

Appendix B
Summary of Sampling Data Received during for the 2006 cruise season.

Note: Only the data for the ships that received approval for discharge are required to submit data per the MOU; and some of the data below is data gathered prior to approval for continuous discharge in Alaska.

highlighted blue = outside of Washington/Alaska voyage waters or discharge approval period

SHIP: NORWEGIAN SUN							
		pH	BOD	TSS	Chlorine Residual	Fecal Coliform	Comments
		St. Units	mg/l	mg/l	mg/l	#/100 ml	
MOU/Alaska Limits ¹		6-9	30/45	30/45	10 ug/l	20 / 40	
WA State Water Quality Standards ²		6.8-8.7	NA	NA	13 / 7.5 ug/l	14 / 43	
Sample Date	Location/ Lab						
5/16/06	Juneau/Analytica	6.71	26.4	5	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
5/20/06	Seattle/Laucks	6.5	28	8	ND< 0.10	< 2	MIXED BLACK AND GRAY OVERBOARD
5/23/06	Juneau/Analytica	6.93	26.3	8	ND< 0.10	2	MIXED BLACK AND GRAY OVERBOARD unannounced sampling
6/3/06	Seattle/Laucks	6.5	16	4	ND< 0.10	< 2	MIXED BLACK AND GRAY OVERBOARD
6/13/06	Juneau/Analytica	6.70	6.87	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
7/1/06	Seattle/Laucks	6.5	16	5	ND< 0.10	11	MIXED BLACK AND GRAY OVERBOARD
7/11/06	Juneau/Analytica	6.96	18.2	7	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD unannounced sampling
7/18/06	Juneau/Analytica	6.68	12.6	6	ND< 0.13	2	MIXED BLACK AND GRAY OVERBOARD
8/5/06	Seattle/Laucks	7.0	11	6	ND< 0.10	< 2	MIXED BLACK AND GRAY OVERBOARD
8/22/06	Juneau/Analytica	6.99	13.7	4	ND< 0.12	2	MIXED BLACK AND GRAY OVERBOARD
9/2/06	Seattle/Laucks	6.6	6	4	ND< 0.10	< 2	MIXED BLACK AND GRAY OVERBOARD
9/12/06	Juneau/Analytica	6.87	10.8	6	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
ND = Non Detect							
Unannounced sampling includes other parameters not listed above.							
	MINIMUM	6.50	ND	ND	ND	ND	Seattle testing compliance
	AVERAGE		15.99	5.58	0.10		
	MAXIMUM	7.00	28.00	8.00	0.13	11	
	GEOMETRIC MEAN					2.3	

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SHIP: NORWEGIAN STAR							
		pH	BOD	TSS	Chlorine Residual	Fecal Coliform	Comments
		St. Units	mg/l	mg/l	mg/l	#/100 ml	
MOU/Alaska Limits¹		6-9	30/45	30/45	10 ug/l	20 / 40	
WA State Water Quality Standards²		6.8-8.7	NA	NA	13 / 7.5 ug/l	14 / 43	
Sample Date	Location/ Lab						
5/9/06	Juneau/Analytica	7.13	2.48	ND< 4	ND< 0.10	ND< 1	MIXED BLACK AND GRAY OVERBOARD
5/14/06	Seattle/Laucks	6.6	18	5	ND< 0.10	< 2	MIXED BLACK AND GRAY OVERBOARD
5/23/06	Juneau/Analytica	7.58	3.24	5	ND< 0.10	* 5000	MIXED BLACK AND GRAY unannounced sampling
5/23/06	Juneau/Analytica	7.57	3.45	4	ND< 0.10	* 5000	MIXED BLACK AND GRAY OVERBOARD unannounced sampling (blind duplicate)
5/28/06	Seattle/Laucks	6.5	6	2	ND< 0.10	< 2	MIXED BLACK AND GRAY OVERBOARD
6/4/06	Seattle/Laucks	6.7	U 5	U 2	ND< 0.10	< 2	MIXED BLACK AND GRAY OVERBOARD
6/20/06	Juneau/Analytica	7.28	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
7/2/06	Seattle/Laucks	6.7	5	2	ND< 0.10	< 2	MIXED BLACK AND GRAY OVERBOARD
7/18/06	Juneau/Analytica	7.49	3.37	4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
8/1/06	Juneau/Analytica	7.49	ND< 2	4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
8/6/06	Seattle/Laucks	6.7	U 6	U 2	ND< 0.10	< 2	MIXED BLACK AND GRAY OVERBOARD
8/8/06	Juneau/Analytica	6.90	ND< 2	4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD unannounced sampling
9/3/06	Seattle/Laucks	6.8	4	2	ND< 0.10	< 2	MIXED BLACK AND GRAY OVERBOARD
9/5/06	Juneau/Analytica	7.27	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
ND = Non Detect							
U = analyte not detected, to the limit of detection							
Unannounced sampling includes other parameters not listed above.							
	MINIMUM	6.50	ND	ND	ND	ND	Seattle testing compliance
	AVERAGE		4.61	3.4	0.10		* report submitted, believes contaminated sample line
	MAXIMUM	7.58	18.00	5.0	0.10	5000	
	GEOMETRIC MEAN					6	

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SHIP: DAWN PRINCESS							
		pH	BOD	TSS	Chlorine Residual	Fecal Coliform	Comments
		St. Units	mg/l	mg/l	mg/l	#/100 ml	
MOU/Alaska Limits¹		6-9	30/45	30/45	10 ug/l	20 / 40	
WA State Water Quality Standards²		6.8-8.7	NA	NA	13 / 7.5 ug/l	14 / 43	
Sample Date	Location/ Lab						
5/13/06	Seattle/Laucks	7.0	7	2	ND< 0.10	17	MIXED BLACK AND GRAY OVERBOARD
5/22/06	Juneau/Analytica	7.38	ND< 2	13	ND< 0.10	2	MIXED BLACK AND GRAY OVERBOARD
5/29/06	Juneau/Analytica	7.19	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD unannounced sampling
6/3/06	Seattle/Laucks	6.7	U 5	U 2	ND< 0.10	2	MBR 1 EFFLUENT (process control sampling)
6/3/06	Seattle/Laucks	6.7	U 5	U 2	ND< 0.10	< 2	MBR 2 EFFLUENT (process control sampling)
6/3/06	Seattle/Laucks	6.9	41	U 2	ND< 0.10	< 2	MBR 3 EFFLUENT (process control sampling)
6/3/06	Seattle/Laucks	6.5	U 5	2	ND< 0.10	< 2	MIXED BLACK AND GRAY OVERBOARD
6/12/06	Juneau/Analytica	7.22	2.25	5	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
6/26/06	Juneau/Analytica	6.72	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD unannounced sampling
7/1/06	Seattle/Laucks	6.6	U 3	U 2	ND< 0.10	< 2	MIXED BLACK AND GRAY OVERBOARD
7/10/06	Juneau/Analytica	6.87	5.65	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
8/5/06	Seattle/Laucks	6.8	9	6	ND< 0.10	< 2	MIXED BLACK AND GRAY OVERBOARD
8/14/06	Juneau/Analytica	7.50	ND< 2	12	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
9/2/06	Seattle/Laucks	6.6	U 4	5	ND< 0.10	< 2	MIXED BLACK AND GRAY OVERBOARD
9/11/06	Juneau/Analytica	6.92	ND< 2	6	ND< 0.10	18	MIXED BLACK AND GRAY OVERBOARD
ND = Non Detect							
U = analyte not detected, to the limit of detection							
Unannounced sampling includes other parameters not listed above.							
	MINIMUM	6.50	ND	ND	ND	ND	Seattle testing compliance
	AVERAGE		6.46	4.7	0.10		
	MAXIMUM	7.50	41.00	12.0	0.10	18	
	GEOMETRIC MEAN					3	

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SHIP: SUN PRINCESS							
		pH	BOD	TSS	Chlorine Residual	Fecal Coliform	Comments
		St. Units	mg/l	mg/l	mg/l	#/100 ml	
MOU/Alaska Limits¹		6-9	30/45	30/45	10 ug/l	20 / 40	
WA State Water Quality Standards²		6.8-8.7	NA	NA	13 / 7.5 ug/l	14 / 43	
Sample Date	Location/ Lab						
5/14/06	Seattle/Laucks	7.1	U 15	4	ND< 0.10	< 2	MIXED BLACK AND GRAY OVERBOARD
5/24/06	Juneau/Analytica	7.75	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD unannounced sampling
5/24/06	Juneau/Analytica	7.77	ND< 2.0	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY unannounced sampling (blind duplicate)
5/31/06	Juneau/Analytica	7.18	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
6/4/06	Seattle/Laucks	6.9	U 5	U 2	ND< 0.10	< 2	MIXED BLACK AND GRAY OVERBOARD
6/14/06	Juneau/Analytica	7.66	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
6/21/06	Juneau/Analytica	7.83	2.07	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY unannounced sampling
6/21/06	Juneau/Analytica	8.05	ND< 2.0	ND< 8	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD unannounced sampling (blind duplicate)
7/2/06	Seattle/Laucks	7.2	3	U 2	ND< 0.10	< 2	MIXED BLACK AND GRAY OVERBOARD
7/12/06	Juneau/Analytica	7.91	3.98	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
8/2/06	Juneau/Analytica	7.89	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY unannounced sampling
8/6/06	Seattle/Laucks	7.1	9	2	ND< 0.10	< 2	MIXED BLACK AND GRAY OVERBOARD
9/3/06	Seattle/Laucks	7.6	U 4	U 2	ND< 0.10	4	MIXED BLACK AND GRAY OVERBOARD
ND = Non Detect							
U = analyte not detected, to the limit of detection							
Unannounced sampling includes other parameters not listed above.							
	MINIMUM	6.90	ND	ND	ND	ND	Seattle testing compliance
	AVERAGE		4.16	3.7	0.10		
	MAXIMUM	8.05	15.00	8.0	0.10	4	
	GEOMETRIC MEAN					2	

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SHIP: HOLLAND OOSTERDAM							
		pH	BOD	TSS	Chlorine Residual	Fecal Coliform	Comments
		St. Units	mg/l	mg/l	mg/l	#/100 ml	
MOU/Alaska Limits ¹		6-9	30/45	30/45	10 ug/l	20 / 40	
WA State Water Quality Standards ²		6.8-8.7	NA	NA	13 / 7.5 ug/l	14 / 43	
Sample Date	Location/ Lab						
5/6/06	Seattle/Laucks	6.7	42	U 2	ND< 0.10	2	GREY WATER
5/6/06	Seattle/Laucks	7.5	U 5	U 2	ND< 0.10	< 2	BLACK WATER
5/8/06	Juneau/Analytica	7.03	18.9	ND< 4	ND< 0.10	ND< 1	GREY WATER
5/8/06	Juneau/Analytica	8.01	8.52	ND< 4	ND< 0.10	ND< 1	BLACK WATER
5/13/06	Seattle/Laucks	6.0	29	U 2	ND< 0.10	< 2	GREY WATER
5/13/06	Seattle/Laucks	7.3	8	5	ND< 0.10	30	BLACK WATER
5/15/00	Juneau/Analytica	7.04	24.5	ND< 4	ND< 0.10	ND< 2	GREY WATER
5/15/00	Juneau/Analytica	7.98	3.98	ND< 4	ND< 0.10	ND< 2	BLACK WATER
5/20/06	Seattle/Laucks	6.6	24	U 2	ND< 0.10	< 2	GREY WATER
5/20/06	Seattle/Laucks	7.3	7	5	ND< 0.10	4	BLACK WATER
5/20/06	Seattle/Laucks	7.1	11	3	ND< 0.10	13	MIXED BLACK AND GRAY
5/22/06	Juneau/Analytica	6.78	18.1	ND< 4	ND< 0.10	8	GREY WATER
5/22/06	Juneau/Analytica	7.91	4.92	ND< 4	ND< 0.10	ND< 2	BLACK WATER
5/22/06	Juneau/Analytica	7.79	16.2	ND< 4	ND< 0.10	34	MIXED BLACK AND GRAY
5/27/06	Seattle/Laucks	6.5	38	U 2	ND< 0.10	< 2	GREY WATER
5/27/06	Seattle/Laucks	7.3	8	4	ND< 0.10	< 2	BLACK WATER
5/27/06	Seattle/Laucks	7.2	28	U 2	ND< 0.10	13	MIXED BLACK AND GRAY
5/29/06	Juneau/Analytica	6.81	29.8	ND< 4	ND< 0.10	ND< 2	GREY WATER
5/29/06	Juneau/Analytica	7.74	4.75	ND< 4	ND< 0.10	ND< 2	BLACK WATER
5/29/06	Juneau/Analytica	7.55	19.9	ND< 4	ND< 0.10	30	MIXED BLACK AND GRAY
6/3/06	Seattle/Laucks	6.3	9	U 2	ND< 0.10	< 2	GREY WATER
6/3/06	Seattle/Laucks	7.4	7	U 2	ND< 0.10	4	BLACK WATER
6/3/06	Seattle/Laucks	7.1	20	U 2	ND< 0.10	12	MIXED BLACK AND GRAY
6/5/06	Juneau/Analytica	6.67	15.9	ND< 4	ND< 0.10	ND< 2	GREY WATER
6/5/06	Juneau/Analytica	7.68	8.78	ND< 4	ND< 0.10	ND< 2	BLACK WATER
6/5/06	Juneau/Analytica	7.62	5.45	ND< 4	ND< 0.10	2	MIXED BLACK AND GRAY
6/12/06	Juneau/Analytica	6.70	11.4	ND< 4	ND< 0.10	ND< 2	GREY WATER
6/12/06	Juneau/Analytica	7.72	2.91	ND< 4	ND< 0.10	ND< 2	BLACK WATER
6/12/06	Juneau/Analytica	7.66	5.39	ND< 4	ND< 0.10	10	MIXED BLACK AND GRAY
6/19/06	Juneau/Analytica	7.81	11.9	ND< 4	ND< 0.10	10.9	MIXED BLACK AND GRAY
6/26/06	Juneau/Analytica	7.56	13.0	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY
7/1/06	Seattle/Laucks	7.1	33	2	ND< 0.10	< 2	GREY WATER
7/1/06	Seattle/Laucks	7.2	7	2	ND< 0.10	< 2	BLACK WATER
7/10/06	Juneau/Analytica	8.77	12.5	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY unannounced sampling
7/17/06	Juneau/Analytica	7.68	4.81	ND< 4	ND< 0.10	2	MIXED BLACK AND GRAY
7/24/06	Juneau/Analytica	7.49	15.5	4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY
7/31/06	Juneau/Analytica	7.64	19.8	ND< 4.0	ND< 0.10	ND< 2	MIXED BLACK AND GRAY

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8/5/06	Seattle/Laucks	6.8	34	U	2	ND< 0.10	< 2	GREY WATER
8/5/06	Seattle/Laucks	7.4	6		5	ND< 0.10	< 2	BLACK WATER
8/7/06	Juneau/Analytica	7.78	6.66		6	ND< 0.10	16	MIXED BLACK AND GRAY
8/14/06	Juneau/Analytica	7.75	19.2		6	ND< 0.10	ND< 2	MIXED BLACK AND GRAY unannounced sampling
9/2/06	Seattle/Laucks	6.8	20	U	2	ND< 0.10	< 2	GREY WATER
9/2/06	Seattle/Laucks	7.4	4		6	ND< 0.10	17	BLACK WATER
9/4/06	Juneau/Analytica	7.99	19.6	ND<	4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY
9/11/06	Juneau/Analytica	7.73	8.91	ND<	4	ND< 0.10	38	MIXED BLACK AND GRAY

ND = Non Detect

U = analyte not detected, to the limit of detection

Unannounced sampling includes other parameters not listed above.

	MINIMUM	6.00	ND	ND	ND	ND	ND	Seattle testing compliance
	AVERAGE		14.92	3.60	0.10			
	MAXIMUM	8.77	42.00	6.00	0.10		38	
	GEOMETRIC MEAN						3.5	

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SHIP: HOLLAND RYNDAM							
		pH	BOD	TSS	Chlorine Residual	Fecal Coliform	Comments
		St. Units	mg/l	mg/l	mg/l	#/100 ml	
MOU/Alaska Limits ¹		6-9	30/45	30/45	10 ug/l	20 / 40	
WA State Water Quality Standards ²		6.8-8.7	NA	NA	13 / 7.5 ug/l	14 / 43	
Sample Date	Location/ Lab						
5/9/06	Juneau/Analytica	7.73	ND< 2	ND< 4	ND< 0.10	ND< 1	MIXED BLACK AND GRAY OVERBOARD
5/16/06	Juneau/Analytica	7.86	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
6/1/06	Juneau/Analytica	7.04	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD unannounced sampling
6/7/06	Juneau/Analytica	7.40	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
6/15/06	Juneau/Analytica	7.76	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
7/5/06	Juneau/Analytica	7.99	5.29	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
7/19/06	Juneau/Analytica	7.63	6.01	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
7/27/06	Juneau/Analytica	8.26	12.9	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD unannounced sampling
7/27/06	Juneau/Analytica	8.29	12.7	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD unannounced sampling (blind duplicate)
8/10/06	Juneau/Analytica	7.75	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
8/24/06	Juneau/Analytica	7.91	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
9/7/06	Juneau/Analytica	8.18	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
9/19/06	Juneau/Analytica	8.25	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
ND = Non Detect							
Unannounced sampling includes other parameters not listed above.							
	MINIMUM	7.04	ND	ND	ND	ND	Seattle testing not complied with - notification made
	AVERAGE		4.22	4	0.10		
	MAXIMUM	8.29	12.90	4	0.10	2	
	GEOMETRIC MEAN					2	

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SHIP: HOLLAND STATENDAM							
		pH	BOD	TSS	Chlorine Residual	Fecal Coliform	Comments
		St. Units	mg/l	mg/l	mg/l	#/100 ml	
MOU/Alaska Limits¹		6-9	30/45	30/45	10 ug/l	20 / 40	
WA State Water Quality Standards²		6.8-8.7	NA	NA	13 / 7.5 ug/l	14 / 43	
Sample Date	Location/ Lab						
5/23/06	Juneau/Analytica	7.80	12.8	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
5/30/06	Juneau/Analytica	7.37	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD unannounced sampling
6/6/06	Juneau/Analytica	7.75	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
6/27/06	Juneau/Analytica	7.82	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
7/11/06	Juneau/Analytica	7.79	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
7/18/06	Juneau/Analytica	8.05	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
8/8/06	Juneau/Analytica	7.59	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
8/9/06	Juneau/Analytica	7.88	ND< 2	ND< 4	ND< 0.10	0	MIXED BLACK AND GRAY OVERBOARD unannounced sampling
8/22/06	Juneau/Analytica	7.57	21.6	9	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
9/5/06	Juneau/Analytica	8.02	ND< 2.0	4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
9/11/06	Juneau/Analytica	7.33	2.46	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
ND = Non Detect							
Unannounced sampling includes other parameters not listed above.							
	MINIMUM	7.33	ND	ND	ND	ND	Vessel did not visit Seattle
	AVERAGE		4.81	4	0.10		
	MAXIMUM	8.05	21.60	9	0.10	2	
	GEOMETRIC MEAN					2	

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Summary of Sampling Data Received during for the 2006 cruise season.

SHIP: HOLLAND VEENDAM							
		pH	BOD	TSS	Chlorine Residual	Fecal Coliform	Comments
		St. Units	mg/l	mg/l	mg/l	#/100 ml	
MOU/Alaska Limits ¹		6-9	30/45	30/45	10 ug/l	20 / 40	
WA State Water Quality Standards ²		6.8-8.7	NA	NA	13 / 7.5 ug/l	14 / 43	
Sample Date	Location/ Lab						
5/12/06	Seattle/Laucks	7.4	U 8	U 2	ND< 0.10	< 2	MIXED BLACK AND GRAY OVERBOARD
5/17/06	Juneau/Analytica	7.47	2.65	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
5/25/06	Juneau/Analytica	7.34	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD unannounced sampling
5/31/06	Juneau/Analytica	7.57	2.75	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
6/8/06	Juneau/Analytica	7.56	3.13	12	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
6/22/06	Juneau/Analytica	7.75	2.57	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
7/12/06	Juneau/Analytica	8.19	9.90	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
7/20/06	Juneau/Analytica	7.67	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
8/17/06	Juneau/Analytica	7.69	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
8/31/06	Juneau/Analytica	7.91	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
9/14/06	Juneau/Analytica	7.83	6.36	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
9/21/06	Juneau/Analytica	7.41	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
9/25/06	Seattle/Laucks	7.4	8	5	ND< 0.10	< 2	MIXED BLACK AND GRAY OVERBOARD
ND = Non Detect							
U = analyte not detected, to the limit of detection							
Unannounced sampling includes other parameters not listed above.							
	MINIMUM	7.34	ND	ND	ND	ND	Seattle testing compliance
	AVERAGE		4.45	5	0.10		
	MAXIMUM	8.19	9.90	12	0.10	2	
	GEOMETRIC MEAN					2	

Appendix B
Summary of Sampling Data Received during for the 2006 cruise season.

SHIP: HOLLAND VOLENDAM							
		pH	BOD	TSS	Chlorine Residual	Fecal Coliform	Comments
		St. Units	mg/l	mg/l	mg/l	#/100 ml	
MOU/Alaska Limits ¹		6-9	30/45	30/45	10 ug/l	20 / 40	
WA State Water Quality Standards ²		6.8-8.7	NA	NA	13 / 7.5 ug/l	14 / 43	
Sample Date	Location/ Lab						
4/22/06	Seattle/Laucks	7.5	5.2	U 2	ND< 0.02	< 2	MIXED BLACK AND GRAY OVERBOARD
5/12/06	Juneau/Analytica	7.67	4.92	ND< 4	ND< 0.10	ND< 1	MIXED BLACK AND GRAY OVERBOARD
5/19/06	Juneau/Analytica	7.55	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD unannounced sampling
5/26/06	Juneau/Analytica	7.86	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
6/2/06	Juneau/Analytica	8.16	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
6/23/06	Juneau/Analytica	7.65	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
7/7/06	Juneau/Analytica	7.59	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
7/14/06	Juneau/Analytica	7.33	3.66	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
7/28/06	Juneau/Analytica	7.86	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD unannounced sampling
8/11/06	Juneau/Analytica	7.69	ND< 2	4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
8/18/06	Juneau/Analytica	8.24	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
9/15/06	Juneau/Analytica	7.45	6.82	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
9/22/06	Juneau/Analytica	7.77	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
ND = Non Detect							
U = analyte not detected, to the limit of detection							
Unannounced sampling includes other parameters not listed above.							
	MINIMUM	7.33	ND	ND	ND	ND	Seattle testing compliance
	AVERAGE		2.97	4	0.09		
	MAXIMUM	8.24	6.82	4	0.10	2	
	GEOMETRIC MEAN					2	

Appendix B
Summary of Sampling Data Received during for the 2006 cruise season.

SHIP: HOLLAND WESTERDAM							
		pH	BOD	TSS	Chlorine Residual	Fecal Coliform	Comments
		St. Units	mg/l	mg/l	mg/l	#/100 ml	
MOU/Alaska Limits ¹		6-9	30/45	30/45	10 ug/l	20 / 40	
WA State Water Quality Standards ²		6.8-8.7	NA	NA	13 / 7.5 ug/l	14 / 43	
Sample Date	Location/ Lab						
5/4/06	San Pedro/Microbac	7.14	3	ND< 4	ND< 0.10	ND< 2	GRAY WATER
5/4/06	San Pedro/Microbac	7.14	13	ND< 4	ND< 0.10	ND< 2	BLACK WATER
5/7/06	Seattle/Laucks	7.2	29	2	ND< 0.10	2	GRAY WATER
5/7/06	Seattle/Laucks	7.4	U 5	U 2	ND< 0.10	< 2	BLACK WATER
5/10/06	Juneau/Analytica	6.05	38.5	ND< 4	ND< 0.10	ND< 1	GRAY WATER
5/10/06	Juneau/Analytica	7.65	3.05	ND< 4	ND< 0.10	ND< 1	BLACK WATER
5/14/06	Seattle/Laucks	6.1	40	U 2	ND< 0.10	< 2	GRAY WATER
5/14/06	Seattle/Laucks	7.3	14	U 2	ND< 0.10	< 2	BLACK WATER
5/17/06	Juneau/Analytica	7.00	32.2	ND< 4	ND< 0.10	2	GRAY WATER
5/17/06	Juneau/Analytica	7.72	4.73	ND< 4	ND< 0.10	2	BLACK WATER
5/21/06	Seattle/Laucks	6.8	33	U 2	ND< 0.10	4	GRAY WATER
5/21/06	Seattle/Laucks	7.5	19	U 2	ND< 0.10	< 2	BLACK WATER
5/24/06	Juneau/Analytica	6.77	24.2	ND< 4	ND< 0.10	8	GRAY WATER
5/24/06	Juneau/Analytica	7.54	6.48	ND< 4	ND< 0.10	ND< 2	BLACK WATER
5/24/06	Juneau/Analytica	6.57	25.5	ND< 4	ND< 0.10	26	MIXED BLACK AND GRAY
5/28/06	Seattle/Laucks	6.6	32	U 2	ND< 0.10	2	GRAY WATER
5/28/06	Seattle/Laucks	7.5	11	2	ND< 0.10	< 2	BLACK WATER
5/28/06	Seattle/Laucks	7.0	38	2	ND< 0.10	2	MIXED BLACK AND GRAY
5/31/06	Juneau/Analytica	7.19	35.1	8	ND< 0.10	ND< 2	GRAY WATER
5/31/06	Juneau/Analytica	7.82	4.26	ND< 4	ND< 0.10	ND< 2	BLACK WATER
5/31/06	Juneau/Analytica	7.22	23.4	8	ND< 0.10	34	MIXED BLACK AND GRAY
6/4/06	Seattle/Laucks	7.3	33	U 2	ND< 0.10	23	GRAY WATER
6/4/06	Seattle/Laucks	7.4	U 5	U 2	ND< 0.10	< 2	BLACK WATER
6/7/06	Juneau/Analytica	7.28	22.4	ND< 4	ND< 0.10	32	GRAY WATER
6/7/06	Juneau/Analytica	7.69	3.03	ND< 4	ND< 0.10	ND< 2	BLACK WATER
6/7/06	Juneau/Analytica	7.57	15.3	5	ND< 0.10	6	MIXED BLACK AND GRAY
6/14/06	Juneau/Analytica	6.67	35.4	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY unannounced sampling
6/21/06	Juneau/Analytica	7.79	19.2	6	ND< 0.10	ND< 2	MIXED BLACK AND GRAY
6/28/06	Juneau/Analytica	7.66	24.4	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY
7/2/06	Seattle/Laucks	7.2	32	U 2	ND< 0.10	< 2	GRAY WATER
7/2/06	Seattle/Laucks	7.5	8	U 2	ND< 0.10	2	BLACK WATER
7/5/06	Juneau/Analytica	7.80	11.4	5	ND< 0.10	2	MIXED BLACK AND GRAY
7/12/06	Juneau/Analytica	8.06	11.7	4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY
7/19/06	Juneau/Analytica	7.81	27.2	ND< 4	ND< 0.10	2	MIXED BLACK AND GRAY unannounced sampling
7/26/06	Juneau/Analytica	7.89	20.6	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY
8/2/06	Juneau/Analytica	7.82	18.6	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY
8/6/06	Seattle/Laucks	6.7	37	U 2	ND< 0.10	2	GRAY WATER

Appendix B
Summary of Sampling Data Received during for the 2006 cruise season.

8/6/06	Seattle/Laucks	7.6	U	12	2	ND< 0.10	<	2	BLACK WATER
8/9/06	Juneau/Analytica	7.81		20.5	ND< 4	ND< 0.10	ND<	2	MIXED BLACK AND GRAY
8/16/06	Juneau/Analytica	7.39		23.4	ND< 4	ND< 0.10		6	MIXED BLACK AND GRAY
9/3/06	Seattle/Laucks	7.0		35	U 2	ND< 0.10		7	GRAY WATER
9/3/06	Seattle/Laucks	7.5		7	U 2	ND< 0.10		4	BLACK WATER
9/6/06	Juneau/Analytica	8.03		21.3	ND< 4	ND< 0.10	ND<	2	MIXED BLACK AND GRAY
ND = Non Detect									
U = analyte not detected, to the limit of detection									
Unannounced sampling includes other parameters not listed above.									
	MINIMUM	6.05		ND	ND	ND		ND	Seattle testing compliance
	AVERAGE			20.42	3	0.10			
	MAXIMUM	8.06		40.00	8	0.10		34	
	GEOMETRIC MEAN							3	

Appendix B
Summary of Sampling Data Received during for the 2006 cruise season.

SHIP: HOLLAND ZAANDAM							
		pH	BOD	TSS	Chlorine Residual	Fecal Coliform	Comments
		St. Units	mg/l	mg/l	mg/l	#/100 ml	
MOU/Alaska Limits¹		6-9	30/45	30/45	10 ug/l	20 / 40	
WA State Water Quality Standards²		6.8-8.7	NA	NA	13 / 7.5 ug/l	14 / 43	
Sample Date	Location/ Lab						
5/5/06	Seattle/Laucks	7.4	U 5	4	ND< 0.10	< 2	MIXED BLACK AND GRAY OVERBOARD
5/14/06	Juneau/Analytica	7.39	4.24	ND< 4	0.24	ND< 2	MIXED BLACK AND GRAY OVERBOARD unannounced sampling
5/28/06	Juneau/Analytica	7.35	ND< 2	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
6/2/06	Seattle/Laucks	7.2	U 8	10	ND< 0.10	< 2	MIXED BLACK AND GRAY OVERBOARD
6/11/06	Juneau/Analytica	7.76	8.08	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
7/7/06	Seattle/Laucks	7.2	U 5	U 10	ND< 0.10	< 2	MIXED BLACK AND GRAY OVERBOARD
7/30/06	Juneau/Analytica	7.56	7.43	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
8/4/06	Seattle/Laucks	7.2	U 6	U 2	ND< 0.10	< 2	MIXED BLACK AND GRAY OVERBOARD
8/9/06	Juneau/Analytica	7.97	6.50	ND< 4	ND< 0.10	0	MIXED BLACK AND GRAY OVERBOARD unannounced sampling
8/13/06	Juneau/Analytica	7.73	14.4	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
9/1/06	Seattle/Laucks	7.4	8	U 2	ND< 0.10	< 2	MIXED BLACK AND GRAY OVERBOARD
9/17/06	Juneau/Analytica	7.46	6.71	ND< 4	ND< 0.10	ND< 2	MIXED BLACK AND GRAY OVERBOARD
ND = Non Detect							
U = analyte not detected, to the limit of detection							
Unannounced sampling includes other parameters not listed above.							
	MINIMUM	7.20	ND	ND	ND	ND	Seattle testing compliance
	AVERAGE		6.78	5	0.11		
	MAXIMUM	7.97	14.40	10	0.24	2	
	GEOMETRIC MEAN					2	

Appendix B
Summary of Sampling Data Received during for the 2006 cruise season.

ND = Non Detect, value in box is the detection level

BOD = Biochemical Oxygen Demand - or organics; TSS = Total Suspended Solids

mg/l = milligrams per liter; ug/l = micrograms per liter; #/100 ml = coliforms per 100 millileters

¹MOU/Alaska limits from Title XIV, Certain Alaska Cruise Ship Operations, Section 1404(c) /40CFR 133.102

BOD and TSS: 30-day average shall not exceed 30 mg/l, 7-day average shall not exceed 45 mg/l

Fecal Coliform: geometric mean of any 30-day period shall not exceed 20 fecal coliform/100 ml and not more than 10% of the samples exceed 40 fecal coliform/100 ml

²Washington State Water Quality Standards for Surface Waters of the State of Washington Chapter 173-201A WAC

Fecal Coliform: shall not exceed a geometric mean of 14 colonies/100 ml and not more than 10% of a samples shall exceed a geometric mean of 43 colonies/100 ml

pH: 7-8.5 with a human-caused variation within less than 0.2

chlorine: 13 ug/l is the acute limit (1-hour average); 7.5 ug/l is the chronic limit (4-day average)