

2021 Small Commercial Passenger Vessel Sampling Regimes

COMMERCIAL PASSENGER VESSEL ENVIRONMENTAL COMPLIANCE (CPVEC) PROGRAM



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Revision 1



Alaska Department of Environmental Conservation

Abbreviations:

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
AMHS	Alaska Marine Highway System (State Ferry System)
AS	Alaska Statutes
BMP	Best Management Practices
BNA	Base/Neutrals and Acids (sampled parameter)
BW	Blackwater (i.e. Sewage)
CPVEC	Commercial Passenger Vessel Environmental Compliance
GW	Graywater
MSD	Marine Sanitation Device
OB	Overboard (Graywater Direct Overboard Drain)
QAPP	Quality Assurance Project Plan
SCPV	Small Commercial Passenger Vessel
VGP	Vessel General Permit
VOC	Volatile Organic Chemicals
VSSP	Vessel Specific Sampling Plan

Table 1. Annual Sample Frequency¹

Vessel Category	Conventional I Sample	Conventional II Sample	Priority Sample	Nutrients Sample	Total No. Sample Events
1. Ferries	Up to 4 [1 per 3 months in operation]	1	1	1 [every 2 years]	4
2. 100 to 249 passengers	2	1 Mixed or alternate BW and GW	1 Mixed or alternate BW and GW	0	2
3. 50 to 99 passengers	1	1 [every 2 years] Mixed or alternate BW and GW	1 [every 2 years] Mixed or alternate BW and GW	0	1
4. Short Term (less than 6 weeks in AK)	1	1 [every 2 years] Mixed or alternate BW and GW	1 [every 2 years] Mixed or alternate BW and GW	0	1
5. New Vessels	2 + 1 ²	1	1	1	3

¹Quantity and frequency of sampling is based on operations in Alaska waters during the calendar year, and actual requirements may vary based on the Vessel Specific Sampling Plan.

²One pre-season sample is required for an initial performance check before entering Alaskan waters.

- Field parameters must be measured at each sample event.
- Conventional II, Priority, and Nutrients samples are taken at the same time as a Conventional I sample.

Table 2. Sample Parameters

Conventional I (Short List)	Conventional II	Priority	Nutrients
Fecal Coliform	Specific Conductance	Base/Neutrals and Acids	Total Organic Carbon
Total Suspended Solids	Settleable Solids	Volatile Organic Compounds	Nitrate/Nitrite
Biochemical Oxygen Demand (5 day)	Chemical Oxygen Demand	Total Recoverable Metals	Total Kjeldahl Nitrogen
Temperature [1]	Ammonia (Total)	Dissolved Metals (except Mercury)	Total Phosphorus
pH [1]	Oil and Grease		
Free Chlorine [1]	Hardness		
Total Chlorine [1]	Alkalinity		

[1] Field measurements.

Refer to the Vessel Specific Sampling Plan and Quality Assurance Project Plan for sample source information, and analyte groupings and minimum grouping for resampling.

2021 Small Commercial Passenger Vessel Sampling Guidance

This document outlines the Alaska Department of Environmental Conservation (ADEC) Commercial Passenger Vessel Environmental Compliance (CPVEC) Program sampling regime guidance for small commercial passenger vessels (SCPVs). This guidance document is intended only for vessels with an ADEC approved Best Management Practices (BMP) Plan. SCPVs have overnight accommodations for 50-249 passengers as determined by the number of lower berths (AS 46.03.490). There are two groups of SCPVs:

- Small cruise ships
- Alaska Marine Highway System (AMHS) mainline ferries with overnight accommodations for 50+ people.

Most SCPVs utilize basic Marine Sanitation Devices (MSDs) that are not capable of producing high quality effluent at the level of large cruise ships. Appropriate sampling frequencies for the various size classes of SCPVs that discharge in Alaska are determined primarily by the treated wastewater volumes (i.e. correlated to passenger number) and period of operation (e.g. year-round operations). Please note that individual ship requirements may vary based on past effluent sampling results, ship specific items, the approved BMP Plan or any state permit. Sampling specifics, including the wastewater discharge operations, must be included in the Quality Assurance Project Plan (QAPP) and the annually approved Vessel Specific Sampling Plan (VSSP).

This guidance document is intended to provide general information on the type of sampling regimes required for SCPVs. SPVCs are required to adhere to the sampling frequency approved annually by the CPVEC Program. The CPVEC Program will work with each vessel to determine the appropriate sampling schedule based on the vessel itinerary. Vessels with passenger capacities greater than 250 are not subject to this guidance and must receive a Large Commercial Passenger Vessel Wastewater Discharge General Permit prior to discharging.

Additional federal sampling requirements may apply. Please check with the Environmental Protection Agency (EPA) if your vessel is subject the EPA Vessel General Permit (VGP). The VGP may require additional sampling and reporting requirements.

Please remember that it is illegal to discharge untreated sewage within 3 nautical miles of shore. Discharging untreated sewage nearshore has negative environmental, economic, and human health impacts, including:

- Sewage can contaminate shellfish beds
- Sewage discharge can result in low oxygen levels in water that can harm fish and shellfish
- Sewage can spread fecal bacteria and diseases to humans
- The smell and visible residues from improperly discharged sewage sends the wrong message about how Alaskans care for their home waters

Sampling Timeline:

SCPVs operating under an approved BMP are required to protect the environment to the maximum extent feasible (AS 46.03.462(k)). To demonstrate compliance with the discharge requirements of the BMP, SCPVs must be sampled within 10 days of initial entry into the marine waters of the State of Alaska¹ or, with prior ADEC approval, when the vessel can access an Alaska port where sampling

¹ "Marine waters of the state" means all waters within the boundaries of the state together with all of the waters of the Alexander Archipelago even if not within the boundaries of the state (AS 46.03.490)

services are provided. SCPVs are subject to ADEC sampling audits and ADEC may perform or require additional sampling as necessary to implement AS 46.03.

Wastewater Treatment Operations:

SCPV wastewater sampling includes results for three main groups:

1. Treated Blackwater (BW, Sewage)
2. Treated / Untreated Greywater (GW)
3. Treated Mixed (BW+GW)

SCPVs that operate under an approved BMP Plan generally conduct wastewater treatment operations in one of the following ways:

- Treated Mixed (BW/GW): The vessel collects BW and GW together and treats this mixed wastewater through the MSD.
- Treated BW and Treated GW (MSD): The vessel collects BW and GW separately. BW flows to the MSD for treatment at a different time than the GW flows for treatment, but both are treated through the MSD.
- Treated BW and Treated GW (Tank): The vessel collects BW and GW separately. BW flows to the MSD for treatment. GW is stored in a separate tank and is manually chlorinated (treated) before it is discharged overboard.
- Treated BW and Untreated GW: The vessel collects BW and GW separately. BW flows to the MSD for treatment. Untreated GW is directly discharged overboard.

Configurations vary so it is important to describe the system accurately in the VSSP. SCPVs face common challenges due to their smaller size and vessel stability requirements that may limit wastewater treatment capacity. Accordingly, larger holding capacities or more advanced treatment systems are not always viable options for SCPVs.

Routine Sampling Regimes

Refer to [Table 2](#) for information regarding the parameter types.

1. AMHS Ferries

A subset of SCPVs that applies only to mainline AMHS vessels with overnight accommodations. While passenger capacities on the mainline ferries typically range between 450 and 499, annual registrations submitted to ADEC document lower berth capacities of less than 250. AMHS Ferries may be operated year-round, with passenger volume typically highest May to August. Some ferries are laid up or operated with reduced schedules during the winter. Each type of treated wastewater discharge must be sampled.

Sampling Regime:

- 1 Conventional Parameter I sample for every continuous three months operating in Alaska.
- 1 Conventional Parameter II sample and 1 Priority sample every calendar year.
- 1 Nutrients sample every 2 calendar years.

2. 100 to 249 passengers (berths)

This size class represents approximately half of the small cruise ships operating in Alaska. The Alaska cruise ship season typically runs from April to October. Some vessels at the upper range of this class may have Advanced Wastewater Treatment Systems.

Sampling Regime:

- 2 Conventional Parameter I samples every calendar year. If the wastewater is not mixed, both BW and GW must be sampled per sampling event.
- 1 Conventional Parameter II sample and 1 Priority sample every calendar year.
 - Vessels that mix BW and GW will sample the mixed wastewater per sampling event.
 - Vessels that treat BW and GW separately will alternate BW and GW sampling.
- Vessels with GW direct OB drains are not required to sample GW from these sources.

3. 50 to 99 passengers (berths)

This size class represents approximately half of the small cruise ships operating in Alaska. The Alaska cruise ship season typically runs from April to October.

Sampling Regime:

- 1 Conventional Parameter I sample every calendar year. If the wastewater is not mixed, both BW and GW must be sampled per sampling event.
- 1 Conventional Parameter II sample and 1 Priority sample every 2 calendar years.
 - Vessels that mix BW and GW will sample the mixed wastewater per sampling event.
 - Vessels that treat BW and GW separately will alternate BW and GW sampling.
- Vessels with GW OB drains are not required to sample GW from these sources.

4. Short Term: SCPVs operating <6 weeks in Alaska

Several small commercial passenger vessels sail for less than six weeks in Alaska during the summer season. Sampling must occur during the Alaska cruise season.

Sampling Regime:

- 1 Conventional Parameter I sample every calendar year. If the wastewater is not mixed, both BW and GW must be sampled per sampling event.
- 1 Conventional Parameter II sample and 1 Priority sample every 2 calendar years.
 - Vessels that mix BW and GW will sample the mixed wastewater per sampling event.
 - Vessels that treat BW and GW separately will alternate BW and GW sampling.
- Vessels with GW OB drains are not required to sample GW from these sources.

5. New Vessels or New MSD

This includes new ships, ships that have not operated in Alaska in the last three years, or ships outfitted with an MSD new to the vessel. Sampling must occur during the Alaska cruise season that the vessel first arrives in Alaska.

ADEC will require sampling for BW and will evaluate which GW sources will be included if wastewater is not mixed. Note that the vessel will need to obtain a Conventional I sample prior to arrival in Alaska to demonstrate that discharges will not be a threat to public health or the environment (18 AAC 69.046). Samples will be taken from all potential sources of BW or GW (treated or untreated) discharge.

Sampling Regime:

- **Prior to arriving in Alaska:** 1 Conventional I sample during the calendar year.
- 2 Conventional Parameter I samples during the calendar year. The second sample must occur six weeks prior to the vessel ending operations in Alaska.
- 1 Conventional Parameter II sample and 1 Priority sample during the calendar year.
- 1 Nutrients sample during the calendar year.

Sampling Results Discharge Performance

For delayed or missed sampling events: The operator must immediately notify ADEC by phone or email and the vessel's Environmental Compliance staff must engage with the sampling contractor to reschedule at the earliest opportunity.

Terms of sampling: When the operator cannot sample in accordance with the terms of the ADEC approved VSSP or Quality Assurance Project Plan (QAPP) [e.g. sampling valve issues that prevent a representative sample], the operator must immediately notify ADEC by phone or email and coordinate any necessary changes to remedy the situation.

Within 2-3 days of the sampling event, the vessel must provide the preliminary fecal coliform, total suspended solids, and chlorine results to ADEC CPVEC.

If sampling results exceed the limitations on discharges outlined in AS 46.03.463, the vessel must:

- Investigate the root cause of the exceedance.
- Keep treated effluent discharges to a minimum when in Alaska State waters and discharge at the maximum distance from shore possible in the area the ship is transiting.
- Take and document corrective actions.
- Submit a Corrective Action Report to the CPVEC Program.

The CPVEC Program will review and may propose follow up actions which include re-sampling to establish the wastewater treatment discharge performance.

The following parameters are required for re-sample events:

- Fecal Coliform
- Total Suspended Solids
- Free Chlorine
- Total Chlorine
- pH
- Temperature

ADEC Contacts

The most recent ADEC staff contact information can be found at: <https://dec.alaska.gov/water/cruise-ships/cruise-contacts/>