

2008 Air Quality Monitoring of Commercial Passenger Vessels Operating In Alaska Waters

Opacity Monitoring

All marine vessels must comply with the Alaska marine vessel emission standard found at 18 ACC 50.070. The standard requires that visible emissions (opacity) from vessel smoke stacks be no greater than 20% opacity for three minutes while docked or anchored. There are limited exemptions while maneuvering to/from anchor or port.

Staff in the Alaska Department of Environmental Conservation (ADEC) Commercial Passenger Vessel Environmental Compliance (CPVEC) Program (a.k.a. Cruise Ship Program) and an independent contractor monitor the visible emissions (opacity) from cruise ship and ferry vessel smoke stacks each season. CPVEC staff and the contractor performed over 200 opacity readings during 2008. Observations were conducted in Juneau, Ketchikan, Skagway, Seward, and Whittier. The independent contractor immediately reports any reading that may be a potential violation to ADEC. ADEC staff and contractors are trained and certified to measure the level of visible emissions (opacity) from vessel stacks according to EPA-approved protocols (Method 9).

In 2002, ADEC joined forces with the U.S. Forest Service to enable monitoring of cruise ship emissions in Tracy Arm, a popular fjord 30 miles south of Juneau. In 2008 Forest Service Kayak Rangers monitored cruise ship emissions while patrolling Tracy and Endicott Arms.

Enforcement

For the 2008 cruise ship season, ADEC issued 10 Notice of Violations (NOV). Three were based on U.S. Forest Service readings in Tracy Arm and Endicott Arm. The cruise ships that received NOVs are:

- Celebrity Mercury
- Celebrity Millennium (2 NOVs)
- Clipper Pacific (sailing as the “Peace Boat”, operated by International Shipping Partners)
- Island Princess (Princess Cruises)
- Norwegian Star (2 NOVs)
- Oosterdam (Holland America)
- Rhapsody of the Seas (Royal Caribbean)
- Serenade of the Seas (Royal Caribbean)

The number of NOVs that ADEC has issued for opacity is listed in Figure 1 below.



Figure 1

Public Complaints

Over the past several years, the ADEC Cruise Ship Program has received public complaints about cruise ship smokestack visible emissions (Figure 2). Staff responds to these public complaints by doing opacity readings in accordance with EPA approved protocols (Method 9). There were 36 complaints (that included detailed information) received by ADEC in 2008. Approximately 1/3 of the complaints involved the Clipper Pacific, also known as the “Peace Boat.” Many complaints did not mention a particular vessel, but were concerning the overall air quality in Juneau.

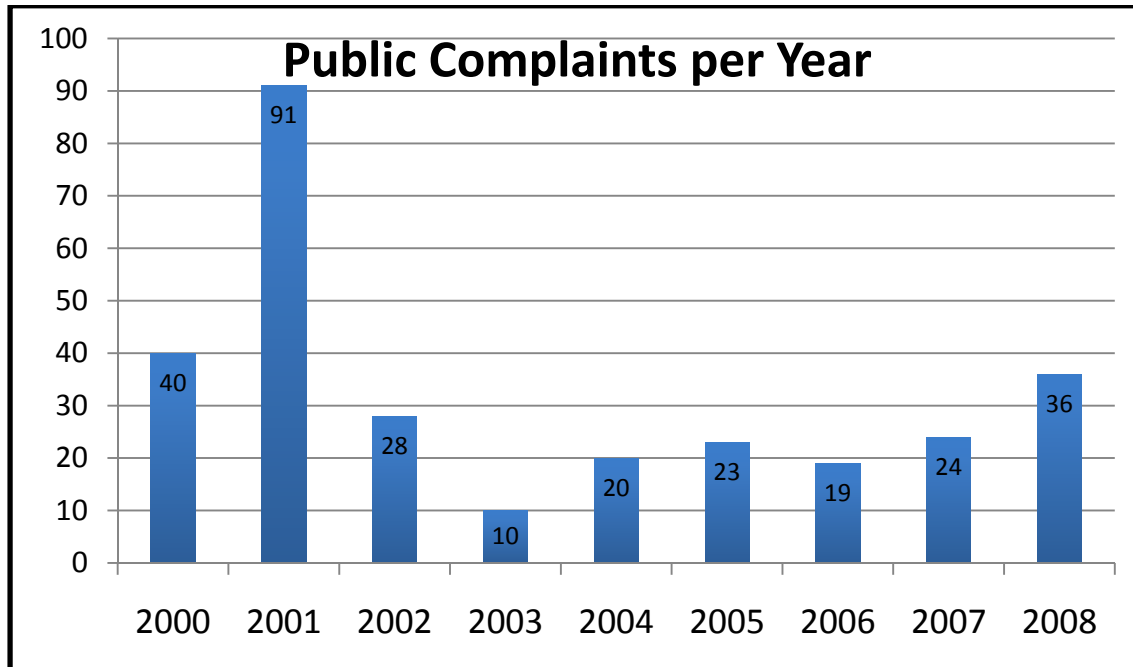


Figure 2

Ambient Air Monitoring in Juneau

Juneau receives the highest volume of cruise ship traffic of any Alaska port. Due to concerns about the air quality in downtown Juneau, an ADEC contractor set up ambient air monitors during 2000 and 2001 to measure the level of selected air pollutants that can be harmful to public health and the environment (sulfur dioxide, nitrogen dioxide, and microscopic particles-PM 2.5). The contractor installed three downtown ambient air monitoring stations in 2000 (Baranof Hotel, Capital Park, and Marine Way) and three monitoring stations during 2001 (Wickersham House, Highlands, and Marine Way).

Data from these monitors indicated that concentrations of measured air pollutants were appreciably below the State and national air quality standards in both 2000 and 2001. Since these standards are developed to protect health and welfare, ADEC concluded that air pollutant concentrations in Juneau would not result in adverse effects on health and welfare.

Because ambient pollutant levels were low during 2000 and 2001, ADEC has not continued the ambient air monitoring during the 2002 through 2008.