

APPENDIX J

Water Quality Trend Analysis Results

Table J1. Spatial trend analysis for in-stream field parameters measured at main stem sampling sites in the Green/Duwamish Watershed in 2001 and 2002.

Parameter	Event Type	Average Rank Sum		U ^b	p-value ^c
		Sampling Site ^a A310	Sampling Site ^a E319		
Temperature	Base	12.8	8.3	27.5	0.0892
Temperature	Storm	9.7	5.9	11.0	0.1079
Dissolved Oxygen	Base	7.6	13.4	21.0	0.0288
Dissolved Oxygen	Storm	3.9	10.2	2.50	0.0027
pH	Base	6.8	14.2	13.0	0.0039
pH	Storm	5.9	8.7	14.5	0.2284
Conductivity	Base	15.3	5.7	2.00	< 0.0001
Conductivity	Storm	11.5	4.5	0.00	0.0007

^a Sampling site A310: Green River at Fort Dent Park; sampling site E319: Green River below Howard Hanson Dam.

^b Computed test statistic from Mann Whitney U-test.

^c Values in **bold** indicate significant differences exists between sampling sites A310 and E319 at $\alpha = 0.05$

Table J2. Spatial trend analysis for in-stream field parameters measured during base flow at major stream sites in the Green/Duwamish Watershed in 2001 and 2002.

Parameter	p-value ^a	Site ^b				
		Low Mean Rank		High Mean Rank		
Temperature	0.4828	0322	A320	A315	C317	A317
Dissolved Oxygen	<0.0001	A317	C317	A315	0322	A320
pH	<0.0001	A317	C317	A315	A320	0322
Specific Conductance	<0.0001	A320	0322	A315	C317	A317

^a Values in bold indicate significant differences exist between monitoring sites based on a Kruskal-Wallis ANOVA ($\alpha = 0.05$).

^b Monitoring sites connected by a single unbroken line are not significantly different based on a nonparametric multiple range test.

Sampling site C317: Black River pump station; A317: Springbrook Creek near mouth; A315: Mill Creek near mouth; A320: Soos Creek above fish hatchery; and 0322 Newakaum Creek near mouth.

Table J3. Spatial trend analysis for in-stream field parameters measured during storm flow at major stream sites in the Green/Duwamish Watershed in 2001 and 2002.

Parameter	p-value ^a	Site ^b				
		Low Mean Rank		High Mean Rank		
Temperature	0.8265	0322	A317	A315	A320	C317
Dissolved Oxygen	0.0038	A317	C317	A315	0322	A320
pH	0.0020	A317	A315	C317	0322	A320
Specific Conductance	0.7967	A317	C317	0322	A315	A320

^a Values in **bold** indicate significant differences exist between monitoring sites based on a Kruskal-Wallis ANOVA ($\alpha = 0.05$).

^b Monitoring sites connected by a single unbroken line are not significantly different based on a nonparametric multiple range test.

Sampling site C317: Black River pump station; A317: Springbrook Creek near mouth; A315: Mill Creek near mouth; A320: Soos Creek above fish hatchery; and 0322 Newakaum Creek near mouth.

Table J4. Spatial trend analysis for conventional parameters measured at main stem sampling sites in the Green/Duwamish Watershed in 2001 and 2002.

Parameter	Event Type	Average Rank Sum		U ^b	p-value ^c
		Sampling Site ^a A310	Sampling Site ^a E319		
Alkalinity	Base	15.0	6.0	0.00	0.0001
Alkalinity	Storm	11.0	4.5	0.00	0.0016
Turbidity	Base	12.3	7.7	19.0	0.0853
Turbidity	Storm	7.0	7.8	20.0	0.7972
Total Suspended Solids	Base	13.3	7.1	12.0	0.0154
Total Suspended Solids	Storm	7.0	7.0	20.0	1.0567
Dissolved Organic Carbon	Base	16.3	8.4	12.0	0.0042
Dissolved Organic Carbon	Storm	13.0	6.8	9.00	0.0145
Total Organic Carbon	Base	17.0	8.0	7.00	0.0008
Total Organic Carbon	Storm	10.5	8.2	24.0	0.4043
Hardness	Base	22.5	8.5	0.0	<0.0001
Hardness	Storm	17.5	7.0	0.0	<0.0001

^a Sampling site A310: Green River at Fort Dent Park; sampling site E319: Green River below Howard Hanson Dam.

^b Computed test statistic from Mann Whitney U-test.

^c Values in **bold** indicate significant differences exists between sampling sites A310 and E319 at $\alpha = 0.05$

Table J5. Spatial trend analysis for conventional parameters measured during base flow at major stream sites in the Green/Duwamish Watershed in 2001 and 2002.

Parameter	p-value ^a	Site ^b				
		Low Mean Rank		High Mean Rank		
Alkalinity	0.0001	A320	0322	A315	C317	A317
Turbidity	0.0001	A320	0322	A315	C317	A317
Total Suspended Solids	0.0040	322	A320	A315	A317	C317
Dissolved Organic Carbon	0.0001	A320	0322	A317	C317	A315
Total Organic Carbon	0.0001	A320	0322	C317	A317	A315
Hardness	<0.0001	A320	0322	A315	C317	A317

^a Values in **bold** indicate significant differences exist between monitoring sites based on a Kruskal-Wallis ANOVA ($\alpha = 0.05$).

^b Monitoring sites connected by a single unbroken line are not significantly different based on a nonparametric multiple range test.

Sampling site C317: Black River pump station; A317: Springbrook Creek near mouth; A315: Mill Creek near mouth; A320: Soos Creek above fish hatchery; and 0322 Newakaum Creek near mouth.

Table J6. Spatial trend analysis for conventional parameters measured during storm flow at major stream sites in the Green/Duwamish Watershed in 2001 and 2002.

Parameter	p-value ^a	Site ^b				
		Low Mean Rank		High Mean Rank		
Alkalinity	0.0437	A317	C317	0322	A320	A315
Turbidity	0.0038	A320	0322	A315	C317	A317
Total Suspended Solids	0.0635	A320	C317	A315	0322	A317
Dissolved Organic Carbon	0.0885	A320	A317	C317	A315	0322
Total Organic Carbon	0.0165	A320	C317	A317	A315	0322
Hardness	0.0141	A317	C317	322	A315	A320

^a Values in **bold** indicate significant differences exist between monitoring sites based on a Kruskal-Wallis ANOVA ($\alpha = 0.05$).

^b Monitoring sites connected by a single unbroken line are not significantly different based on a nonparametric multiple range test.

Sampling site C317: Black River pump station; A317: Springbrook Creek near mouth; A315: Mill Creek near mouth; A320: Soos Creek above fish hatchery; and 0322 Newakaum Creek near mouth.

Table J7. Spatial trend analysis for in-stream parameters measured at main stem sampling sites in the Green/Duwamish Watershed in 2001 and 2002.

Parameter	Event Type	Average Rank Sum		U ^b	p-value ^c
		Sampling Site ^a A310	Sampling Site ^a E319		
Fecal Coliform Bacteria	Base	12.0	5.0	0.00	0.0010
Fecal Coliform Bacteria	Storm	15.0	6.0	0.00	0.0001
Enterococci Bacteria	Base	11.8	5.1	1.00	0.0020
Enterococci Bacteria	Storm	14.6	6.3	3.00	0.0004
<i>E. Coli</i> Bacteria	Base	12.0	5.0	0.00	0.0010
<i>E. Coli</i> Bacteria	Storm	15.0	6.0	0.00	0.0001

^a Sampling site A310: Green River at Fort Dent Park; sampling site E319: Green River below Howard Hanson Dam.

^b Computed test statistic from Mann Whitney U-test.

^c Values in **bold** indicate significant differences exists between sampling sites A310 and E319 at $\alpha = 0.05$

Table J8. Spatial trend analysis for microbiological parameters measured during base flow at major stream sites in the Green/Duwamish Watershed in 2001 and 2002.

Parameter	p-value ^a	Site ^b				
		Low Mean Rank			High Mean Rank	
Fecal Coliform Bacteria	0.0787	0322	A320	A317	C317	A315
Enterococci Bacteria	0.7220	0322	C317	A320	A317	A315
<i>E. Coli</i> Bacteria	0.2764	A320	0322	A315	A317	C317

^a Values in **bold** indicate significant differences exist between monitoring sites based on a Kruskal-Wallis ANOVA ($\alpha = 0.05$).

^b Monitoring sites connected by a single unbroken line are not significantly different based on a nonparametric multiple range test.

Sampling site C317: Black River pump station; A317: Springbrook Creek near mouth; A315: Mill Creek near mouth; A320: Soos Creek above fish hatchery; and 0322 Newakaum Creek near mouth.

Table J9. Spatial trend analysis for microbiological parameters measured during storm flow at major stream sites in the Green/Duwamish Watershed in 2001 and 2002.

Parameter	p-value ^a	Site ^b				
		Low Mean Rank			High Mean Rank	
Fecal Coliform Bacteria	0.1529	A320	C317	A317	0322	A315
Enterococci Bacteria	0.0306	A320	0322	A315	C317	A317
<i>E. Coli</i> Bacteria	0.0776	A320	C317	0322	A317	A315

^a Values in **bold** indicate significant differences exist between monitoring sites based on a Kruskal-Wallis ANOVA ($\alpha = 0.05$).

^b Monitoring sites connected by a single unbroken line are not significantly different based on a nonparametric multiple range test.

Sampling site C317: Black River pump station; A317: Springbrook Creek near mouth; A315: Mill Creek near mouth; A320: Soos Creek above fish hatchery; and 0322 Newakaum Creek near mouth.

Table J10. Spatial trend analysis for nutrients measured at main stem sampling sites in the Green/Duwamish Watershed in 2001 and 2002.

Parameter	Event Type	Average Rank Sum		U ^b	p-value ^c
		Sampling Site ^a A310	Sampling Site ^a E319		
Ammonia	Base	12.9	7.4	15	0.0346
Ammonia	Storm	9.8	6.2	11	0.1469
Total Nitrogen	Base	14.6	6.3	3	0.0004
Total Nitrogen	Storm	11.6	5.2	2	0.0040
Nitrate + Nitrite Nitrogen	Base	14.3	6.5	5	0.0012
Nitrate + Nitrite Nitrogen	Storm	11.6	5.2	2	0.0040
Orthophosphorus	Base	14.7	6.2	2	0.0003
Orthophosphorus	Storm	12.0	5.0	0	0.0010
Total Phosphorus	Base	14.9	6.1	1	0.0001
Total Phosphorus	Storm	9.5	6.4	12.5	0.1898

^a Sampling site A310: Green River at Fort Dent Park; sampling site E319: Green River below Howard Hanson Dam.

^b Computed test statistic from Mann Whitney U-test.

^c Values in **bold** indicate significant differences exists between sampling sites A310 and E319 at $\alpha = 0.05$

Table J11. Spatial trend analysis for nutrients measured during base flow at major stream sites in the Green/Duwamish Watershed in 2001 and 2002.

Parameter	p-value ^a	Site ^b				
		Low Mean Rank				High Mean Rank
Ammonia	0.0001	0322	A320	A315	C317	A317
Total Nitrogen	0.0008	C317	A315	A317	A320	0322
Nitrate + Nitrite Nitrogen	<0.0001	C317	A317	A315	A320	0322
Orthophosphorus	0.0357	A320	A315	C317	0322	A317
Total Phosphorus	0.0001	A320	0322	A315	C317	A317

^a Values in **bold** indicate significant differences exist between monitoring sites based on a Kruskal-Wallis ANOVA ($\alpha = 0.05$).

^b Monitoring sites connected by a single unbroken line are not significantly different based on a nonparametric multiple range test.

Sampling site C317: Black River pump station; A317: Springbrook Creek near mouth; A315: Mill Creek near mouth; A320: Soos Creek above fish hatchery; and 0322 Newakaum Creek near mouth.

Table J12. Spatial trend analysis for nutrients measured during storm flow at major stream sites in the Green/Duwamish Watershed in 2001 and 2002.

Parameter	p-value ^a	Site ^b				
		Low Mean Rank		High Mean Rank		
Ammonia	0.0484	A320	0322	A317	A315	C317
Total Nitrogen	<0.0001	A317	C317	A320	A315	0322
Nitrate + Nitrite Nitrogen	<0.0001	A317	C317	A315	A320	0322
Orthophosphorus	0.0001	A320	C317	A317	A315	0322
Total Phosphorus	0.0078	A320	C317	A317	A315	0322

^a Values in **bold** indicate significant differences exist between monitoring sites based on a Kruskal-Wallis ANOVA ($\alpha = 0.05$).

^b Monitoring sites connected by a single unbroken line are not significantly different based on a nonparametric multiple range test.

Sampling site C317: Black River pump station; A317: Springbrook Creek near mouth; A315: Mill Creek near mouth; A320: Soos Creek above fish hatchery; and 0322 Newakaum Creek near mouth.

Table J13. Spatial trend analysis for nutrients measured at main stem sampling sites in the Green/Duwamish Watershed in 2001 and 2002.

Parameter	Event Type	Average Rank Sum		U ^b	p-value ^c
		Sampling Site ^a A310	Sampling Site ^a E319		
Aluminum, dissolved	Base	14.0	14.9	89.5	0.7666
Aluminum, dissolved	Storm	6.9	13.5	19	0.0159
Aluminum, total	Base	18.2	11.7	51.5	0.0373
Aluminum, total	Storm	8.8	12.3	34.5	0.2103
Arsenic, dissolved	Base	15.3	13.9	86.5	0.6642
Arsenic, dissolved	Storm	15.3	8.4	18	0.0126
Arsenic, total	Base	18.1	11.8	52.5	0.0421
Arsenic, total	Storm	15.9	8.0	13	0.0034
Cadmium, dissolved	Base	13.5	15.3	84	0.5991
Cadmium, dissolved	Storm	9.8	11.8	42	0.5002
Cadmium, total	Base	13.5	15.3	84	0.5991
Cadmium, total	Storm	10.0	11.6	44	0.5951
Calcium, dissolved	Base	21.2	9.5	16	0.0001
Calcium, dissolved	Storm	17.5	7.0	0	< 0.0001
Calcium, total	Base	21.6	9.2	11	< 0.0001
Calcium, total	Storm	17.5	7.0	0	< 0.0001
Chromium, dissolved	Base	14.0	14.9	89.5	0.7666
Chromium, dissolved	Storm	11.4	10.8	49	0.8596
Chromium, total	Base	18.6	11.4	47	0.0226
Chromium, total	Storm	12.0	10.4	44	0.5951
Copper, dissolved	Base	18.7	11.4	46	0.0197
Copper, dissolved	Storm	17.5	7.0	0	< 0.0001
Copper, total	Base	21.5	9.2	11.5	< 0.0001
Copper, total	Storm	12.8	9.9	38	0.3363
Iron, dissolved	Base	21.6	9.2	11	< 0.0001
Iron, dissolved	Storm	17.3	7.2	2	< 0.0001
Iron, total	Base	21.8	9.1	9	< 0.0001
Iron, total	Storm	11.4	10.8	49	0.8596
Lead, dissolved	Base	13.5	15.3	84	0.5991
Lead, dissolved	Storm	10.8	11.2	50	0.9155
Lead, total	Base	15.7	13.6	82	0.5369
Lead, total	Storm	15.6	8.2	15	0.0060
Magnesium, dissolved	Base	22.5	8.5	0	< 0.0001
Magnesium, dissolved	Storm	17.5	7.0	0	< 0.0001
Magnesium, total	Base	22.5	8.5	0	< 0.0001
Magnesium, total	Storm	17.5	7.0	0	< 0.0001

Table J13. Spatial trend analysis for nutrients measured at main stem sampling sites in the Green/Duwamish Watershed in 2001 and 2002 (continued).

Parameter	Event Type	Average Rank Sum		U ^b	p-value ^c
		Sampling Site ^a A310	Sampling Site ^a E319		
Manganese, dissolved	Base	13.7	15.1	86	0.6642
Manganese, dissolved	Storm	14.6	8.8	23.5	0.0368
Manganese, total	Base	13.6	15.2	85.5	0.6313
Manganese, total	Storm	13.6	9.4	31	0.1403
Mercury, dissolved	Base	13.8	15.1	87	0.6978
Mercury, dissolved	Storm	9.5	11.9	40	0.4137
Mercury, total	Base	15.1	14.1	89	0.7666
Mercury, total	Storm	9.3	12.0	38.5	0.3363
Nickel, dissolved	Base	18.3	11.7	51	0.0373
Nickel, dissolved	Storm	14.1	9.1	27	0.0756
Nickel, total	Base	22.5	8.5	0	< 0.0001
Nickel, total	Storm	15.6	8.2	15	0.0060
Potassium, dissolved	Base	14.5	14.5	96	1.0000
Potassium, dissolved	Storm	11.0	11.0	52	1.0000
Potassium, total	Base	14.5	14.5	96	1.0000
Potassium, total	Storm	11.0	11.0	52	1.0000
Selenium, dissolved	Base	13.5	15.3	84	0.5991
Selenium, dissolved	Storm	9.8	11.8	42	0.5002
Selenium, total	Base	13.5	15.3	84	0.5991
Selenium, total	Storm	9.8	11.8	42	0.5002
Silver, dissolved	Base	13.5	15.3	84	0.5991
Silver, dissolved	Storm	9.8	11.8	42	0.5002
Silver, total	Base	13.5	15.3	84	0.5991
Silver, total	Storm	9.8	11.8	42	0.5002
Sodium, dissolved	Base	22.5	8.5	0	< 0.0001
Sodium, dissolved	Storm	17.5	7.0	0	< 0.0001
Sodium, total	Base	22.5	8.5	0	< 0.0001
Sodium, total	Storm	17.5	7.0	0	< 0.0001
Zinc, dissolved	Base	15.7	13.6	81.5	0.5070
Zinc, dissolved	Storm	16.6	7.6	7.5	0.0004
Zinc, total	Base	19.3	10.9	38	0.0061
Zinc, total	Storm	15.3	8.4	18	0.0126

^a Sampling site A310: Green River at Fort Dent Park; sampling site E319: Green River below Howard Hanson Dam.

^b Computed test statistic from Mann Whitney U-test.

^c Values in **bold** indicate significant differences exists between sampling sites A310 and E319 at $\alpha = 0.05$

Table J14. Spatial trend analysis for metals measured during base flow at major stream sites in the Green/Duwamish Watershed in 2001 and 2002.

Parameter	p-value ^a	Site ^b				
		Low Mean Rank		High Mean Rank		
Aluminum, dissolved	0.1755	A317	C317	A315	0322	A320
Aluminum, total	0.3158	A317	A320	0322	A315	C317
Arsenic, dissolved	0.0002	0322	A315	C317	A317	A320
Arsenic, total	< 0.0001	0322	A320	A315	C317	A317
Cadmium, dissolved	0.0037	A320	A315	C317	0322	A317
Cadmium, total	0.0039	A320	A315	0322	C317	A317
Calcium, dissolved	< 0.0001	A320	0322	A315	C317	A317
Calcium, total	< 0.0001	A320	0322	A315	C317	A317
Chromium, dissolved	0.0477	A315	A320	C317	0322	A317
Chromium, total	0.0890	A315	A320	A317	C317	0322

Table J14. Spatial trend analysis for metals measured during base flow at major stream sites in the Green/Duwamish Watershed in 2001 and 2002 (continued).

Parameter	p-value ^a	Site ^b				
		Low Mean Rank				High Mean Rank
Copper, dissolved	0.0112	A320	0322	C317	A317	A315
Copper, total	0.0008	A320	0322	A315	A317	C317
Iron, dissolved	0.0001	A320	0322	C317	A317	A315
Iron, total	< 0.0001	0322	A320	A315	A317	C317
Lead, dissolved	0.1360	A320	C317	A315	0322	A317
Lead, total	0.0004	A320	0322	A317	A315	C317
Magnesium, dissolved	< 0.0001	0322	A320	A315	C317	A317
Magnesium, total	< 0.0001	0322	A320	A315	C317	A317
Manganese, dissolved	< 0.0001	0322	A320	A315	A317	C317

Table J14. Spatial trend analysis for metals measured during base flow at major stream sites in the Green/Duwamish Watershed in 2001 and 2002 (continued).

Parameter	p-value ^a	Site ^b				
		Low Mean Rank				High Mean Rank
Manganese, total	< 0.0001	0322	A320	A315	A317	C317
Mercury, dissolved	0.0049	A315	C317	A320	A317	0322
Mercury, total	0.1016	A320	C317	A315	A317	0322
Nickel, dissolved	< 0.0001	A320	0322	A315	C317	A317
Nickel, total	< 0.0001	0322	A320	A315	A317	C317
Potassium, dissolved	< 0.0001	A320	0322	A315	C317	A317
Potassium, total	< 0.0001	A320	0322	A315	C317	A317
Selenium, dissolved	Analysis not performed because the analyte was detected in only one collected sample.					
Selenium, total	Analysis not performed because the analyte was not detected in any collected samples.					
Silver, dissolved	Analysis not performed because the analyte was not detected in any collected samples.					

Table J14. Spatial trend analysis for metals measured during base flow at major stream sites in the Green/Duwamish Watershed in 2001 and 2002 (continued).

Parameter	p-value ^a	Site ^b				
		Low Mean Rank		High Mean Rank		
Silver, total		Analysis not performed because the analyte was not detected in any collected samples.				
Sodium, dissolved	< 0.0001	A320	0322	A315	C317	A317
Sodium, total	< 0.0001	A320	0322	A315	C317	A317
Zinc, dissolved	< 0.0001	A320	0322	A315	A317	C317
Zinc, dissolved	< 0.0001	A320	0322	A315	A317	C317

^a Values in **bold** indicate significant differences exist between monitoring sites based on a Kruskal-Wallis ANOVA ($\alpha = 0.05$).

^b Monitoring sites connected by a single unbroken line are not significantly different based on a nonparametric multiple range test.

Sampling site C317: Black River pump station; A317: Springbrook Creek near mouth; A315: Mill Creek near mouth; A320: Soos Creek above fish hatchery; and 0322 Newakaum Creek near mouth.

Table J15. Spatial trend analysis for metals measured during storm flow at major stream sites in the Green/Duwamish Watershed in 2001 and 2002.

Parameter	p-value ^a	Site ^b				
		Low Mean Rank			High Mean Rank	
Aluminum, dissolved	0.0560	A315	A320	C317	A317	0322
Aluminum, total	0.2004	A320	C317	A315	0322	A317
Arsenic, dissolved	0.0683	A315	C317	A317	0322	A320
Arsenic, total	0.0004	0322	A315	C317	A320	A317
Cadmium, dissolved	0.0015	A320	A315	C317	0322	A317
Cadmium, total	0.0002	A320	A315	C317	0322	A317
Calcium, dissolved	0.0186	A317	C317	0322	A315	A320
Calcium, total	0.0087	A317	C317	0322	A315	A320
Chromium, dissolved	0.0003	A320	A315	C317	0322	A317
Chromium, total	0.0180	A320	0322	A315	C317	A317

Table J15. Spatial trend analysis for metals measured during storm flow at major stream sites in the Green/Duwamish Watershed in 2001 and 2002 (continued).

Parameter	p-value ^a	Site ^b				
		Low Mean Rank				High Mean Rank
Copper, dissolved	0.0161	A320	A315	0322	C317	A317
Copper, total	0.0012	A320	A315	0322	C317	A317
Iron, dissolved	< 0.0001	A320	0322	A315	A317	C317
Iron, total	0.0004	A320	0322	C317	A315	A317
Lead, dissolved	< 0.0001	A320	A315	0322	C317	A317
Lead, total	0.0001	A320	0322	A315	C317	A317
Magnesium, dissolved	0.1135	A317	C317	0322	A315	A320
Magnesium, total	0.1454	A317	C317	0322	A315	A320
Manganese, dissolved	< 0.0001	0322	A320	A317	A315	C317
Manganese, total	0.0024	A320	0322	C317	A317	A315

Table J15. Spatial trend analysis for metals measured during storm flow at major stream sites in the Green/Duwamish Watershed in 2001 and 2002 (continued).

Parameter	p-value ^a	Site ^b				
		Low Mean Rank				High Mean Rank
Mercury, dissolved	0.0002	A320	A315	C317	A317	0322
Mercury, total	0.0182	A320	C317	A315	0322	A317
Nickel, dissolved	0.0046	A320	0322	A315	C317	A317
Nickel, total	0.0198	A320	0322	C317	A315	A317
Potassium, dissolved	0.0003	A320	C317	A317	A315	0322
Potassium, total	0.0002	A320	C317	A317	A315	0322
Selenium, dissolved		Analysis not performed because the analyte was not detected in any collected samples.				
Selenium, total		Analysis not performed because the analyte was not detected in any collected samples.				
Silver, dissolved		Analysis not performed because the analyte was not detected in any collected samples.				
Silver, total		Analysis not performed because the analyte was detected in only four collected samples.				

Table J15. Spatial trend analysis for metals measured during storm flow at major stream sites in the Green/Duwamish Watershed in 2001 and 2002 (continued).

Parameter	p-value ^a	Site ^b				
		Low Mean Rank		High Mean Rank		
Sodium, dissolved	0.6368	A317	C317	0322	A320	A315
Sodium, total	0.7325	A317	C317	A320	0322	A315
Zinc, dissolved	< 0.0001	A320	0322	A315	C317	A317
Zinc, dissolved	< 0.0001	A320	0322	A315	C317	A317

^a Values in **bold** indicate significant differences exist between monitoring sites based on a Kruskal-Wallis ANOVA ($\alpha = 0.05$).

^b Monitoring sites connected by a single unbroken line are not significantly different based on a nonparametric multiple range test.

Sampling site C317: Black River pump station; A317: Springbrook Creek near mouth; A315: Mill Creek near mouth; A320: Soos Creek above fish hatchery; and 0322 Newakaum Creek near mouth.