/2023	AE 31924	Fecal Coliform	200 FC/100ml	8,160 FC/100ml	

### COMPLIANCE SUMMARY

In addition to the sampling violations, the American Constellation was issued a NOV for unrepresentative sampling. This vessel installed a new advanced wastewater treatment system before the 2023 season which provided far superior performance to its previous treatment system. However, during an inspection, it was noted that samples had been taken from a port installed before the vessels holding tank and certain deviations



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were noted from the vessels BMP Plan regarding discharges. The vessel has already been in touch with the Department to remedy these issues before the start of the 2024 season.

Alaska Dream Cruises was issued a NOV from the Department in 2023 for the Chichagof Dream's repeatedly poor sample performance, which failed multiple sample events. Last year, both Chichagof Dream and Admiralty Dream had some of the highest exceedances of any small CPVs. Since 2018, the Chichagof Dream has failed ten of its eleven sample events. During the Chichagof Dream's inspection on August 18, 2023, it was also discovered that the vessel had performed unauthorized discharges this season. Admiralty Dream (which was not sampled this year due to its reclassification) has had equally poor performance over the past five years.

UnCruise Adventures was also issued a NOE this year. UnCruise Adventures operated four vessels that met the requirements for small CPVs in Alaska in 2023. This year, three of their four vessels failed their initial sample events, and all have had poor sample performance over the past three years. For example, in 2021, two of the vessels, Wilderness Explorer and Wilderness Adventurer, both failed all five of their sample events. This season, one of their vessels, the Safari Endeavor, was required to resample due to an elevated chlorine reading but contacted the Department requesting an exemption from the sample event. The exemption was granted on the condition that the vessel would take daily chlorine readings and submit the vessel's chlorine log to the Department at the end of the season for review. During this vessel's inspection, it was found this log had not been maintained, so the vessel did not meet the sampling requirements for Alaska in 2023.

If there are any questions or concerns regarding this report, please contact the acting Cruise Ship Program Manager, Ben Eisenstein, at [ben.eisenstein@alaska.gov](mailto:ben.eisenstein@alaska.gov) or 907-465-5161.