



# 2014 Wastewater Sampling Results For Small Cruise Ships and Ferries

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Alaska Department of  
Environmental Conservation  
Commercial Passenger Vessel Environmental Compliance Program



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## 1. SUMMARY

This is a report of the results of onboard sampling and laboratory testing of small cruise ship and ferry wastewater effluent in Alaska during 2014. Sampling is required by regulation under the Best management Practices Plans required for discharge. Tables of sample results are included in Appendix 1. Information on the sampling techniques and requirements can be found in the Methods section of this report.

Thirteen small cruise ships operated in Alaska in 2014 along with five state ferries subject to the sampling requirements, of those sixteen ships were authorized to discharge wastewater in Alaska, Table 1 lists small cruise ships and ferries with BMPs in Alaska and their discharge status in 2014.

## 2. INTRODUCTION

Sampling of cruise ship effluent is a requirement under the General Permit for all large cruise ships discharging in Alaska waters. Sampling is needed to:

- Check if treatment systems are operational
- Obtain information on treatment system performance for future discharge permits or Best Management Practices Plans
- Compile information on potential environmental effects

Sample result data for cruise ships have been collected by the Department of Environmental Conservation since 2000. Reports for prior years can be found on the cruise program's report webpage. [http://dec.alaska.gov/water/cruise\\_ships/reports.htm](http://dec.alaska.gov/water/cruise_ships/reports.htm)

## 3. METHODS

Samples are grab wastewater samples taken from a sample port prior to discharge. The grab samples were taken according to requirements in the vessels approved Quality Assurance Project Plan (QAPP). Several vessels used the [2014 Cruise Line International Association North West and Canada Quality Assurance Project Plan for Sampling and Analysis of Treated Sewage and Graywater from Commercial Passenger Vessels](#). The QAPP specifies minimum requirements for sampling and analysis of wastewater. It includes a list of approved methods, sample collection requirements, and laboratory analysis requirements. Samplers must follow

the QAPP and the [Vessel Specific Sampling Plan](#) (VSSP) for each cruise ship when collecting a sample. The cruise ship program spot checked several results submitted by the cruise ship operators for compliance with the QAPP and VSSPs.

Sampling may occur while underway or when docked. All samples were obtained in Southeast Alaska in 2014, with the majority of samples obtained in or near Juneau.

One of the samples for each ship was analyzed for 167 “priority pollutants” including metals, volatile organic compounds, and bases, neutral, acids (BNAs). Some small ships have separate graywater and blackwater discharges. The department allowed these ships to sample priority pollutants on only one of their wastewater discharges per season.

In the tables of results those values highlighted in orange are exceedances of water quality standards or Marine Sanitation Device certification standards, but under the small cruise ship regulations are not violations. Dark blue highlights indicate that either no sample data was received or accepted. Results below the method detection limit (MDL) are recorded as zero.

#### 4. RESULTS

Wastewater sample results are listed in Appendix 1 with tables for conventional parameters, nutrient parameters, and metals. Full results of VOCs and BNAs are available on request.

Table 1: 2014 Small Cruise Ship and Ferry Summary

2014 Small <sup>1</sup> Commercial Passenger Vessels Wastewater Treatment									
Vessel Operator	Vessel Name	Passenger Capacity <sup>3</sup>	Crew Capacity	Voyages	Maximum Total Passengers	Blackwater Treatment System Manufacturer	BMP	Discharging in Alaska <sup>2</sup> & Subject to sampling program	
								BW	GW
Alaska Marine Highway	<i>Columbia</i>	625	66	Year Rd.	N/A	Omnipure 15MX	Yes	Yes	Yes
Alaska Marine Highway	<i>Kennicott</i>	748	42	Year Rd.	N/A	Orca II	Yes	Yes	Yes
Alaska Marine Highway	<i>Malaspina</i>	500	50	Year Rd.	N/A	Omnipure 15MX	Yes	Yes	Yes
Alaska Marine Highway	<i>Matanuska</i>	498	50	Year Rd.	N/A	Omnipure 15MX	Yes	Yes	Yes
Alaska Marine Highway	<i>Taku</i>	370	42	Year Rd.	N/A	Omnipure 15MX	Yes	Yes	Yes
Allen Marine	<i>Admiralty Dream</i>	66	21	16	1056	Omnipure Type II	Yes	Yes	Yes
American Cruise Lines	<i>American Spirit</i>	93	27	8	744	Orca II	Yes	Yes	Yes
Hapag-Lloyd	<i>Hanseatic</i>	160	123	3	480	DG Bio-Compact KSA	N/A	No	No
National Geographic	<i>Sea Bird</i>	66	28	18	1188	Omnipure 12M	Yes	Yes	Yes
National Geographic	<i>Sea Lion</i>	66	28	18	1188	Omnipure 12M	Yes	Yes	Yes
Noble Caledonia	<i>Caledonian Sky</i>	114	73	4	456	Hamworthy Super Trident	Yes	Yes	Yes
Silver Expeditions	<i>Silver Discoverer</i>	128	76	2	140	Hamman Model HI Type II	Yes	Yes	Yes
Silver Expeditions	<i>Silver Explorer</i>	150	120	1	150	Unex Bio 200E	N/A	No	No
Un-Cruise Adventures	<i>Wilderness Adventurer</i>	78	24	16	1248	Omnipure 12M	Yes	Yes	Yes
Un-Cruise Adventures	<i>Wilderness Discoverer</i>	74	25	22	1628	Omnipure 12M	Yes	Yes	Yes
Un-Cruise Adventures	<i>Wilderness Explorer</i>	76	27	18	1368	Red Fox Type II	Yes	Yes	Yes
Un-Cruise Adventures	<i>Safari Endeavor</i>	86	35	19	1634	Omnipure 12MX	Yes	Yes	Yes
Un-Cruise Adventures	<i>S.S. Legacy</i>	92	34	10	920	Red Fox Type II	Yes	Yes	Yes
				<b>Totals</b>	<b>155</b>	<b>12,200</b>			

<sup>1</sup>A small vessel has overnight accommodations for 50 to 249 passengers. A large vessel has overnight accommodations for 250 or more passengers.  
<sup>2</sup>Alaska water extends 3 miles from the coastline and includes the Alexander Archipelago.  
<sup>3</sup>Based on lower berths for small cruise ships and capacity for ferries.  
Vessels highlighted in gray in the above table have registered that they will not discharge wastewater in Alaskan waters in 2014.

Small cruise ships are required to meet standard terms and conditions, or seek alternative terms and conditions with Best Management Practices Plans in order to discharge blackwater and graywater in Alaska marine waters. Under standard terms and conditions blackwater, graywater, and other wastewater must contain no more than 200 fecal coliform per 100 milliliters and no more than 150 milligrams per liter of total suspended solids. These are the US Coast Guard performance requirements for approval of Type II Marine Sanitation Devices (MSD) under test conditions. A MSD is required for discharge of blackwater in US waters. Some small cruise ships and ferries also treat their graywater with their MSD.

Small ships continue to try to balance bacterial disinfection and chlorine use. Chlorine is used to disinfect bacteria, but it is toxic to marine organisms and high residuals must be avoided. Several vessels have installed equipment to dechlorinate the treated wastewater. The maximum total residual chlorine results for small-ship graywater or blackwater was 110 mg/L. The Alaska Marine Water Quality Standard (AMWQS) is 0.0075 mg/L.

The fecal coliform standard is 200 colonies per 100 ml for approved Type II Marine Sanitation Devices. The most stringent daily maximum AMWQS is 43 colonies per 100 ml to collect shellfish for raw consumption, and is the standard used to protect all uses of all waters. Traditionally blackwater has had the highest median fecal coliform results, although very high results have been found in graywater (especially untreated or partially treated) as well. The highest reported result was 6,000,000 FC/100ml., this is over 100,000 times AMWQS daily maximum for raw shellfish consumption. One mixed wastewater and blackwater sample were labeled as “TNTC” (too numerous to count) for fecal coliform. These results are likely very high, and the lack of an actual number skews the median for mixed wastewater down.

Alaska uses dissolved metal concentration (a subset of total recoverable metals) for its water quality standards, but Table 5 also includes the total recoverable metals results for informational purposes. All small cruise ships met the AMWQS for dissolved antimony, beryllium, cadmium, chromium, lead, thallium, silver, and total recoverable mercury. All sampled vessels exceeded the AMWQS for copper. Fourteen of fifteen samples exceeded the AMWQS for copper, one for arsenic, three for nickel, four for selenium, and four for zinc.

Most of the priority pollutants were not detected in small ship discharges. Full priority results are available on request to DEC.

## **Conclusion**

The wastewater sample results in this report were taken at the point of discharge with no mixing zone. A mixing zone is an area of water surrounding the point of discharge where the wastewater can be diluted by the receiving water. Most permitted wastewater facilities receive a mixing zone. DEC has addressed this issue in the vessel Best Management Practices plans (BMPs) to minimize discharge in sensitive areas and near shore. The BMPs are renewed every five years, and DEC reviews the renewal applications for progress on wastewater sample results.

Small commercial passenger vessels and state ferries have made progress in terms of overall effluent quality since the beginning of the CPVEC BMP program. Unfortunately, some ships struggle to meet the standards for suspended solids, fecal coliform, BOD, and chlorine. Overall effluent quality appears to have improved since 2004. DEC believes improvements can be made by small cruise ships and ferries, especially with regard to chlorine, fecal coliform, TSS, and biological oxygen demand (BOD).

Operators have also made progress in quicker notification, and follow up corrective actions after high fecal coliform results are reported.

## APPENDIX 1: 2014 SMALL CRUISE SHIP SAMPLE DATA

Table 2: Conventional Parameters for Mixed Blackwater and Graywater

	Ammonia as N	pH	Biochemical O <sub>2</sub> Demand	Chemical Oxygen Demand	Total Suspended Solids	Total Chlorine	Free Chlorine	Fecal Coliform Bacteria	Specific Conductance	Oil & Grease	Total Organic Carbon	Alkalinity	Hardness (as CaCO <sub>3</sub> )	Nitrogen, Nitrate-Nitrite (as N)	Total Phosphorus	Total Kjeldahl Nitrogen	Total Settleable Solids	
Reportable Limit (PQL)	0.1	0.1	2	10	4	0.1	0.1	2	2	5	1	2		1	0.05	1	0.1	
Units	mg/L	s.u.	mg/L	mg/L	mg/L	mg/L	mg/L	FC/100ml	umhos/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Alaska Marine Water Quality Standards or MSD Limits	1	6.5-8.5	60	n/a	150	0.0075	n/a	200	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
Vessel Name	Sample Date																	
Columbia	7/14/14	15	7.10	130	300	53	0.0	0	2,000,000	27,000	5	27	140	0	0	2.9	32	0
Columbia	8/11/14		7.05				3.1	0.28	330									
Columbia	8/25/14	18	6.87	140	330	46	0.0	0	3,000,000	26,200	12	38	170		0	1.7	30	0
Columbia	9/24/14		6.80				0.0	0	100									
Kennicott	5/7/14	0	8.04	19	530	9.2	5.9	6.4	2	45,200	0	1.3	120	6,400	0	0	0	0
Kennicott	7/30/14	3	7.54	100	300	86	0.56	0.68	20	32,700	10.0	1.4	98		0	0.59	4.1	0.6
Malaspina	6/2/14	19	6.54	120	360	46	0	0	13,000	33,500	0.0	24	130		0.22	4.2	29	0
Malaspina	7/2/14		6.57				0	0	3,300									
Malaspina	7/29/14	0.86	6.51	79	300	60	7.8	4.0	0	24,200	11	4	70	2,700	0	0.72	4	0
Matanuska	5/29/14	15	6.63	170	460	42	0	0	>100,000	27,900	10.0	28	160		0	4.3	41	0
Matanuska	6/26/14		7.03				1.55	0	520									
Matanuska	7/31/14	10	6.93	110	350	52	0	0	1,700	19,600	19.0	41	120	2,100	0.25	2.9	30	0.2
Matanuska	8/21/14		6.86				0	0	4,300									
Taku	4/2/14	1.1	6.80	100	440	61	5.20	1.60	6	41,300	13	7	96		0.27	1.6	13	1.0
Taku	7/25/14	13	6.41	190	440	91	0	0	72	21,900	16.0	44	92	2,400	0	4.4	37	0
American Spirit	6/28/14	0.2	7.14	0	6	4	0	0	33,000	147	0	0.99	39		0.19	0	0	0
American Spirit	7/19/14	0.17	7.69	0	9	4.4	0	0	1,600	138	0	1.1	76	38	0	0	0	0
Wilderness Adventurer	6/7/14	47	7.89	380	960	352	15.0	0.3	300	31,100	72	67	200		0.51	1.7	31	9.5
Wilderness Adventurer	8/2/14	31	6.93	370	930	90	11	0	4,900	29,200	33	86	200	2,500	0.35	7.5	82.0	0.5
<b>Minimum</b>	<b>0</b>	<b>6.4</b>	<b>0</b>	<b>6</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>138</b>	<b>0</b>	<b>1</b>	<b>39.0</b>	<b>0.0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Maximum</b>	<b>47.0</b>	<b>8.0</b>	<b>380.0</b>	<b>960.0</b>	<b>352.0</b>	<b>15.00</b>	<b>6.40</b>	<b>3,000,000</b>	<b>45,200</b>	<b>72.0</b>	<b>86.0</b>	<b>200.0</b>	<b>6,400.0</b>	<b>0.5</b>	<b>7.5</b>	<b>82.0</b>	<b>9.5</b>	
<b>Median</b>	<b>11.50</b>	<b>6.93</b>	<b>115.00</b>	<b>355.00</b>	<b>52.50</b>	<b>0.00</b>	<b>0.00</b>	<b>1,060.00</b>	<b>27,450</b>	<b>10.50</b>	<b>25.50</b>	<b>120.00</b>	<b>2,400.00</b>	<b>0.00</b>	<b>1.70</b>	<b>29.50</b>	<b>0.0</b>	
Nondetects set to 0																		
* Too numerous to count																		
Exceeds WQS of federal secondary treatment standards. Not a violation under BMP regulations.																		
Not analyzed																		

Table 3: Conventional Parameters for Blackwater

		Ammonia as N	pH	Biochemical O <sub>2</sub> Demand	Chemical Oxygen Demand	Total Suspended Solids	Total Chlorine	Free Chlorine	Fecal Coliform Bacteria	Conductivity	Oil & Grease	Total Organic Carbon	Alkalinity	Hardness (as CaCO <sub>3</sub> )	Nitrogen, Nitrate-Nitrite (as N)	Total Phosphorus	Total Kjeldahl Nitrogen	Total Settleable Solids
Reportable Limit (PQL)		0.1	0.1	2	10	4	0.1	0.1	2		5	1	2		1	0.05	1	0.1
Units		mg/L	s.u.	mg/L	mg/L	mg/L	mg/L	mg/L	FC/100ml	umhos/c m	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ml/L
Alaska Marine Water Quality Standards or MSD Limits		1	6.5-8.5	60	n/a	150	0.0075	n/a	200	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Vessel Name	Sample Date																	
Admiralty Dream	5/26/14	4	7.36	37	420	41	2.2	2.20	0	41,200	0	17	110		0.20	3	24	6
Admiralty Dream	6/19/14	160	8.63	410	1,500	300	8.0	8.10	4,200,000	29,400	12	100	750		0.12	20	250	13.0
Caledonian Sky	6/25/14	0	8.55	11	380	46	54	4	0	43,000	0	0.71	110		0.20	0.4	2.2	0
Safari Endeavour	6/8/14	59	6.75	490	2,200	260	0	0	*TNTC	30,200	43	160	200		0.35	18	110	45.1
Safari Endeavour	8/3/14	19	7.44	130	640	160	0.0	0	2,900,000	27,400	15	56	200	2,900	0.22	6.8	53	3.5
Safari Legacy	6/22/14	82	7.87	160	1,000	60	0	0	6,000,000	34,200	12	34	500		0	12	140	3
Safari Legacy	8/3/14	80	7.60	190	1,000	580	0	0	430,000	28,400	22	26	300	3,100	0.10	12	130	38
Sea Bird	6/21/14	5.9	8.18	140	1600	52	0.2	0	210	28500	10	390	150		0.15	2.3	27	1.6
Sea Bird	8/16/14	2.5	6.90	>900	6,800	18	0	0	560	25,400	0	3,300	650		0	0.75	5.2	0
Sea Lion	6/22/14	7.8	7.47	56	620	60	0.31	0.29	8700	27900	0	54	100		0.12	0.86	30	3
Sea Lion	8/3/14		8.92				0	0	0									
Sea Lion	8/17/14	0.14	8.02	>320	7100	18	0	0	0	16,500	0	3400	0	1700	0	0	0.8	0.7
Wilderness Discoverer	5/14/14	40	7.97	490	1,900	600	4.7	3.3	1,200,000	38,000	54	100	300		0.14	11	100	65
Wilderness Discoverer	8/9/14	33	8.08	270	1,200	550	7.3	0.18	170,000	32,500	16	58	200	2,000	0.28	9.1	95	59
Wilderness Explorer	5/17/14	58	7.88	91	640	60	0.15	0	920,000	36,000	0	2.4	350		0.13	7.1	87	1.5
Wilderness Explorer	7/12/14		8.55				110.0	90.0	0									
Wilderness Explorer	8/9/14	40	7.67	64	300	86	0	0	210,000	15,600	7.1	18	200		0	1.5	35	7
<b>Minimum</b>		<b>0</b>	<b>6.75</b>	<b>11</b>	<b>300</b>	<b>18.0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15,600</b>	<b>0</b>	<b>0.7</b>	<b>0</b>	<b>1,700</b>	<b>0</b>	<b>0</b>	<b>0.80</b>	<b>0</b>
<b>Maximum</b>		<b>160</b>	<b>8.92</b>	<b>490</b>	<b>7,100</b>	<b>600</b>	<b>110.0</b>	<b>90.0</b>	<b>6,000,000</b>	<b>43,000</b>	<b>54.0</b>	<b>3,400</b>	<b>750</b>	<b>3,100</b>	<b>0.35</b>	<b>20</b>	<b>250</b>	<b>65</b>
<b>Median</b>		<b>33.00</b>	<b>7.88</b>	<b>140</b>	<b>1,000</b>	<b>60.0</b>	<b>0.2</b>	<b>0.0</b>	<b>89,350</b>	<b>29,400</b>	<b>10.0</b>	<b>56.0</b>	<b>200.0</b>	<b>2,450</b>	<b>0.13</b>	<b>6.80</b>	<b>53.00</b>	<b>3.50</b>
Nondetects set to 0																		
* Too numerous to count																		
Exceeds WQS or MSD technology standards. Not a violation under BMP regulations.																		
Not sampled																		



Table 5: Full Suite Metal Sample Results

			Antimony (TR)	Antimony dissolved	Arsenic (TR)	Arsenic dissolved	Beryllium (TR)	Beryllium dissolved	Cadmium (TR)	Cadmium dissolved	Chromium (TR)	Chromium dissolved	Copper (TR)	Copper dissolved	Lead (TR)	Lead, dissolved	Mercury (Total)	Nickel (TR)	Nickel, dissolved	Selenium (TR)	Selenium, dissolved	Silver (TR)	Silver, dissolved	Thallium (TR)	Thallium, dissolved	Zinc (TR)	Zinc, dissolved	
Reportable Limit (PQL)			1	1	1	2.5	1	1	1	1	1	1	1	1	1	1	0.2	1	1	1	1	1	1	1	1	1	1	
Units			µg/mq	µg/mq	µg/mq	µg/mq	µg/mq	µg/mq	µg/mq	µg/mq	µg/mq	µg/mq	µg/mq	µg/mq	µg/mq	µg/mq	µg/mq	µg/mq	µg/mq	µg/mq	µg/mq	µg/mq	µg/mq	µg/mq	µg/mq	µg/mq	µg/mq	
Alaska Marine Water Quality Standards (chronic for marine life)			N/A	N/A	N/A	36	N/A	N/A	N/A	8.8	N/A	50 (chromium IV)	N/A	3.1	N/A	8.1	0.94	N/A	8.2	N/A	71	N/A	1.9 (acute)	N/A	N/A	N/A	81	
Vessel Name	Sample Date	Sample Type																										
Columbia	7/14/14	Mixed	0	0	36	36	0	0	0	0	1.3	1	83	74	0	0	0	6.3	6.1	98	74	0	0	0	0	0	56	42
Kenicott	5/7/14	Mixed	0	0	53	45	0	0	0	0	0	0	200	200	0	0	0	4.9	6.8	0	0	0	0	0	0	0	53	59
Malaspina	7/29/14	Mixed	0	0	8.3	5	0	0	0	0	2.2	1.3	110	72	0	0	0	7.2	6.3	23	8	0	0	0	0	0	53	47
Matanuska	7/31/14	Mixed	0	0	23	23	0	0	0	0	3.3	1.3	210	150	1	0	0	16	16	71	64	0	0	0	0	0	37	27
Taku	7/25/14	Mixed	0	0	23	0	0	0	0	0	1.5	0	160	130	0	0	0	9.6	8.5	75	66	0	0	0	0	0	63	47
Admiralty Dream	6/19/14	GW	0	0	1	0	0	0	0	0	4	2	240	64	17	3.9	0	18	14	2.1	1.7	0	0	0	0	0	1600	630
American Spirit	7/19/14	Mixed	0	0	0	0	0	0	0	0	0	0	16.0	3.4	4.1	0	0	3.9	1	0	0	0	0	0	0	0	930	700
Caledonian Sky	6/25/14	GW	0	0	2	0	0	0	0	0	2	0	54	2.7	3.4	0	0	5.7	0	2.9	2	0	0	0	0	0	190	23
Safari Endeavor	8/3/14	BW	0	0	35	34	0	0	0	0	1.2	0	71	51	2.6	0	0	3.7	3.1	88	87	0	0	0	0	0	170	26
Safari Legacy	8/3/14	BW	0	0	37	35	0	0	0	0	1	0	76	55	1.1	0	0	4.3	3.5	92	88	0	0	1.5	0	0	170	9.5
Sea Bird	8/16/14	GW	0	0	0	0	0	0	0	0	39	43	110	89	0	0	0	0	0	0	0	0	0	0	0	0	110	99
Sea Lion	8/17/14	BW	0	0	27	29	0	0	0	0	0	24	52	53	0	0	0	0	0	92	73	0	0	0	0	0	4600	8700
Wilderness Adventurer	8/2/14	Mixed	0	0	26	24	0	0	0	0	3.9	2.4	130	120	2.2	0	0	5.5	5.1	47	22	0	0	0	0	0	100	51
Wilderness Discoverer	8/9/14	BW	0	0	18	18	0	0	0	0	2.2	0	170	150	0	0	0	5	3.9	0	0	0	0	0	0	0	150	27
Wilderness Explorer	8/9/14	GW	0	0	0	0	0	0	0	0	0	11	9.3	0	0	0	0	0	0	0	0	0	0	0	0	0	49	43
<b>Minimum</b>			0	0	0	0	0	0	0	0	0	0.0	11	3	0	0	0	0	0.0	0	0	0	0	0	0	0	37	10
<b>Maximum</b>			0	0	53	45	0	0	0	0	39	43.0	240	200	17.00	4	0	18	16.0	98	88	0	0	2	0	0	4600	8700
<b>Median</b>			0	0	23	18	0	0	0	0	2	0.0	110	72	0.00	0	0	5	3.9	23	8	0	0	0	0	0	110	47
Nondetects set to 0																												
Exceeds WQS. Not a violation under BMP regulations.																												

## **APPENDIX 2: REFERENCES**

Alaska Department of Environmental Conservation (ADEC) Cruise Ship Program

[http://www.dec.state.ak.us/water/cruise\\_ships/index.htm](http://www.dec.state.ak.us/water/cruise_ships/index.htm)

CLIA Northwest and Canada Quality Assurance Project Plan

[http://dec.alaska.gov/water/cruise\\_ships/pdfs/2015\\_CLIA-NWC\\_QAPP.pdf](http://dec.alaska.gov/water/cruise_ships/pdfs/2015_CLIA-NWC_QAPP.pdf)

Small Cruise Ship Discharge Options

[http://dec.alaska.gov/water/cruise\\_ships/small\\_vessel\\_dischargeoptions.htm](http://dec.alaska.gov/water/cruise_ships/small_vessel_dischargeoptions.htm)

Alaska Cruise Ship Laws and Regulations

[http://www.dec.state.ak.us/water/cruise\\_ships/Law\\_and\\_Regs/index.htm](http://www.dec.state.ak.us/water/cruise_ships/Law_and_Regs/index.htm)

Sample reports from prior years

[http://www.dec.state.ak.us/water/cruise\\_ships/reports.htm](http://www.dec.state.ak.us/water/cruise_ships/reports.htm)