SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C078

Collection Date:	10/20/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/21/2005	**Mudline Elevation (NAVD88 ft):**	3.00
Core Tube Length (ft):	14.0	**Easting:**	7618756
Core Drive Length (ft):	13.0	**Northing:**	717315
Core Recovered Length (ft):	12.0	**Coordinate System:** NAD83/91 Oregon State Plane North, International Feet	

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Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)		Sample ID	FID (ppm)	PID (ppm)
0 / 0		SAND: fine-med sand, tr silt, tr gravel; silt occurs in sfc layer and in lenses (clayey silt, stiff) up to 2.5 cm long; sand is loose; brn-v.dk brn; no odor; no debris	<5/100<5	ANALYZE	LW2-C078-A	124	14
-30 / -1		SAND: fine sand, tr silt (in lenses <5 mm thick); sand is dense; v.dk gray; no odor; no debris	0/100/<5				
-60 / -2		SAND w/silt: v.fine-fine sand, tr silt, w/silt and clayey silt in lenses, laminae, and interbeds (up to ~11cm thick, stiff-v.stiff); sand is dense; med-dk grayish brown; mild sulfur odor; fines beds are generally well-defined	0/75/25	ANALYZE	LW2-C078-B	201	18
-150 / -5		Silty SAND: similar to above but with increased silt content between 204-240 cm;	0/65/35	ANALYZE	LW2-C078-C	84	24
-280 / -9		SAND: v.fine sand, v.well sorted; dk grayish brown; no odor	0/100/0	archive	LW2-C078-D	302	18
-360 / -12							

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SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C079

Collection Date:	10/20/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/20/2005	**Mudline Elevation (NAVD88 ft):**	-1.00
Core Tube Length (ft):	14.0	**Easting:**	7619286
Core Drive Length (ft):	13.0	**Northing:**	717259
Core Recovered Length (ft):	11.9	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 / 0		Sandy CLAY: sand is fine, tr fine gravel (rounded, 2 cm); medium gray; no odor; tr rootlets and wood; cottage cheese texture	<5/40/60	LW2-C079-A	461	19
-30 / -1		CLAY w/sand: sand is fine (tr coarse grains); stiff-v.stiff; medium gray; no odor; tr rootlets; lumpy texture similar to above, v.stiff material in lenses ~5 cm thick	0/20/80	LW2-C079-B	490	25
-160 / -5		SAND w/silt: interbedded and interlaminated sand (v.fine-fine), silt, and clay mixtures; dense/v.stiff; dk-v.dk grayish brn; no odor; tr woody organics; clay decreases with depth	0/75/25	LW2-C079-C	960	24
-270 / -9				LW2-C079-D	604	19

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ANC06956

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SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C080

Collection Date:	10/20/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/20/2005	**Mudline Elevation (NAVD88 ft):**	4.00
Core Tube Length (ft):	14.0	**Easting:**	7619970
Core Drive Length (ft):	13.0	**Northing:**	717248
Core Recovered Length (ft):	11.0	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)		Sample ID	FID (ppm)	PID (ppm)
0		SAND: fine-med sand, tr silt in sand and tr silt lenses; dense; v.dk gray; mod oily odor; light sheen; tr organic debris	0/100/<5	ANALYZE	LW2-C080-A	1147	16
-30 / -1		SAND: fine-med sand (tr coarse) similar to above, tr fine gravel (up to 19mm, subrounded), tr silt in lenses; v.dk gray; mod TPH odor; mod sheen	<5/100/<5	ANALYZE	LW2-C080-B	1448	18
-90 / -3		SAND: fine-med sand (tr coarse) as above, tr silt and clay in silty clay bed from 172-179 cm (v.stiff, high plast., med greenish gray); v.dk gray; mild TPH odor; light sheen above ~120cm; tr woody debris; abrupt basal contact	0/100/<5	ANALYZE	LW2-C080-C	1411	18
-190 / -7		Sandy CLAY: Interbedded mixtures of sand (v.fine), silt, and clay; v.stiff, m-hi plast; m.brn.gray-gr.brn; no odor; tr organic lenses and rootlets	0/30/70	archive	LW2-C080-D	640	18

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C082-1

Collection Date:	10/19/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/20/2005	**Mudline Elevation (NAVD88 ft):**	-27.00
Core Tube Length (ft):	14.0	**Easting:**	7618030
Core Drive Length (ft):	13.0	**Northing:**	717195
Core Recovered Length (ft):	9.7	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)		Sample ID	FID (ppm)	PID (ppm)
0 / 0		SAND: fine sand, well sorted, tr silt, silty lenses near sfc, tr gravel (fine,1 cm, subang); dense; v.dk gray; no odor; tr sheen florets; no organics; faint reddish stain @ 28-30 cm	<5/100/<5	ANALYZE	LW2-C082-A1	648	11
-30 / -1		SAND w/silt: sand as above, well sorted, w/silt in lenses and a bed up to 1 cm thick (bed occurs @ ~73cm); dense; faint sweet odor; tr faint sheen @36cm; wood chunk (native) @ 66-67cm; faint reddish stain @ 32-35 cm	0/80/20	ANALYZE	LW2-C082-B1	310	12
-140 / -5		SAND: fine-med sand, well sorted, w/tr silt in lenses up to 1cm thick; dense; v.dk gray; no odor	0/100/<5	ANALYZE	LW2-C082-C1	541	11
-210 / -7				ANALYZE	LW2-C082-D1	32	12

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SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C082-2

Collection Date:	10/19/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/20/2005	**Mudline Elevation (NAVD88 ft):**	-27.00
Core Tube Length (ft):	14.0	**Easting:**	
Core Drive Length (ft):	13.0	**Northing:**	
Core Recovered Length (ft):	9.7	**Coordinate System:** NAD83/91 Oregon State Plane North, International Feet	

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Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)		Sample ID	FID (ppm)	PID (ppm)
0 / 0		SAND: fine-med sand, well sorted, tr silt and tr silt lenses near sfc; dense; v.dk gray; mild oily odor; light sheen	0/100/<5	ANALYZE	LW2-C082-A2, -A3	517	12
-30 / -1		SAND w/silt: fine-med sand, w/silt occurring primarily in lenses and laminae (0.2 - 2cm thick), tr gravel (3cm, coarse, angular); dense; v.dk gray; mod oily odor; tr light sheen; wood debris	<5/80/20	ANALYZE	LW2-C082-B2, -B3	269	14
-100 / -4		SAND: sand as above, well sorted, w/silt in lenses and laminae up to ~0.5cm thick; oily odor to 138cm; no debris; medium sand fraction increases w/depth, no odor below 138 cm	0/100/<5	ANALYZE	LW2-C082-C2, -C3	616	15
-210 / -7		SAND: fine-med, well sorted; mod dense; v.dk gray; mild sulfur odor; no debris	0/100/0	ANALYZE	LW2-C082-D2, -D3	188	14

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SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C083

Collection Date:	10/19/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/20/2005	**Mudline Elevation (NAVD88 ft):**	-24.00
Core Tube Length (ft):	14.0	**Easting:**	7618735
Core Drive Length (ft):	13.0	**Northing:**	717170
Core Recovered Length (ft):	9.3	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 / 0		Silty SAND: sand is fine-med, silt occurs in matrix and in lenses and laminae (<0.5 cm); mod dense; v.dk gray; mild sulfur odor; tr light sheen; tr rootlets and woody debris	0/70/30	LW2-C083-A	1027	15.6
-30 / -1		Silty SAND: interlaminated sands, silts, and mixtures, sands as above; dense sand, sft silt; v.dk gray/dk gr brn; mild oily odor; light sheen; tr rootlets and woody debris; silt has med plast	0/60/40	LW2-C083-B	955	17
-130 / -5		Silty SAND: sand is fine-med, well sorted w/tr silt, w/silt primarily in lenses, laminae, and beds (0.2-11 cm thick, med. plast); v.stiff, m-hi plast; v.dk gray/dk gr brn; mild TPH odor; tr sheen	0/70/30	LW2-C083-C	1166	19
-190 / -7		SAND: fine-med, well sorted, tr silt in bed @ top of unit (disturbed, ~1 cm thick); v.dk gray; no odor; no debris; no debris	0/100/<5	LW2-C083-D	522	14

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SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C084

Collection Date:	10/20/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/21/2005	**Mudline Elevation (NAVD88 ft):**	-18.00
Core Tube Length (ft):	14.0	**Easting:**	7619307
Core Drive Length (ft):	13.0	**Northing:**	717163
Core Recovered Length (ft):	12.1	**Coordinate System:** NAD83/91 Oregon State Plane North, International Feet	

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Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 / 0		SILT w/sand: sand is v. fine-fine, occurs in lenses and in a bed from 0-6cm, v.stiff silt clasts in upper 6 cm; soft silt matrix; med grayish brown; mild sulfur odor; tr rootlets; tarry odor noted upon homogenization	0/20/80	LW2-C084-A (ANALYZE)	NA	NA
-30 / -1		SILT: silt w/tr v.fine sand, w/med. sand in thin lamina (<0.5 cm thick); soft silt matrix; med grayish brown; mild sulfur odor	0/<5/100	LW2-C084-B (ANALYZE)	NA	NA
-60 / -2		Sandy SILT: sand is v.fine; v.soft; med grayish brown; mild TPH odor; tr wood fragments	0/40/60			
-90 / -3		SAND w/silt: interbedded sands (v.fine-fine), silts, and mixtures (tr clay), beds up to ~7 cm thick; loose to 81cm; dk-v.dk grayish brn; lt TPH odor to 81cm; light sheen; no organics; no odor and dense/stiff-v.stiff below 81cm	0/75/25	LW2-C084-C (ANALYZE)	NA	NA
-120 / -4						
-150 / -5						
-170 / -6		Silty SAND: sand is v.fine-fine, well sorted, w/interbeds of silt and clayey silt (up to ~28 cm thick), sand beds typically well defined (1-29 cm thick); dense/stiff-v.stiff; mild sulfur odor; no apparent organics	0/65/35	LW2-C084-D (ANALYZE)	NA	NA
-210 / -7						
-240 / -8						
-270 / -9						
-300 / -10				LW2-C084-E (archive)	NA	NA
-330 / -11						
-360 / -12						

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SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C087

Collection Date:	10/20/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/21/2005	**Mudline Elevation (NAVD88 ft):**	-18.00
Core Tube Length (ft):	14.0	**Easting:**	7618665
Core Drive Length (ft):	13.0	**Northing:**	717093
Core Recovered Length (ft):	10.8	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 to -320 cm / 0 to -10 ft		Sandy SILT: interbedded silt w/sand, and sands, sand is fine, laminae and beds 0.1-2 cm thick; v.soft-soft; mod H2S odor	0/30/70	LW2-C087-A (ANALYZE)	132	NA
		SILT w/sand: silt, w/tr v.fine-fine sand, w/tr sand in thin beds, laminae, and lenses (v.dk gray, up to 1 cm thick); mod stiff, med plast; med grayish brn; mild sulfur odor; tr woody debris @ 96cm	0/10/90	LW2-C087-B (ANALYZE)	1486	NA
		SAND: fine-med sand (tr angular-subang coarse grains), tr silt/clayey silt lenses in upper 20 cm; v.dk grayish brn; no odor; no debris; no debris; some faint laminations apparent in sands	1/100/<5	LW2-C087-C (ANALYZE)	1307	NA
				LW2-C087-D (archive)	248	NA

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SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C088

Collection Date:	10/19/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/20/2005	**Mudline Elevation (NAVD88 ft):**	-35.00
Core Tube Length (ft):	14.0	**Easting:**	7618371
Core Drive Length (ft):	13.0	**Northing:**	717078
Core Recovered Length (ft):	9.3	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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LWG Lower Willamette Group

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)		Sample ID	FID (ppm)	PID (ppm)
0 / 0		SILT w/sand: sand is fine, occurs in matrix and in lenses, and laminae (up to 0.5cm thick); soft silt matrix; med grayish brown; mild sulfur odor	0/10/90	ANALYZE	LW2-C088-A	1000	13
-30 / -1		SILT w/sand: interbedded silt, fine-med sand and mixtures in laminae and beds (0.1-2cm thick); dk gr brn/v.dkgray; mild oily odor; tr root and plant debris; abrupt basal contact	0/25/75	ANALYZE	LW2-C088-B	739	13
-160 / -5		SAND: fine-med sand, tr silt in lenses above 191cm; mod dense; v.dk gray; no odor; no debris	0/100/<5	ANALYZE	LW2-C088-C	242	12

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C089

Collection Date:	10/24/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/25/2005	**Mudline Elevation (NAVD88 ft):**	1.00
Core Tube Length (ft):	20.0	**Easting:**	7619961
Core Drive Length (ft):	19.0	**Northing:**	717051
Core Recovered Length (ft):	15.9	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0		SAND w/silt: v.fine-fine sand, silt decreases below 20cm; loose to 20cm; v.dk brownish gray; mod TPH odor; mod sheen	0/80/20	LW2-C089-A (ANALYZE)	787	31
-30 / -1		SAND w/silt: fine-med sand, well sorted, w/silt in laminae and lenses (0.2-5cm thick) between 43-70cm, and 152-196cm, tr gravel (20cm, subang); v.dk brownish gray; mod TPH odor; mod sheen; tr woody organics @ 49-55cm; sheen and odor noted throughout, but decrease with depth, tr glass shard (2cm), abrupt basal contact	<5/90/10	LW2-C089-B (ANALYZE)	1742	45
				LW2-C089-C (ANALYZE)	1523	37
-190 / -6		Sandy SILT: interbedded mixtures of sand (v.fine), silt, and clay; v.stiff, m-hi plast; med grayish brn; mild H2S odor; tr rootlets and woody debris	0/30/70	LW2-C089-D (ANALYZE)	1923	34
-310 / -10		Clayey SILT w/sand: mixtures of sand (v.fine), silt, and clay; v.stiff, high plast; med grayish brn; mild sulfur odor; tr rootlets; sand occurs primarily above 372cm, tr lt colored (precip?) material @ 335cm	0/20/80	LW2-C089-E (archive)	1720	23

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C089

Collection Date:	10/24/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/25/2005	**Mudline Elevation (NAVD88 ft):**	1.00
Core Tube Length (ft):	20.0	**Easting:**	7619961
Core Drive Length (ft):	19.0	**Northing:**	717051
Core Recovered Length (ft):	15.9	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
-390 / -13 / -400 / -410 / -420 / -14 / -430 / -440 / -450 / -15 / -460 / -470 / -480				archive: LW2-C089-F	1590	26

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C090

Collection Date:	10/19/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/20/2005	**Mudline Elevation (NAVD88 ft):**	-28.00
Core Tube Length (ft):	14.0	**Easting:**	7618913
Core Drive Length (ft):	12.5	**Northing:**	717066
Core Recovered Length (ft):	9.7	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)		Sample ID	FID (ppm)	PID (ppm)
0 / 0		SILT: silt w/tr fine sand in lenses and laminae (up to ~0.3cm thick); soft; med grayish brn; mild sulfur odor	0/<5/100	ANALYZE	LW2-C090-A	489	12
-30 / -1		SILT: silt w/tr sand as above; soft; med grayish brn; mild sulfur odor; tr sheen floret; abrupt basal contact	0/<5/100	ANALYZE	LW2-C090-B	617	12
-70 / -2		SAND: fine-med sand, well sorted; dense; v.dk gray; mild sulfur odor; abrupt basal contact	0/100/0 0/25/75	ANALYZE			
-110 / -3		SILT w/sand: interlaminated silt and sand (fine-med), laminae <5 mm thick; stiff; v.dk gray; no odor; poss paint fleck (purple) @100cm; tr organic lens and woody debris		ANALYZE			
-120 / -4		SAND: fine-med sand, well sorted, w/tr silt lenses; dense; no odor; tr (3) synthetic fibers; fibers <1-2 mm wide and 50mm long (lt blue and clear - fishing line?) noted on sampling	0/100/<5	ANALYZE	LW2-C090-C	121	12
-240 / -8				archive	LW2-C090-D	312	11
-290 / -9							

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SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C091

Collection Date:	10/19/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/20/2005	**Mudline Elevation (NAVD88 ft):**	-27.00
Core Tube Length (ft):	14.0	**Easting:**	7619196
Core Drive Length (ft):	13.0	**Northing:**	717075
Core Recovered Length (ft):	10.0	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)		Sample ID	FID (ppm)	PID (ppm)
0 / 0		SILT: silt w/tr fine sand and tr sand lenses and laminae (1-3 mm thick) between 23-27cm; v.soft-soft; med grayish brn; mild sulfur odor	0/<5/100	ANALYZE	LW2-C091-A	528	12
-30 / -1		SILT w/sand: silt as above, w/fine-med sand primarily in laminae(1-5 mm thick), lenses, and thin beds (up to ~1cn thick), tr meth.ves.; slightly stiffer; mild odor; no debris	0/10/90	ANALYZE	LW2-C091-B	560	13
-150 / -5		Silty SAND: interlaminated sands (v.fine-fine), silt, and mixtures; v.dk gray/med gr brn; mild-mod TPH odor; sheen; tr plant debris	0/70/30	ANALYZE	LW2-C091-C	428	12
-210 / -7		SAND: fine-med sand, well sorted; v.dk gray; no odor; no debris	0/100/0	ANALYZE	LW2-C091-D	1126	12
-300 / -10							

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C092

Collection Date:	10/24/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/25/2005	**Mudline Elevation (NAVD88 ft):**	0.00
Core Tube Length (ft):	20.0	**Easting:**	7619867
Core Drive Length (ft):	19.0	**Northing:**	717041
Core Recovered Length (ft):	16.9	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 / 0		Sandy SILT: sand is fine, silt/clay sized material (med gray and lt beige) intermixed as v.soft material and as clasts (up to ~3cm wide); v.strong rotten smell; 10% woody frags, tr rootlets	0/30/70	LW2-C092-A	508	30
-30 / -1		Silty SAND: sand is v.fine-fine, grades from sandy silt to silty sand @ ~74cm; v.loose-soft; v.dk gray; mod TPH odor; light sheen; 10% woody detritus and plant material; tr clast of beige/gray material (as above) and black silty material (strong odor) above 40cm	0/60/40	LW2-C092-B	1275	50
-150 / -5		Silty SAND: similar to above to 180cm, then silt occurs primarily in lenses and beds (~0.5cm thick), tr gravel (fine, 1cm, subang) @ 210cm; dense below 180cm; strong TPH odor; mod sheen; tr lenses of lt-colored material sim. to clasts above (~3 mm long) @ 172cm, abrupt basal contact	<5/70/30	LW2-C092-C	1667	53
-210 / -7		Sandy SILT: interbedded mixtures of sand (v.fine-med), silt, and clay; mod TPH odor; mod sheen mainy in sands; tr woody organics	0/30/70	LW2-C092-D	882	38
-280 / -9		SILT w/sand: interbedded clayey silts and sandy clayey silts, indistinct bedding, sand is v.fine; v.stiff, high plast; med grayish brn; mild H2S odor; tr organics; rapid dilatency	0/20/80	LW2-C092-E	1310	35

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SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C092

Collection Date:	10/24/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/25/2005	**Mudline Elevation (NAVD88 ft):**	0.00
Core Tube Length (ft):	20.0	**Easting:**	7619867
Core Drive Length (ft):	19.0	**Northing:**	717041
Core Recovered Length (ft):	16.9	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
-390 -400 -410 -420 -430 -440 -450 -460 -470 -480 -490 -500 -510 (-13, -14, -15, -16)				archive: LW2-C092-F	1160	37

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C094

Collection Date:	10/20/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/20/2005	**Mudline Elevation (NAVD88 ft):**	-7.00
Core Tube Length (ft):	14.0	**Easting:**	7619640
Core Drive Length (ft):	13.0	**Northing:**	717055
Core Recovered Length (ft):	12.1	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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LWG Lower Willamette Group

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 / 0		Sandy SILT: tr meth.ves.; v.soft-soft; dk grayish brown; mild sulfur odor; tr organics	0/40/60	LW2-C094-A (ANALYZE)	951	15
-30 / -1		SILT w/sand: sand occurs in matrix and in lenses, tr clay lenses; soft; dk grayish brown; mild TPH odor; possible lt sheen; wood chunk (0.5cm thick) @51cm	0/20/80	LW2-C094-B (ANALYZE)	268	20
-90 / -3		Sandy SILT: interbedded sand (v.fine-fine), silt, and clay mixtures in beds up to 33cm thick; dense/stiff,hi plast; grayish brn/dk gr brn; no odor; tr organic lenses & 1mm laminae; tr soft white material in v.small lenses (1 mm) to 323 cm	0/40/60	LW2-C094-C (ANALYZE)	506	23
				LW2-C094-D (archive)	660	27
				LW2-C094-E (archive)	650	22

ANC06970

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SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C096

Collection Date:	10/24/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/24/2005	**Mudline Elevation (NAVD88 ft):**	-4.00
Core Tube Length (ft):	20.0	**Easting:**	7617939
Core Drive Length (ft):	18.0	**Northing:**	716953
Core Recovered Length (ft):	12.4	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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LWG Lower Willamette Group

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0		SAND: tr silt, tr fine gravel (0.5cm, angular); v.dk grayish brn; no odor; tr rootlets and woody debris	0/100/<5	LW2-C096-A	518	46
-30 (-1)		Sandy SILT: sand is v.fine-fine, tr meth.ves.; soft; dk grayish brown; mild odor	0/30/70			
-40		WOOD DEBRIS and Silty SAND: silty sand is approx. 65% sand 35% silt; v.dk grayish brn; mild TPH odor; light sheen; mostly woody debris, incl. one large (14cm) chunk	/ /	LW2-C096-B	740	54
-50		SAND: sand is fine, v.well sorted, w/tr silt occurring primarily to 77cm in matrix and lenses; v.dk gray; oily odor above 86cm; light sheen; tr woody debris above 71cm	0/100/<5			
-150 (-5)		SAND w/silt: sand is fine, v.well sorted (as above), silt (dk grayish brn, med plast) occurs as blocky lens betw 181-197cm, & lenses from 263-266cm & 270-271cm; sand is v.dk gray; v.light odor	0/90/10	LW2-C096-C	518	50
-270 (-9)		SAND: sand is fine, v.well sorted (as above), w/tr silt (dk grayish brown) in lenses up to ~1cm thick; sand is v.dk gray; abrupt basal contact	0/100/<5	LW2-C096-D	404	59
-350 (-11)		SAND w/silt: sand is v.fine-fine, silt occurs primarily in laminae and lenses (1-3mm thick); v.dk brownish gray; no odor	0/80/20			

ANALYZE — ANALYZE — ANALYZE — archive

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C099

Collection Date:	10/24/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/24/2005	**Mudline Elevation (NAVD88 ft):**	-5.00
Core Tube Length (ft):	20.0	**Easting:**	7618036
Core Drive Length (ft):	19.0	**Northing:**	716704
Core Recovered Length (ft):	12.1	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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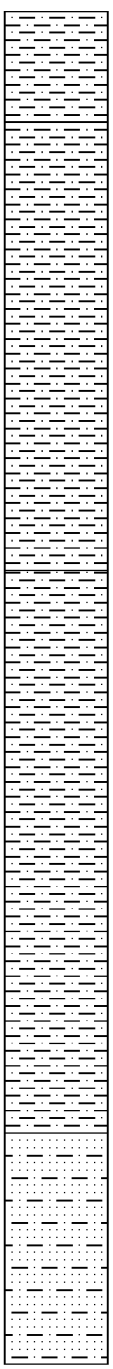
LWG Lower Willamette Group

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 to -360 / 0 to -12		SILT w/sand: sand is v.fine-fine, fine sand occurs primarily in upper 13cm; soft; dk grayish brown; mild sulfur odor; tr rootlets	0/25/75	LW2-C099-A (ANALYZE)	606	48
		Sandy SILT: sand is v.fine-fine, fine sand occurs primarily in sandy laminae; stiff, med plast; dk grayish brown; possible lt TPH odor; possible lt sheen; tr woody debris in lenses and a bed from 98-104cm	0/40/60	LW2-C099-B (ANALYZE)	762	64
		Sandy SILT: similar to above but w/appar. decr. in v.fine sand fraction; fine sand occurs in silty bed betw 192-212 cm & in laminae (0.1-1cm thick) below 273cm; stiff, med-hi plast; dk grayish brown; mod TPH odor; light sheen on sands below 273cm; woody organics in bed betw 192-212cm	0/30/70	LW2-C099-C (ANALYZE)	1113	56
		SAND w/silt: sand is fine-med (tr coarse), tr fine gravel, silt occurs in lenses, beds and laminae (med grayish brown, med plast, up to 1cm thick); v.dk brownish gray; no odor; silt fraction decreases w/depth	<5/80/20	LW2-C099-D (archive)	690	51

ANC06972

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SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C103

Collection Date:	10/24/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/25/2005	**Mudline Elevation (NAVD88 ft):**	-3.00
Core Tube Length (ft):	20.0	**Easting:**	7618155
Core Drive Length (ft):	19.0	**Northing:**	716406
Core Recovered Length (ft):	15.2	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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LWG Lower Willamette Group

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0		SILT w/sand: sand is v.fine; soft; med grayish brn; mild sulfur odor; tr rootlets	0/25/75	LW2-C103-A	603	43
-30 / -1		SILT w/sand: as above; stiff; med grayish brn; mild sulfur odor; tr woody plant debris; abrupt basal contact	0/25/75	LW2-C103-B	824	36
-90 / -3		SAND w/silt: sand is fine, well sorted, w/silt lenses and laminae (med grayish brown, 0.1-1cm thick); dense; v.dk brownish gray; no odor; abrupt basal contact	0/90/10			
-120 / -4		SILT w/sand: as above; stiff; med grayish brn; possible odor; tr light sheen; ~10% woody organics, tr rootlets	0/25/75			
-150 / -5		Clayey SILT w/sand: clayey silt w/v.fine sand, sand less abundant than above; v.stiff, high plast; med grayish brn; lt-mod TPH odor below 236cm; tr sheen florets, hvy sheen lens @ 312cm; tr woody (milled) organics in lenses; abrupt basal contact	0/10/90	LW2-C103-C	368	56
-270 / -9				LW2-C103-D	302	56
-360 / -12		SAND: sand is fine-med, v.well sorted, w/tr silt primarily in upper 13cm; dense; v.dk brownish gray; TPH odor; lt sheen florets to ~410cm; tr woody detritus in lamina (<0.5cm) @ 444cm	0/100/<5	LW2-C103-E	646	53

ANALYZE — ANALYZE — archive — ANALYZE

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C103

Collection Date:	10/24/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/25/2005	**Mudline Elevation (NAVD88 ft):**	-3.00
Core Tube Length (ft):	20.0	**Easting:**	7618155
Core Drive Length (ft):	19.0	**Northing:**	716406
Core Recovered Length (ft):	15.2	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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LWG Lower Willamette Group

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
-390				ANALYZE		
-400						
-410						
-420						
-430						
-440						
-450						
-460						

-13

-14

-15

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C106

Collection Date:	10/25/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/25/2005	**Mudline Elevation (NAVD88 ft):**	-8.00
Core Tube Length (ft):	20.0	**Easting:**	7618224
Core Drive Length (ft):	19.0	**Northing:**	716204
Core Recovered Length (ft):	16.5	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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LWG Lower Willamette Group

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 / 0		SILT w/sand: sand is v.fine, tr meth.ves.; soft; med grayish brn; mild H2S odor; tr rootlets	0/10/90	LW2-C106-A (ANALYZE)	320	110+
-30 / -1		SILT w/sand: sand is v.fine-fine, tr v.fine sand in matrix w/tr fine sand in lenses and laminae (<0.5cm thick) and a bed from 264-269cm; stiff, med-hi plast; mild-mod TPH odor to depth; faint blk oily stain @419cm & 395cm; tr wood debris, detritus, and rootlets throughout; plasticity increases with depth	0/10/90	LW2-C106-B (ANALYZE)	420	80+
				LW2-C106-C (ANALYZE)	313	102
				LW2-C106-D (archive)	301	99+

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C106

Collection Date:	10/25/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/25/2005	**Mudline Elevation (NAVD88 ft):**	-8.00
Core Tube Length (ft):	20.0	**Easting:**	7618224
Core Drive Length (ft):	19.0	**Northing:**	716204
Core Recovered Length (ft):	16.5	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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LWG Lower Willamette Group

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
-390				ANALYZE → LW2-C106-E	311	98+
-400 -13						
-410						
-420						
-430 -14						
-440						
-450						
-460 -15		Sandy SILT: sand is fine, occurs in laminae and a bed (10cm thick); mild musty odor; possible lt sheen; tr woody debris; tr light tan fine material in laminae and lenses	0/30/70	ANALYZE LW2-C106-F	422	89+
-470						
-480						
-490 -16						
-500						

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C109

Collection Date:	10/25/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/25/2005	**Mudline Elevation (NAVD88 ft):**	-8.00
Core Tube Length (ft):	20.0	**Easting:**	7618327
Core Drive Length (ft):	19.0	**Northing:**	715916
Core Recovered Length (ft):	14.2	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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LWG Lower Willamette Group

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 / 0		SILT w/sand: sand is v.fine, tr meth.ves.; soft; med grayish brn; mild sulfur odor; tr rootlets	0/20/80	LW2-C109-A	207	56+
-30 / -1		SILT w/sand: silt w/v.fine sand (~10%), w/tr fine sand in laminae (2-<5mm thick, mainly betw 116-121cm, from 338-375cm and in a silty bed from 197-199cm); med-high plasticity; med grayish brn; mild-mod TPH odor; plastic debris (hard, lt blue) @~60cm; tr woody debris in lenses, tr rootlets; tr light brown clay lenses @ 298cm, sand laminae increase below 323cm, abrupt basal contact	0/15/85	LW2-C109-B	313	62+
-150 / -5				LW2-C109-C	284	60+
-270 / -9				LW2-C109-D	348	66+
-380 / -12		SAND: sand is fine-med, v.well sorted, w/tr silt in lenses 1-2mm thick; v.dk brownish gray; possible	0/100/<5	LW2-C109-E	600	63+

ANALYZE

ANALYZE

ANALYZE

archive

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C109

Collection Date:	10/25/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/25/2005	**Mudline Elevation (NAVD88 ft):**	-8.00
Core Tube Length (ft):	20.0	**Easting:**	7618327
Core Drive Length (ft):	19.0	**Northing:**	715916
Core Recovered Length (ft):	14.2	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
-390						
-13		lt odor; tr woody debris		ANALYZE ↓		
-400						
-410						
-420						
-14						
-430						

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C127

Collection Date:	10/25/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/25/2005	**Mudline Elevation (NAVD88 ft):**	-5.00
Core Tube Length (ft):	20.0	**Easting:**	7617354
Core Drive Length (ft):	17.0	**Northing:**	714244
Core Recovered Length (ft):	15.3	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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LWG Lower Willamette Group

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 / 0		SILT: silt w/tr v.fine sand and tr v.fine sand lenses, tr meth.ves.; mod stiff; med grayish brn; light TPH odor; light sheen	0/<5/100	LW2-C127-A (archive)	489	52+
-30 / -1		SILT w/sand: silt w/tr sand (v.fine) and w/fine sandy interbeds, lenses and laminae (typically ~0.5cm thick); med plasticity; med grayish brn; mod TPH odor; mod sheen on sands; tr woody debris; largest sandy bed occurs in bottom 20 cm, abrupt angled basal contact	0/15/85	LW2-C127-B (ANALYZE)	314	58+
				LW2-C127-C (ANALYZE)	381	57+
-180 / -6		SAND: sand is v.fine, v.well sorted; dense; v.dk gray above248cm; no odor; no debris; v. hard between 230-238cm, gradual color change to med gray below 248cm	0/100/0	LW2-C127-D (ANALYZE)	664	54+
-270 / -9		Clayey SILT: interbedded clay and silt mixtures, tr v.fine sand, silt (dilatent) beds up to 40 cm thick, clay beds up to 32cm thick; lt-dk gray; mild sulfur odor; tr organic lenses & laminae @ 308cm and 358cm (1-3mm thick)	0/<5/100	LW2-C127-E (archive)	111	57+

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C127

Collection Date:	10/25/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/25/2005	**Mudline Elevation (NAVD88 ft):**	-5.00
Core Tube Length (ft):	20.0	**Easting:**	7617354
Core Drive Length (ft):	17.0	**Northing:**	714244
Core Recovered Length (ft):	15.3	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
-390 / -13 / -400 / -410 / -420 / -14 / -430 / -440 / -450 / -15 / -460				archive: LW2-C127-F	319	57

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C167

Collection Date:	10/18/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/19/2005	**Mudline Elevation (NAVD88 ft):**	-33.00
Core Tube Length (ft):	14.0	**Easting:**	7619264
Core Drive Length (ft):	13.0	**Northing:**	710836
Core Recovered Length (ft):	11.7	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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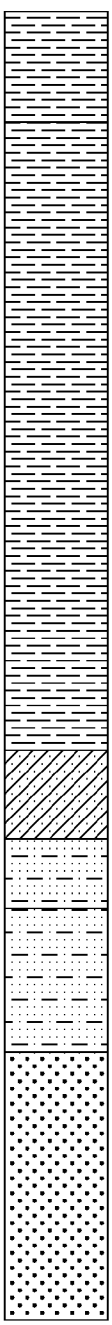
LWG Lower Willamette Group

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 to -350 / 0 to -11		SILT: silt w/tr fine sand, tr meth.ves.; med plasticity; med grayish brn; mild sulfur odor; tr rootlets	0/<5/100	LW2-C167-A (ANALYZE)	22	12
		SILT: silt w/tr fine sand and tr thin sand lenses and laminae (2mm), tr gravel @ 45cm (coarse, 6cm x 2.5cm, subrounded), w/meth.ves. (~10%); stiff, med-hi plast; med grayish brn; mild sulfur odor; abrupt basal contact	0/<5/100	LW2-C167-B (ANALYZE)	989	14
				LW2-C167-C (ANALYZE)	250	16
		Clayey SILT w/sand: interbedded silt, clayey silt, and sands (fine, v.dk gray, dense), isolated gravel clast @ 226-232cm (6cm, subangular); stiff, med-hi plast; med brown gray&gray; mild TPH odor	10/20/70	LW2-C167-D (ANALYZE)	745	17
			0/90/10			
		SAND w/silt: sand is v.fine-fine, fines increase w/depth; dk gray	0/75/25	LW2-C167-E (archive)	20	16
		SAND w/silt: sand is v.fine-fine, silt increases w/depth; dense; med olive brown; no odor				
		SAND: v.fine-fine sand, well sorted, tr silt; dense; med grayish brn; no odor; faint v.thin (1mm) laminations observed	0/100/<5	LW2-C167-F (archive)	6	21

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C187

Collection Date:	10/27/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/28/2005	**Mudline Elevation (NAVD88 ft):**	-22.00
Core Tube Length (ft):	20.0	**Easting:**	7620139
Core Drive Length (ft):	17.0	**Northing:**	709498
Core Recovered Length (ft):	13.7	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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LWG Lower Willamette Group

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 / 0		Sandy SILT: interbedded sand (v.fine-fine) and silt (0-8cm sand bed underlain by silt w/sandy laminae and lenses); med-dk grayish brown; faint TPH odor; tr rootlets	0/40/60	LW2-C187-A (archive)	682	77+
-30 / -1		Sandy SILT w/gravel: interbedded silts, sands (v.fine-fine, tr coarse), and mixtures, w/gravel (fine-coarse up to 6cm long, ang-subrounded); light-mod TPH odor; light-mod sheen, tr blk stain; tr woody debris (stick) and plant detritus; sheen & odor increase betw 150-156cm, blk stain occurs in lamina (3mm) @166cm, abrupt basal contact	10/40/50	LW2-C187-B (ANALYZE)	892	82+
-100 / -4				LW2-C187-C (ANALYZE)	458	75
-180 / -6		Silty CLAY w/sand: sand is v.fine; gray; no odor	0/10/90			
-200 / -7		SAND w/silt: v.fine-fine sand, well sorted, in beds up to 56cm thick, silt occurs in lenses, laminae, & thin beds (up to ~1.5cm), clayey laminae & thin bed betw 382-392cm; med gray-orange brn; no odor; lt sheen near top of unit	0/90/10	LW2-C187-D (ANALYZE)	27	87
-310 / -10				LW2-C187-E (archive)	9	83
-390 / -12						

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SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C187

Collection Date:	10/27/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/28/2005	**Mudline Elevation (NAVD88 ft):**	-22.00
Core Tube Length (ft):	20.0	**Easting:**	7620139
Core Drive Length (ft):	17.0	**Northing:**	709498
Core Recovered Length (ft):	13.7	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
-390 -400 -410	-13					

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C227

Collection Date:	10/19/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/19/2005	**Mudline Elevation (NAVD88 ft):**	-1.00
Core Tube Length (ft):	14.0	**Easting:**	7621415
Core Drive Length (ft):	7.5	**Northing:**	707787
Core Recovered Length (ft):	6.3	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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LWG Lower Willamette Group

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 / 0		SILT: silt w/tr fine sand, little (15%) meth.ves.; soft; dk grayish brown; mild sulfur odor; tr rootlets	0/<5/100	LW2-C227-A (archive)	1402	29.6
-30 / -1		SILT: as above, w/tr v.fine-fine sand, fine sands occur in lenses and laminae (<5mm) primarily from 94-112cm, tr meth.ves. to depth; stiff; dk grayish brown; mild sulfur odor; tr woody organics in laminae (<5mm) from 63-112cm; bed of fine sand w/silt and woody detritus in bottom 5cm	0/<5/100	LW2-C227-B (ANALYZE)	1390	35+
-120 / -4				LW2-C227-C (ANALYZE)	1484	37+
-190 / -6						

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C296

Collection Date:	10/18/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/19/2005	**Mudline Elevation (NAVD88 ft):**	-1.00
Core Tube Length (ft):	14.0	**Easting:**	7627314
Core Drive Length (ft):	13.0	**Northing:**	705446
Core Recovered Length (ft):	10.9	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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LWG Lower Willamette Group

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)		Sample ID	FID (ppm)	PID (ppm)
0		Sandy SILT: sand is v.fine; soft; dk grayish brown; no odor; tr rootlets	0/35/65	archive	LW2-C296-A	604	11
-30 / -1		SILT w/sand: silt w/v.fine sand (~10%), w/fine-med sand bed (v.dk gray) from 195-210cm, tr meth.ves., clay fraction appears to increase w/depth; soft, med plast; dk grayish brown; mild H2S odor; ~10% native woody debris in lenses	0/10/90	ANALYZE	LW2-C296-B	120	17
-150 / -5				ANALYZE	LW2-C296-C	1385	15
-220 / -7		Clayey SILT: v.stiff, m-hi plast; dk grayish brown; no odor; abrupt basal contact	0/0/100	archive	LW2-C296-D	509	14
-250 / -8		SAND: fine-med sand, well sorted, tr silt in lenses (up to 1cm thick); v.dk gray; no odor	0/100/<5	archive			

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C303

Collection Date:	10/18/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/19/2005	**Mudline Elevation (NAVD88 ft):**	-2.00
Core Tube Length (ft):	14.0	**Easting:**	7627151
Core Drive Length (ft):	13.0	**Northing:**	705315
Core Recovered Length (ft):	9.3	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)		Sample ID	FID (ppm)	PID (ppm)
0 / 0		Sandy SILT: sand is fine; soft; med grayish brn; no odor; tr wood debris (sticks)	0/40/60	archive	LW2-C303-A	156	10.8
		SILT: silt w/tr v.fine sand, tr meth.ves.; stiff, med plast; med grayish brn	0/<5/100				
-30 / -1		SILT: silt w/tr v.fine-fine sand, fine sand occurs in a bed from 72-77cm; stiff; med grayish brn; mild sulfur odor; ~20% woody debris	0/<5/100	ANALYZE	LW2-C303-B	1778	15.8
-90 / -3		WOOD DEBRIS: w/approx. 10% fine sand	/ /	ANALYZE	LW2-C303-C	1760	13.2
		SAND: fine sand, w/tr silt (decrease w/depth) and tr silt lenses and laminae (0.3-1.5cm thick) @ 113cm, 187cm, 193cm, and 202 cm; v.dk gray; no odor; faint sheen on silt @ 113cm	0/100/<5				
-210 / -7		SAND: fine-med sand, well sorted, coarsens slightly in bottom 8cm to include minor coarse sand and fine gravel (subrounded and subangular); v.dk gray; no odor	0/100/0	archive	LW2-C303-D	309	15.8

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C312

Collection Date:	10/18/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/19/2005	**Mudline Elevation (NAVD88 ft):**	-38.00
Core Tube Length (ft):	14.0	**Easting:**	7625128
Core Drive Length (ft):	13.0	**Northing:**	705159
Core Recovered Length (ft):	8.0	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 / 0		Clayey SILT: tr v.fine sand, tr med sand in lenses and laminae (~3mm thick); soft, med plast; med olive brown; mild TPH odor	0/<5/100	LW2-C312-A	690	15.55
-30 / -1		Clayey SILT: as above, w/tr fine sand in laminae ~ 2mm thick; mild TPH odor; tr faint sheen	0/<5/100	LW2-C312-B	1000+	17
-50 / -2		WOOD DEBRIS: native	/ /			
-70 / -3		SAND: fine-med sand, tr silt as lens from 75-78cm; v.dk gray; mild TPH odor; odor decreases w/depth, not noticeable below 100cm	0/100/0			
-150 / -5				LW2-C312-C	197	15.67
-240 / -8						

ANALYZE

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SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C321-1

Collection Date:	10/27/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/27/2005	**Mudline Elevation (NAVD88 ft):**	-15.00
Core Tube Length (ft):	20.0	**Easting:**	7626059
Core Drive Length (ft):	18.7	**Northing:**	704450
Core Recovered Length (ft):	15.3	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0		SAND: v.fine-med sand, v.well sorted, tr silt in lenses, tr fine gravel (1.5cm, subangular); dense; v.dk gray; mild TPH odor	<5/100/<5	LW2-C321-A1 (archive)	1435	50+
-30 / -1		SILT w/sand and gravel: interlaminated silts and sand (v.dk gray), w/coarse gravel (up to 7cm, subangular to rounded); med grayish brn; mild TPH odor; tr unidentified debris; abrupt basal contact	25/25/50	LW2-C321-B1 (ANALYZE)	346	56+
-60 / -2		SAND w/gravel: fine sand, v.well sorted, w/fine-coarse gravel (1.5-4cm, subrounded); dense; v.dk gray; mild TPH odor; abrupt basal contact	10/90/0			
-90 / -3		SILT w/sand: silt w/v.fine-fine sand in laminae and lenses (1-2mm thick); stiff	0/25/75			
-120 / -4		SILT: stiff; med gray; mild TPH odor; abrupt basal contact	0/0/100			
-140 / -5		SAND w/silt: fine-med sand w/silt lenses; dense; v.dk gray; mild odor	NA			
-150 / -5		SILT: v.stiff; med gray; plastic odor	0/0/100			
-180 / -6		SILT w/sand: interbedded silt, sand (v.fine), clay, and mixtures; v.stiff; tan-lt grayish brn; mild plastic odor; no debris	0/25/75	LW2-C321-C1 (ANALYZE)	26	58+
-260 / -9		SAND w/silt: v.fine sand, silt occurs in faint lenses and laminae; v.dense; med-dk brownish gray; mild odor; no debris	0/90/10	LW2-C321-D1 (archive)	12	41
-300 / -10		SAND w/silt: v.fine-fine sand; v.dense; med gray; no odor; no debris; abrupt basal contact	0/75/25			
-390						

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C321-1

Collection Date:	10/27/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/27/2005	**Mudline Elevation (NAVD88 ft):**	-15.00
Core Tube Length (ft):	20.0	**Easting:**	7626059
Core Drive Length (ft):	18.7	**Northing:**	704450
Core Recovered Length (ft):	15.3	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
-390						
-400 -13		SAND: fine sand, v.well sorted; v.dk gray; sulfur odor	0/100/0	LW2-C321-E1	66+	26
-410 -420				archive		
-430 -14		SILT and SAND: sand is v.fine, tr fine sand lens @ 459cm, coarse sand and subangular gravel in bottom 2cm; med gray; sulfur odor	<5/50/50			
-440 -450 -460 -15						

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C321-2

Collection Date:	10/27/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/27/2005	**Mudline Elevation (NAVD88 ft):**	-15.00
Core Tube Length (ft):	20.0	**Easting:**	
Core Drive Length (ft):	18.7	**Northing:**	
Core Recovered Length (ft):	16.1	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 – -30 / 0 – -1		SAND w/silt: fine-med sand, v.well sorted, w/silt in lenses; dense; v.dk gray; mild TPH odor; tr woody detritus	0/90/10	archive LW2-C321-A2, -A3	1085	62+
-30 – -70 / -1 – -2		SILT and SAND: interbedded sand (as above) and silt, silt occurs in lenses, laminae, and beds (up to 10 cm thick); dense/stiff; mod TPH odor; tr woody debris	0/50/50	ANALYZE LW2-C321-B2, -B3	909	63+
-70 – -110 / -2 – -3		SILT w/sand: silt w/v.fine-fine sand in lenses and laminae; stiff-v.stiff; med grayish brn; mild TPH odor	0/10/90	ANALYZE		
-110 – -130 / -3 – -4		SAND w/silt: v.fine-fine sand w/silt in blocky lenses up to 1.5cm thick; v.dk gray; strong odor; mod-heavy sheen; heavy sheen is on contact with the underlying silt	0/75/25	ANALYZE		
-130 – -270 / -4 – -9		SILT and SAND: interbedded v.fine-fine sands, silts, clays, and mixtures; dense/stiff; med gray; strong-mild odor; free prod blebs @145cm and 149cm; lg native wood chunks; odor decreases to mild w/depth	0/50/50	ANALYZE C2 LW2-C321-C2, -C3	62*	584
-270 – -390 / -9 – -12		Silty SAND: v.fine sand, silt content varies in beds from 4-44cm thick; v.dense; med gray; mild unid. odor; tr sheen floret @ 367cm; no debris; color changes to orangish brown between 294-307cm. Abrupt basal contact	0/60/40	archive LW2-C321-D2, -D3	28	68

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C321-2

Collection Date:	10/27/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/27/2005	**Mudline Elevation (NAVD88 ft):**	-15.00
Core Tube Length (ft):	20.0	**Easting:**	
Core Drive Length (ft):	18.7	**Northing:**	
Core Recovered Length (ft):	16.1	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
-390 / -400 / -410 / -420 / -430 / -440 / -450 / -460 / -470 / -480 / -490 (-13, -14, -15, -16)		SAND w/silt: fine sand, v.well sorted in upper 23cm, grades to silty v.fine sand; dense; mild odor; sulfur and unidentified plastic odor increases w/depth	0/75/25	ANALYZE E2 — LW2-C321-E2, -E3	15	105
		GRAVEL w/sand: fine-coarse gravel (up to 8cm, subangular-subrounded); loose; mild plastic odor; (grains larger than ~2.5cm were excluded from the sample)	75/25/0			

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C358

Collection Date:	10/26/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/26/2005	**Mudline Elevation (NAVD88 ft):**	-28.00
Core Tube Length (ft):	20.0	**Easting:**	7628393
Core Drive Length (ft):	12.5	**Northing:**	702147
Core Recovered Length (ft):	9.9	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 / 0		SILT w/sand: silt w/v.fine sand, tr meth.ves.; v.soft-soft; med grayish brn; no odor; tr rootlets	0/10/90	LW2-C358-A	1041	49+
-30 / -1		SILT w/sand: silt as above w/tr v.fine-fine sand in lenses and v.thin laminae (~1mm), tr meth.ves.; soft-stiff, m plast; m-dk grayish brown; mild chem odor; red synth fibers @38cm, lens oily liquid @54cm, poss.paint chip @179cm, blk stain lens @212cm; chemical odor begins @ ~137cm and increases w/depth, tr beige clay lenses & laminae	0/<25>75	LW2-C358-B	714	55+
-150 / -5				LW2-C358-C	96	55+
-240 / -8		SILT w/sand: silt as above w/v.fine sand and v.fine sandy thin beds and laminae ; stiff, med plast; med brown; mod chem odor; tr rootlets and plant debris	0/<25>75	LW2-C358-D	81	56+

ANALYZE

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SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C360-1

Collection Date:	10/26/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/27/2005	**Mudline Elevation (NAVD88 ft):**	-8.00
Core Tube Length (ft):	20.0	**Easting:**	7628249
Core Drive Length (ft):	19.0	**Northing:**	702106
Core Recovered Length (ft):	18.8	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0		SILT w/sand: silt w/v.fine-fine sand; v.soft-soft; med grayish brown; mod sulfur odor; tr rootlets	0/15/85	LW2-C360-A1	96	22+
-30 / -1		SILT w/sand: as above, silt w/v.fine sand and tr v.fine-fine sand lenses (~3mm), appar. increased clay content; soft; med grayish brown; mod odor ; blk stain in bands from 67-89 cm; tr rootlets	0/15/85	LW2-C360-B1	42	18
-90 / -3		SILT w/sand: as above,silt w/v.fine-med sand lenses, laminae, and thin beds (1cm), tr clay lenses, clay appears to increase w/depth; stiff, med-hi plast; med brown; mod-strong chem odor; tr sheen florets (1-2 mm); native woody debris (sticks, bark), rootlets, and blk organic lenses; tr orange-colored lenses(~3mm thick) @440cm and 565cm	0/25/75	LW2-C360-C1	39	18
-210 / -7				LW2-C360-D1	13	8
-330 / -11				LW2-C360-E1	19	9

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SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C360-1

Collection Date:	10/26/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/27/2005	**Mudline Elevation (NAVD88 ft):**	-8.00
Core Tube Length (ft):	20.0	**Easting:**	7628249
Core Drive Length (ft):	19.0	**Northing:**	702106
Core Recovered Length (ft):	18.8	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
-390						
-400	-13					
-410						
-420						
-430	-14					
-440						
-450				LW2-C360-F1	15	7
-460	-15					
-470						
-480						
-490	-16					
-500						
-510						
-520	-17					
-530						
-540						
-550	-18					
-560						
-570						

archive

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SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C360-2

Collection Date:	10/26/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/27/2005	**Mudline Elevation (NAVD88 ft):**	-8.00
Core Tube Length (ft):	20.0	**Easting:**	
Core Drive Length (ft):	19.0	**Northing:**	
Core Recovered Length (ft):	16.7	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0		SILT w/sand: silt w/v.fine sand, tr meth.ves.; soft; med grayish brown; mild sulfur odor	0/10/90	archive LW2-C360-A2, -A3	31	18+
-30 / -1		SILT: silt w/tr v.fine sand, tr meth.ves.; soft; med grayish brown; sulfur odor; blk stain in bands; tr rootlets; abrupt color change @ 70cm	0/<5/100	ANALYZE LW2-C360-B2, -B3	73	11+
-70 / -2		SILT w/sand: silt w/v.fine sand (~10%), w/fine-fine sands in laminae, lenses, and thin beds (1cm), tr clay laminae; med-high plasticity; med brown; mod-strong chem odor; tr blk stain lamina @ 362 cm, tr sheen florets (<1mm); tr organics as rootlets, woody debris (plant debris, bark, sticks), and blk organic lenses; tr orange-colored lenses(<1-5mm thick)	0/25/75	ANALYZE C2 LW2-C360-C2, -C3	30	20+
-180 / -6				archive LW2-C360-D2, -D3	45	21+
-300 / -10				archive LW2-C360-E2, -E3	90	17+
-390						

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C360-2

Collection Date:	10/26/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/27/2005	**Mudline Elevation (NAVD88 ft):**	-8.00
Core Tube Length (ft):	20.0	**Easting:**	
Core Drive Length (ft):	19.0	**Northing:**	
Core Recovered Length (ft):	16.7	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
-390 / -13 / -400 / -410 / -420 / -14 / -430 / -440 / -450 / -15 / -460 / -470 / -480 / -16 / -490 / -500				archive: LW2-C360-F2, -F3	18	10

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C381

Collection Date:	10/18/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/18/2005	**Mudline Elevation (NAVD88 ft):**	-38.00
Core Tube Length (ft):	14.0	**Easting:**	7629325
Core Drive Length (ft):	13.0	**Northing:**	701102
Core Recovered Length (ft):	12.8	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 / 0		SILT: silt w/tr v.fine-fine sand in lenses (1-3mm thick), lens (0.5cm) of hard tan clay @ 20cm; soft-stiff, m plast; med grayish brown; tr rootlets, tr wood debris	0/<5/100	LW2-C381-A (archive)	1235	48
-30 / -1		Clayey SILT: tr fine sand in thin (1-4mm) laminae betw 115-122 cm, lenses of tan clay (hard) @ 49cm and 56cm, clay content increases below 123cm; stiff, med-hi plast; med brown; mild sulfur odor	0/<5/100	LW2-C381-B (ANALYZE)	938	39
-150 / -5		Silty CLAY: tr v.fine sand lenses; v.stiff; med-dk grayish brown; no odor	0/<5/100	LW2-C381-C (ANALYZE)	561	39
-200 / -7		Sandy CLAY: clay intermixed w/clayey silt as above, clay appears granular (fine-sand sized) in areas, w/black fine-sand particles; v.stiff-hard; light gray; no odor	0/40/60			
-220		Silty CLAY: as above (in 152-201cm); stiff; mild sulfur odor	0/<5/100			
-270 / -9		Silty CLAY: silty clay w/tr v.fine sand, sand content increases in bottom 10cm in thin sandy laminae (1mm); v.stiff; dk grayish brown; mild sulfur odor; woody (native) organic lenses	0/<5/100	LW2-C381-D (archive)	387	53
-340 / -11		Clayey SAND: v.fine-fine sand, interbedded w/silty clay and clayey sand mixtures; dense; med gray; no odor	0/55/45	LW2-C381-E (ANALYZE)	210	35
-390 / -12						

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C449

Collection Date:	10/18/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/18/2005	**Mudline Elevation (NAVD88 ft):**	-24.00
Core Tube Length (ft):	14.0	**Easting:**	7633640
Core Drive Length (ft):	13.0	**Northing:**	696962
Core Recovered Length (ft):	10.5	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 to -320 cm / 0 to -10 ft		SILT: silt w/tr v.fine sand; v.soft; med greenish brown; mild sulfur odor; tr rootlets and lenses of plant debris	0/<5/100	LW2-C449-A (ANALYZE)	888	37
				LW2-C449-B (ANALYZE)	548	50
		Sandy SILT: interbedded silt and silty fine sand (loose); stiff, med plast; green brn/dk gr brn; mild sulfur odor; tr organic laminae (1mm; rootlets plant debris)	0/35/65	LW2-C449-C (ANALYZE)	586	56
		SILT: silt w/tr v.fine sand; stiff, med plast; med greenish brown; mild sulfur odor; tr organic laminae (1 mm) @ 182cm and 189 cm	0/<5/100	LW2-C449-D (archive)	224	52
				LW2-C449-E (ANALYZE)	382	71

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C492

Collection Date:	10/26/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/26/2005	**Mudline Elevation (NAVD88 ft):**	-11.00
Core Tube Length (ft):	20.0	**Easting:**	7637597
Core Drive Length (ft):	18.0	**Northing:**	694315
Core Recovered Length (ft):	14.2	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 / 0		SILT: silt w/tr v.fine sand; v.soft-soft; med grayish brown; mild sulfur odor; tr rootlets and plant debris	0/15/85	archive LW2-C492-A	625	49+
-30 / -1		Sandy SILT: silt as above w/v.fine sandy beds and laminae (beds up to ~10cm thick), tr fine sand; stiff; med grayish brown; mild sulfur odor; tr rootlets; abrupt basal contact	0/30/70	ANALYZE LW2-C492-B	317	61+
-150 / -5		SAND: fine-med sand (tr coarse), tr silt in 1cm thick bed and 2cm lenses, tr gravel (fine & coarse, to 4cm long, subang-subrounded) ; gravel increases w/depth; no odor	<5/100/<5	ANALYZE LW2-C492-C	429	60+
-270 / -9				archive LW2-C492-D	156	58+

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C492

Collection Date:	10/26/2005	Logged By:	Susan Fitzgerald
Core Processing Date:	10/26/2005	Mudline Elevation (NAVD88 ft):	-11.00
Core Tube Length (ft):	20.0	Easting:	7637597
Core Drive Length (ft):	18.0	Northing:	694315
Core Recovered Length (ft):	14.2	Coordinate System: NAD83/91 Oregon State Plane North, International Feet	

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
-390 -400 -410 -420 -430 -13 -14				archive LW2-C492-E	103	59+

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C522

Collection Date:	10/19/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/19/2005	**Mudline Elevation (NAVD88 ft):**	-29.00
Core Tube Length (ft):	14.0	**Easting:**	7617035
Core Drive Length (ft):	11.8	**Northing:**	715190
Core Recovered Length (ft):	9.6	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 / 0		SILT: silt w/tr v.fine sand, tr meth.ves.; soft; med grayish brown; mild unid. odor; tr rootlets	0/<5/100	LW2-C522-A (ANALYZE)	1000+	19
-30 / -1		SILT: silt as above w/tr v.fine-fine sand in lenses, laminae, and a bed from 55-60cm, ~10% meth.ves.; stiff; possible TPH odor; light sheen; abrupt basal contact	0/<5/100	LW2-C522-B (ANALYZE)	1000+	25
-90 / -3		SAND: v.fine sand, thin beds (~0.5cm thick) of v.fine sand (hard, v.dk gray w/no odor) @128cm, 131cm, and lens @ 134cm; dense; dk gray; lt possible TPH odor	0/100/0	LW2-C522-C (ANALYZE)	1000+	22
-130 / -5		Silty SAND: sand is v.fine; dense; olive gray-m gr brn; sulfur odor; tr blk stain (no odor) @ 143cm; organic lens (2mm thick) @ 140cm; abrupt basal contact	0/65/35	LW2-C522-D (archive)	180	24
-170 / -6		SAND w/silt: v.fine-fine sand w/silt, tr clay (clays primarily in lenses and silty beds up to ~8cm thick); dk gray; tr organics in thin (1-2mm) laminae @top of unit and @276cm	0/90/10	LW2-C522-E (archive)	5	27
-290 / -9						

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SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C523

Collection Date:	10/18/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/19/2005	**Mudline Elevation (NAVD88 ft):**	-39.00
Core Tube Length (ft):	14.0	**Easting:**	7625590
Core Drive Length (ft):	13.0	**Northing:**	704876
Core Recovered Length (ft):	12.1	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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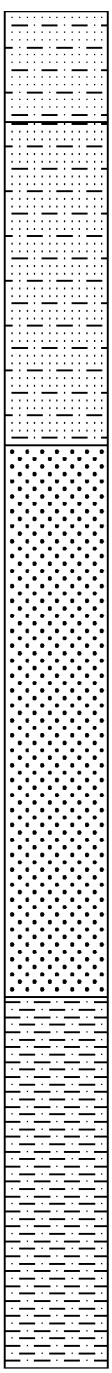
Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 to -120 / 0 to -4		Silty SAND: alternating beds (1-15cm thick) of silt (tr fine sand) and fine-med sand (tr fine gravel, 5mm, subang); v.soft; med olive brown; mild TPH odor	0/65/35	LW2-C523-A (ANALYZE)	1510	13
-30 to -270 / -1 to -9		SAND w/silt: interbedded fine sand (tr silt) and silt (w/clay, med-high plast); v.dk gray/m gr brn; mild odor; blk stain & mod odor on silt lens @ 95cm	0/80/20	LW2-C523-B (ANALYZE)	1000+	14.11
-120 to -270 / -4 to -9		SAND: fine sand w/tr clayey silt as lenses (some blocky) up to 6cm thick; dense; v.dk gray; mild sulfur odor	0/100/<5	LW2-C523-C (ANALYZE)	227	15.6
-270 to -360 / -9 to -12		Sandy SILT: interbedded clayey silt and fine sands (sands are dense, v.dk brownish gray); v.stiff, m-hi plast; med grayish brown; mild sulfur odor	0/30/70	LW2-C523-D (archive)	42.2	23+

ANC07002
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SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C524

Collection Date:	10/19/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/19/2005	**Mudline Elevation (NAVD88 ft):**	3.00
Core Tube Length (ft):	14.0	**Easting:**	7627408
Core Drive Length (ft):	6.0	**Northing:**	705645
Core Recovered Length (ft):	4.7	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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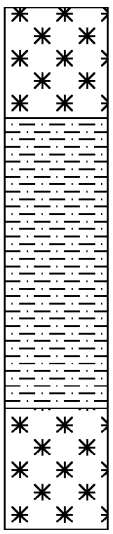
LWG Lower Willamette Group



Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)		Sample ID	FID (ppm)	PID (ppm)
0 / 0		WOOD DEBRIS: w/silty fine sand; TPH odor; light sheen	/ /	ANALYZE	LW2-C524-A	1551	24.7
-30 / -1		SILT w/sand: interbedded silt, clayey silt, and fine sands (loose, beds 1-3cm thick); stiff, med-hi plast; med grayish brown; lt-mod TPH odor; light sheen ; ~20% woody debris in beds up to 5cm thick; contamination assoc. w/woody debris and sands	0/25/75	ANALYZE	LW2-C524-B	2668	35.3
-110 / -4		WOOD DEBRIS: woody detritus; lt TPH odor	/ /	archive	LW2-C524-C	425	36.8

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C525

Collection Date:	10/25/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/26/2005	**Mudline Elevation (NAVD88 ft):**	-31.00
Core Tube Length (ft):	20.0	**Easting:**	7623306
Core Drive Length (ft):	19.0	**Northing:**	706147
Core Recovered Length (ft):	14.0	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 / 0		Sandy SILT: sand is v.fine-fine, little gravel (fine & coarse, angular, black, resin-like), tr meth.ves.; soft; med grayish brown; mod TPH odor; tr blk stain in sand lenses; tr wood debris, one worm (<1mm thick) noted @ ~4cm	20/35/45	LW2-C525-A	507	42+
-30 / -1		SILT w/sand: silt, w/tr v.fine sand w/v.fine-fine sand in lenses and laminae; stiff, m-hi plast; med grayish brown; blk staining in lenses, laminae and bands; tr plant detritus; blk stain increases w/depth in bands up to 2-3cm thick, occur on both silts & sands	0/20/80	LW2-C525-B	411	51+
-130 / -4				LW2-C525-C	981	61+
-240 / -8		Silty SAND: fine-v.fine sand, tr silt/clay lenses (med brownish gray fines); v.dk gray; strong TPH odor; lt-heavy sheen; some (>25%) woody plant detritus; fairly uniform appearance throughout, abrupt basal contact	0/60/40	LW2-C525-D	566	70+
-340 / -11		SAND: fine-med sand, v.well sorted, tr silt in lenses (0.2-3cm), laminae (1-2 mm) and thin beds (1cm thick); dense; dk brownish gray; mod TPH odor on sand; blk stain & sheen on silt lens from 363-366cm	0/100/<5	LW2-C525-E	725	51+

ANALYZE

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C525

Collection Date:	10/25/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/26/2005	**Mudline Elevation (NAVD88 ft):**	-31.00
Core Tube Length (ft):	20.0	**Easting:**	7623306
Core Drive Length (ft):	19.0	**Northing:**	706147
Core Recovered Length (ft):	14.0	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
-390 -13 -400 -410 -420 -14				ZE		

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C527

Collection Date:	10/25/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/26/2005	**Mudline Elevation (NAVD88 ft):**	-4.00
Core Tube Length (ft):	20.0	**Easting:**	7623022
Core Drive Length (ft):	19.0	**Northing:**	706136
Core Recovered Length (ft):	15.8	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 / 0		SILT w/sand: silt w/v.fine-fine sand, 5-10% meth.ves.; soft; med grayish brown; mild odor; tr rootlets	0/25/75	LW2-C527-A (ANALYZE)	110	34
-30 / -1		SILT w/sand: silt w/tr v.fine sand, w/tr fine sand in lenses, sand in matrix decreases below ~60cm, tr meth.ves.; stiff; med grayish brown; mild sulfur odor; tr faint blk stain in fine-sand lenses starting @ 45cm; tr rootlets, blk organic lens from 69-71cm	0/90/10	LW2-C527-B (ANALYZE)	352	42
-150 / -5		SILT w/sand: silt w/tr v.fine sand as above, w/tr fine-med sand in lenses and laminae (2-4mm thick), tr isolated gravel (fine, 0.5cm, subangular) @205cm; stiff; mild-mod tarry odor; faint blk stain in bands on silt, heavier stain on most sand laminae	<5/90/10	LW2-C527-C (ANALYZE)	372	48
-250 / -8		SILT w/sand: silt w/tr v.fine sand, w/v.fine-fine sand in laminae and organic beds; mod-strong TPH odor; blk staining, heavy sheen; ~25% organic laminae and beds (woody detritus, plant debris, rootlets); staining typ. assoc. w/organic deposits, the heavy sheen is on organic bed @ 405-407cm	0/25/75	LW2-C527-D (archive)	347	59
-360 / -12				LW2-C527-E	183	84

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SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C527

Collection Date:	10/25/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/26/2005	**Mudline Elevation (NAVD88 ft):**	-4.00
Core Tube Length (ft):	20.0	**Easting:**	7623022
Core Drive Length (ft):	19.0	**Northing:**	706136
Core Recovered Length (ft):	15.8	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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LWG Lower Willamette Group

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
-390						
-400	-13			ANALYZE		
-410						
-420						
-430	-14					
-440						
-450						
-460	-15					
-470						
-480						

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C528

Collection Date:	10/25/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/26/2005	**Mudline Elevation (NAVD88 ft):**	-8.00
Core Tube Length (ft):	20.0	**Easting:**	7622856
Core Drive Length (ft):	19.0	**Northing:**	706193
Core Recovered Length (ft):	16.1	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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LWG Lower Willamette Group

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 / 0		SILT: silt w/tr v.fine sand, tr meth.ves.; soft; med grayish brown; mild sulfur odor; tr plant debris	0/<5/100	LW2-C528-A (ANALYZE)	146	28+
-30 / -1		SILT: silt w/tr v.fine sand as above, tr fine sand in lenses & laminae (1-3 mm thick) @155cm & in laminae & beds (up to 10 cm thick) below 398cm, tr meth.ves.; stiff-v.stiff; med grayish brown; tarry odor; blk stain in bands up to 14cm thick starting @ 154cm, sheen on some bands; tr rootlets; tr debris (4cm diam. pipe segment @ 345cm, metal debris @ 397cm), abrupt basal contact	0/<5/100	LW2-C528-B (ANALYZE)	310	24+
-150 / -5				LW2-C528-C (ANALYZE)	312	15
-270 / -9				LW2-C528-D (ANALYZE)	274	25+
-390				LW2-C528-E (archive)	31	28

ANC07008

BZTO104(e)007008

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C528

Collection Date:	10/25/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/26/2005	**Mudline Elevation (NAVD88 ft):**	-8.00
Core Tube Length (ft):	20.0	**Easting:**	7622856
Core Drive Length (ft):	19.0	**Northing:**	706193
Core Recovered Length (ft):	16.1	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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LWG Lower Willamette Group

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
-390 / -13				archive		
-400						
-410						
-420 / -14						
-430						
-440						
-450 / -15		SAND: fine sand, well sorted, w/tr silt lenses (1-3mm thick); dense; dk brownish gray; mild sulfur odor	0/100/<5	ANALYZE LW2-C528-F	8	15
-460						
-470						
-480						
-490 / -16						

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C529

Collection Date:	10/26/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/27/2005	**Mudline Elevation (NAVD88 ft):**	-3.00
Core Tube Length (ft):	20.0	**Easting:**	7622740
Core Drive Length (ft):	19.0	**Northing:**	706341
Core Recovered Length (ft):	17.7	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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LWG Lower Willamette Group

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 / 0		SILT: silt w/tr v.fine sand, tr meth.ves.; soft; med grayish brown; no odor; tr rootlets	0/<5/100	LW2-C529-A	411	29
-30 / -1		SILT: silt w/tr v.fine sand, as above, tr v.fine-fine sand lenses (~2mm thick) and thin bed from 285-286, tr fine sand bed from 434-435cm, tr meth.ves.; stiff, m-hi plast; med grayish brown; TPH odor below 154cm; faint blk stain bands starting @154cm, heavy sheen on sand @285cm; organic detritus in bed @ 285cm; blk stain bands up to 1cm thick at intervals of 1 to ~30cm	0/<5/100	LW2-C529-B	380	29+
				LW2-C529-C	430	23
				LW2-C529-D	430	32+

ANALYZE

ANALYZE

ANALYZE

archive

ANC07010
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SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C529

Collection Date:	10/26/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/27/2005	**Mudline Elevation (NAVD88 ft):**	-3.00
Core Tube Length (ft):	20.0	**Easting:**	7622740
Core Drive Length (ft):	19.0	**Northing:**	706341
Core Recovered Length (ft):	17.7	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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LWG Lower Willamette Group

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
-390						
-400	-13					
-410						
-420						
-430	-14			LW2-C529-E	380	36+
-440						
-450						
-460	-15					
-470						
-480						
-490	-16					
-500						
-510						
-520	-17					
-530						
-540						

ANALYZE

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C530

Collection Date:	10/26/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/27/2005	**Mudline Elevation (NAVD88 ft):**	-4.00
Core Tube Length (ft):	20.0	**Easting:**	7622683
Core Drive Length (ft):	19.0	**Northing:**	706499
Core Recovered Length (ft):	17.8	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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LWG Lower Willamette Group

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 / 0		SILT w/sand: silt w/v.fine sand, w/tr fine sand lenses, ~10% meth.ves.; soft; med grayish brown; mild sulfur odor; fibrous plant debris	0/15/85	LW2-C530-A	260	29+
-30 / -1		SILT w/sand: silt w/v.fine sand as above, w/v.fine and fine sand in lenses and laminae (1-5mm thick), and beds (1-8 cm thick), tr tan clay lenses; med-high plasticity; TPH odor below 57cm; blk stain in bands and lenses starting @ 57cm, increasing w/depth; tr rootlets, and woody detritus in bed @ 414-415cm	0/15/85	LW2-C530-B	106	42+
-150 / -5				LW2-C530-C	360+	80+
-270 / -9				LW2-C530-D	12+	56+

ANALYZE — LW2-C530-A

ANALYZE — LW2-C530-B

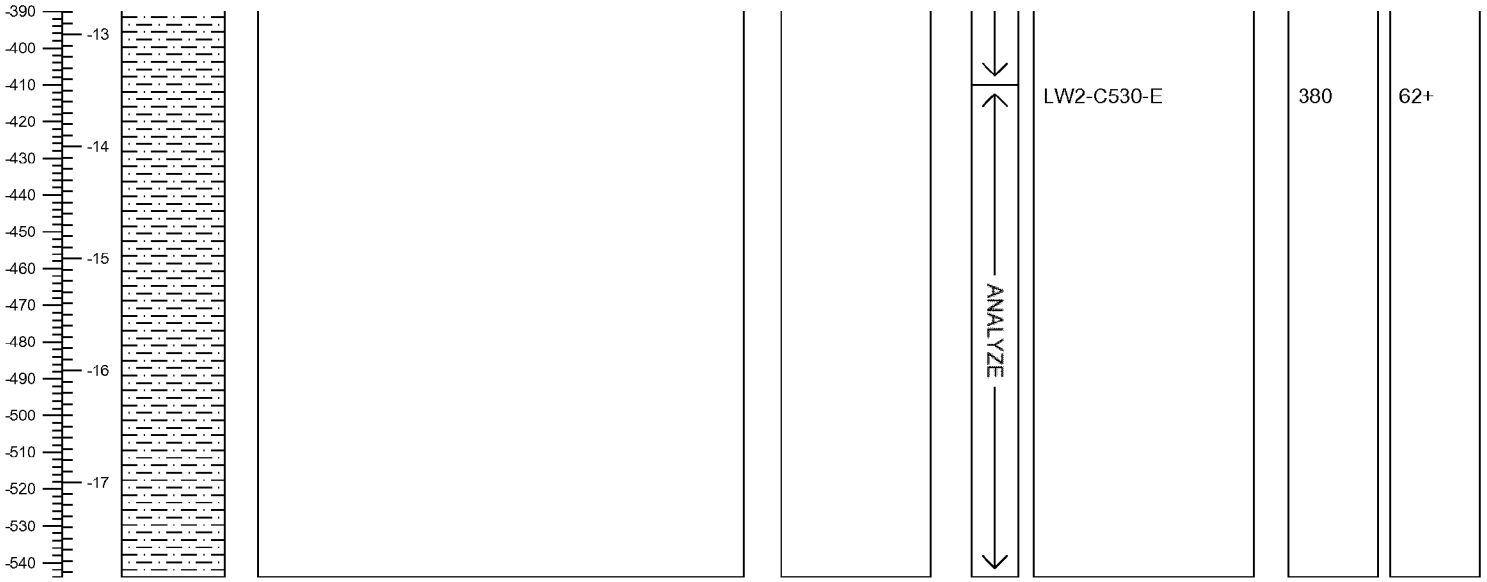
ANALYZE — LW2-C530-C

archive — LW2-C530-D

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C530

Collection Date:	10/26/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/27/2005	**Mudline Elevation (NAVD88 ft):**	-4.00
Core Tube Length (ft):	20.0	**Easting:**	7622683
Core Drive Length (ft):	19.0	**Northing:**	706499
Core Recovered Length (ft):	17.8	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet



SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C531

Collection Date:	10/27/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/28/2005	**Mudline Elevation (NAVD88 ft):**	-7.00
Core Tube Length (ft):	20.0	**Easting:**	7622585
Core Drive Length (ft):	19.0	**Northing:**	706621
Core Recovered Length (ft):	16.9	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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LWG Lower Willamette Group

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 / 0		SILT w/sand: silt w/v.fine sand increasing @ 20 cm, tr meth.ves.; soft-stiff; med grayish brown; mild sulfur odor; tr possible paint fleck (red); tr rootlets and organic detritus	0/25/75	LW2-C531-A (ANALYZE)	580+	100+
-30 / -1		SILT w/sand: silt w/v.fine-fine sand and w/sand in lenses, laminae, and beds up to 11cm thick, tr clay laminae (dk brown), tr meth.ves.; medium plasticity; med grayish brown; TPH odor to 371cm; lt sheen to 371cm, blk stain in bands starting @95cm, poss. free prod blebs in sand bed @307-310cm; no obvious stain bands below 347cm	0/25/75	LW2-C531-B (ANALYZE)	122+	110
-150 / -5				LW2-C531-C (ANALYZE)	1100+	114
-270 / -9				LW2-C531-D (archive)	340	97
-370 / -12		SILT and SAND: interbedded and interlaminated sand (v.fine-fine), silt, and mixtures, sandy beds up to 31cm thick, silty beds up to 49 cm thick;	0/50/50	LW2-C531-E	313	119+

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C531

Collection Date:	10/27/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/28/2005	**Mudline Elevation (NAVD88 ft):**	-7.00
Core Tube Length (ft):	20.0	**Easting:**	7622585
Core Drive Length (ft):	19.0	**Northing:**	706621
Core Recovered Length (ft):	16.9	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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LWG Lower Willamette Group

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
-390 -400 -410 -420 -430 -440 -450 -460 -470 -480 -490 -500 -510	-13 -14 -15 -16	up to 5 rcm thick, silty beds up to 49 cm thick, dense/v.stiff m plast; no odor; tr organic detritus in laminae (1-2mm thick)		ANALYZE		

SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C532

Collection Date:	10/18/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/18/2005	**Mudline Elevation (NAVD88 ft):**	-21.00
Core Tube Length (ft):	14.0	**Easting:**	7629257
Core Drive Length (ft):	13.0	**Northing:**	700289
Core Recovered Length (ft):	12.2	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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LWG Lower Willamette Group

Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)	Sample ID	FID (ppm)	PID (ppm)
0 – -30 / 0 – -1		SILT: silt w/tr v.fine sand, tr meth.ves.; soft; med grayish brown; sulfur odor; tr rootlets and plant debris	0/<5/100	LW2-C532-A (ANALYZE)	641	33
-30 – -100 / -1 – -3		Sandy SILT: sand is v.fine-fine (dk gray lenses); stiff; med grayish brown; light odor; possible lt sheen; tr rootlets and woody laminae (1mm)	0/40/60	LW2-C532-B (ANALYZE)	835	39
-100 – -200 / -3 – -6		SILT: silt w/tr v.fine sand, tr thin lenses and thin laminae fo fine sand (dk gray), sand content increases slightly with depth; stiff, med plast; med grayish brown; mild TPH odor	0/<5/100	LW2-C532-C (ANALYZE)	550	65
-200 – -290 / -7 – -9		Clayey SILT: v.stiff, m-hi plast; med grayish brown; mod TPH odor; tr lens of black stain @278cm	0/0/100	LW2-C532-D (archive)	574	67
-290 – -330 / -9 – -11		Clayey SILT w/sand: clayey silt w/ fine sand occurring primarily in thin laminae and lenses (1-10 mm), lens of hard clay (olive-colored, 3x15mm) @ 311cm; mod-strong TPH odor; sand fraction increases in bottom 6cm to sandy silt. Abrupt basal contact	0/20/80	LW2-C532-E (ANALYZE)	501	87
-330 – -370 / -11 – -12		SAND w/clay: fine sand; dense; med-dk gray; stiff clay in bottom 3 cm	0/90/10	LW2-C532-F (ANALYZE)	1002	48

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SEDIMENT CORE LOG

PROJECT: Portland Harbor RI/FS **CORE ID:** LW2-C533

Collection Date:	10/19/2005	**Logged By:**	Susan Fitzgerald
Core Processing Date:	10/19/2005	**Mudline Elevation (NAVD88 ft):**	-1.00
Core Tube Length (ft):	14.0	**Easting:**	7627332
Core Drive Length (ft):	13.0	**Northing:**	705710
Core Recovered Length (ft):	11.0	**Coordinate System:**	NAD83/91 Oregon State Plane North, International Feet

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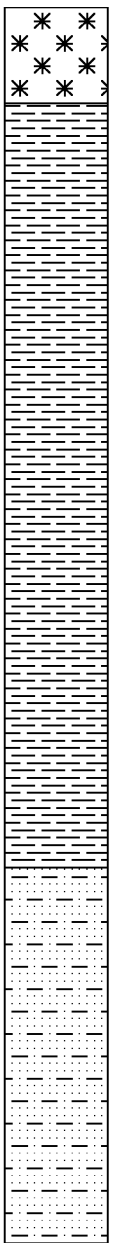
LWG Lower Willamette Group



Core Depth (cm/ft)	Lithology	Core Description	Grain Size % (G / S / Fines)		Sample ID	FID (ppm)	PID (ppm)
0		WOOD DEBRIS	0/0/0	ANALYZE	LW2-C533-A	187	30+
-30		SILT: silt w/tr fine sand, sand occurs primarily in a bed betw 54-62 cm, also in thin (1-5mm) laminae and lenses throughout; stiff, med plast; med grayish brown; mild sulfur odor; tr woody debris; v.fine sand fraction in bottom 9cm of silt	0/<5/100	ANALYZE	LW2-C533-B	351	30
-110				ANALYZE	LW2-C533-C	574	28+
-240		SAND w/silt: v.fine-fine sand w/tr silt and silt lenses (0.5-2cm thick, med plast); dense; dk gray; no odor; silt content decreases below 296cm	0/75/25	ANALYZE	LW2-C533-D	1270	32+

Lower Willamette Group

Co-Chairperson: Bob Wyatt, NW Natural
Treasurer: Larry Patterson, ATOFINA

February 27, 2003

Chip Humphrey
811 SW Sixth Ave, 3rd Floor
Portland, OR 97204

Tara Martich
EPA
1200 6th Ave, Suite ECL-115
Seattle, WA 98101

Dear Chip and Terra:

As you requested, enclosed is the Summary of Round 1 and Round 1A Field Activities. This document summarizes all Round 1 and 1A field sampling and reconnaissance work that EPA previously approved either by e-mail correspondence or by field approvals. As discussed, EPA will confirm in writing its approval of this work, which will constitute approval of the field work itself. Reports presenting the results of Round 1 and 1A field work are in preparation and will be submitted to you in a separate document.

If you have any questions, please call.

Very truly yours,

Bob Wyatt

Mark Lewis

121 NW Everett Portland OR 97209 ♦ PO Box 3529 Portland OR 97208

LWG
LOWER WILLAMETTE GROUP

SUMMARY OF ROUND 1/1A FIELD ACTIVITIES

PORTLAND HARBOR RI/FS

February 28, 2003

Prepared for:
The Lower Willamette Group

Prepared by:
Striplin Environmental Associates, Inc.
Olympia, WA

ANC07019
BZTO104(e)007019

INTRODUCTION

This document provides a summary of the Portland Harbor RI/FS Round 1/1A field sampling and reconnaissance activities that were conducted from June 24 through December 20, 2002. A Round 1 Field Sampling Report, which contains the details of the various field programs, is in preparation.

Except where noted in the Round 1 Field Sampling Report or as modified by subsequent correspondence between the LWG and EPA (e.g., EPA letter dated 20 September 2002), all sample collection activities followed the procedures described in the Round 1 and Round 1A Field Sampling Plans (FSP; SEA et al. 2002a,b) and the Fish Tissue Sampling Standard Operating Procedure (SOP; SEA et al. 2002c). Fish tissue sample processing, including compositing, homogenization, and shipping, followed the procedures detailed in the Fish Tissue Compositing and Homogenization SOPs (SEA et al. 2002d, SEA 2002a). All laboratory analyses have or are following the EPA-approved project Quality Assurance Project Plan (QAPP; SEA 2002b).

SUMMARY OF ROUND 1A FIELD ACTIVITIES

The following tasks were carried out per the Round 1A FSP. The Round 1A FSP was approved by EPA on May 5, 2002.

- **Juvenile Salmonid Mark/Recapture Pilot Study**. A pilot study to gather information on mark/recapture methods was conducted July 8 and 9, 2002. Juvenile salmonids were also collected for tissue analysis during this time. The study was halted when water temperature in the lower Willamette River had increased to levels that were stressful to juvenile salmonids held in buckets prior to being marked. Agency representatives did not observe this brief study.
- **Collection of Fish Tissue for Chemical Analysis**. The fish tissue collection program was approved as part of Round 1A. Juvenile salmonids were collected for tissue analysis during June 24 –27, 2002. The collection of other fish and crayfish occurred between July 22 and November 10, 2002. Details, including agency observers, are provided below.
- **Hard Bottom Benthos Sampling Using Multiplates**. Multiplates were deployed July 15-16, 2002 and were retrieved August 27-28, 2002. No regulatory agency representatives were present as observers.
- **Aquatic Plant And Amphibian Reconnaissance**. The survey was conducted 26-28 June 2002. David Terpening and Joseph Goulet from EPA, Helen Hillman from NOAA, and Jeremy

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Buck from USFWS , observed the nighttime frog call procedures at one sampling location on the evening of June 26.

- **Adult Lamprey Harvest Reconnaissance Survey.** LWG consultants observed lamprey harvests by the Confederated Tribes of Siletz on 26 June 2002, and by the Yakama Nation on 22 July 2002. Because these harvest dates were not fixed in advance and required attendance on very short notice, neither DEQ nor EPA technical staff were able to observe
- **Nearshore Deposition/Erosion Monitoring Using Sediment Stakes.** Stakes were installed in July and measured once a month from 17 July to 12 December 2002. No regulatory agency representatives were present as observers.
- **Summer 2002 Bathymetry Survey.** The summer 2002 bathymetric survey was conducted in two phases. RM 2 to 11 were surveyed between July 3 and 18, 2002. Following a review of these data, RM 0 to 2.5 and 10.5 to 15.6 were surveyed between September 16 and 20, 2002. This bank-to-bank survey was conducted during the low water season to obtain summertime riverbed elevations for comparison with the riverbed elevation data collected during December 2001 and January 2002

In addition, the following two activities were performed:

- **Seep Reconnaissance Survey**. As requested by EPA in their September 20, 2002 letter, the LWG conducted a seep reconnaissance survey on October 7 and 8, 2002. Representatives from the Oregon Department of Environmental Quality (Eric Blischke) and the EPA (Renee Fuentes) accompanied representatives of the LWG on a subsequent tour of the identified seep areas on October 24, 2002.
- **Juvenile Lamprey And Benthic Infaunal Biomass Reconnaissance Surveys**. During the fish tissue sampling program, the LWG became concerned that juvenile lamprey were not being collected using proposed techniques. The LWG conducted a reconnaissance survey for juvenile lamprey based on grab sampling at 21 of the 22 co-located sediment and tissue sampling stations originally identified in the June 2002 LWG Field Sampling Plan on September 16 and 17, 2002. Concurrently, the LWG collected benthic samples to assess the potential success of the benthic infauna tissue collection program. On October 8 and 9, 2002 a field team consisting of two lamprey biologists from the Umatilla tribe (Aaron Jackson

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and Brandon Trelor), Hellen Hillman of NOAA, and LWG consultants visited 11 Lower Willamette sites for a follow-up reconnaissance using specialized lamprey electroshocking equipment. EPA approved the plan for this task in its September 20, 2002 letter to the LWG.

Details of the sampling associated with most of the tasks listed above is described in individual task reports that are being provided to EPA under separate cover. The status of these reports is:

- Aquatic Plant and Amphibian/Reptile Reconnaissance Survey (submitted)
- Preliminary Assessment of Epifaunal and Infaunal Benthic Communities (in preparation)
- Technical Memorandum: Adult Lamprey Reconnaissance Survey (submitted)
- Sediment Stake Erosion/Accretion Analysis (in preparation)
- Lower Willamette River Summer 2002 Multibeam Bathymetric Survey (submitted)
- Results of Seep Reconnaissance Survey RM 2-10.5 Lower Willamette River (submitted)
- Technical Memorandum: Lamprey Ammocoete and Benthic Infaunal Biomass Reconnaissance Surveys of the Lower Willamette River (submitted).

Fish tissue data will be reported in the Round 1 Site Characterization Report.

SUMMARY OF ROUND 1 FIELD ACTIVITIES

Round 1 field activities included the following tasks which were approved in EPA's September 20, 2002 letter:

- Collection of sediments at sculpin, crayfish and benthic infauna stations
- Collection of composited beach sediments
- Collection of benthic infauna
- Collection of clams for tissue analysis.

Each of these collections is described in more detail in the following section. Results of these tasks will be provided in the Round 1 Site Characterization Report.

SEDIMENT SAMPLING

To support the human health risk assessment, composite surface beach sediment samples were collected at twenty beaches in Portland Harbor as described in the Round 1 FSP and EPA's letter of September 20, 2002. Beach sediment sampling occurred from October 9 through 14. At each beach, samples were generated by combining randomly-selected individual 0-15 cm surface samples into a single composite. All sediments were collected using stainless-steel hand corers. Mike Poulsen (ODEQ) participated in the beach sediment collection and modified the definition (start or end point) of some target beaches during the field sampling.

Surface sediments (0-15 cm) collected for chemical analyses to support the ecological risk assessment were collected at two types of stations. First, as described in the FSP, co-located sediments were collected at all nearshore sculpin and/or crayfish tissue sampling stations. Second, surface sediments for chemical analysis were also collected at ten benthic infauna stations to provide additional information on the distribution of benthic infauna in Portland Harbor. These stations were situated in both nearshore areas and in the navigation channel to supplement the distribution of the twenty-seven sculpin/crayfish co-located stations. The co-located surface sediment samples were collected from October 16 through 25, with an additional sampling day on November 12

All surface sediments were collected using either a 0.1 m^2 van Veen grab sampler provided by SEA or a 0.3 m^2 hydraulic power grab sampler provided by Marine Sampling Systems. A minimum of three samples were composited for each station. Co-located surface sediment sample collection procedures were observed by Dana Davoli (EPA), Helen Hillman (NOAA), and Jennifer Peterson (ODEQ).

BENTHIC INFAUNA/CLAM SAMPLING

Soft-bottom benthic samples were collected from twenty-two stations in the LWR. Benthos were collected at twelve of the sculpin/crayfish co-located sediment stations and at the ten additional stations in both nearshore areas and the navigation channel. Infauna were collected with a 0.1 m^2 van Veen grab sampler and sieved through a 0.5mm sieve box. A single replicate was collected at each location to provide a qualitative indication of the benthic infaunal assemblages throughout the harbor for the ecological risk assessment. Benthic infauna were sampled from October 22 through 25.

During the juvenile lamprey/benthic infauna reconnaissance survey conducted in September 2002 (reported under separate cover), it was determined that the non-native bivalve species *Corbicula fluminea* was likely the only soft-bottom organism that could be found in sufficient abundance and size in Portland Harbor for benthic tissue chemical analyses. Clams were collected by repeated casts of a 0.1 m^2 van Veen grab sampler at each target location. Also, at one location, an unsuccessful attempt was made to rake clams from a shallow subtidal beach. Clam collection was attempted at

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five stations over multiple sampling days. After considerable total effort (over 500 van Veen casts), two locations near the center of the ISA yielded more than 150 grams of tissue, which is the minimum biomass required to conduct tissue analyses for a full suite of target analytes. Fifty-three grams were collected at a third station, while the remaining two stations yielded only nominal amounts. Clam sampling occurred from October 29 through November 5, with an additional day on November 12

FISH AND CRAYFISH SAMPLING

Before fish tissue sampling began, the LWG established a fish sample processing field laboratory and field equipment storage area, located in former laboratory space at the decommissioned ATOFINA plant in Portland OR. This field laboratory was outfitted with a water de-ionizing unit, venting hood, two sinks, and all laboratory safety equipment listed in the SOP. David Terpening (EPA) visited and approved the use of the field laboratory space. In addition, he observed a "dry run" of the fish processing procedures and approved the methodology being used. EPA project managers Wallace Reid, Chip Humphrey and Tara Karamas conducted a final visit to the laboratory, where the fish processing team from Fishman Environmental Services (FES) clarified any additional questions about fish processing procedures.

For the ecological and human health risk assessments, eleven fish species and one crayfish species were targeted for tissue analyses. The target species for the ecological risk assessment (ERA) were northern pikeminnow, smallmouth bass, sculpin, subyearling chinook salmon, peamouth, largescale sucker, lamprey ammocoetes, and crayfish. For the human health risk assessment (HHRA) the target species were carp, black crappie, bullhead, smallmouth bass and crayfish. In addition, walleye and largescale sucker were collected as alternative species for bullhead and carp, respectively. These alternate species were not used for tissue analyses because adequate numbers of bullhead and carp were collected.

During the Round 1A collection of subyearling chinook salmon from June 24 through June 27, 2002, beach seining and dip netting were the only fishing techniques used. The beach seining procedure was observed by David Terpening and Joe Goulet from EPA, Helen Hillman from NOAA, and Jeremy Buck from USFWS. The intended mark and recapture pilot program for subyearling chinook salmon was halted after signs of heat stress were observed in fish held in buckets prior to marking.

During the Round 1 collection of all other species from July 22 through November 10, 2002, a total of six fishing techniques were used. These included beach seining, boat electrofishing, backpack electrofishing, trot line, angling, and crayfish traps. At the beginning of Round 1 field program, fishing techniques, sample handling and fish processing were observed in the field by David Terpenning (EPA) and Eric Blischke (ODEQ). Subsequent visits were made by Joseph Goulet (EPA) and Helen Hillman (NOAA), who, along with LWG consultant field managers and field crew, helped clarify issues such as station definitions and appropriate fishing methods.

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The LWG field teams collected fish in the LWR for a total of 79 days and both day and night fishing was conducted. A total of 1870 fish were collected including 863 sculpin, 419 crayfish, 128 largescale sucker, 90 smallmouth bass, 78 carp, 92 subyearling chinook salmon, 64 brown bullhead, 35 northern pikeminnow, 48 black crappie, 30 peamouth, 18 yellow bullhead, 3 lamprey ammocoetes, and 2 walleye. Forty-two individuals participated in the fish tissue collection effort. Striplin Environmental Associates staff coordinated the effort, which was carried out by personnel from Ellis Ecological Services, Fishman Environmental Services, Windward Environmental, Kennedy/Jenks Consultants, and Anchor Environmental. All people directly involved with the fishing effort were authorized to collect fish under the scientific taking permit granted by the Oregon Department of Fish and Wildlife to Ellis Ecological Services. With the exception of juvenile lamprey, the 2002 fish sampling program was successful in collecting all target species at all target locations in the LWR to satisfy the Round 1 data needs of the human health and ecological risk assessments.

Fish samples were processed at the field laboratory by a field laboratory staff led by Fishman Environmental personnel. Fish specimen sample handling and processing procedures followed those detailed in EPA-approved project SOPs and QAPP. Following final agreement with EPA on fish sample compositing schemes, frozen samples were shipped to Axys Analytical Services Ltd. (Sidney, B.C., Canada) for tissue homogenization.

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LWG
LOWER WILLAMETTE GROUP

PORTLAND HARBOR RI/FS

ROUND 2A SUMMER 2005 SURFACE WATER FIELD SAMPLING REPORT

APPENDIX A

Field Notebooks

DRAFT

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ROUND 2A SURFACE WATER
RI/FS PORTLAND HARBOR
SUMMER SAMPLING
JULY 1 – JULY 12 2005

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BOOK 1

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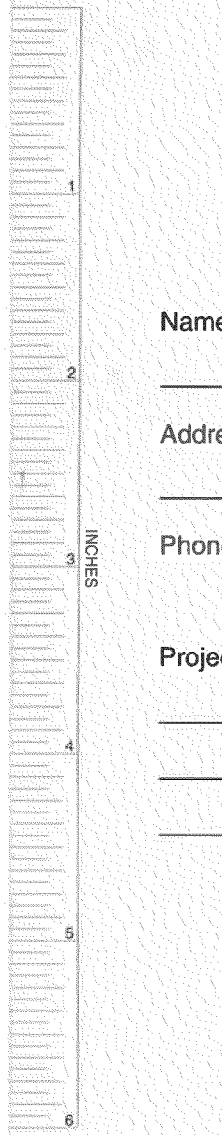

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CONTENTS

PAGE	REFERENCE	DATE

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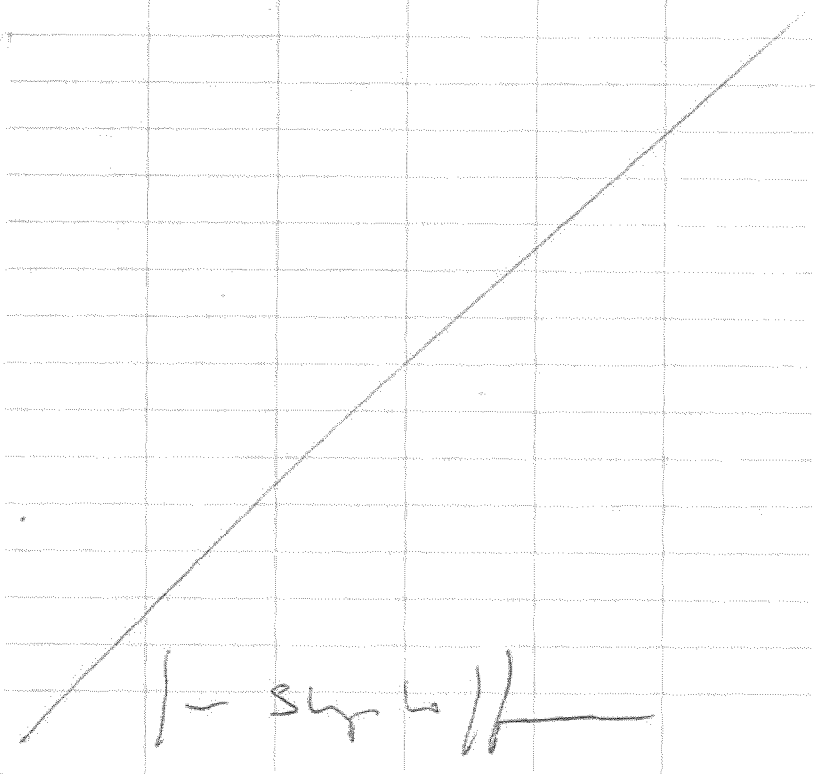
7/1/05 I. STUPAKOFF

1550 4 liters of ultra pure Axys water was passed through system. Flow rate 1.672 L/min 900 RPM, 2.5 PSI

1553 stop pumping.
0.5 μm filter sample ID
LW2-W3902F

1720 Finished mobing for the day.

I. Stupakoff



7/5/05 I. STUPAKOFF

0645 AT Field lab loading vans.

0730 At Fred Marina's loading boat
Crew: Angelita Rodriguez, Sacha Maxwell, Ian Stupakoff, Mike May.

0845 set up YSI multiprobe meter.
1) Create new files W001, W002, W003, W004.

0900 2) Calibrate YSI
DO (%)
Pressure = 763.2 mmHg

0925 DO (%) ~~98.05~~ sm 99.6
DO (mg/L) = 8.06
Temp = 26.19 °C
pH - 2 point
7.00 @ 25°C
pH before calibration = 7.00
pH after calibration = 7.00
pH 4.00 @ 25°C
pH b/f calibration = 3.98 (Sm)
pH after = 4.00
ORP = 240 mV @ 25°C
ORP b/f calibration = 233.7
ORP after = 240.0

1000 Finished setting up equipment.

7/5/05 S MAXWELL

1000 Ian called Coast Guard & Sherrif.
1005 Underway to WO01. Ian S. drive. Shift.
1006 Weather: sunny, slight breeze 80°F highs forecasted.
1015 On station WO01 (LW2-U3-LW01)
1020 Deploying sampler
1030 Start YSI logging
1031 20.36 °C
144 µs/cm², .131 ms/cm
121.8 DO %
11.00 DO mg/L
0.31 m depth
8.01 pH
~~70.4 SA~~ 155.6 ORP
1033 Stop Video recording.
1033 start ~~Pe~~ peristaltic pump.
1034 start GPS logging.
NOTES: Water turbid, chunks algae.
1037 Stopped pumping because of wake from boats & sampler is in shallow water
NOTES: Heavy algal content in water.
1042 Start peristaltic pump.

7/5/05 S. MAXWELL

1045 Stop pump: wake.
1047 start pump.
1052 Stop pump: wake
1053 start pump.
1056 Stop pump: wake.
1057 start pump.
1102 Stop GPS log.
1106 Stop pump. wake.
1108 start pump.
NOTE Collected water in carboys is slightly turbid due to algae. can see algae filaments; no sediment.
1113 20.68 °C
143 µS/cm²
123.4 DO %
11.07 DO mg/L
0.23 m depth
8.26 pH
202.5 ORP
1114 Stop pump
Stop YSI logging
1115 Bring up Sampler.
1120 Head to WO02
1122 Filling water bottles.

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7/5/05 — J. STURDEVANT

(200 Finished processing samples from W3001.

1214 Begin peristaltic pump @ W002-1
Start YSI log
Start GPS log.

1215 21.04 °C
128 mS/cm
130.6 DO %, 11.63 DO mg/L
0.70m depth
8.46 pH
179.0 ORP

1245 Stop peristaltic pump.

(1230) Stop GPS log ~approx. time.

1245 21.38°C
128 mS/cm
132.0 DO%, 11.68 DO mg/L
0.72 m depth
8.57 pH
183.1 ORP
Stop YSI log.

1245 Filling bottles.

1316 Finish filling bottles, pump out extra water

1318 Start pumping duplicate W3002-2.

NOTE Disturbance in water turbidity

7/5/05 — S. MAXWELL

Increased (Silty)

1332 Stop peristaltic Fill bottles.

1333 Stop YSI-meter

NOTES: Fine (sediment?) particles in pc carboy.

1430 On station. W3004

1434 Deploy Sampler.
Begin videotape recording

1435 Start YSI logging
24.13 °C
88 mS/cm
140.3 DO %, 11.83 DO mg/L
0.13 m depth
8.92 pH
193.3 ORP

1435 Stop video taping

1438 Start peristaltic pump

1439 Start GPS log.

1445 Stop GPS log.

1510 Fill sample jars, stop pump
Stop YSI
23.29 °C
89 mS/cm
134.0 DO %, 11.22 DO mg/L

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7/5/05 S. MAXWELL

0.164 m depth
8.60 pH
181.9 ORP
1525 bring up sampler
1528 moving to W3003.
1535 Finish filling bottles. On station.
1600 Deploy sampler
1602 Start YSI log
1602 start GPS log
20.62 °C
77 µS/cm
124.9 DO %, 11.19 DO mg/L
0.074 m
8.07 pH
203.2 ORP
1603 Start peristaltic pump.
1630 20.31 °C
76 µS/cm
121.4 % DO, 10.97 DO mg/L
0.164 m depth
7.91 pH
201.0 ORP
1638 Stop peristaltic pump. Begin filling sample bottles.

7/5/05 S. MAXWELL

1712 Stop YSI log. (forgot)
1712 check calibration:
7.0 pH reading 7.07 pH, 24°C
4.0 pH reading 4.04 pH, 24°C
ORP reading 236.5 @ 25°C
conductivity reading 1345 µS/cm, 25°C
(should read 1386 @ 24°C)
1715 At Fred's, unload boat.
Called Coast Guard
1720 DO = 101.5 %, 8.21 mg/L
1800 Leave Fred's for field lab.
1810 Unload equipment & put samples in fridges w/ COCs
1830 Finish up & leave field lab.

[signature]

7/5/05 [signature]

7/6/05 L. Shipatoff

0615 At field lab loading van.
XAD column ID 0013, 24-JUN-2005
repack ID L7919-1, spikes 240µL DX012A-STK/05
#84, 40µL CS020A-SUR/01 #7; 120µL PR013A-STK/01 #2

Filter#1 0.5µm filter ID: L7325-1
cleaned 19-Oct-04
cleaning batch L6745-28

Filter#2 0.5µm filter ID: L7327-8, cleaned 21Oct-04
Cleaning batch L6745-30

0646 Left field lab to Cathedral Park

0715 At boat ramp loading boat.

0720 Called Coast Guard and Sheriff

0735 Safety meeting.
Crew: Mike May, Jane Sund,
Sacha Maxwell, Ian Shipatoff

0739 Calibrate YSI meter
DO % = 103.2 pre-calibrate → calibrate = 100.1 %
pressure = 761.2 mmHg
temp = 22.37°C
pH 2-point: ≈3.998pH @ ≈22°C
pH ≈ 7.009 ≈22°C
pH 7.009: pre-cal = 7.08, post-cal = 7.01
pH 3.998: pre-cal = 3.99, post-cal = 4.00
sp conductivity = 1.413 mS/cm

7/6/05 S. Maxwell

pre-cal = all over the place, "out of range"
accept anyway: post-cal = 1125 µS/cm
ORP 240 mV @ 25°C, pre-cal =
239.4, post-cal = 240.1 mV

0758 At station W3-013, Willamette Cove.
NOTES: Barge at point of Cove - off loading
from barge to land.

0809 Deployment of 1-filtrex/sampler

0811 Start YSI log, video taping too.

0815 stop video recording

0818 Start Infiltrex pump - see log.

0840 Start peristaltic pump for
blank collection
Note: stir bar in glass carboy
looks to have dark black
smudge marks.

0855 YSI memory full (not sure when) - no
download YSI - no software so see log (manual)

0845 COLLECT BLANK ON Peristaltic
SAMPLE TIME: 0845
weather: cloudy, 60°F
ONLY 1/4 OF 1 Liter Amber
archive collected of 3 - 1 Liters.

0926 Finish filling rinsate sample bottles

7/6/05 S. MAXWELL

Pump out excess DI water

0933 Begin Peristaltic pump.

NOTE (previously logged GPS coordinates - not recorded at time of logging)

0945 stop peristaltic pump, fill sample bottles.

1015 complete filling bottles.

1043 Mike takes Ian in skiff to ~~SW~~ Willamette Cove. Ian takes samples back to lab. and to download YSI software onto to laptop, and retrieve Int. Itrox spreadsheet.

1240 videotaped for a minute to show material on bottom + on samples.

1445 IAN RETURNS

1520 Mike May leaves R.I. Sampler

1525 Crew switch: Kevin replaces Mike May as captain.

1630 KEVIN leaves to pick up ANGELITA RODRIGUEZ + JOSS MOORE @ Cathedral Park (note crew)

1647 They (?) arrive. Ian, Jane, Sacha leave.

7/6/05 J. MOORE.

1715 : KEVIN BACK ON BOARD.

1845 : REMOVE FILTER #1

ID: 47325-1 0.5 mm filter

- STORE IN DEDICATED JAR, ON ICE.

2129 Stopped pumping, 1000 L PUMPED

2150 Brought up Sampler

2156 Stopped YSI logging

2200 Check calibration

pH ~~4~~ 2 point @ 20 °C

pH 4 reading 3.99 pH

pH 7 reading 6.98 pH

Conductivity @ 1278 uS/cm 20°C

reading 2216 uS/cm stable

ORP = 241.51 reading

DO = 103.0% reading

9.93 mg/L

2220 Download YSI meter data

Replaced batteries in YSI meter

2238 Return to Cathedral Park & demobilize equipment & samples

2300 Return to field lab & secure samples in frig & equipment in lab

End of day

[signature]

7/7/05 S. MAXWELL

0620 6:30: I. STUPAKOF & S. MAXWELL arrive at field lab. Load equipment

0635 Leave for Willamette Cove boat ramp

0705 Unload equipment & load boat.

CREW: Mike May (Captain, Ross Island)
S. Maxwell, I. STUPAKOF (Integral)

WEATHER: Cloudy, cool, calm.

PLAN: Replicate PCB sampling at W3-013, Willamette Cove. (Infiltrex only).

0710 ~~Calibrate~~ (S) YSI - create file "W3-013-2".

0720 Hying up on station W3-013-2

0720 calibrate YSI:
DO (%) = 105.8 (pre-cal), post-cal = 100.3 %, 10.01 mg/L
pressure = 762.6 mmHg
temp. (ambient) = 15.49 °C
pH: 2 point.
pH 7.034 @ 15°C: precal = 7.03, postcal = 7.03.
pH 3.993 @ 15°C: precal = 4.00, post-cal = 4.00
Conductivity = ~~1147~~ (S) 1143 mS/cm @ 25°C, 1173 mS/cm @ 16°C
pre-cal = 2 mS/cm, post-cal = 900 mS/cm
(out of range; accept anyway)
ORP 240 mV, pre-cal = 246.6, postcal = 240.1 mV

7/7/05 S. MAXWELL

0730 put in new filters:
filter #1: ID # L7327-7, 21-OCT-04, cleaning batch L6745-30.
filter #2: ID # L7325-4
cleaning batch: L6745-28, 19-OCT-04
XAD column: L6674-32,
G.W. L6765-7, column ID: 00138
ID# L7916-8, repack date: 24-JUNE-05

0749 Record video of deployment, deploy sampler.

0753 On bottom

0753 start YSI logging - "W3013-2"

0755 start Infiltrex pump. see log

0756 Stop video recording.

* 0710 Called Sheriff & Coast Guard.

NOTES: R.I. barges 50m in front of us: Unloading dirt onto shore same as yesterday.

0844 Stop Infiltrex, bring up sampler to re-calibrate conductivity on YSI.

0845 Stop YSI log, calibrate YSI.
pre-calibrate conductivity: 984 200 µS/cm
1413 mS/cm post-calibration.

0850 Re-deploy sampler, video recording.

7/7/05 S. MAXWELL

0852 On bottom. Start YSI log, start Infiltrex pump. Stop video recording.

0925 Ian leaves for boat ramp to go to field lab. (Mike may driving skiff)

0935 Mike Returns to R.P. Sampler.

1125 NOTE: Particle board + wood debris floating near boat (may be from barge or disturbance due to barge anchor lines)

1201 Stop Infiltrex — no pressure — very low flow algae in line — clog. Trickle.

1202 Remove tubing and metal filter. rinse w/ ultra pure DI water and tap on foil to dislodge debris — small particles — reinstal.

1210 Re-start Infiltrex — OK.

1220 Mike takes skiff to pick up Ian at C.P. boat ramp.

1235 Ian & Mike return.

1239 Stop Infiltrex pump. change metal filter (put on clean one) b/c suspect son-clogging still present.

1240 Start Infiltrex.

1436 Shoreline activities by Ross Island Sand & Gravel using a dredge

7/7/05 S. MAXWELL

crane with bucket to remove sand from barges to shore has significant impact of sandy dust on boat surface and water column.

1516 Stop Infiltrex & move sampler slightly. It had shifted a bit.

1518 Start Infiltrex.

1555 Mike takes skiff to pick up A. Rodriguez (WW) & J. Moore (ICI)

1607 CREW Shift: Rey (A) replace S. MAXWELL & J. STUPAKOF (ICI)

16[illegible] Conduct HEALTH AND SAFETY MEETING FOR THE NIGHT CREW

1830 Switched from filter #1 to filter #2 Stopped XAD pumping to remove filter #1, L7327-7

1832 Started XAD pumping again.

1900 : MIKE AND ANGIE MOB TO CATHEDRAL PARK FOR REST STOP.

1915 : MIKE AND ANGIE RETURN.

1917 Stop Infiltrex to remove 140µm filter because it is clogged ~~with~~

1921 Start Infiltrex with new clean 140µm filter

7/7/05 A. RODRIQUEZ

1923 Stop Infiltrex because it did not resume pumping water then back flushed the system

1927 Resume pumping & start Infiltrex

2158: STOPPED INFILTREX, 1016 L pumped - REMOVE FILTERS, #2, @ 27325-4 AND XAD COLUMN L 6674-32. STOP LOGGING YSI

2214 Check calibration @ 20°C
pH 2 pt @ 20°C
4pH reading @ 4.05
7pH reading @ 7.01
ORP 240mV reading @ 235.4
Conductivity reading @ 1308 µS/cm
DO = 98.7% DO = 8.98 mg/L

2233: DOWNLOAD YSI, SAVE AND CLOSE OUT.

2240: CALL COAST GUARD & SHERIFF - MOB TO CATHEDRAL PARK.

2320 Arrive at field lab & demob equipment & secure samples

2325 Decon Infiltrex, refer to Book 2 pg. 18, 7/14/05

2430 Finish cleaning Infiltrex
End of day

Angelita R. Bechelly 7/7/05

7/8/05 S. MAXWELL

0615 At field lab loading van

0635 Left field lab to Cathedral Park

CREW: I. STUPAKOF, M. TANNOR, S. MAXWELL, Mike May (Captain, R.I.)

WEATHER: Cloudy, rain likely, cool, breezy to windy.

0705 At boat ramp loading van

0715 Called Coast Guard & Sheriff

0730 Calibrate YSI - wait for DO

0730 Set up carboys

0740 Ian drives skiff. Head to WB006.
YSI - pressure = 759.0 mmHg
temp (ambient) = 16.4 °C (also solution temp.)
DO % pre-cal = 101.4, post-cal = 99.8 %.
Conductivity (spCond)
1.413 mS/cm: pre-cal = 1 µS/cm°, post-cal = 1362 µS/cm°
pH 2-point: 7.034 @ 15°C
pre-cal =
(entered 7.02 for ~16°C)
post-cal = 7.01, post-cal = 7.02
pH 3.993 @ 15°C: pre-cal = 3.99
post-cal = 3.99.

7/8/05 S. MAXWELL

ORP 240 mV: pre-cal = 242.9, post-cal = 240.1 mV.
Redo conductivity: Spl and.
1.413 mS/cm: pre-cal = 2490 µS/cm
post-cal = 1185 µS/cm, 1400 µS/cm c.

0755 Create files "W3006"
0755 anchoring on station W3-006.
0807 Deploying Sampler, videotaping.
0808 Start YSI log, on bottom
0810 Start ~~[illegible]~~ peristaltic pump. (SW)
0810 (SW) Stop video recording.
0810 Take GPS position.
0840 Stop peristaltic pump. Fill sample bottles.
0838 stop YSI log.
0840 Bring up sampler and anchors.
0845 move to W3-007.
0855 setting up on station, Finish filling bottles.
0930 Deploy sampler. recording on video.
NOTE smell of solvent in air. Barge nearby is a barge w/ crude drips on sides. visible black crude on top of barge - guy shoveling it.
0940 Reported it to Coast Guard. Took photos.

7/8/05 S. MAXWELL

0945 Record GPS position - note - need to erase some points, start YSI log.
* 0900 Ian takes skiff to pick up supplies (carboys) from the field lab.
1001 Ian returns to R.I. Sampler
NOTE sheen on water (slight, but around sampling boat).
* 0900 Health & safety meeting.
1009 start peristaltic pump.
Record of events:
0900: saw spill over side of barge - black crude-like streaks. Took photos. Before we had set up - man in white hardhat ~~and~~ on large marine skiff with windshield drives quickly in behind us - talks to 2 guys w/ no hardhats who suddenly arrive on barge deck. They try to shovel the crude/solvent-like mixture from ~~off~~ deck. (SW) ~~[illegible]~~ Supervisor ties a rope on a piling ~~(to distract us?)~~ and leaves. I called Coast Guard at 0940 a man in a skiff and

no pads, no shoves.

into hull.

7/8/05 S. MAXWELL

0950 Two women w/ file folders arrive
0950 and ask us what we are doing. Make
May told them we are water sampling
& work for LWG (Integral Consulting)
They leave. No booms around
barge. Sheen on water near our boat is a
network of oil + pockets - not
solid - like it is mixed w/ solvent.
1000 Coast Guard + DEQ call me. DEQ
1000 records my call. The barge is called
"Boaz" from Seattle. Half empty -
lifted in front; full in back. Guys slipping all
1000 Coast Guard arrive at dock + inspect
(see photos for details).
NOTE some wood debris in carboys.
1035 Finish filling carboys - stop peristaltic
pump. Fill water bottles.
1035 Stop YSI log.
* cont. all over boat deck & covered in crude.
1000 No safety gear. Showing Coast
1030 Guard around deck @ 1030.
1040 Underway to W3-008.
1050 set up at station.
1100 Deploy sampler & videotape. Crappies
in water: see video. Also at W3007.

7/8/05 S. MAXWELL

1100 Finish filling sample bottles &
set up new carboys.
1107 Start YSI log.
20.32°C
99 µS/cm
90 µS/cm
48.2 mg/L DO
1.53 m
7.47 pH
239 ORP
1108 Record GPS position.
1117 Start peristaltic pump & fill
carboys.
1150 Stop peristaltic pump. Fill
sample bottles.
1150 Bring up sampler.
1155 Move to station W3-009
1150 Stop YSI logging (late)
1210 At station W3-009.
1215 Deploy sampler; video record.
1218 Start YSI log.
1220 Start peristaltic pump.
1250 Stop peristaltic pump. Fill
sample bottles.

7/8/05 S. MAXWELL

1252 Stop YSI Log
1253 Bring up sampler.
1256 Head to Cathedral Park boat ramp to unload equipment.
1258 Check YSI calibration
pH 7 reads 6.93
pH 4 reads 4.02 @ 15°C
Conductivity reads 1144 mS/cm
ORP reads 257.6 mV
DO reads 100.2%
1315 Packed van & leave for lab.
1335 Arrived at field lab and unloaded van.
1437 Finished processing samples and demobing.
Uploading data from YSI
1500 Done for the day

7/11/05 I. STUPAKOFF

0615 At field lab loading van
0635 Left lab towards Swan Island Lagoon
0653 At boat ramp loading boat.
0705 Called Coast Guard and Sheriff
0706 Healthy Safety Meeting
0755 Sonde calibration (ARL)
YSI pressure = 761.7 mm Hg
Temperature (ambient) = 19.25°C
DO% pre-cal = not recorded
post-cal = 100.1%
Conductivity 1.413 mS/cm
pre-cal = 1393 µS/cm post-cal = 1282 µS/cm
pH #1 pre cal = 7.07 post cal = 7.01
(entered 7.01)
pH #2 (entered 4.00)
pre-cal = 4.04 post-cal = 4.00
ORP (entered 240 mV)
pre-cal = 225.8 post-cal = 240.5

0830 0.5 µm filter ID L7325-8
clean 19-90-04 batch L6745-28
XAD column ID 00135
repack ID L7916-5 date 24-Jun-05
XAD: L6674-32 G.W.: L6765-7

ANC07041
BZTO104(e)007041

7/11/05 A. Wood

Spiked with 240 µL DX012A-STK/03 #86 40 µL CS020A-SUR/01 #7 120 µL PRO13A-STK/01 #2 date 26-6-05

08:35 Left boat ramp

09:20 arrived at WB-023 EDI 1

0930 Calibrated peristaltic pump to 0.2 L/min

0936 ascent/descent calibration

#1 start time 09:38 start depth = 1.6 m
end time 09:39 end depth = 2.48 m

#2 start time 09:40 depth = 2.88 m
end time 09:41 depth = 2.08 m descent rate = 0.8 m/min

CREW: IAN SCHEKAFF, JOHN HARRIS, ALICE WOOD

WEATHER: OVERCAST, BREEZY

09:50 Infiltrex pump start

09:52 Infiltrex sampling start 09:52 Began calibration

0953 Began peristaltic pump & lowering sonde

0957 peristalic pump preferentially pumping to glass carboy due to low pumping rate. Fixed by adjusting tubing.

7/11/05 L. Schaffner

10:04 Water depth 12 m

10:15 Began logging GPS position

10:16 Touched bottom & reversed to ascent
Depth at bottom ≈ 15.3m

10:32 Depth = 5.87 m

10:39 Hit surface

10:42 stop both I-filtrex & Peristaltic

10:43 Heading to EDI 2.

10:45 Stopped logging GPS for EDI-1

10:50 Began pumping for EDI-2 both peristaltic and Infiltrex

10:56 Began lowering sampler (0.8 m/min)

10:58 YSI was not logging at EDI-1

10:58 Began YSI logging for EDI-2

11:00 Water depth ≈ 17.0m

11:05 7.187 m probe depth & descent rate 0.23 m/min

11:06 7.42 m " "

~~11:08~~ 9.75

11:17 never descent rate = 0.44 m/min
Touched bottom & Began ascent
Bottom depth of probe = 15.5

11:40 Stopped I-filtrex & peristaltic

ANC07042
BZTO104(e)007042

07.11.05

1153	Began peristaltic and Infiltrex pumps & descent
1154	probe depth = 1.46 m
1155	Began GPS logging
1201	~~3.44 m~~ descent check
1202	3.94 m & descent rate = 0.54 m/min
1203	4.43 m
1207	6.17 m & " " = 0.69 m/min
1208	6.52 m
1224	probe depth = 12.1 m
1228	water depth 15.0 m
1231	Stopped both pumps — no flow on Infiltrex. Depth = 13.9 m
1232	touched bottom Depth = 13.94 m
1233	Reversed Infiltrex flow
1236	Raised probe/sampler, found a kink in the tubing approximately 8 ft from the intake. Repaired kink with zip-tie & duct tape
1245	Began lowering probe/sampler
1249	Probe depth = 13.16 Began Infiltrex & peristaltic pumps
1252	Stopped both pumps - ~~Infiltrex~~ not working

07.11.05

1254	Checked prefilter — clean. Raised RPM to ~1200 to work through air bubbles
1255	Dropped RPM to 850 & began pumping peristaltic & Infitrex. Began ascent of probe.
1312	Stopped both pumps & stopped raising ~~probe~~ probe
1330	~~Dept~~ YSI memory full. Uploaded W3023-2.dat & W3023-3.dat to laptop
1341	Began both pumps & probe descent at EDI-4 Water depth 12m
13:42:15	0.960m & descent check
13:43:15	1.901 m & 0.935 m/min
1352	At bottom of EDI 4 Could not see sediment at bottom through video camera. Must have touched rocky bottom.
1401	Started logging YSI.
1410	Stopped peristaltic pump Probe depth = 3.24 m

ANC07043
BZTO104(e)007043

07.11.05

1431 Began Infiltrex pump at EDI-1
Began lowering probe at EDI-1

1447 Probe depth 10.7m Touched bottom and began raising probe

14:55:15 6.02m } ascent rate = 0.57 m/min
14:56:15 5.45m }

15:03 Reached top, began descending again. Finished filling sample bottles from carboys

15:~~08~~ 12 PM Began GPS logging
Began YSI logging

15:20 Reached bottom, began ascending

15:23 Infiltrex pump not working. Raised probe/sampler to examine for problems

1532 Began pump for Iltrex

15:38:30 1.746m } 0.40 m/min descent rate
15:39:30 2.15m }

1556 John Harrie leaves to pickup crew replacement at Swan Island Lagoon.

07.11.05 TDO

1612 Reached bottom at ~7.9m
Began ascending

16:39 Began lowering

1708 Shift change: Mike May, Ian Stupakoff,
~~1713 Begin EDI 2-B~~ AR Alice Wood,
John Harrie (day crew) replaced by
Angelita Rodriguez, Thai Do, Joss Moore,
& Kevin Harlan (night crew)

1713 Begin EDI 2-B descent
1809 Begin EDI-2B ascent @ 16.1m bottom depth
1849 Begin EDI-2B descent
1921 Begin EDI-2B ascent @ 16.3m bottom depth.
1926 End EDI-2B
1929 MOB to EDI-3B
1933 Begin EDI-3B descent
2011 TDO Begin EDI-3B ascent @ 13.7m bottom depth.
2047 Begin EDI-3B descent @ 0.326m
2116 Begin EDI-3B ascent @ 13.5m bottom depth

07-11-05 / 07-12-05 TDO

21:51 Begin EDI-3B descent @ 0.05m.
22:00 Ended EDI-3B (804L)
22:05 MOB to EDI-4B
22:10 Begin EDI-4B descent @ 0.45m
22:29 Begin EDI-4B ascent @ 10.9m bottom
22:40 Stopped logging and pumping to download YSI W3-023-04 to laptop
22:59 START YSI LOGGER W3-023-05 FILE, ON EDI-4B, START INFILTREX. START RADIAL SAMPLER
NOTE: YSI FILES 01/03/04 DELETED FROM MEMORY AS NO MEMORY TO START 05.
23:18 Begin EDI-4B descent @ 0.130m
23:47 Begin EDI-4B ascent @ 11.99m bottom
00:15 Begin EDI-4B descent @ 0.083
00:31 Ended EDI-4B (1001L)
00:40 YSI READINGS
pH 4 - 4.05
pH 7 - 7.02
DO % - 107.5 DO mg/L - 10.17
Cond - 1434
ORP - 238.3

07/12/05 T.DO

01:25 Depart Swan Island Lagoon for field lab
01:40 Arrive at field lab
01:51 Begin Infiltrex decon process
02:25 INFILTREX DECON COMPLETE
02:35 - LAB SERIES, CHARGE ON FOR GAS. DEMOB.

TM
07/12/05

ANC07045
BZTO104(e)007045

7/12/05 I. STUPAKOFF

0530 At field lab unloading and loading van

0543 left field lab to Cathedral Park

0602 At boat ramp

0615 Loading boat

0641 Began calibrating YSI
AIR PRESSURE 764.9 mm Hg
D.O. pre-calibration = 105.3 %
D.O. - post calibration = 100.6 %
Initial temp = 16.96°C
Final temp = 17.60°C
Cond pre-cal = 1359 µS/cm²
Cond post-cal = 1422 µS/cm²
pH #1 (entered 7.01)
pre-cal = 7.11 post cal = 7.00
pH #2 (entered 4.00)
pre-cal = 4.04 post-cal = 4.00
ORP (entered 240 mV)
pre-cal = 239.6 mV post-cal = 240.3 mV

0702 Finished calibrating YSI.
Arrived at W3-011-EDI1
Large slip docked near EDI1 location

7/12/05 I. STUPAKOFF

XAD column ID 00139
Repack ID L7916-9, 24 JUN-2005
XAD: L6674-32, G.W. L6765-7
Spiked with 240 µL DX012A-STK/03 #89; 40 µL CS020A-SUR/01 #7; 120 µL PR013A-STK/01 #2, JUNE 26, 2005.
0.5 µm filter ID L7327-4
cleaned 21-oct-2004
cleaning batch L6745-30

0713 Target probe ascent/descent rate = 0.6 m/min

0719 At W3-011-01
Water Depth = 13 m
Began Peristaltic pump. Probe depth 0.412 m

~~0720 Began Infiltrex pump~~

0721 Weather: overcast, warm
Crew: Ian Stupakoff, John Harrie, Alice Wood
Pilot: Mike May

0723 Infiltrex pump not working. Was attempting to run through empty filter #2. Corrected to filter #1.

0724 Began Infiltrex pump

Depth descent calibration

7:26:30 2.57m } 0.68 m/min
7:28:30 3.93m }

0728 Start logging YSI
0730 Start GPS logging
0743 touched bottom Depth ≈ 13.0m

07:52:15 8.1m } 0.48 m/min
07:53:15 7.62m } ascent rate

0806 Reached surface
Turned off both pumps
Logged off YSI & GPS

0811 began logging YSI & GPS at W3-011-02
0813 began both pumps
0814 began lowering probe
0817 water depth at W3-011-02 = 14m

08:18:10 2.65m } 0.41 m/min
08:19:10 3.24m } descent rate

839 Touched bottom. Probe depth = 14.4m
Reversed direction to ascent.

8:43:15 9.5m } 1.0 m/min
8:44:15 8.49m } ascent rate

09:03 STOPPED Ascent
moved to EDI #3

09:06 ON EDI #3 WATER DEPTH 15M
09:08 PERISTALTIC ON / GPS Logging
09:09 INFILTREX ON
& STARTED Descent
09:10 YSI START Logging
Descent Rate 0.5 m/min
09:20 ADJUSTED RATE
~~8.50~~ 8.40 09:22:45
10.40 09:25:10
2 min 25 sec
/ 2 m
= 1.2 m/min
V with stop watch 1/2 m / 76 sec

09:33 Depth 15.6 m
09:34 STARTED Ascent
09:36:25 13.045 }
09:37:25 12.154 } 0.891 m/min
09:50 STOPPED Ascent
09:51 dropped pumps
move TO EDI #4

ANC07047
BZTO104(e)007047

7/12/05 JH/ES/AW Tues.

952 moved away from mid channel for barge to pass. Downloading YSI data.

10:07 ON EDI #4, start GPS
START Peristaltic & IFTRX

10:09 START Desent w YSI
10:13:30 3.112 } 0.891 m/min
10:14:30 4.003 }

EDI #4 15 meters

10:28 BOTTOM @ 16.4'
STARTED ASENT
10:31:30 13.668 } 0.833 m/min
10:32:30 12.835 }

10:45 STOPPED Asent
10:46 STOPPED Peristaltic
10:47 STOPPED INFTRX

10:51 ON EDI #5 Depth 9 m
10:52 STARTED Peristaltic
10:53 STARTED INFTX
10:54 Desent START
RPm @ 870 1053
to 10:59

7/12/05 TUES JH/ES/AW

10:59 RPm @ 800
11:01 RPm @ 830
11:04 RPm @ 820

11:08 BOTTOM 13.4 m
STARTED ~~ASENT~~ Ascent

11:10:00 11.970
11:11:00

11:10 STOPPED PUMPS
Due to SEDIMENT
STOPPED ~~ASENT~~ Ascent
& BROUGHT to SURFACE

REVERSED FLOW BOTH PUMPS to CLEAR
11:20 LOWERED to DEPTH of 9.608
11:21 STARTED PUMPS PERISTALTIC on & PUMPING INFTR OUT
11:23 RESUMED ~~ASENT~~ Ascent

ANC07048
BZTO104(e)007048

7/12/05 Tues J/ES/AW

EDI 5 Cont.

11:29:00 5.579 } 0.764 m/min
11:30:00 4.815 }

11:35 Stopped Ascent
11:36 Peristaltic off
11:39 IX off

EDI #1

11:51 on EDI #1
Started Pump (IFX) 13 m Depth

11:52 Started Descent

11:53:00 1.034 } 0.704
11:54:00 1.738 }

12:12 Stopped Descent
12:13 Ascent
12:14 Ship Osprey Arrow pulled Boom & started to wash Deck 20-30 yds upstream of Position
12:17 Discharge from Ship Stopped

12:34 Stopped Ascent
12:37 Down (Descent)
12:59 Stopped Descent
13:01 Ascent Started
13:14 Stopped Ascent
13:17 Down Again

13:20:00 3.337 } 0.791
13:21:00 4.128 }

1323 RPM to 840
1329 Stop & Started Ascent

13:34:00 8.95 }
~~13:35:00~~ } 0.875 L/m
13:36:00 7.242 }

1344 Reached top.
Tow boats coming into EDI-1 area to move large ship about 30 m away from EDI-1
Continued last 9L of sampling for EDI-1 from surface in order to be able to quickly move away from the tow boats

1346 Stopped sampling from EDI-1 & left early in add to move away from tug boats.

1347 Began moving boat to EDI-5

1350 Arrived at EDI-5

1356 Setting both anchors at EDI-5

1412 Finished setting anchors at EDI-5

1413 Began pumping Infiltrex at EDI-5

1414 Began lowering probe

1416 Began YSI logging

1418:00 3.07m } descent rate at EDI-5

14:19:00 3.28m } = 0.21m/min

1437 6.8m → near bottom. Tug boats turning around very large ship. Ship & tug came within 50m of EDI-5 during sampling.

7.0m ↗ hit bottom. Turned on winch just above bottom.

Ship name → Osprey Arrow (Nassau)
" company → Great Bulk
Tug name → Jim Moore

1439 Turned off Infiltrex pump at 7.01m. Watched camera to make sure the ship movement did not

1445 Began Infiltrex pump & began raising probe

1448 Forgot to lower winch speed & raised probe out of water too quickly. Stopped Infiltrex & YSI probe

1453 Returned probe to 6.3m

1453 Began Infiltrex pump. Many air bubbles in the line

14:55: Most air bubbles gone

14:55:30 5.83m } ascent rate

15:56:30 5.53 } = 0.3 m/min

15:10 1.18m. Stopped ascent

15:11 Began descent

15:13:00 1.944 } 0.437 m/min

15:14:00 2.381 }

15:24 5.7m depth. Stopped descent

15:25 Began ascent

15:26:30 5.55m } 0.3 m/min

15:27:30 5.2 }

15:30 J. Harris took skiff to pick up evening crew

ANC07050
BZT0104(e)007050

07.12.05 TDO

15:40 0.95m depth. Began descent.
15:42:15 1.57m } 0.37m/min
15:43:15 1.94m }
1556 5.5m depth. Began ascent

1559 Shift change Mike May, Ian Stupakoff, John Harrie, Alice Wood (day crew) replaced by Joss Moore, Angelita Rodriquez, Thai Do & Kevin Harlan (night crew)

1612 Completed EDI-5B Stopped logging YSI and Infiltrex. Collected 577L so far. MOB to EDI-4B

1633 Begin EDI-4B descent. Start logging YSI and Infiltrex @ 0.625m.

1704 Begin ascent EDI-4B @ 14.6m bottom depth

1708 Stopped Infiltrex and YSI logging to upload data files into laptop. (YSI memory full). EDI-4B

1714 Began logging YSI and Infiltrex data for EDI-4B- new file created called W3011-6

1744 Pump stopped to reset tubing @ top. (0.41m) Stopped logging.

07.12.05 TDO

1752 Resume logging, Begin descent @ 0.57m EDI-4B

1757 Stopped logging YSI & Infiltrex. EDI-4B complete (714L total)

1801 MOB to EDI-3B

1803 Begin YSI & Infiltrex logging @ 0.57m @ EDI-3B

1838 Begin ascent for EDI-3B @ 14.5m bottom depth

1911 Begin descent for EDI-3B @ 0.47m

1945 Infiltrex and YSI stop logging. EDI-3B completed. MOB to EDI-2B.

1951 Begin descent for EDI-2B @ 0.45m Reset RPM on Infiltrex to 870. Started logging YSI & Infiltrex

2024 Begin ascent for EDI-2B @ 14.0m bottom depth.

2057 Begin descent for EDI-2B @ 0.37m

2128 Begin ascent for EDI-2B @ 14.5m bottom depth.

2148 Completed EDI-2B. Stopped Infiltrex and YSI log. (1001L collected)

2154 BEGIN READINGS FOR YSI

ANC07051
BZTO104(e)007051

07/12/05 J. MOORE

PH 4 - 3.94
PH 7 - 6.93
Cond - 1443
ORP - 240.3
DO mg/L - 9.76

1015 W/WAS EQUIPMENT AT CATHEDRAL PARK. - CALL COAST GUARD AND SHERIFF.

1051 Arrive at field lab, demob & secure Infiltrex samples

1053 Begin Infiltrex decon

1123 Complete Infiltrex decon

1140 SECURE LAB. ALL CREW OFFSITE.

JM
7/12/05
1145

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BZTO104(e)007053

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ANC07054
BZTO104(e)007054

7/13/05 J. Harrie, A. Wood, L. Stupakoff
0535 At field lab loading van.
0545 Left field lab to Fred's Marina
0630 Boat is loaded. Setting up equipment and calibrating
DO (entered 767.5 mmHg)
pre-cal = 104.1% post-cal = 101.0%
Temperature = 14.84 °C
Conductivity (entered 1413 mS/cm)
pre-cal = 1418 µS/cm post cal = 1406 µS/cm
pH #1 (entered 7.01)
pre-cal = 6.97 post cal = 7.01
pH #2 (entered 4.00)
pre-cal = post cal = 4.01
ORP (entered 240 mV)
pre-cal = 240.6 post cal = 240.7
0640 Began moving towards W3005-EDI-1
0641 Jon called Coast Guard & Sheriff's
0642 Crew: Jon Stupakoff, John Harrie, Alice Wood Pilot: Mike Alaya
Weather: Overcast, warm
0702 At W3005-EDI-1 Sampler & probe positioned at surface of water

7/13/05 J. Harrie, A. Wood, L. Stupakoff
0703 Water depth = 10 m
0705 at W3005-EDI-1. Turning on Infiltrex pump. Checking flow and filter.
Target ascent/descent rate = 0.64 m/min
0715 Teflon liner in Infiltrex tubing causing clog at connection to Infiltrex unit. Cut off ~3 inch portion of tubing & reconnected.
0720 Infiltrex pump still not working. Removed Infiltrex cover & tightened connections
0732 Infiltrex pump still not working. Tightened K&D connections
0743 Began Infiltrex ~~& Peristaltic pumps~~.
0744 Began Peristaltic pump
0754 7:54 3.83 } 0.47 m/min descent rate
7:55 4.30 }
0808 @ Bottom DEPTH 11.2 m
Reversed & started Ascent
08:13:15 10:038 } 0.513
08:14:15 9.525 }
L.S. 7.14.05
* Exacto knife was decontaminated with Alconox, acetone & methanol batches prior to cutting tube

ANC07055
BZTO104(e)007055

7/13/05 WED. JH/ES/AW

EDI #1 Cont.

08:18:30	6.930	} 0.63	m/min
08:19:30	6.296		

8:28 STOPPED Ascent & Peristaltic pump

0831 STOPPED IFX & TSI Logging

EDI #2

0835 on LOCATION EDI #2 13 m Depth

STARTED Peristaltic

0837 STARTED IFX & Descent

08:41:00	2.82	} 1.24	m/m
08:42:00	4.057		

0842 Slowed Descent

08:42:15	5.091	} 0.755	
08:43:15	5826		

0856 @ Bottom 13.6 m

STARTED Ascent

9:00:15	11.187	} 0.798	
9:01:15	10 389		

7/13/05 JH/ES/AW

EDI 2 Cont.

09:03:15 ~~9:52:22~~	9.522	} 0.44	m/m
09:04:15	9.078		
09:05:00	8.491	} 0.48	m/m
09:06:00	8.008		
09:07:00	7.347	} 0.606	m/m
09:08:00	6.741		

0917 Reached top (0.27 m)
Stopped peristaltic pump

0919 Stopped logging GPS & YSI
Stopped IFX pump

0922 Arrived at EDI-3

0923 Began peristaltic pump

0926 Began IFX pump

0928 Stopped both pumps because the boat drifted far off location

EDI #3

0934 Arrived back at EDI-3 14 m

0935 Began peristaltic pump

0936 Began IFX pump

09:44:00	4.902	} 0.632	m/m
09:45:00	5.534		

ANC07056
BZTO104(e)007056

7/13/05 Wed 15/JH/AW

EDI 3 Cont

10:00 Bottom @ 15.3 meters
STARTED Ascent
10:01:00 15.023 } 0.611 m/m
10:02:00 ~~14~~ 14.412 }
10:25 Stopped ascent, stopped both pumps, stopped logging
10:28 arrived at EDI-4. Water depth = 16m
Started peristaltic
Started YSI logging
10:30 Started IFX pump
~~10:34:30 0.31~~
~~10:35:30~~
10:35 Did not have clamp on descender button. Started descent.
10:36 0.86m } 0.84 m/min descent rate
10:37 1.7 m }
10:38 2.36 m } 0.61 m/min
10:39 2.97 m }
11:04 Reached bottom. Depth = 16.86 m
Began ascending

7/13/05 15/JH/AW

11:06 Checked ascent rate
11:06:15 15.23m } 0.49 m/min
11:07:15 14.74m }
11:07 Increased ascent ~~rate~~ rate
11:08:10 14.33m } 0.53 m/min
11:09:10 13.80m }
11:10 Increased ascent rate
11:10:00 ~~13.81m~~ 13.34m } 0.64 m/min
11:11:00 12.70m }
Increased ascent rate
11:12:00 12.03m } 0.65 m/min
11:13:00 11.38m }
11:13 Stopped peristaltic pump because carboys becoming full
11:27 Stopped ascent at 0.27m
Stopped YSI logging & IFX pump
11:28 Began moving to EDI-5
11:31 Arrived at EDI-5 16m Depth
11:32 START PERISTALTIC
11:34 IFX on & YSI
1135 STARTED DESCENT
11:37:15 2.106 } 0.799
11:38:15 2.905 }

ANC07057
BZTO104(e)007057

7/13/05 Wed 1.S/JH/AW

EDI #5 cont

11:39 Stopped peristaltic pump and emptied approx. 3L in order to make room for more sample

1143 Started peristaltic pump.

1156 Bottom @ 16.6 m

STARTED Ascent

12:00:00	13.792	0.676 m/m
12:01:00	13.116	
12:01:45	12.607	.641 m/m
12:02:45	11.325	
12:05:30	9.981	0.823 m/min
12:06:30	9.158	

1216 STOPPED Ascent & Both pumps.

EDI #6

1224 On location Depth 12 meters

STARTED INFX & YSI

1225 Descend & STARTED Peristaltic

12:29:30	3.163	0.677 m/m
12:30:30	3.840	

7/13/05 1.S./JH/AW

EDI #6 cont

12:31:30	4.655	0.994 m/m
12:32:30	5.649	
12:33:45	6.763	0.799 m/min
12:34:45	7.562	

1240 Bottom 11.8 meters

1241 Ascent

12:42:00	10595	0.878
12:43:00	9.717	

1250 Turned off peristaltic pump

1251 IFX off YSI off. Jon is filling sample bottles from carboy

1314 Anchors set at EDI-1

1320 Began IFX pump & descending probe.

13:24:45	2.44m	0.44m/min
13:25:45	2.88m	

1326 Reduced descent rate

13:27:00	3.37m	0.14m/min
13:28:00	3.23m	

1342 YSI memory full. Downloaded.

1351 Began logging YSI. Depth=9.7m Began ascending.

ANC07058
BZTO104(e)007058

7/13/05 IS/JH/AW

1353 Checked ascent rate
13:53:30 9.20m } 0.35m/min
13:54:30 8.85m }

1402 Calculations by Ian indicate that 114L should be pumped through the IFX at each of the six EDIs.

1403 In YSI changed the station names for the second sampling pass to W3-0051B, W3-0052B, etc.

1406 Increased IFX RPM to 900

1416 Depth = 0.46m. Began descent

1440 Depth = 10.5m. Touched bottom. Began ascent.

1442 14:42:30 8.74m } 0.44m/min
14:43:30 8.30m }

1455 Depth = 3.43m. IFX volume = 425L. Meets target volume for EDI-1B

1457 Began raising anchor.

1458 Stopped logging YSI

1536 Arrived at EDI-2

1538 Slow to Infiltrex at EDI-2. Began descent

07.13.05 TDJ

1544 Checked descent rate
~~15:44:30 3.29m~~
15:54 5.49m } 0.28m/min
15:55 5.77m }

1559 Large wake. Shifted Infitrex. Knocked clamp off & ascend/descend button. Replaced as quickly as possible & continued the descent
16:05:45 8.21m } 0.15 m/min
16:06:45 8.36m }

1608 Depth = 8.64m
YSI batteries low. Stopped logging.

1613 Batteries are replaced on the YSI. Began logging again. Evening crew arrived on the ship.

1614 Shift change. Mike May, Ian Stupakoff, Alice Wood, John Harrie (Day crew) replaced by Angelita Rodriguez, Thai Do, Joss Moore

1629 Begin ascent for EDI-2B @ 13.5m bottom depth.

1638 Completed EDI-2B (567L) MOB to EDI-3B (Stopped Infiltrex & YSI)

ANC07059
BZTO104(e)007059

07.13.05. T.D.

16:45 Start YSI & Infitrex @ EDI-3B
16:47 Begin descent for EDI-3B @ 0.7m.
17:17 Begin ascent for EDI-3B @ 14.5m bottom depth
17:48 Begin descent for EDI-3B @ 0.1m.
17:54 End EDI-3B @ 3.3m. Stopped logging YSI & Infitrex. MOB to EDI-4B. Increased Infitrex to 950 RPM (659L @ EDI-3B)
1759 Start YSI and Infitrex @ EDI-4B
~~1846~~ Start descent for ED-4B
1846 Start ascent @ EDI-4B @ 16.3m bottom depth
1920 Start descent @ EDI-4B @ 0.2m.
1924 Stop descent and YSI/Infitrex logging. EDI-4B completed (777L). MOB to EDI-5B.
1928 Start logging YSI/Infitrex @ EDI-5B @ 0.69m (descent)
2003 Begin ascent for EDI-5B @ 15.3m bottom depth
2035 Begin descent for EDI-5B @ 0.30m.
2055 Completed EDI-5B (842L)
Stop logging YSI/Infitrex. MOB to EDI-6B

07.13.05 T.D.

2059 Begin descent @ EDI-6B @ 0.3 m.
2100 Begin YSI/Infitrex logging for EDI-6B.
2122 Begin ascent @ EDI-6B @ 12.03m bottom depth
2147 Begin descent @ EDI-6B @ 0.26m
2218 Begin ascent @ EDI-6B @ ~~19.5~~ 20.51m bottom depth
2224 Stopped logging YSI/Infitrex.
7/20/05 1.5. Completed EDI-6B (1002L)
2235 - BLEW IN SAMPLER, BEGIN TUBE REMOVAL AND FINAL DART
READING FOR YSI
PH 4 - 4.02
PH 7 - 6.96
Cond - 1236
ORP - 239.5
Temp - 9.87°
2250 - ARRIVE FRED MARINA - BEGIN DEMOB. - UPLOADED YSI FILES WJ-00518 THRU WJ-00563.
2340 Begin Infitrex decon
2400 Complete Infitrex decon
Anderson RB 7.14.05

ANC07060
BZTO104(e)007060

07/14/05 I. Stupakoff

0630 At field lab loading van. Downloading data to server and copying field note books.

0720 At Swan Island Lagoon loading boat.
Crew: Mike Kay, Ian Stupakoff, John Harrie, Alice Wood.
Weather: overcast, mild wind.

0725 Called Coast Guard & Sheriff

0730 Left Swan Island boat ramp towards WQ18
Installed XAD column and filter

0745 At station WQ18
Column ID 00134
Repack ID L7916-4
Repack Date 24-JUN 2005
XAD: L6674-32, G.W. L6765-7
Spiked with 240 µL DX012A-STK/03 #85, 40 µL CS020A-SUR/01 #7, 120 µL PRO13A-STK/01 #2, 26 JUN 2005.
0.5 µm Filter ID L7965-2 (I.S.)
cleaned 4-JUL-05, cleaning batch L6745-40

7/14/05 A. Wood

0752 Calibration of sonde
DO% (entered 765.6 mm Hg)
pre-cal = 100.4% post-cal = 100.7%
Conductivity (entered 1413 µS/cm)
pre-cal = 1370 µS/cm post-cal = 1424 µS/cm
pH #1 (entered 7.01)
pre-cal = 7.04 post-cal = 7.01
pH #2 (entered 4.00)
pre-cal = 4.07 post-cal = 3.98
ORP (entered 240 mV) post-cal =
pre-cal = 378.6 mV 240.0 mV

0809 Finished calibration

0813 Started logging YSI at 15 min intervals for station WQ-018

0818 Began lowering probe to river bottom

0823 Probe is set on river bottom.
Depth = 7.7m

0824 Began peristaltic pump. Priming IFX pump

0829 Began IFX pump

ANC07061
BZTO104(e)007061

07/14/05 STURHAHN, HARPER, WOOD

0831 Noted that water at river bottom looked clear on the probe camera. Very few suspended particles

0855 Stopped peristaltic pump
Glass carboy ~ 9.5 L
HDPE carboy ~ 11 L
Began filling sample bottles

0917 Finished filling sample bottles

1203 Pressure gauge showing low (<2) pressure. Jan tightened connections. Briefly stopped IFX pump, and pressure dropped to 0. This suggests that the gauge is working.

1240 Laura Jones arrives with pingers

1327 Turned off IFX in order to rotate pressure gauge.

1330 Restarted IFX pump. Pressure gauge reading increased to 2.5.

1332 Pressure reading = 2.0. Slight air leak entering in IFX unit has been present all day & is still present following gauge adjustment

7/14/05 STURHAHN, HARPER, WOOD

1428 Laura Jones finished conducting an in-field audit of sampling techniques. During audit, videotaped a crawfish crawling near camera attached to sampler. Small crappie and copepods were seen occasionally near the camera throughout the day.

1456 Night crew arrives

2153 Stop Infiltrex & YSI logging

2200 - Download YSI DATA - SAVE ALL FILES - BACKUP COPY SAVED TO MEMORY STICK

2210 - YSI SHIFT READING
pH 4 — 4.0
pH 7 - 6.92
Cond - 1334
ORP - 733.1
DO - 10.26 mg/L.

2230 - BEGIN UNLOAD-G 4T SWAN ISLAND.

2245 - LEAVE SWAN ISLAND - MOB TO LAB.

ANC07062
BZTO104(e)007062

7/14/05 05 SW SUMMER J. Moore

2255 - ARRIVE FIELD LAB

2310 - BEGIN INFILTREX DECON.

1 - WASH 140 µg FILTER + MAL FILTER HOUSINGS.

2 - FLUSH SYSTEM WITH 20 L ALCONOX - 10 L THRU EACH FILTER

3 - PUMP APPROX 2.5 L of DI THRU EACH FILTER

4 - PUMP 0.5 L THEN 1 L of ACETONE THRU EACH FILTER

5 - PUMP 0.5 L THEN 1 L of METHANOL THRU EACH FILTER

6 - PUMP 0.5 L THEN 1 L of ULTRA PURE WATER (CAS) THRU EACH FILTER

7 - REPLACE TUBING AND FOIL OPEN PORTS - READY FOR NEXT INFILTREX DEPLOYMENT.

2400 Complete Infiltrex decon, Call Coast Guard & Sheriff

[signature] 7.15.05

7/15/05 A. Rodriguez

0630 Arrive at field lab and wait for Joss to arrive with key

0640 Order lunch and call Mike May about delay

0700 Joss arrives at field lab and load up van

0730 Arrive at Cathedral Park & load up boat

Crew: A. Rodriguez, John Harvie, Alice Wood & Mike May (Boat driver)

Weather: Warm, sunny & clear

0750 Depart for W3-0.17 & experience GPS problems - call Ian

0817 Calibrate YSI meter:

Conductivity entered 1.413 µS/cm

pre - calibration 1281 µs/cm

calibrate 1279 µs/cm

pH 2 pt calibration

pH 7 pre - ~~7.04~~ 6.67 pH 7 calibrated = 7.00

pH 4 pre = 4.21 post = 3.98

ORP entered 240 mV

pre = 397.2 post = 240.2

DO % = 761.9 mm Hg entered

pre = 99.1% post = 100.6%

0830 GPS connected

7/15/05 FRI AR/JH/AW

0836 Arrive at W3-017 & contact Sheriff's office & Coast Guard

0856 At bottom ~ 1.4m depth, start YSI & GPS logging

~~0907~~

0920 } Stopped Peristaltic
0922 } water waves caused turbidity as viewed on camera. Started pump

0926 Again @ 0922
~~0930~~ 0931 Turned off peristaltic pump
Glass carboy = 15L
PC " = 14.5L

0931 Raised sampler to surface. Stopped YSI & GPS logging

1000 Arrived on Station W3-014

1010 Called Ian. River bottom depth is only 1.4m. Ian instructed us to move to a deeper station. Moved to 26.5m South and 1.4m west of Station W3-014
Water depth ~ 3.0m

1015 Complete filling bottles.

1024 Deploy sampler, surface depth .265m

7/15/05 AR/JH/AW

1025 Start YSI logging, peristaltic pump, GPS

1027 Begin descent at W3-014

10:31:30	0.605m }	0.225 m/min
10:32:30	0.830m }	
10:33:30	0.999 }	0.118 m/m
10:34:30	1.117 }	

10:33 Settled to position w/ wind & current
17.95 m South
0.5 m West
of established location (see photo)

ANGIE NOTED WE WERE USING UPPER TIME ON YSI ON FIELD NOTES INSTEAD OF TIME DISPLAYED AT LOWER LEFT OF YSI
Difference is 2 min 45 sec.
THIS WAS DONE DURING DAT SHIFT ALL THIS WEEK
TODAY IS BASED ON TIME DISPLAYED IN LOWER LEFT.

ANC07064
BZTO104(e)007064

7/15/05 FRI JH/AW

WS 014 cont

10:43	@ Bottom Depth = 2.46 & started Ascent * See note on bottom
10:53	stopped Pump & pulled Gear
10:56	Glass carboy stinger not working. Tried for several minutes to adjust position. Will fill sample bottles from Plastic carboy first
10:58	Began moving towards station W3-012
11:10	Arrived at station. Began setting anchors
11:20	Angle fixed stinger in glass carboy
11:35	Began filling sample bottles from ~~glass~~ carboy

* Note. Much sediment was stirred up when sampler hit bottom. Temporarily shut off pump. At the time of filling sample bottles, some sediment was visible in the carboys. Sediment was also present on the sampler when it was raised. Took photos.

7/15/05 AR/JH/AW

1140	Complete filling bottles
1151	Deploy sampler, start logging YSI start peristaltic pump, bottom depth .378m at W3-012
1152	Created GPS file for W3-012 named W3-012-2
12:07	Boat passed near causing very large wake. Turned off peristaltic pump.
12:08	Following large wakes, boat generator was knocked off by the wakes. Boat was knocked off of position. LNAPL floating on surface of water. Took photos.
1227	Stop pumping because of wake kicking up sediment on the river bottom
1229	Start pumping
1234	Stop pumping & raise sampler, stop YSI logging & GPS.
12:40	Carboys showed darker color than usual. Took photos. Strong petroleum odor.

ANC07065
BZTO104(e)007065

24 7/15/05 FRI A. Wood

12:41 Began filling sample bottles
Oily water dripping off of sampler.
Took photos.

13:25 Sampler has sediment & tar on base.
Angie talked to Laura Jones.
Decided to rinse sampler with
DI and wipe it down before
deployment at W3-010

13:30 Finished filling sample bottles

13:43 Wiped off metal table with

13:50 YSI data logger full. Uploaded
W3-017.dat, W3-014.dat, W3-012.dat,

13:59 and W3-0018.dat

14:01 NEW Began peristaltic pump and lowering
probe

NEW
14:02:45 0.377m
14:03:45 0.205m
14:06:10 0.721m

14:03 Reached bottom at 0.721m depth
This is too shallow, so moved boat and
boat over along the dock about
10 ft.

14:08 Restarted pump and began descent

FRI 25
7/15/05

14:11:10 0.208
14:[illegible]:10

14:10:00 0.995m } 0.55 m/min
14:11:00 1.54m

14:12:30 2.13m } 0.18 m/min
14:13:30 2.31m

1425 Stop pumping the sampler hit bottom
& sucked up sediment into the carboys
Angie on phone with Laura Jones discussing
clean up of sampler in the field lab

14:37 Emptied original carboys & packed
away. Put fresh carboys on stands
and fresh tubing on sampler

14:42 Began pumping and lowering
sampler. Re-started logging YSI

14:43 Noticed that pump was not working.
Tape still on sampler intake.
Removed tape.

14:44 Began pumping and lowering probe @ W3-010
14:45:20 0.865m } 0.199 m/min
14:46:20 1.064m

15:13 STOPPED Pump & Ascent

ANC07066
BZTO104(e)007066

26 FRI
7/15/05

15:20 began filling sample bottles. Removed samplers from boom. Will take to field lab for decon.

15:25 Checked probe measurements
DO = 96.3% (ambient)
Conductivity = 1409 µS/cm (1413 µS/cm)
~~SPC~~ ACW
pH (7.0 solution) = 7.16
pH (4.00 solution) = 3.99
ORP (240 mV solution) = 236.1 mV

1546 Uploaded data from YSI. Have finished filling sample bottles and are emptying carboys

1645 Returned to field lab
Placed samplers in refrigerators
Pulled YSI data into Excel files in SW Summer folder

17:15 Angie called Coast Guard and Sheriff

17:30 Angie filling out COCs
Alice copying field notebook

27

17:35 Decided to wait to decon sampler until the weekend. Very tired.

Angelita K
7.15.05

ANC07067
BZTO104(e)007067

7/16/05 A. Rodriguez

1230 Arrive at field lab to clean surface water sampler according to the following procedures:

1) Open bay doors for proper ventilation
2) Laid down extra layer of plastic on table, wore nitrile gloves
3) Remove YSI probe and rope from sampler using box cutter
4) Pour acetone on paper towels & wiped the noticeable tar soiled areas on the sampler
5) Pour methanol on paper towels & wiped the same areas mentioned in step 4
6) Repeated step 4 because tar soiled areas needed to be cleaned more
7) Pour DI on paper towels & wiped down the sampler
8) Disposed of rope, gloves and paper towels in trash bag

The purpose of this cleaning task was to clean & remove the tar from the sampler, specifically at the base of

7/16/05

the sampler where a majority of the tar was located.
Photos were taken of the sampler before and after the cleaning.

1332 Completed the cleaning of the surface water sampler
A new rope is needed to secure the sampler for the next deployment and the video camera needs to be wiped down still and it is on the Ross Island sampler.

1340 Download photos on both the field laptop and the field lab laptop.

1415 End of day

A. Rodriguez 7.16.05

ANC07068
BZTO104(e)007068

7/18/05 S. MAXWELL, I. STUPAKOFF, A. WOOD

615 At field lab loading van.

641 Finished downloading GPS and YSI data to USB memory stick.

700 Left field lab to Swan Island.

711 At boat ramp loading boat.

712 Called Coast Guard & Sheriff.

733 Sampler has been reattached to boom and reinforced with zip ties.

7:34 Began calibrating YSI.

DO % (entered pressure 756.9 mmHg)

pre-cal = 97.7% post-cal = 100.7%

pH #1 (entered 7.010 @ 20°C

pre-cal = 7.05 post-cal = 7.02

pH #2 (entered 3.995 @ 20°C)

pre-cal = 3.90 post-cal = 3.99

Conductivity (entered 1.413 mS/cm)

pre-cal = 1420 µS/cm post-cal = 1412 µS/cm

ORP (entered 240 mV)

pre-cal = 237.0 mV post-cal = 240.2 mV

7:38 Began moving to W3-016

Crew Ian Stupakoff, Sacha Maxwell, Alice Wood

Captain Mike May

S. MAXWELL, I. STUPAKOFF, A. WOOD 7/18/05

07:55 Weather: Sunny, cloudless, hot, still

08:00 Arrived at W3-016.

Setting up filters and XAD column on Infiltrex

0800 put in 0.5 micron filter:

ID # L7965-3, cleaned 04-JUL-05, cleaning batch # L6745-40.

put in colomn # 1.

put in XAD resin colomn:

~~ID # L6765-7~~, G.W. L6765-7

XAD ~~ID #~~ L6674-32, ~~00~~ SM

Colomn ID # 00133, cleaned Jun 24, 05

repack ID # L7916-3

Reset flow, volume to zero.

08:18 Sampler and peristaltic are ready to go. Setting anchors.

02:20 Dropped anchor handle in river. Mike using skiff to place back anchor

0838 Deploy sampler

0847 Began YSI logging

WEATHER Sunny breezy, will be hot later (~90°F)

7/18/05 A. Wood, S. Maxwell, [illegible]

08 48 Began peristaltic pump

08 49 " Infiltrex

08 50 Began logging GPS

0903 Stop peristaltic pump, begin filling sample bottles (W3-016-1)

0917 Large wake, but camera on sampler showed no disturbance

0925 Finished filling sample bottles.

0926 start peristaltic pump, filling carboy for replicate (W3-016-2)

0929 Stop peristaltic pump. Begin filling sample bottles.

0935 Finish filling sample bottles.

0944 Peristaltic/sample bottle station cleaned up. Ian called Mannon to tell her that samples were ready for pick-up

0958 Sacha and Mike took stiff to drop samples off to Mannon

1021 Stopped Infiltrex pump for about 30 sec because boat wake stirred up some sediment

I Stuebbert, S Maxwell, A. Wood 7/18/05

1103 Sampler camera shows that water is murky and "milky white" following a boat wake. The water was clear prior to this (as shown on video)

1235 Stop Infiltrex pump: wake created turbulence & sampler moved on bottom, stirring up sediment.

NOTE floating tar ball on surface w/ sheen trailing from it.

1238 Re-start Infiltrex pump.

NOTE can see copepods in video on sediment surface

1450 Mike left to pick up night crew

1453 Large wake. Stopped Infiltrex pump. Wake knocked out boats generator

1459 Generator is restarted

1458 Start Infiltrex

1450 Mike May leaves w/ skiff to pick up Joss Moore (ICI) & A. Rodriguez (WU)

ANC07070
BZT0104(e)007070

7/18/05 J Moore

15:14 Night crew arrives: A. Rodriquez Joss Moore & Richard Hall (boat driver)

1532 Day crew leaves

1600 Joss Moore back on RI 1.

*NOTE: Conductivity readings have been taken as ms/cm^2 until 1456, from 1533 to finish the conductivity will be taken as ms/cm.

1746 Stop Infiltrex due to decrease in Infiltrex flow rate (~900 mL/min) and calibrated flow rate of 1.05 L/min Back flush Infiltrex

1747 Restart Infiltrex and adjust flow rate to 1.28 L/min

1833 Stop Infiltrex to replace filter #1, L7965-3 with filter #2 L7965-7 and replaced 140 µm SS filter with clean 140 µm SS filter due to decrease in flow rate

1845 Restart Infiltrex and adjust rate to 1.38 L/min

1900: Joss Moore off RI 1 to Swan Island boat ramp to pick up keys for van.

1925: Returns with Sacha Maxwell

7/18/05 – 7/19/05 J. Moore

to try to resolve missing van key

1955 S. Maxwell, R. Hall and A. Rodriquez off RI 1 to head back to Swan Island.

2025 - A. Rodriquez and R. Hall return to RI 1.

* NOTE: Air bubbles due to leak in Infiltrex system are reducing flow rate and creating unstable air pressure readings

2254 Completed W3-016 with 1008 L Stop Infiltrex & YSI logging

2327 Check YSI calibration
4 pH reading 4.02 pH
7 pH reading 7.05 pH
Conductivity reading 1396 µS/cm
ORP reading 233.5
DO reading 112.1% 10.64 mg/L

0015 Call Coast Guard & Sheriff's office

0055 Arrive at field lab & refrigerate samples (XAD column + Filters) Begin Infiltrex decon as described on pg. 18 7/14/05 and tightened all nuts & bolts inside the Infiltrex

7/19/05

outflow housing in order to eliminate air leak.

0150 Complete Infiltrex decon

* Downloade YSI data to laptop. (time unknown). SM

Angelita [signature] 7/19/05

[signature] 7/18/05

7/19/05 I. Stupakoff, A. Wood, S. Maxwell

627 At field lab loading van

715 At boat ramp loading boat.

728 Left Swan Island boat ramp.

729 Called Coast Guard & Sheriff

0730 Calibrate YSI:
pressure = 759.6 mmHg.

0740 Do %: pre-cal = 107.3%, post = 100.4%
Air temp = 15.6 °C, solutions temp = 17°C
Conductivity (specific) 1.413 mS/cm
pre-cal = 1400 µS/cm, post = 1413 µS/cm
pH 7.03 @ 15°C pre-cal = 7.05,
post = 7.02. pH 3.99 @ 15°C pre-cal = 3.98,
post = 3.99.
ORP 240 mV pre-cal
= 246.4, post-cal = 240.0 mV.

0745 Resh peristaltic pump. Rinsate.

0750 Install 0.5 micron filter into
Infiltrex pump. ~~Cuto~~ 5m filter ID #:
L7965-5, cleaned Jul 4, '05,
Cleaning batch # L6745-40. Into
canister #2.

0750 Anchoring on station LW3-~~019~~ 015 SM
create file in YSI log "LW3-019" 015 SM

WEATHER: sunny, going to be hot, like 7/18/05, high ~80°F.

7/19/05 I. STUPAKOF, S. MAXWELL, A. WOOD

Install XAD resin Column ID#00137, Repack ID L7916-7, re-pack date Jun, 24, '05. XAD: L6674-32, G.W. L6765-7.

0815 Begin filling sample bottles w/ Rinsate water from carboys.

~~0828~~ DI water info. CAS lab: product #= 011912, container #= 000200.

0828 Lowered sampler into water.

0830 Began Infiltrex pump. Began YSI logging Depth = 0.67 m

0906 Start peristaltic pump: Sample W3-015.

0920 Stop peristaltic pump. Begin filling sample bottles.

0943 Fill out COCs and load samples on Skiff.

0945 S. MAXWELL leaves to take samples to field lab.

0950 Stopped GPS logging and detached unit from laptop

0959 Ian repaired pvc stand on stir table with glue. Covered sample table.

I. STUPAKOFF, S. MAXWELL, A. WOOD 7/19/05

10:00 Today's crew: Ian Stupakoff, Sacha Maxwell, Alice Wood
Captain: Mike May

10:20 Mike returned with the skiff

11:05 Tug boat passing by causes wake that stirs up some sediment, but not enough to turn off Infiltrex pump

11:10 Two transients walking along beach. One is the same individual who appeared to be living on the beach at the station sampled yesterday (W3-016)

12:26 Large wake from passing boats. Turned off Infiltrex pump

12:29 Re-started Infiltrex pump

13:05 Mike took still to pick up Eric Blischke (EPA) ~~and Oregon DEQ representative~~ (I.S.)

13:35 Mike Arrived with Eric Blischke of EPA, Chip Humphrey, Kristine Koch

7/19/05 I. STUPAKOFF, A. WOOD

14:12 Generator stopped due to ~~either~~ new ~~low fuel or~~ low oil. This caused Infiltrex pumps to also stop

14:15 Generator restarted. Infiltrex restarted

14:29 Large wake, stopped Infiltrex

14:32 Infiltrex restarted

14:36 Mike took EPA ~~and ODEQ~~ (i.3) visitors back to boat ramp on skiff

1444 Mike and visitors return on skiff for forgotten item. Causes wake, so shut off Infiltrex for about 30 seconds

1515 Night crew arrives on skiff

1521 Stopped Infiltrex because of wake

1522 Restarted Infiltrex

1549 Stopped Infiltrex to backflush*

1550 Restarted Infiltrex

1556 Day crew leaves & Joss Moores drives them back to Swan Island

1630 Stop Infiltrex due to large wake

1632 Restart Infiltrex & Joss Returns

7/19/05 A. Rodriquez, J. Moore

* NOTE: Continously backflush Infiltrex because of high turbidity in the river. Refer to Water Sample Log sheets and comments.

1854 Begin testing GPS on rugged laptop while running multiple windows applications for a field test. Start with sampling location W3-015 ~~test-71905~~ (AR) with sample ID name: W3015-test-71905
3 sampling locations were tested: Arekema, Willamette Cove & Rhone Poulenc

2145 Complete GPS software testing in field using TerraSync

2152 Stop Infiltrex and change SS 140um filter and changed filter #1 and added filter # L7965-11 to filter #2

2204 Restart Infiltrex & adjust rate

2215 Stop YSI logging to replace batteries

2218 Resume logging YSI

2231 Begin video recording of river bottom to capture the high turbidity.

2237 Stop video recording

7/19/05 - 7/20/05 A. Rodriquez, J. Moore

2327 - 1000 L+ PUMPED, STOPPED INFILTREX
STOPPED YSI LOGGING.

2330 - BEGIN DEMOB, AND FINAL READINGS.

2332 Download YSI data to PC

2353 Check Calibration YSI
4 pH reading @ 4.03 pH
7 pH reading @ 7.05 pH
Conductivity 1413 uS/cm reading @ 1311 uS/cm
ORP reading @ 232.1
DO 9.84 mg/L, 106.8 %

0002 Begin pulling in anchors

0015 Complete unanchoring the boat & depart for Swan Island Lagoon

0018 Call Coast Guard & Sheriff

0045 Arrive at Swan Island Lagoon

0102 Arrive at field lab, demob, and put samples in refrigerator

0107 Ran DI water ~ 5 L thru each filter on the Infiltrex

0116 End of day

Angelita RS 7/20/05 Jackelly 7/19/05

7/20/05 I. STUPAKOFF, A. WOOD, S. MAXWELL

0525 At field lab loading van

0555 At Swan Island boat ramp loading boat

0556 Called Coast Guard & Sheriff

0612 Leave dock - heading to station W3-022.

CREW Mike May (Captain), I. Stupakoff, S. Maxwell, A. Wood (Integral)

WEATHER Sunny, slight breeze currently. expect highs of 100°F today.

0615 Calibrate YSI:
pressure = 760.8 mmHg, air temp = 13.18°C. Solution temp. = 17°C.
DO%: pre-cal = 101.7 %, post = 100.1%
conductivity (specific):
(entered 1.413 mS/cm) pre-cal = / post = 1413 µS/cm
pH #1 (entered 7.034)
pre-cal = 7.07 post-cal = 7.03
pH #2 (entered 3.993)
pre-cal = 4.04 post-cal = 4.00
ORP (entered 240 mV)
pre-cal = 235.6 mV post-cal = 239.9 mV

0617 Left dock. Heading to W3-022

0636 Finished calibration of YSI

7/20/05 I. STUPAKOFF, S. MAXWELL, A. WOOD

0646 Arrived at W3-022. Began setting anchors (fire station).
0650 Lowered sampler at W3-022. Started YSI logging, video
0651 on bottom. stop video recording
0652 Start peristaltic pump.
0705 stop peristaltic pump. Begin filling sample bottles ~~(estimated stop time)~~. ~~Actual stop time = 0720.~~ (I.S.)
0720 Bring up sampler & move to Station W3-019 (Gunderson)
0741 On station.
0755 Deploy sampler & video record it. collect GPS position.
0755 set up new carboys.
0758 start YSI logging
0801 start peristaltic pump.
0830 stop peristaltic pump. Begin filling sample bottles. stop YSI log
0832 Bring up sampler. Move to Station W3-021. ~~Human H~~ Sm Eco Risk station.
0852 On station, anchored.
0855 Deploy sampler & video record it.

7/20/05 I. STUPAKOFF, S. MAXWELL, A. WOOD.

cont. collect GPS feature
0907 Start YSI log.
0910 Start peristaltic pump.
0940 stop peristaltic pump ~~(estimated)~~. (I.S.)
0929 Stop YSI log. Fill sample bottles
0930 Bring up sampler. Move to Station
~~09~~ Sm W3-020 - Human Health station.
0950 Anchoring at Station W3-020.
1005 Deploy sampler & video record it.
1010 start YSI log & collect GPS position
1013 start peristaltic pump ~~(estim~~ (vertical integrated sample)
1040 stop peristaltic pump ~~(estimated)~~ (I.S.)
1035 stop YSI log. + (30 second logging interval; others were 1 minute).

NOTE Depth to bottom is 2.5+m, so performed vertical integration from 2.5m depth to below surface.
1005 Check depth + recorded it on video.

Rate of descent:

sec depth
.22 - .32 = ~2m/min
.22 - 2.2

(.29) .32 = 2.2m/min
-2.5

NOTE Depth varies due to boat swinging. (2.4m to 3.2m).

7/20/05 I. STOPALIFF, S. MAXWELL, A. WOOD

1045 Filling sample bottles. Bring up sampler. Return to Swan Island boat ramp.

1050 At ramp, unloading equipment.

~~1050~~ 1120 Leave Swan Island for field lab.

1135 Arrive field lab. Unload equipment. Put water samples in fridges & ~~fill out COCs.~~ SM

1120 Left boat ramp

1130 Jan called Coast Guard to tell them we were off the water

11:35 At field lab. Began unloading.

12:00 Lunch

~~1300~~ 13:00 Demobilization

1724 Finished filling up COCs and double checking COCs and samples for XRD & filters.

1800 Finished demob for today.

7/20/05 7/20/05 7/20/05 7/20/05

ANC07077
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LWG
LOWER WILLAMETTE GROUP

PORTLAND HARBOR RI/FS

ROUND 2A SUMMER 2005 SURFACE WATER FIELD SAMPLING REPORT

APPENDIX B

Infiltrex and YSI Water Sampling Logs

DRAFT

DO NOT QUOTE OR CITE
This document is currently under review by US EPA and its federal, state, and tribal partners, and is subject to change in whole or in part.

September 19, 2005

Infiltrex 300 System - Water Sample Log

LWG

Survey R2 SW Summer Crew S.MAXWELL, T.STUBBLEFF, J. SUND Date 7/6/05

Station ID	Start Time	End Time	RPM	Flow Rate (mL/min)	Volume Sampled (L)	Pressure (15-20 psi)	Filter change #	Comments
W2-013-1	0818		1200	0 1.6	0		0	Start pump
	0819		1200	~~1.65~~ 1.6	1.6	6		water clears XAD
	0820		1000	1.8 L	4.82	4		Adjusting
	0821		900	1600	6			"
	0821		850	1505		3.5		"
	0822		800	1435	7.4	3		"
	0822		750	1321	8.0	2		"
	0823		700	1228	9.5	2		2L in 1min 31 sec = 1.32 L/min
	0828		700	1226	15	2		some air leak inline - tightened
	0829		650	1129	16.4	2.8		2L in 1min 38 sec = 1.22 L/min
	0833		680	1179	20.8	2.8		Adjust, 2L in 1min 34 sec = 1.28 L/min
	0836		680	1120	26	2.8		
	0838		700	1264	27.5	2.8		Adjust, 2L in 1min 32sec = 1.30 L/min
	0841		800	1417	31.7	3.2		Adjust, 2L in 1min 19 sec = 1.52 L/min
	0845		775	1315	36.0	3.2		Adjust, 2L in 1min 22sec = 1.46 L/min
	0848		750	1319	40.4	3.2		Adjust 2L in 1m 25sec = 1.41 L/min
	0851		660	~~1889~~ #6	44			Adjust; 2L in 1m 36sec = 1.25 L/min
	0905		650	1158	63	3.2		2L in 1.36 sec = 1.25 L/min
	0941		650	1103	101	3.2		2L in 1.37 sec = 1.24 L/min
	1007		650	1154	131	3.2		2L / 1min 57 sec = 1.04 L/min

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Infiltrex 300 System - Water Sample Log

Survey LW6 R2 SW Summer '05 Crew S. MAXWELL, I. STUPAKOF, J. SUND Date 7/6/05

Station ID	Start Time	End Time	RPM	Flow Rate (mL/min)	Volume Sampled (L)	Pressure (15-20 psi)	Filter change #	Comments
W3-013-1	1034		650	1131	162	3.2		~~not logged in YSI~~ 2L in 1.38 sec = 1.22 L/min
"	1058		650	1120	189	3.5		2L in 1.39 ~~min~~ sec = 1.21 L/min
"	1100		700	1156	192	4.0		Adjust rate 2L in 1.34 ~~min~~ = 1.28 L/min
"	1130		700	1180	226	4.0		2L in 1.35 min = 1.26 L/min
"	1200		700	1152	261	5.0		2L in 1.33 = 1.29 L/min
"	1231		700	1146	297	5.0		2L in 1.35 = 1.26 L/min
"	1300		700	1120	329	5.0		2L in 1.37 = 1.24 L/min
"	1330		700	1109	363	5.5		2L in 1.39 = 1.21 L/min
"	1333		750	~~1184~~ 8	~~368~~ 28	~~6.5~~ 28		Adjust rate
"	1334		750	1184	368	6.5		2L in 1.32 = 1.30 L/min
"	1400		750	1166	398	7.0		2L in 1.33 = 1.29 L/min
"	1428		750	1149	431	8.0		2L in 1.37 = 1.24 L/min
"	1506		750	1102	476	10.0		2L in 1.40 = 1.20 L/min
"	1511		800	1171	480	11.5		2L in 1.33 = 1.29 L/min
"	1538		800	1134	509	13.0		2L in 1.37 = 1.24 L/min
"	1608		800	1027	543	17.0		2L in 1.43 = 1.17 L/min
"	1611		850					Adjust rate
"	1612		850	1134	547	18.0		2L in 1.37 = 1.24 L/min
"	1636		850	1039	573	20.5		2L in 1.44 = 1.15 L/min
"	1642						#2 L7327-8	STOP IN FILTREX, Switch to Filter #2

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Infiltrex 300 System - Water Sample Log

Survey WG R2 SW Summer '05 Crew I. STUPAKOFF, S. MAXWELL, J. SUND Date 7/6/05
N.K. Crew: J. MORE, A. RODRIGUEZ

Station ID	Start Time	End Time	RPM	Flow Rate (mL/min)	Volume Sampled (L)	Pressure (15-20 psi)	Filter change #	Comments
W3013-1	1643		650	1022	579	3.0		2L in 1.46 = 1.37 L/min
"	1649		700	1104	584	4.0		Adjust rate 2L in 1.43 = 1.13 L/min
"	1653		800	1251	611	5.0		Adjust rate 2L in 1.29 min = 1.35 L/min
"	1727		800	1247	631	5.5		2L in 1.29 min = 1.35 L/min
"	1754		800	1220	665	5.5		2L in 90 sec = 1.33 L/min
"	1828		800	1206	705	6.0		2L in 1.32 min = 1.30 L/min
"	1857		800	1184	741	6.0		2L in 1.33 min = 1.29 L/min
"	1929		800	1181	778	7.0		2L in 1.34 min = 1.28 L/min
"	1959		800	1176	813	7.0		2L in 1.35 min = 1.26 L/min
"	2031		800	1144	850	7.0		2L in 1.38 min = 1.22 L/min
"	2033		850	1222	853	7.0		Adjust rate 2L in 1.30 min = 1.33 L/min
"	2103		850	1203	888	8.5		2L in 1.32 min = 1.30 L/min
"	2129		850	1205	919	8.5		2L in 1.33 min = 1.29 L/min

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Infiltrex 300 System - Water Sample Log

Survey LWG R2 SW Summer Crew S. MAXWELL, I. STOPALOFF Date 7/7/05

Station ID	Start Time	End Time	RPM	Flow Rate (mL/min)	Volume Sampled (L)	Pressure (15-20 psi)	Filter change #	Comments
W3-013-2	0755		850	1462	0	~3	0	water clears XAD column
"	0757							2L in 1min 20 sec = 1.5 L/min
"	0758		800	1335	4.2	~3		Adjust, 2L in 1:25 = 1.36 L/min
"	0830		800	1262	45.8	~3		2L in 1:28 = 1.36 L/min
"	0833		750	1141	49.7	~2.5		Adjust; 2L in 1:36 = 1.25 L/min
"	~~0844~~ 0844							Stop Infiltrex.
"	0852		750	1209	61	~2.5		re-start Infiltrex, water clears XAD column
"	0857		750	1213	67	~2.5		2L in 1:33 = 1.29 L/min
"	0925		750	1155	99	~2.5		2L in 1:37 = 1.24 L/min
"	0954		750	1149	137	~2.5		2L in 1:39 = 1.21 L/min
"	1001		800	1202	140	3.0		Adjust; 1:33 = 1.29 L/min
"	1031		800	1182	172	3.2		1min 34 sec = 1.28 L/min
"	1056		800	1147	205	3.8		1min 37 sec = 1.24 L/min
"	1126		800	1150	239	4.0		1min 40 sec = 1.20 L/min
"	1129		850	1197	242	4.0		Adjust; 2L in 1:35 = 1.26 L/min
"	~~1201~~ 1201							Stop Infiltrex (Trickle) - see field log.
"	1210		850	2065	266	4.0		re-start Infiltrex 1min 28 sec = 1.41 L/min
"	1217		850	1233	269	4.0		2L in 1:32 = 1.30 L/min
"	1232		850	1048	287	4.0		2L in 1:46 = 1.12 L/min
"	1238		850	1029	291	4.0		Stop Infiltrex pump. Δ metal filter

Infiltrex 300 System - Water Sample Log

Survey LWG R2 SW Sonne Crew S. MAXWELL, I. STUPALLO (Day) J. Moore, A. Rodriguez (Night) Date 7/7/05

Station ID	Start Time	End Time	RPM	Flow Rate (mL/min)	Volume Sampled (L)	Pressure (15-20 psi)	Filter change #	Comments 2L 1:27 = 1.24 L/min
cont. W3-013-2	1240		850	1249	293	3.8	0	Start pump: water clears Xtra column
"	1307		850	1247	324	4.8		2L in 1:30 = 1.33 L/min
"	1339		850	1214	365	5.2		2L in 1:32 = 1.30 L/min
"	1421		850	1171	415	6.0		2L in 1:35 = 1.26 L/min
"	1457		850	1146	449	6.2		2L in 1:37 = 1.24 L/min
"	~~1516~~ SM	1516						Stop Infiltrex.
"	1518		850	1238	480	5.0		Start Infiltrex 2L in 1:34 = 1.28 L/min
"	1551 SM		850	1123	515	6.8		2L in 1:39 = 1.21 L/min
"	1553		900	1203	520	7.0		2L in 1:34 = 1.28 L/min
"	1628		900	1146	559	8.5		2L in 1:37 = 1.24 L/min
"	1701		900	1098	597	9.0		2L in 1:41 = 1.19 L/min
"	1703		1000	1261	602	11.0		2L in 1:28 = ~~1.36 L/min~~ AR 1.36 L/min
"	1734		1000	1191	637	13.0		2L in 1:33 = 1.29 L/min
"	1757		1000	1146	663	14.0		2L in 1:37 = 1.24 L/min
* "	1827	1830	1000	1022	696	16.0		2L in 1:47 = 1.12 L/min, * 1830 Stopped XAD
"	1832		700	988	700	2.0		Adjust rate 2L in 2:01 = .99 L/min, Start XAD
"	1844		900	1228	711	4.0		Adjust rate 2L in 1:30 = 1.33 L/min
"	1857		900	1200	728	5.0		2L in 1:33 = 1.29 L/min
"	1917							Stop Infiltrex, no pressure, change 140 um filter
"	1927		900	1200	750	5.0		Start Infiltrex, 2L in 1:33 = 1.29 L/min

Infiltrex 300 System - Water Sample Log

Survey LWG RZ SW Summer Crew J. Moore, A. Rodriguez Date 7/7/05

Station ID	Start Time	End Time	RPM	Flow Rate (mL/min)	Volume Sampled (L)	Pressure (15-20 psi)	Filter change #	Comments
W3-013-Z	1957		900	1115	782	5.0		2 L in 1:40 min = 1.20 L/min
	2000		950	1192	785	6.0		Adjust rate 1:34 min = 1.28 L/min
	2027		950	1063	~~806~~ 816	6.0		2 L in 1:41 min = 1.19 L/min
	2031		1000	1165	820	7.0		2 L in 1:36 min = 1.25 L/min
	2058		1000	1084	850	7.0		2 L in 1:43 min = 1.16 L/min
	2101		1050	1152	855	7.5		2 L in 1:35 min = 1.26 L/min, Adjust rate
	2128		1050	1105	884	7.5		2 L in 1:39 min = 1.21 L/min
	2153		1050	1110	911	7.5		2 L in 1:40 min = 1.20 L/min

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page #1

Infiltrex 300 System - Water Sample Log

Survey SW Summer 2005 Crew A. Wood, J. Harrie, I. Shupakoff Date 7/11/05

ARW

Station ID	Start Time	End Time	RPM	Flow Rate (mL/min)	Volume Sampled (L)	Pressure (15-20 psi)	Filter change #	Comments
W3023								
EDI 1	9:52		850	1237	0	2.5		2L in 1:30 sec = 1.33 L/min
	9:55		800					changed RPM to 800 2Lin
	10:04		800	1181	15.37	2.0		2L in 1:36 sec = 1.25 L/min
	10:16		800	1158	30.06	2.0		2L in 1:36 sec = 1.25 L/min
	10:42	STOP	800	1152	58.8	2.0		2L in 1:37 sec = 1.24 L/min
EDI 2	10:50		800	1155	63.8	2.0		2L in 1:39 sec = 1.21 L/min
	11:20		800	1140	92.0	2.0		2L in 1:38 sec = 1.22 L/min adjusted RPM to 850
	11:24		850	1225	101	2.0		2L in 1:30 sec = 1.33 L/min
	1140	STOP	850	1226	117	2.8		—
EDI 3	1159		850	1219	127	2.8		2L in 1:32 sec = 1.30 L/min
	1223	1231 (STOP)	850	1221	156	2.8		2L in 1:33 sec = 1.29 L/min
	1249 58		850	1214	169	3.2		2L in 1:32 sec = 1.30 L/min
	1309 (1st)	1312	850	1226	183	2.5		2L in 1:32 sec = 1.30 L/min
EDI 4	1342		850	1221	189	2.8		2L in 1:30 sec = 1.33 L/min
At Bottom	1357		850	1216	208	3.0		2L in 1:32 = 1.30 L/min
	1400		825					changed RPM
	1403		825	1148	214	3.0		2L in 1:35 sec = 1.26 L/min
	1413		825	1172	225	3.0		2L in 1:35 sec = 1.26 L/min

ANC07085
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page #2

Infiltrex 300 System - Water Sample Log

Survey SW Summer 2005 Crew A. Wood, J. Haffig, I. Stupakoff, J. Moore, T. Do, A Rodriguez Date 7/11/05

Station ID	Start Time	End Time	RPM	Flow Rate (mL/min)	Volume Sampled (L)	Pressure (15-20 psi)	Filter change #	Comments
W3023								
EDI-1B	1431		825	1040	230	3.0		
	1449		825	1162	248	3.0		2L in 1:35sec = 1.26 L/min
	15:03		825	1161	264	3.0		2L in 1:34sec = 1.28 L/min
	15:32		825	1116	287	3.2		2L in 1:36sec = 1.25 L/min
	16:13		825	1134	333	3.2		2L in 1:37sec = 1.24 L/min
	16:37		825	1120	360	3.2		2L in 1:37sec = 1.24 L/min
	16:39		850	1202	367	3.2		2L in 1:34sec = 1.28 L/min
	1701		850	1186	391	3.2		2L in 1:34sec = 1.28 L/min
2B	1714		850	1189	396	2.0		2L in 1:33sec = 1.29 L/min
	1745		850	1189	429	3.0		2L in 1:34sec = 1.28 L/min
	1810		850	1179	462	3.0		2L in 1:33sec = 1.29 L/min
	1845		850	1162	500	3.0		2L in 1:35sec = 1.26 L/min
	1916		850	1158	537	3.0		2L in 1:35sec = 1.26 L/min
	1926	stop	850	1158	548	3.0		2L in 1:35sec = 1.26 L/min
3B	1933		850	1153	548	3.0		2L in 1:34sec = 1.28 L/min
	2000		850	1167	583	3.5		2L in 1:34sec = 1.28 L/min
	2011		850	1133	595	4.0		2L in 1:35sec = 1.26 L/min
	2042		850	1152	631	4.0		2L in 1:35sec = 1.26 L/min
	2048		850	1151	637	4.0		2L in 1:34sec = 1.28 L/min

PAGE # 3

Infiltrex 300 System - Water Sample Log

Survey SW SUMMER '05 Crew T. DO . A. RODRIQUEZ . J. MOORE Date 7/11/05

Station ID	Start Time	End Time	RPM	Flow Rate (mL/min)	Volume Sampled (L)	Pressure (15-20 psi)	Filter change #	Comments
W3-023-3B	2116		850	1144	670	4.0		2 L in 1:35 sec = 1.26 L/min
	2147		850	1126	704	4.0		2 L in 1:37 sec = 1.24 L/min
	2149		900	1225	706	4.5		UP RATE ~ 2 L in 1.29 sec = 1.35 L/min
	2200		900	1221	720	4.0		2 L in 1:32 sec = 1.30 L/min
W3023-4B	2210		900	1220	724	4.5		2 L in 1:31 sec = 1.32 L/min
	2230		900	1225	748	4.5		2 L in 1:31 sec = 1.32 L/min
	2300		900	1229	763	4.0		2 L in 1:29 sec = 1.35 L/min
	2315		900	1217	781	4.0		2 L in 1:31 sec = 1.32 L/min
	2341		900	1199	814	5.0		2 L in 1:31 sec = 1.32 L/min
	2346		900	1202	819	4.5		2 L in 1:31 sec = 1.32 L/min
07.12.05	0012		900	1199	850	4.5		2 L in 1:32 sec = 1.30 L/min
	0030		900	1194	872	5.0		2 L in 1:33 sec = 1.29 L/min

Angelito R

pg #1

Infiltrex 300 System - Water Sample Log

Survey SWS Summer 2005 Crew J. Stebbins, Tallgrass Archaeology Date 7/12/05

Station ID	Start Time	End Time	RPM	Flow Rate (mL/min)	Volume Sampled (L)	Pressure (15-20 psi)	Filter change #	Comments
WS011-01	07 24		800	1161	0	2.0		2 L in 1:33sec = 1.29 L/min
	0732		800	1163	10.5	2.0		2 L in 1:34sec = 1.28 L/min
	0743		800	1178	23	2.0		2L in 1:34sec = 1.28 L/min
EDI-02	0815		800	1177	53	2.0		2L in 1:34sec = 1.28 L/min
	08 20		800	1165	58	2.0		2L in 1:34 sec = 1.28 L/min
	840		800	1176	82	2.0		2L in 1:34sec = 1.28 L/min
	0901		800	1164	107	2.0		2L in 1:34sec = 1.28 L/min
EDI-03	0911		800	1188	112	2.0		2L in 1 min 33sec = 1.29 L/m
	0933		800	1170	137	2.0		2L 1 min 33s = 1.29 L/m
	0950		800	1179	156	2.0		
EDI-04	10:10		800	1111	162	2.0		2L 1 min 36s = 1.25 L/m
	1022		800	1183	179	2.0		2L 1 min 33s = 1.29 L
	10:30		800	1154	186	2.0		2L 1 min 35s = 1.26 L/m
	10:46		800	1163	204	2.0		2L 1 min 36 1.25 L/m
EDI 5	10:54		~~800~~ 870	1285	207	2.~~5~~		2L 1 m 27 1.38 L/m
	~~10:59~~							
	10:59		800	1128	213.4	2.5		2L 1 m 37 1.24 L/m
	11:01		830	1222	215.9	2.5		2L 1 m 31 1 31 L/m
	11:04		820	1205	218.8	2.5		2L 1 m 33 1.29 L/m
	11:09		820	1116	224.5	2.5		2L 1 m

ANC07088
BZTO104(e)007088

pg #2

Infiltrex 300 System - Water Sample Log

Survey SW3 Summer 2005 Crew IS, JH, AW Date 7/12/05

Station ID	Start Time	End Time	RPM	Flow Rate (mL/min)	Volume Sampled (L)	Pressure (15-20 psi)	Filter change #	Comments
EDI 5	11:23		820	1175	228.4	2.4		2L in 1min 33 sec = 1.29 L/m
Cont.	11:35		820	1109	242 3			2L in 1min 41 sec = 1.19 L/min
EDI #1	11:53		820	1165	250.4	2.1		2L = 1min 34sec = 1.28 L/m
	12:10		820	1179	270	2.1		2L = 1min 34 1.28 L/m
	12:35		820	1159	298	2.1		2L = 1min 36 sec 1.25 L/m
	13:00		820	1139	330	2.1		2L 1min 37 sec 1.24 L/m
	13:15		820	1128	344	2.1		2L = 1min 37 sec 1.24 L/m
	13 23		840	1154	353	2.5		2L = 1min 37 sec 1.24 L/m
	1330		840	1171	361	2.5		2L = 1min 35 sec 1.26 L/m
	13 42		840	1163	375	2.5		2L in 1:37sec = 1.24 L/min
	1346		840	-	379	2.5		-
EDI #5B	1414		840	1208	381	2.5		2L in 1:33 sec = 1.29 L/min
	1457		840	1200	414	2.5		2L in 1:34 sec = 1.28 L/min
	1510		840	1206	433	2.0		2L in 1:33 sec = 1.29 L/min
	1524		840	1200	450	2.1		2L in 1:33 sec = 1.29 L/min
	15:39		840	1182	468	2.5		2L in 1:34 sec = 1.28 L/min
	15:56		840	1173	489	2.5		2L in 1:34 sec = 1.28 L/min
	16:10		840	1281	507	2.0		2L in 1:34 sec = 1.28 L/min
EDI #4B	16:33		840	1196	510	2.0		2L in 1:32 sec = 1.30 L/min

ANC07089
BZTO104(e)007089

pg#3

Infiltrex 300 System - Water Sample Log

Survey SW3 Crew A. Rodriguez, J. Moore, T. Da Date 07-12-05

Station ID	Start Time	End Time	RPM	Flow Rate (mL/min)	Volume Sampled (L)	Pressure (15-20 psi)	Filter change #	Comments
W3011-04B	1703		~~845~~ 840	1176	546	2.0		2L in 1:32 sec = 1.30 L/min
	1743		840	1184	586	3.0		2L in 1:33 sec = 1.29 L/min
	1756		840	1189	592	2.0		2L in 1:33 sec = 1.29 L/min
W3011-03B	1804		840	1183	595	2.0		2L in 1:33 sec = 1.29 L/min
	1833		840	1165	630	2.5		2L in 1:34 sec = 1.28 L/min
	1839		840	1178	636	2.0		2L in 1:34 sec = 1.28 L/min
	1910		840	1158	673	3.0		2L in 1:35 sec = 1.26 L/min
	1942		840	1167	710	3.0		2L in 1:36 sec = 1.25 L/min
	1945		840	1167	713	3.0		2L in 1:36 sec = 1.25 L/min
W3011-02B	1951		870	1220	714	3.0		2L in 1:32 sec = 1.30 L/min
	2022		870	1203	751	3.0		2L in 1:32 sec = 1.30 L/min
	2054		870	1184	788	3.0		2L in 1:34 sec = 1.28 L/min
	2124		870	1158	824	3.0		2L in 1:34 sec = 1.28 L/min
	2141		870	1150	843	2.0		2L in 1:37 sec = 1.24 L/min
						1.30		
					07-12-05			

ANC07090
BZTO104(e)007090

p#1

Infiltrex 300 System - Water Sample Log

Survey SW Summer 2005 Crew T. Stupakoff, J. Harrie, A. Wood Date 7/13/05

Station ID	Start Time	End Time	RPM	Flow Rate (mL/min)	Volume Sampled (L)	Pressure (15-20 psi)	Filter change #	Comments
W3-005								
EDI-1	7:46		800	1112	4.6	2.0		2L in 1:38 sec = 1.22 L/min
	7:52		820	1136	12	3.0		2L in 1:36 sec = 1.25 L/min
	809		820	1124	32	3.0		2L in 1:38 sec 1.38 = 1.22 L/m
	827		820	1111	52	3.0		" " 1:37 sec ~~1.37~~ = 1.24 L/m
EDI-2	0838		820	1128	57	3.0		" 1:38 sec = 1.22 L/m
	0858		820	1094	80	4.0		" 1:39 sec = 1.21 L/m
	0902		840	1154	84	4.0		" 1:36 sec = 1.25 L/m
	0918		840	1120	102	4.0		2L in 1:38 sec = 1.22 L/min
EDI-3	~~0925~~		~~860~~	~~1148~~	~~104~~	~~3.5~~		stopped pumping
	0937		860	1173	110	3.5		2L in 1:34 sec = 1.28 L/min
	0956		860	1168	131	~~3.5~~ 4.0		2L in 1:34 sec = 1.28 L/m
	10:02		860	1180	139	4.0		" 1:36 sec = 1.25 L/m
	10:24		860	1152	164	4.0		2L in 1:37 sec = 1.24 L/min
EDI-4	10:32		860	1159	168	4.0		2L in 1:35 sec = 1.26 L/min
	11:04		860	1149	206	4.0		2L in 1:36 sec = 1.25 L/min
	11:26		860	1127	231	4.5		2L in 1:38 sec = 1.22 L/min
EDI-5	1136		880	1182	236	4.5		1:34 1.28 L/m
	1158		880	1150	262	5.0	bottom	2L in 1:36 sec = 1.25 L/min
	1215		880	1150	281	5.0		1:36 1.25

EDI #1 982

p#2

Infiltrex 300 System - Water Sample Log

Survey SLO Summer 2005 Crew TS, JH, AW, AR, JM, TD Date 7/13/05

Station ID	Start Time	End Time	RPM	Flow Rate (mL/min)	Volume Sampled (L)	Pressure (15-20 psi)	Filter change #	Comments
EDI #4	12:26		880	1159	284	5.0		2L in 1:35 sec = 1.26 L/m
~~#5 39~~	12:39		880	1154	299	5.0		1:35 sec 1.26 L/m
#6	12:51		880	1152	312	5.0		1:35 sec 1.26 L/m
EDI #1B ~~#3 21~~	13:21		880	1148	317	4.5		2L in 1:37 sec = 1.24 L/min
#1B	14:09		900	1163	371	5.0		2L in 1:36 sec = 1.25 L/min
#1B	14:15		900	1149	379	5.5		2L in 1:36 sec = 1.25 L/min
#1B	14:40		920	1138	408	6.0		2L in 1:37 sec = 1.24 L/min
#1B	14:52		920	1153	421	6.0		2L in 1:36 sec = 1.25 L/min
EDI 2B	15:38		920	1195	426	5.0		2L in 1:32 sec = 1.30 L/min
	15:44		900	1176	435	5.0		2L in 1:34 sec = 1.28 L/min
	16:02		900	1160	454	5.0		2L in 1:36 sec = 1.25 L/min
	16:29		900	1153	1498	5.5		2L in 1:35 sec = 1.26 L/min
	16:38		900	1145	498	5.5		2L in 1:35 sec = 1.26 L/min
EDI 3B	16:47		900	1181	499	4.6		2L in 1:33 sec = 1.29 L/min
	17:18		900	1145	536	5.2		2L in 1:36 sec = 1.25 L/min
	17:46		900	1112	568	6.0		2L in 1:38 sec = 1.22 L/min
	17:52		900	1114	575	6.0		2L in 1:34 sec = 1.22 L/min
EDI 4B	17:54		950	1228	578	6.0		2L in 1:30 sec = 1.33 L/min
	18:31		950	1212	1616	6.0		2L in 1:33 sec = 1.29 L/min
	18:46		950	1174	1636	6.5		2L in 1:34 sec = 1.28 L/min

ANC07092
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p#3

Infiltrex 300 System - Water Sample Log

Survey SW Summer 2005 Crew A Rodriguez, J. Moore, T. Do Date 07.13.05

Station ID	Start Time	End Time	RPM	Flow Rate (mL/min)	Volume Sampled (L)	Pressure (15-20 psi)	Filter change #	Comments
WB-005-EDI-4B	1904		950	1153	654	7.0		2L in 1:34 sec = 1.28 L/min.
	1919		950	1153	672	7.0		2L in 1:35 sec = 1.28 L/min
	192A		950	1154	678	6.5		2L in 1:35 sec = 1.28 L/min
EDI-5B	1928		950	1222	679	6.0		2L in 1:31 sec = 1.31 L/min
	1958		950	1176	715	7.0		2L in 1:34 sec = 1.28 L/min
	2029		950	1144	748	7.0		2L in 1:35 sec = 1.28 L/min
	2035		950	1145	757	7.0		2L in 1:36 sec = 1.25 L/min.
	2053		950	1131	777	7.5		2L in 1:37 sec = 1.24 L/min
EDI-6B	2059		950	1182	780	7.0		2L in 1:33 sec = 1.29 L/min.
	2122		950	1154	808	7.0		2L in 1:36 sec = 1.25 L/min.
	2143		950	1155	832	7.0		2L in 1:36 sec = 1.25 L/min.
	2208		950	1120	860	7.0		2L in 1:38 sec = 1.22 L/min.
	2218		950	1101	871	7.0		2L in 1:39 sec = 1.21 L/min
	2223		950	1101	876	8.0		2L in 1:39 sec = 1.21 L/min
						T. Do		
						07.13.05		

ANC07093
BZTO104(e)007093

Infiltrex 300 System - Water Sample Log

Survey SW Summer 2005 Crew T. Stubblefield, J. Harris, A. Woods Date 7/14/05

Station ID	Start Time	End Time	RPM	Flow Rate (mL/min)	Volume Sampled (L)	Pressure (15-20 psi)	Filter change #	Comments
03-018	0831		800	1155	3.2	1.8		2L in 1:33 sec = 1.28 L/min
	0903		800	1159	40	2.0		2L in 1:33 sec = 1.29 L/min
	0935		800	1170	77	1.9		2L in 1:35 sec = 1.28 L/m
	10:06		800	1167	114	1.9		2L in 1:36 sec = 1.25 L/m
	10:38		800	1153	150	1.9		2L in 1:36 sec 1.25 L/m
	11:10		800	1154	188	1.9		2L in 1:36 sec 1.25 L/m
	11:41		800	1135	224	1.9		2L in 1:38 sec 1.22 L/m
	12:08		800	1174	254	1.8		2L in 1:34 sec = 1.28 L/min
	12:40		800	1134	289	1.9		2L in 1:37 sec = 1.24 L/min
	13:12		800	1153	326	1.8		2L in 1:38 sec = 1.22 L/m
	13:17		820	1179	332	1.8		2L in 1:36 sec = 1.25 L/min
	13:31		820	1172	346	2.0		2L in 1:33 sec = 1.29 L/min
	14:03		820	1162	382	2.0		2L in 1:35 sec = 1.28 L/m
	14:36		820	1131	419	2.0		2L in 1:37 sec = 1.24 L/min
	15:04		820	1131	455	2.0		2L in 1:37 sec = 1.24 L/m
	15:34		820	1138	490	2.0		2L in 1:38 sec = 1.22 L/min
	1542		860	1191	499	2.5		2L in 1:33 sec = 1.29 L/min
	1606		860	1168	528	2.5		2L in 1:34 sec = 1.28 L/min
	1638		860	1170	564	2.0		2L in 1:34 sec = 1.28 L/min
	1708		860	1162	599	2.0		2L in 1:35 sec = 1.28 L/min

ANC070
BZTO104(e)007094

Infiltrex 300 System - Water Sample Log

Survey SW Summer '05 Crew A. Rodriguez, J. Moore, ~~Kevin~~ Date 7/14/05

Station ID	Start Time	End Time	RPM	Flow Rate (mL/min)	Volume Sampled (L)	Pressure (15-20 psi)	Filter change #	Comments
W3-018	1737		860	1114	633	25		2 L in 1:34 sec = 1.28 L/min
	1809		860	1172	670	2.5		2 L in 1:36 sec = 1.25 L/min
	1838		860	1152	703	2.5		2 L in 1:37 sec = 1.24 L/min
	1908		860	1120	736	2.5		2 L in 1:38 sec = 1.22 L/min
	1937		860	1140	769	2.5		2 L in 1:39 sec = 1.21 L/min
	1940		900	1185	772	2.5		Adjust rate 1:34 sec = 1.28 L/min
	2008		900	1174	805	2.5		2 L in 1:34 sec = 1.28 L/min
	2039		900	1140	841	2.5		2 L in 1:36 sec = 1.25 L/min
	2109		900	1106	875	2.5		2 L in 1:38 sec = 1.22 L/min
	2111		930	1172	879	3.0		Adjust rate 2 L in 1:34 = 1.28 L/min
	2144		930	1184	917	3.0		2L in 1:33 sec = 1.29 L/min
	2152		930	1170	923	3.0		2L in 1:35 sec = 1.28 L/min
				1005 L pumped				
						JM		

ANC07095
BZTO104(e)007095

Infiltrex 300 System - Water Sample Log

Survey SW SUMMER 2005 Crew I. STUPAKOFF, A. WOOD, S. MAXWELL Date 7/18/05

Station ID	Start Time	End Time	RPM	Flow Rate (mL/min)	Volume Sampled (L)	Pressure (15-20 psi)	Filter change #	Comments
W016	0849		800	1192	0.5	2		2L in 1:34 sec = 1.28 L/min
"	0902.4	sm	800	1216	19.2	~2		2L in 1:35 = 1.26 L/min
"	0922.5	sm	800	1174	44	~2.2		2L in 1:36 = 1.25 L/min
	0958		800	1174	83	2.5		2L in 1:39 sec = 1.21 L/min
	10:03		820	1160	87	2.5		2L in 1:36 sec = 1.25 L/min
	10:30		820	1183	120	2.3		2L in 1:37 sec = 1.24 L/min
	11:00		820	1116	154	3.1		2L in 1:42 sec = 1.18 L/min
			~~840~~					
	11:06		850	1187	163	3.1		2L in 1:37 sec = 1.24 L/min
	11:35		850	1109	194	4.0		2L in 1:41 sec = 1.18 L/min
	11:39		880	1187	199	4.0		2L in 1:37 sec = 1.24 L/min
	12:08		880	1108	233	4.8		2L in 1:42 sec = 1.18 L/min
	12:11		910	1157	237	4.9		2L in 1:37 sec = 1.24 L/min
	~~1235~~ (57)	1237 (57)						Stop (rake)
	~~1238~~ 40	sm	910	1265	268	5.1		Restart 2L in 1:32 sec = 1.30 L/min
	~~1243~~	45 sm	890	~~1188~~	~~276~~ (59)	5.1		Adjust rate: 2L in 1:36 sec = 1.25 L/min
	1245	sm	890	1180	276	5.1		
	1309	sm	890	1065	302	~5		2L in 1:45 = 1.14 L/min
	1312	sm	925	1				Adjust
	1314	sm	925	1080	305	~5		2L in 1:41 = 1.18 L/min

ANC07096
BZTO104(e)007096

Infiltrex 300 System - Water Sample Log

Survey PH R2 SW summer '05 Crew STUPALOF, MAXWELL, WOOD, RODRIQUEZ, MOORE Date 7/18/05

Station ID	Start Time	End Time	RPM	Flow Rate (mL/min)	Volume Sampled (L)	Pressure (15-20 psi)	Filter change #	Comments
W3-016	~~1316~~ SW	1316	980		308			Adjust
	~~1317~~ SW	1319	980	1185	311	5.2		2L in 1:35 sec = 1.26 L/min
	1353		980	1082	349	5.9		2L in 1:44 sec = 1.15 L/min
	1356		1000	1115	351	5.9		2L in 1:40 sec = 1.20 L/min
	1359		1030	1170	~~359~~			2L in 1:37 sec = 1.24 L/min
	1401		1050	1190	355 358	6.5		2L in 1:34 sec = 1.28 L/min
	1425	1453	1050	1168	386	7.0		2L in 1:36 sec = 1.25 L/min
		1453	—	—	417			Stopped because of large water
	1501							Restart Infiltrex
	1507	SW	~~1360~~ 1050	1360	428	7.5		2 L in 1:24 sec = 1.42 L/min
	1532		1050	1226	459	7.0		2 L in 1:32 sec = 1.30 L/min
	1603		~~1050~~ ~~1050~~ W	1084	495	7.0		2 L in 1:42 sec = 1.18 L/min
	1608		1100	1155	502	8.0		Adjust rate 2 L in 1:37 sec = 1.24 L/min
	1636		1100	1139	532	8.0		2 L in 1:45 sec = 1.14 L/min
	1639		1250	1270	536	10.0		Adjust rate 2 L in 1:28 sec = 1.36 L/min
	1710		1250	1221	573	11.5		2 L in 1:30 sec = 1.33 L/min
	1742		1250	900	608	12.0		2 L in 2:02 sec = 1.05 L/min
	1746		~~1100~~ AR					Stop Infiltrex and backflush
	1747		1400	1845	613	14.0		Restart Infiltrex 2 L in 1:03 sec = 1.90 L/min
	1749		1250	1547	616	13.0		Adjust rate, 2 L in 1:14 sec = 1.62 L/min

BZTO104(e)007097 ANC07097

Infiltrex 300 System - Water Sample Log

Survey Rd 2 SW Summer '05 Crew A. Rodriguez, J. Moore Date 7/18/05

Station ID	Start Time	End Time	RPM	Flow Rate (mL/min)	Volume Sampled (L)	Pressure (15-20 psi)	Filter change #	Comments
W3-016	1752		1050	1200	620	11.0		Adjust rate, 2 L in 1:34 sec = 1.28 L/min
	1829		1050	797	657	15.0		2 L in 2:18 sec = 0.92 L/min
	1833						L7965-7	Stop Infiltrex, replace filter #1 with filter #2
	1845		1050	1464	665	6.0		Restart Infiltrex, 2 L in 1:17 sec = 1.56 L/min
	1852		950	1300	666	5.0		2 L in 1:27 sec = 1.38 L/min Adjust rate
	1925		950	1209	708	6.0		2 L in 1:32 sec = 1.30 L/min
	1956		950	1128	742	6.0		2 L in 1:41 sec = 1.18 L/min
	1958		1030	~~1030~~ 1311	744	6.5		2 L in 1:22 sec = 1.30 L/min
	2022		1030	1103	775	6.5		2 L in 1:40 sec = 1.20 L/min, air bubbles
	2030		1100	1162	780	7.0		2 L in 1:32 sec = 1.30 L/min, " "
	2059		1100	1129	814	7.0		2 L in 1:39 sec = 1.21 L/min, " "
	2101		1150	1172	817	7.5		Adjust rate, 2 L in 1:33 sec = 1.29 L/min
	2128		1150	910	847	6.0		2 L in 2:00 sec = 1.00 L/min, air bubbles
	2131		1350	1164	850	7.0		Adjust rate 2 L in 1:30 sec = 1.33 L/min
	2158		1350					Stop Infiltrex and backflush system due to increased air leak, low flow rate
	2209		1350	1835	870	11.0		Adjust rate, 2 L in 1:03 sec = 1.90 L/min
	2201		1100	1366	874	8.0		2 L in 1:25 sec = 1.41 L/min
	2227		1100	496	896	4.0		2 L in 5:05 sec = .393 L/min
	2229							Backflush
	2233		1100	1464	898	8.0		2 L in 1:18 sec = 1.54 L/min

ANC070981
BZTO104(e)007098

Infiltrex 300 System - Water Sample Log

Survey Rd 2 SW Summer '05 Crew A. Rodriguez, J. Moore Date 7/18/05

Station ID	Start Time	End Time	RPM	Flow Rate (mL/min)	Volume Sampled (L)	Pressure (15-20 psi)	Filter change #	Comments
W3-016	2243		1100	1219	~~907~~ 907	7.0		2 L in 1' 34 sec = 1.28 L/min
	2254		1100	1210	924	6.0		2 L in 1:31 sec = 1.29 L/min

7/18/05

ANC07099
BZTO104(e)007099

page #1

Infiltrex 300 System - Water Sample Log

Survey SW Summer 2005 Crew I. Stupakoff, S. Maxwell, A. Wood Date 7/19/05

Station ID	Start Time	End Time	RPM	Flow Rate (mL/min)	Volume Sampled (L)	Pressure (15-20 psi)	Filter change #	Comments
WB-015	08:34		800	1179	3.7	2.5	0	2L in 1:35 sec = 1.26 L/min
	0838		800	1208	9.5	2.5		2L in 1:34 sec = 1.28 L/min
	0901		800	1189	36.3	~2		2L in 1:34 sec = 1.27 L/min
	0928		800	1178	69	2.5		2L in 1:34 sec = 1.27 L/min
	0956		800	1189	101	2.5		2L in 1:35 sec = 1.26 L/min
	1025		800	1165	134	2.5		2L in 1:36 sec = 1.25 L/min
	1056		800	1157	171	2.5		2L in 1:36 sec = 1.25 L/min
	1126		800	1168	206	2.5		2L in 1:36 sec = 1.25 L/min
	1155		800	1165	239	2.8		2L in 1:38 sec = 1.22 L/min
	1158	1226	820	1177	243	2.8		2L in 1:36 sec = 1.25 L/min
	~~1229~~	new	——	——	276	——		Turned s/o pump b/c of large wake
	1229		820	1190	278	2.9		Re-started pump. 2L in 1:35 sec = 1.26 L/min
	1258		820	1146	310	2.9		2L in 1:38 sec = 1.22 L/min
	1301		840	1172	314	2.9		2L in 1:36 sec = 1.25 L/min
	1330		840	1150	348	3.0		2L in 1:38 sec = 1.22 L/min
	1334		860	1175	352	3.0		2L in 1:35 sec = 1.26 L/min
	1401		860	1136	383	3.0		2L in 1:39 sec = 1.21 L/min
	1405	1412	900	1205	388	3.0		2L in 1:34 sec = 1.27 L/min
	1412		——	——	396	——		Pump s/o because generator stopped
	1415		900	1283	400	3.0		Restarted pump. 2L in 1:28 sec = 1.36 L/min

ANC07100
BZTO104(e)007100

page #2

Infiltrex 300 System - Water Sample Log

Survey SW Summer 2005 Crew I. Stuyakoff, A. Wood Date 7/19/05

Station ID	Start Time	End Time	RPM	Flow Rate (mL/min)	Volume Sampled (L)	Pressure (15-20 psi)	Filter change #	Comments
WB-015	14:19		900	1240	401	3.1		2L in 1:30 sec = 1.33 L/min
	14:23	1429	900	1229	405	3.1		2L in 1:32 sec = 1.30 L/min
		1429	—	—	413	—		Stopped pump because of large wake
	14:32	—	900	—	—	—		Restarted pump
	14:37		900	1195	419	3.2		2L in 1:34 sec = 1.27 L/min
	15:04		900	1106	400	3.2		2L in 1:42 sec = 1.088 L/min
		1508	—	—	455	—		Stopped pump B/C of large wake
	15:08:30	—	—	—	—	—		Restarted pump
	15 13			1076	459			2L in 1:43 sec = 1.17 L/min
	15 18		930	1095	465	3.25 psi		2L in 1:43 sec = 1.17 L/min
	1547	1549	930	972	495	3.5		2L in 1:56 sec = 1.03 L/min
	1549	—	—	—	—	—		Stopped pump to backflush
	1550	—	—	—	—	—		Restarted pump
	1552		930	1312	498	~~3.5 psi~~ 4.5 psi		2L in 1:25 sec = 1.41 L/min
	1622		930	1045	535	4.5		2L in 1:49 sec = 1.10 L/min
	1630							Stop Infiltrex
	1632		975	1366	543	4.5		Restart Infiltrex, Adjust rate = 2L in 1:29 sec = 1.34 L/min
	1651		975	990	564	5.0		2L in 1:52 sec = 1.07 L/min
		1654			566			Stop Infiltrex and backflush
	1655		975	1352	567	5.5		Restart Infiltrex, adjust rate 2L in 1:25 sec = 1.414 L/min

ANC07101
BZTO104(e)007101

Infiltrex 300 System - Water Sample Log

Survey SW Summer '05 Crew A. Rodriguez, J. Moore Date 7/19/05

Station ID	Start Time	End Time	RPM	Flow Rate (mL/min)	Volume Sampled (L)	Pressure (15-20 psi)	Filter change #	Comments
W3-015	1717		975	1138	594	5.5		2 L in 1:34 sec = 1.27 L/min
"	~~172~~ AR	1722			598			Stop Infiltrex due to large wake from barge
"	1723							Restart Infiltrex
"	1729		975	985	606	5.0		2 L in 1:54 sec = 1.05 L/min
"	~~1734~~ AR	1731			608			Back flush
"	1732		975	1339	610	5.5		Restart, Adjust rate 2 L in 1:25 sec = 1.41 L/min
"	1748		975	1120	627	6.5		2 L in 1:35 sec = 1.26 L/min
"	1804		975	980	643	6.5		2 L in 1.55 sec = 1.04 L/min
"		1804	—	—	—	—		Backflush Stop Infiltrex
"	1807		975	1278	645			Restart Infiltrex
"	1817		975	1160	657	7.0		2 L in 1:37 sec = 1.24 L/min
"	1825		975	942	668	7.5		2 L in 1:57 sec = 1.03 L/min
"		1825	—		671	—		STOP INFILTREX - BACKFLUSH
"	1827		~~975~~	~~1289~~	671	7.0		START INFILTREX
"	1848		975	1176	689	9.0		2 L in 1:35 sec = 1.26 L/min
"	1904		975	1032	708	9.5		2 L in 1:45 sec = 1.14 L/min
"		1904			709			Stop Infiltrex & backflush
"	1908		975	1271	710	7.0		ReStart Infiltrex
"	1921		975	1100	724	9.0		2 L in 1:46 sec = 1.13 L/min
		1921			724			Backflush

ANC07102
BZTO104(e)007102

Infiltrex 300 System - Water Sample Log

Survey SW Summer '05 Crew A. Rodriguez, J. Munoz Date 7/19/05

Station ID	Start Time	End Time	RPM	Flow Rate (mL/min)	Volume Sampled (L)	Pressure (15-20 psi)	Filter change #	Comments
W3-015	1924		975	1227	726	6.5		Restart Infiltrex
	1937		"	1110	742	9.0		2L in 1:37 sec = 1.24 L/min
	1949		975	1000	753	10.0		2L in 1:48 sec = 1.11 L/min
		1949			753			Stop Infiltrex & backflush
	1951		975	1274	755	8.0		2 L in 1:31 sec Restart Infiltrex
	2001		975	1120	768	9.0		2L in 1:36 sec = 1.25 L/min
	2020		975	1044	787	12.0		2L in 1:45 sec = 1.14 L/min
		2020			787			Stop Infiltrex, backflush
	2024		975	1220	790	9.0		Restart Infiltrex, 2 L in 1:22 sec = 1.394/min
	2034		975	1080	804	11.5		2L in 1:40 sec = 1.20 L/min
	2050		975	1020	817	13.0		2L in 1:47 sec = 1.12 L/min
		2050			817			Stop Infiltrex & backflush
	2053		975	1205	820	9.0		Restart Infiltrex
	2109		"	1050	837	13.0		2 L in 1:44 sec = 1.15 L/min
		2109			837			Stop Infitrex & backflush
	2113		1050	1334	840	9.5		Restart Infiltrex
	2125		~~1170~~ (AR)	1170	854	13.0		2 L in 1:35 sec = 1.26 L/min
	2136		1050	1000	866	14.0		2 L in 1:50 sec = 1.09 L/min
		2136			866			Stop Infiltrex
	2140		1050	1312	870	10.0		Restart Infiltrex

ANC07103
BZTO104(e)007103

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Infiltrex 300 System - Water Sample Log

Survey Jul Summer 05 Crew A. Rodriguez J. Moore Date 7/19/05

Station ID	Start Time	End Time	RPM	Flow Rate (mL/min)	Volume Sampled (L)	Pressure (15-20 psi)	Filter change #	Comments
W3-015	2149		1050	1025	880	13.0		2 L in 1:45 sec = 1.14 L/min
		2152					17905-11	Stop Infiltrex, filter change
	2204		1050	1580	885	4.0		Restart Infiltrex, 2 L in 1:12 sec = 1.67 L/min
	2212		925	1366	895	3.5		2 L in 1:28 sec = 1.36 L/min
	2246		925	1286	941	3.5		2 L in 1:28 sec = 1.36 L/min
	2315		925	1173	976	3.0		2 L in 1:35 sec = 1.26 L/min
	2325		925	1134	987	3.0		2 L in 1:37 sec = 1.24 L/min
	2327							Stop Infiltrex

7/19/05

ANC07104
BZTO104(e)007104

YSI LOG

Survey R2 SW Summer '05 Crew S. MAXWELL, I. STUPAKOF, J. SUND, J. Moore, A. Rodriguez Date 7/6/05

Station	Time	Depth	Temp C	DO (mg/L)	pH	Conductivity (uS/cm)	ORP (mV)	Comments
W3-013-1	0826	3.27m	20.1	9.55	7.46	142	197	a few minutes into Kitchen Sampling
W3-013-1	0855	3.22m	20.11°C	9.77	7.56	143	213	(not stored in memory)
"	0910	3.22m	20.11	9.72	7.55	143	213	"
"	0944	3.15	20.21	10.03	7.67	143	221	"
"	1009	3.10	20.28	10.10	7.74	143	221	"
"	1032	3.06	20.07	9.46	7.47	142	229	"
"	1059	3.01	20.18	9.79	7.64	143	226	"
"	1131	2.95	20.19	9.69	7.56	143	229	"
"	1201	2.90	20.27	10.04	7.70	143	224	"
"	1232	2.85	20.25	9.95	7.65	146	225	"
"	1300	2.80	20.30	10.11	7.68	147	223	"
"	1330	2.78	20.17	9.72	7.56	150	227	"
"	1400	2.71	20.59	11.23	8.24	146	209	"
"	1427	2.67	20.25	9.97	7.64	149	223	"
"	1509	2.65	20.36	10.41	7.78	147	220	Being logged. "W3-013-1n" = file name
"	1538	2.62	20.34	9.97	7.65	148	224	"
"	1609	2.64	20.30	9.85	7.59	148	227	"
"	1640	2.65	20.52	10.67	7.96	146	219	"
"	1727	2.75	20.46	10.26	7.75	146	223	"
"	1758	2.86	20.43	9.92	7.61	147	227	"

YSI LOG

Survey R2 SW Summer '05 Crew A. Rodriquez, J. Moore Date 7/6/05

Station	Time	Depth(m)	Temp C	DO (mg/L)	pH	Conductivity (uS/cm)	ORP (mV)	Comments
W3-013-1	1831	2.98	20.4	10.73	8.03	~~148~~ 144	219	Being logged as "W3-013-1n"
"	1858	3.08	20.53	11.03	8.12	145	218	"
"	1930	3.12	20.54	10.37	7.85	145	221	"
"	1959	3.15	20.56	10.27	7.73	142	226	"
"	2031	3.14	20.56	10.29	7.77	144	227	"
"	2104	3.11	20.49	10.14	7.67	145	231	"
"	2130	3.08	20.34	NC 9.67	7.55	152	237	"

ANC07106
BZTO104(e)007106

YSI LOG

Survey 2W6 RZ SW Summer Crew J. STOPAKOF, S. MAXWELL (Day) J. Moore, A. Rodriguez (Night) Date 7/7/05

file name W3013-2

Station	Time	(m) Depth	Temp C	DO (mg/L)	pH	Conductivity (uS/cm)	ORP (mV)	Comments
W3-013-2	0801	3.00	20.15	6.19	7.24	71083	208	* Conductivity not correct
"	0836	2.93	20.20	6.28	7.34	70046	256	* " " "
"	0844							Stop YSI log, check calibration
"	0852							restart YSI log.
"	0854	2.68	20.17	8.65	7.03	85	234	
"	0925	2.64	20.24	8.67	7.35	86	236	
"	0959	2.57	20.29	8.67	7.34	85	238	
"	1031	2.52	20.24	8.80 (SM)	7.36	84	239	
"	1057	2.47	20.24	8.66	7.35	85	240	
"	1127	2.42	20.36	8.90	7.37	85	242	
"	1220	2.32	20.48	8.97	7.41	85	237	
"	1308	2.24	20.55	9.96	7.40	84	239	
"	1423	2.12	20.66	9.14	7.45	84	239	
"	1452	2.05	20.66	9.09	7.44	84	239	
"	1523	2.24	20.67	9.13	7.45	84	239	* Moved sampler on bottom
"	1628	2.17	20.84	9.34	7.50	85	238	
"	1703	2.19	20.98	9.39	7.53	85	237	
"	1736	2.25	21.24	9.47	7.58	86	236	
"	1757	2.31	21.30	9.58	7.62	86	233	
"	1827	2.43	20.81	9.09	7.45	85	239	

p#1

YSI LOG

Survey SW Summer 2005 Crew A. Wood, J. Harris, T. Stupakoff Date 7/11/05

Station	Time	Depth m	Temp C	DO (mg/L)	pH	Conductivity (uS/cm)	ORP (mV)	Comments
W3023-1	10:26	9.9	20.85	8.09	7.19	95	188.2	*NOTE - failed to turn on logging at EDI-1
W3023-1	10:43	0.9	20.94	8.19	7.18	95	193.0	at surface at EDI-1
W3023-2	10:57	1.07	20.97	8.25	7.21	95	193.7	lowering at EDI-2
W3023-2	11:20	14.0	20.86	8.11	7.19	103	202.6	raising at EDI-2
W3023-2	11:39	1.17	21.01	8.24	7.22	95	209.5	" " "
	1140	0.42						
W3023-3	12:04	4.84	20.94	8.26	7.20	95	213.5	
-3	12:19	10.31	20.91	8.19	7.18	96	215.0	lowering at EDI-3
-3	13:00	8.3	20.98	8.36	7.20	95	223.1	
W3023-4	13:45	3.7	21.21	8.54	7.25	95	206.9	lowering at EDI-4
	13:52	9.7	20.91	8.30	7.21	97	207.7	
	13:57	12.5	20.90	8.24	7.20	98	208.7	At bottom
	14:10	3.24	21.29	8.35	7.24	95	206.9	stopped peristaltic pump
2ND PASS ↓ W3023-1B	1452	8.16	20.88	8.19	~~7.84~~ 7.18	95	218.5	raising at EDI-1
-1B	15:05	1.99	21.00	8.29	7.21	94	217.1	
	15:36	0.97	21.03	8.22	7.24	95	209.0	
	16:15	8.6	20.90	8.10	7.17	99	213.4	
	16:39	0.73	21.47	8.34	7.22	95	213.6	
2B	17:15	1.76	21.47	8.45	7.29	95	215.6	
	1745	4.55	21.14	8.28	7.22	96	214.8	

ANC07108
BZT0104(e)007108

page # 2

YSI LOG

Survey SW Summer 2005 Crew A. Rodriguez, J Moore, T. Do, K. Haslam Date 07.11.05

Station	Time	Depth	Temp C	DO (mg/L)	pH	Conduct-ivity (uS/cm)	ORP (mV)	Comments
W3023	1812	15.10	20.94	8.10	7.20	112	205	Near bottom
EDI-2B	1846	1.49	21.22	8.29	7.25	96	211.4	
	1917	14.6	20.94	8.05	7.20	113	213.6	
	1926	13.8	20.93	8.02	7.18	105	213.7	
EDI-3B	1934	0.84	21.28	8.35	7.34	83	212.3	
	2000	10.77	20.99	8.12	7.19	112	219.2	
	2012	12.02	20.96	8.06	7.16	106	219.1	Near bottom
	2042	2.158	21.38	8.47	7.27	84	219.5	
	2048	0.743	21.40	8.47	7.25	89	219.9	
	2116	13.1	20.90	7.92	7.16	102	225.1	Near bottom
	2147	1.61	21.26	8.41	7.27	88	221	
	2200	4.23	21.22	8.34	7.26	89	221.7	
EDI-4B	2210	0.75	21.21	8.40	7.34	84	225.1	
	2230	10.82	20.91	7.91	7.16	108	228.7	Near bottom
	2300	6.41	21.12	8.27	7.22	96	224	
	2315	0.79	21.20	8.33	7.26	94	223.9	
	2342	10.53	21.14	8.17	7.19	96	226.8	Near bottom
	2347	10.98	21.13	8.18	7.17	103	227.9	Near bottom
07.12.05	0012	0.76	21.21	8.35	7.26	88	225.5	
	0030	7.24	21.23	8.34	7.24	89	227.2	

ANC07109
BZT0104(e)007109

P#1

YSI LOG

Survey SW Summer 2005 Crew I. Stupakoff, J. Harsie, A. Wood Date 7/12/05

Station	Time	Depth (m)	Temp C	DO (mg/L)	pH	Conductivity (uS/cm)	ORP (mV)	Comments
W3-011-01	0729	4.43	21.04	7.40	7.01	104	208.0	
	0743	13.00	20.88	6.83	6.95	103	216.	bottom
	0807	0.24	21.03	7.46	7.02	103	217.9	top
EDI-02	0815	1.28	21.04	7.46	7.07	101	213.6	
	0841	12.49	20.75	6.98	7.04	105	219.9	bottom
EDI 3	09:10	1.65	21.06	7.59	7.08	100	218.7	TOP
	09:30	13.85	20.20	7.36	7.12	124	227.0	Bottom @ 15.6
	09:38	10.60	20.81	6.97	7.07	104	225.5	
	09:50	0.25	21.16	7.64	7.09	—	222.8	TOP
EDI 4	10:09	0.91	21.12	7.63	7.14	100	179.2	TOP
	10:22	11.4	20.64	7.14	7.01	114	201	
	10:29	15.1	20.21	7.21	7.09	122	206	Bottom
	10:47	0.303	21.22	7.72	7.08	100	208.6	TOP
EDI 5	1056	3.050	21.09	7.48	7.09	100	207.8	Top
	1105	10.8	20.95	7.28	7.02	102	212.6	~~Bottom (None)~~
	11:08	12.7	20.67	7.13	7.03	109	214.7	Bottom
	11:24	8.6	20.98	7.26	7.02	101	214.5	Bottom
	11:36	0.34	21.34	7.78	7.12	100	212.6	TOP
EDI #1	11:54	2.3	21.17	7.82	7.17	101	211.9	TOP
	12:12	13.5	20.85	6.83	6.98	103	222.8	Bottom

p#2

YSI LOG

Survey SW Summer 2005 Crew IS / JH / AW / AR / JM / T.D. Date 7/12/05

Station	Time	Depth(m)	Temp C	DO (mg/L)	pH	Conduct-ivity (uS/cm)	ORP (mV)	Comments
EDI #1B	12:36	0.379	21.53	8.25	7.20	100	217.2	Top
	13:00	12.46	20.91	6.91	6.98	102	223.7	Bottom
	13:16	0.378	21.64	8.27	7.20	100	218.0	Top
	13:30	11.50	20.93	7.02	7.00	101	224.2	Bottom
	13:40	2.7	21.16	7.78	7.08	101	222.0	top
EDI #5B	14:17	2.947	21.12	7.85	7.16	99	175.3	
	1457	5.16	21.09	7.77	7.12	99	198.3	bottom
	1511	1.11	21.25	7.87	7.14	100	203.4	top
	15:25	5.7	21.05	7.62	7.1	100	209.3	bottom
	15:41	1.18	21.28	8.01	7.16	99	210.8	top
	15:58	5.3	21.10	7.66	7.10	99	215.8	bottom
	1610	2.3	21.31	8.09	7.15	92	217.1	near top
EDI #4B	1633	0.625	21.46	8.65	7.35	93	216.0	near top.
	1703	14.6	20.97	7.42	7.04	92	223.3	bottom
	1744	0.41	21.44	8.67	7.27	93	219.1	near top
	1756	1.97	21.35	8.50	7.30	92	220.6	
EDI #3B	1804	0.57	21.32	8.47	7.39	92	222.8	top
	1834	13.37	20.95	7.30	7.02	92	230.8	
	1839	13.95	20.93	7.18	7.02	92	230.1	bottom
	1910	0.47	21.33	8.50	7.25	92	221.9	top

ANC07111
BZTO104(e)007111

#3

YSI LOG

Survey SW Summer 2005 Crew A. Rodriguez, J. Moore, T. Do Date 07.12-05

Station	Time	Depth	Temp C	DO (mg/L)	pH	Conduct-ivity (uS/cm)	ORP (mV)	Comments
W3-011-0BB	1942	11.68	20.98	7.45	7.04	92	229.7	
	1946	12.68	20.98	7.52	7.04	92	230.4	
W3-011-0BB	1951	0.45	21.25	8.41	7.34	95	225.3	
	2022	12.92	20.93	7.23	7.04	92	231.8	near bottom
	2054	1.47	21.20	7.99	7.16	93	227.9	
	2124	12.51	20.94	7.44	7.04	95	234.5	
	2141	7.031	21.07	7.77	7.09	93	232.6	

T. Do
07.12-05

ANC07112
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p#1

YSI LOG

Survey SLW Summer 2005 Crew I. Stuparyk, T. Harris, A. Wood Date 7/13/05

Station	Time	Depth(m)	Temp C	DO (mg/L)	pH	Conduct-ivity (uS/cm)	ORP (mV)	Comments
W3.005								
EDI-1	07:03	0.12	20.76	7.68	6.68	103	201.3	Surface
	0749	1.8	20.89	7.46	7.12	102	218.2	
	811	10.7	20.61	7.24	7.13	113	223.6	Bottom
	0820	0.45	20.93	7.48	7.11	101	225.5	Top
EDI 2	0840	2.48	20.92	7.42	7.11	101	224.6	on Descent
	0857	12.8	20.47	7.39	7.18	117	230.8	Bottom
	0919	0.3	20.98	7.53	7.13	101	230.7	top
EDI 3	0927	0.3	21.00	7.61	7.10	101	228	top
	0940	2.8	20.92	7.44	7.09	102	~~227~~ ←228	
	0956	~~13.2~~ 12.8	20.18	7.58	7.17	134	233.5	Bottom going Down
	10:03	13.3	20.15	7.59	7.23	132	232.0	Bottom going up
	10:26	0.12	21.12	7.65	7.12	101	234.2	top
	10:33	0.31	21.18	7.69	7.15	101	228.6	top going down
	11:03	16.161	20.00	7.86	7.30	142	334.9	
	11:27	0.53	21.11	7.70	7.14	101	233.9	top
EDI#5	11:35	0.47	21.12	7.69	7.14	101	231.5	
	1159	14.3	15.55	8.14	7.34	148	230	bottom
	1215	0.94	21.12	7.63	7.12	101	233.2	TOP
EDI #6	1227	~~21.07~~ 1.95	21.07	7.61	7.14	101	227.5	TOP

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pt 2

YSI LOG

Survey SW Summer 2005 Crew IS, JH, AW Date 7/13/05

Station (6)	Time	Depth (m)	Temp C	DO (mg/L)	pH	Conduct-ivity (uS/cm)	ORP (mV)	Comments
EDI #6	12:40	11.8	20.50	7.20	7.12	127	234.7	
cont (6)	12:51	0.64	21.19	7.78	7.16	101	230.0	top
2nd pass ↓ EDI #18	13:23	1.53	21.09	7.78	7.20	103	216.1	top at EDI #18
	13:43	8.88	20.43	7.37	7.14	127	226.1	bottom
	14:17	0.59	21.38	7.90	7.18	102	225.6	top
	14:41	9.3	20.68	7.12	7.11	108	232.6	bottom
	14:53	4.46	20.95	7.39	7.07	103	232.6	
EDI 23	15:39	2.12	21.27	7.90	7.29	101	215.2	
	16:03	7.51	20.79	7.41	7.12	111	228.8	
	1629	13.5	20.17	7.46	7.20	108	233.4	near bottom
	1637	0.62	20.82	7.43	7.13	103	232.8	
EDI 3B	1646	0.74	21.33	7.95	7.27	94	228.8	near top
	1718	14.5	20.07	7.89	7.27	122	236.1	bottom
	1746	0.78	21.47	8.26	7.27	94	231.1	near top
	1753	2.49	21.35	8.05	7.24	94	230.5	
EDI-4B	1759	0.61	21.44	8.27	7.40	95	228.7	near top
	1831	11.22	20.69	7.42	7.13	106	237.5	
	1846	16.32	19.96	7.40	7.22	141	239.4	bottom
	1904	7.66	20.98	7.40	7.12	96	235.8	
	1918	0.801	21.26	7.91	7.19	94	234.1	near top

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p#3.

YSI LOG

Survey SW Summer 2005 Crew A. Rodriguez, J. Moore, T. Do Date 07-13-05

Station	Time	Depth	Temp C	DO (mg/L)	pH	Conduct-ivity (uS/cm)	ORP (mV)	Comments
EDI-4B	1924	2.68	21.26	7.92	7.17	94	234.8	
EDI-5B	1929	0.69	21.14	7.93	7.34	95	235.0	
	1958	14.01	20.56	7.26	7.11	127	241.6	
	2029	3.85	21.20	7.89	7.20	103	235.0	
	2035	0.64	21.21	7.99	7.22	95	235.8	
	2053	8.88	20.97	7.35	7.09	99	240.3	
EDI-6B	2059	0.375	21.12	8.13	7.24	95	237.9	
	2122	12.03	20.40	7.02	7.09	107	244.2	bottom
	2143	1.87	21.12	7.87	7.19	96	240.1	
	2208	10.37	20.54	7.35	7.11	124	247.3	near bottom
	2218	14.51	20.44	7.34	7.14	130	245.1	bottom
	2223	9.91	20.86	7.40	7.10	104	243.9	

7.90

07-13-05

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YSI LOG

Survey SW Summer 2005 Crew I. Stumhoff, J. Hasse, A. Wood Date 7/14/05

Station	Time	Depth (m)	Temp C	DO (mg/L)	pH	Conduct-ivity (uS/cm)	ORP (mV)	Comments
WS-018	08:26	7.72	20.97	7.27	6.93	106	173.8	at river bottom
	09:04	7.72	21.09	7.20	6.99	107	171.8	"
	0936	7.74	21.08	7.09	6.98	107	153	"
	1007	7.77	21.07	7.07	6.97	107	137.8	"
	1038	7.80	21.07	7.00	6.95	107	132.1	"
	11:11	7.83	21.07	6.99	6.95	107	128.0	"
	11:42	7.85	21.07	7.01	6.94	106	92.9	"
	12:10	7.85	21.07	7.10	6.98	106	129.1	"
	12:39	7.83	21.07	7.17	7.00	105	148.8	"
	13:13	7.81	21.07	7.13	6.99	105	147.1	"
	13:33	7.78	21.07	7.11	7.00	106	152.7	"
	14:09	7.76	21.08	7.25	7.02	105	147.0	"
	14:37	7.73	21.07	7.22	7.02	105	148.1	"
	15:06	7.70	21.05	7.11	6.97	106	131.2	"
	1534	7.66	21.06	7.11	6.97	106	91.7	"
	1606	7.62	21.05	7.12	6.9	89	98.7	"
	1638	7.59	21.04	7.06	6.97	98	102.9	"
	1708	7.56	21.04	7.05	6.96	98	96.8	"
	1737	7.51	21.03	7.19	6.99	98	82.8	"
	1809	7.51	21.04	7.19	7.01	97	113.5	"

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YSI LOG

Survey SW Summer 2005 Crew A. Rodriguez, J. Moore Date 7/14/05

Station	Time	Depth	Temp C	DO (mg/L)	pH	Conduct-ivity (uS/cm)	ORP (mV)	Comments
W3-01B	1838	7.48	21.04	7.27	6.99	97	128.2	
	1908	7.48	21.04	7.17	6.99	97	130.2	
	1937	7.48	21.03	7.14	6.98	98	139.1	
	2008	7.49	21.03	7.04	6.98	98	143.7	
	2039	7.54	21.08	7.18	6.98	89	79.7	
	2109	7.61	21.03	7.15	6.96	98	91.3	
	2144	7.73	21.03	7.19	6.97	98	123.3	
	2152	7.78	21.03	7.12	6.96	98	113.6	

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YSI LOG

Survey SW Summer 2005 Crew A. Rarquez, J. Hoffie, A. Wood Date 7/15/05

Station	Time	Depth(m)	Temp C	DO (mg/L)	pH	Conductivity (uS/cm)	ORP (mV)	Comments
W3-017	0856	1.38	21.23	7.92	7.28	107	189.5	At bottom
	0930	1.42	21.14	7.67	7.29	107	195.3	"
W3-014	1025	0.361	21.52	8.44	7.48	~~160~~ 98	160.2	At surface
	10~~38~~36	1.66	21.38	8.28	7.40	105	167.3	
-014	1044	2.46	21.50	8.29	7.35	105	169.9	At bottom
-014	1052	0.42	21.87	8.40	7.40	106	164.0	TOP
-012	1152	0.38	22.11	8.69	7.51	109	175.7	on Bottom
-012	1234	0.37	20.49	9.04	7.54	108	170.4	
W3-010	14:00	0.01	22.45	8.93	7.43	106	173.2	top
-010	1408	~~0.03~~ 0.3	21.80	~~101.7~~ 8.92	7.40	99	180.1	Surface
	~~1442~~	~~0.110~~	~~22.61~~	~~8.82~~	~~7.49~~	~~107~~	~~190.8~~	
-010	1444	0.396	22.09	8.82	7.50	100	190.1	Near surface (re-do)
-010	1500	3.5	21.18	8.11	7.27	105	194.4	Bottom
-010	1513	0.28	22.69	8.77	7.49	106	186.6	TOP

YSI LOG

Survey SW SUMMER 2005 Crew I. STUPAKOFF, A. WOOD, S. DARWELL Date 7/18/05

Station	Time	Depth (m)	Temp C	DO (mg/L)	pH	Conductivity (uS/cm)	ORP (mV)	Comments
WQ16-1	08:49	2.46	21.27	9.29	7.28	108	190.3	
"	0853	2.45	21.19	9.26	7.31	107	191	
"	0922	2.40	21.24	9.41	7.43	106	186	
"	10:00	2.35	21.40	9.75	7.56	105	183	
"	10:29	2.30	21.48	9.94	7.65	104	185	
"	11:03	2.25	21.63	10.14	7.76	104	186	
"	11:37	2.20	21.53	9.90	7.73	104	188	
"	12:11	2.16	21.49	9.77	7.65	104	192	
"	1240	2.12	21.46	9.90	7.68	104	195	
"	1310	2.11	21.49	9.79	7.72	104	197	
"	1352	2.12	21.53	10.06	7.74	104	199	
"	1424	2.15	21.39	9.72	7.62	105	205	
"	14:56	2.20	21.35	9.57	7.55	105	209	
"	1533	2.29	21.46	9.94	7.75	97	207	1N µS/cm FOR CONDUCTIVITY.
"	1604	2.36	21.35	9.66	7.61	98	210.7	"
"	1636	2.42	21.74	10.19	8.13	99	201	"
"	1710	2.43	22.10	10.38	7.93	100	206	"
"	1744	2.41	22.00	10.51	7.93	99	208.3	"
"	1829	2.37	22.67	11.11	8.16	104	202.2	"
"	1925	~~2.30~~ 2.32	22.54	10.90	8.27	110	198.2	"

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YSI LOG

Survey Rd 2 SW Summer '05 Crew A. Rodriguez, J. Moore Date 7/18/05

Station	Time	Depth	Temp C	DO (mg/L)	pH	Conduct-ivity (uS/cm)	ORP (mV)	Comments
W3-016	1956	2.30	22.56	10.91	8.43	106	194.5	
	2022	2.28	22.07	10.33	8.03	105	207.0	
	2059	2.26	22.04	10.29	7.90	106	213.6	
	2129	2.23	22.20	10.32	7.97	107	214	
	2200	2.20	22.26	10.31	8.00	106	213.8	
	2228	2.19	21.79	9.74	7.75	105	221.3	
	2254	2.19	21.47	9.26	7.49	104	227.8	

7/18/05

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Page #1

YSI LOG

Survey SW Summer 2005 Crew I. Stuffkoff, S. Maxwell, A. Wood Date 7/19/05

Station	Time	Depth(m)	Temp C	DO (mg/L)	pH	Conductivity (uS/cm)	ORP (mV)	Comments
W3-015	0832	0.67	21.38	8.95	7.18	108	188	
W3-015	0859	0.62	21.34	9.06	7.56	108	192	
"	0922	0.58	21.37	8.88	7.52	107	196	
"	0930	0.57	21.41	9.04	7.57	108	197	
"	0956	0.53	21.58	9.27	7.65	107	196	
"	1026	0.48	21.80	9.42	7.73	108	195	
"	1056	0.43	21.94	9.79	7.86	108	193	
"	1126	0.38	22.52	9.80	7.95	109	191	
"	1155	0.34	22.49	10.25	8.10	111	189	
"	1228	0.28	22.43	10.04	8.04	107	190	
"	13:00	0.24	23.90	10.55	8.22	121	185	
"	13:30	0.21	23.32	10.43	8.38	109	179	
"	1402	0.18	24.85	10.58	8.44	117	178	
"	1423	0.19	25.09	10.51	8.45	116	177	
"	1503	0.21	24.00	10.85	8.55	~~174~~	174	
"	1548	0.32	23.71	10.93	8.55 (1.5)	109 (1.5) 108	176	
"	1623	0.43	23.25	10.91	8.60	108	177	
"	1652	0.52	22.89	10.3	8.31	108	184	
"	1719	0.59	23.30	10.64	8.56	110	179	
"	1750	0.64	23.35	10.85	8.59	105	179	

YSI LOG

Survey Rd 2 SW Summer '05 Crew A. Rodriguez, J. Moore Date 7/19/05

Station	Time	Depth	Temp C	DO (mg/L)	pH	Conduct-ivity (uS/cm)	ORP (mV)	Comments
W3-015	1820	0.64	23.44	10.68	8.63	107	176	
"	1850	0.61	23.26	10.86	8.67	106	176	
"	1920	0.57	22.99	10.55	8.61	104	179	
"	1949	0.53	23.05	10.87	8.68	104	180	
"	2020	0.50	22.96	10.81	8.71	104	180	
"	2049	0.48	22.84	10.68	8.66	103	183	
"	2118	0.46	22.76	10.40	8.58	103	186	
"	2148	0.45	22.64	10.26	8.54	102	189	
"	2214	0.43	22.55	10.20	8.52	102	191	
"	2215							Stop logging to replace batteries
"	2218							Resume logging
"	2247	0.39	22.43	10.14	8.44	102	193	
"	2315	0.37	22.12	9.51	8.05	103	203	
"	2325	0.36	22.13	9.59	8.10	99	204	

Analyst [signature] 7/19/05

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YSI LOG

PH RZ
Survey SW Summer 2005 Crew I. Stupakoff, S. Maxwell, A. Lucas Date 7/20/05

Station	Time	Depth (m)	Temp C	DO (mg/L)	pH	Conductivity (uS/cm)	ORP (mV)	Comments
LW3-022	~~2105~~ 0652	0.48	21.94	8.96	7.27	110	179	~Begin * Recorded YSI data
LW3-022	0715	0.43	21.96	8.95	7.67	110	186	~end (at one-minute intervals
LW3-019	0759	1.68	21.60	8.62	7.67	107	162	~Begin
LW3-019	0828	1.64	21.67	8.51	7.60	108	195	~end
LW3-021	0907	0.25	23.11	9.60	8.23	107	165	~Begin
LW3-021	0929	0.21	23.17	9.48	8.27	107	171	~End
LW3-020	1010	1.08	23.40	8.63	8.62	106	170	~Begin total depth is 2.5 m
LW3-020	1034	0.25	23.68	9.95	8.69	106	171	~End * Recorded YSI at 30 sec intervals

Lori Gallegos
7/29/05

ANC07123
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LWG
LOWER WILLAMETTE GROUP

PORTLAND HARBOR RI/FS

ROUND 2A SUMMER 2005 SURFACE WATER FIELD SAMPLING REPORT

DRAFT

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September 19, 2005

Prepared for:
The Lower Willamette Group

Prepared by:
Integral Consulting Inc.

IC05-0030

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LIST OF ACRONYMS

ASTM	American Society for Testing and Materials
Axys	Axys Analytical Services, Ltd.
CAS	Columbia Analytical Services
DGPS	differential global positioning system
DOC	dissolved organic carbon
EDD	electronic data deliverable
EDI	equal discharge increment
EPA	U.S. Environmental Protection Agency
EquIS	Environmental Quality Information System
FSP	field sampling plan
HHRA	human health risk assessment
HSP	health and safety plan
NAD	North American Datum
NEA	Northeast Analytical Laboratories
ORP	oxidation reduction potential
PAHs	polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls
QA	quality assurance
QC	quality control
QAPP	quality assurance project plan
RI/FS	remedial investigation and feasibility study
RM	river mile
R/V	research vessel
SVOC	semivolatile organic compounds
SDG	sample delivery group
TOC	total organic carbon
TDS	total dissolved solids
TSS	total suspended solids

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1.0 INTRODUCTION

The remedial investigation and feasibility study (RI/FS) of the Portland Harbor Superfund Site includes several rounds of field sampling activities to investigate the nature and extent of contamination in the in-water portion of the Site, to assess potential risk to human health and the environment, and to develop cleanup alternatives. Round 1 chemical and biological sampling took place during the summer and fall of 2002, and these results, as well as the results of physical studies that continued into the winter of 2004 (e.g., the February 2004 bathymetry survey), are described in the Round 1 Site Characterization Summary Report (Integral 2004a).

Round 2 sampling activities included beach sediment and riverbed surface sediment sampling for chemical and toxicity testing (Integral 2005b), subsurface sediment sampling for chemical analysis (Integral and Anchor 2005), fall 2004 surface water sampling for chemical analysis (Integral 2005c), winter 2005 surface water for chemical analysis (Integral 2005d) and a groundwater evaluation pilot study (Integral 2005a).

This Round 2A Summer 2005 Surface Water Field Sampling Report is the third of the three scheduled sampling events and only describes surface water collection activities that occurred from July 5 - 20, 2005. Field sampling reports for other Round 2 sampling activities are being submitted under separate cover.

Except where noted, all Round 2A surface water field activities, including navigational positioning, sample collection, sample handling and processing, and data management, followed guidelines specified in the Round 2A Field Sampling Plan: Surface Water Sampling (Integral 2004d), hereafter referred to as the surface water field sampling plan (Surface Water FSP); the Round 2 Quality Assurance Project Plan (QAPP; Integral and Windward 2004); the Round 2 QAPP Addendum 1 (Integral 2004c); and the Round 2 Health and Safety Plan (HSP; Integral 2004b).

1.1 ROUND 2A SAMPLING OBJECTIVES

The purpose of Round 2A sampling was to fill in remaining data gaps for the RI and risk assessments as well initiate data collection for the FS. Three sampling events were scheduled for the Round 2A sampling program. The first sampling event took place during the early rainy season, late fall of 2004 (Integral 2005c). The second sampling event occurred during late winter of 2005 (Integral 2005d). A third sampling event, reported here, occurred during July 2005.

The specific objective of the Round 2A FSP for the surface water sampling program was to collect the following types of data:

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- Surface water chemistry to characterize the nature and extent of contamination including contaminant distribution and identification of potential source effects to the river
- Surface water chemistry adjacent to amphibian habitats to support the ecological risk assessment
- Surface water chemistry in generally quiescent areas adjacent to beaches that are used by swimmers to support the human health risk assessment (HHRA)
- Surface water chemistry and conventional water quality parameters to support the feasibility study.

These sampling efforts are described in this report. Other Round 2 work that has been or will be discussed under separate cover includes the following types of data collection:

- Surface and subsurface sediment chemistry and physical data to characterize the nature and extent of contamination, including contaminant distribution and potential source effects to the river, and to support the FS
- Groundwater, transition zone water, and seep water chemistry to evaluate the potential impact of groundwater chemicals discharging from upland areas to the river to sediment quality and risks to human health and the environment
- Preliminary natural attenuation sampling (e.g., radioisotope cores) targeted for areas that may have potential natural processes to support this alternative.

Analytical results from the Round 2 sampling program will be summarized in a series of Round 2 site characterization reports, which will be published in 2005.

1.2 REPORT ORGANIZATION

The remaining sections of this document describe the field collection procedures used during Round 2A for surface water samples. Section 2 provides a chronology of the sampling activities that took place during this phase of sampling. Section 3 describes the field sampling methods, quality assurance/quality control samples, and deviations from the FSP, QAPP, and QAPP Addendum 1. Laboratory sample handling and processing, and laboratory deviations from the FSP and QAPP, are described in Section 4. A summary of this sampling event is described in Section 5. References cited are listed in Section 6.

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Supporting information is provided in two appendices:

- Appendix A: Field Notebooks
- Appendix B: Infiltrex and YSI Sampling Logs

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2.0 CHRONOLOGY OF FIELD OPERATIONS

This report describes the third surface water sampling event of the Round 2A surface water sampling program that took place from July 5 - 20, 2005. A site reconnaissance survey was made on October 29, 2004, prior to initiation of the Round 2 surface water sampling program. The reconnaissance survey and the fall 2004 surface water sampling event (the first of three sampling events scheduled for the Round 2 surface water sampling program) were reported in the Surface Water Field Sampling Report (Integral 2005c). The second sampling event was reported in the Round 2A Winter 2005 Surface Water Field Sampling Report (Integral 2005d).

2.1 SURFACE WATER SAMPLING WITH PERISTALTIC PUMP METHOD

Surface water samples were collected at 23 target locations from river mile (RM) 2 to RM 11 in the Willamette River. All stations identified in the FSP, including 12 amphibian habitat stations, 2 amphibian habitat/source area stations, 3 beach area/source area stations, 3 human-use contact areas, and 3 site characterization cross-sectional river transects were sampled (Table 2-1). Two stations (W002 and W016) were occupied twice to generate field replicates for this sampling method. In accordance with the surface water FSP and QAPP, surface water samples from all 23 target stations were submitted to analytical laboratories for chemical testing (see Section 4.1).

River stage and river flows on the Willamette River at Portland as well as local precipitation levels that occurred during the surface water sampling period (July 5 - 20, 2005) are shown in Table 2-2.

2.2 HIGH-VOLUME SURFACE WATER SAMPLING WITH XAD-2 COLUMNS

High-volume surface water sampling using an Infiltrex 300 system connected to XAD-2 resin columns was conducted to collect hydrophobic organic compounds for analysis by ultra-low analytical methods. Sample volumes of approximately 1,000 liters were collected at seven target locations in the Willamette River from July 6 -19, 2005 (Table 2-1). All stations identified in the FSP were sampled. One station (W013) was occupied twice to generate a field replicate for this sampling method. In accordance with the FSP and QAPP, surface water samples from all seven target stations were submitted to analytical laboratories for extraction and chemical testing (see Section 4.1).

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3.0 FIELD SAMPLING PROCEDURES

The following sections summarize the procedures and methods used to collect Round 2 surface water samples, including station navigation and positioning, sampling procedures, record keeping, sample handling, sample storage, and field quality control (QC) procedures. Sampling procedures generally followed those detailed in the Surface Water FSP (Integral 2004d). Deviations from the FSP are discussed in Section 3.10.

3.1 SAMPLING VESSELS

Benthic, LLC (Portland, OR) provided the research vessel (R/V) *Ross Island Sampler "1,"* a 29-foot-long pontoon boat equipped with a 120-horsepower outboard engine, for the collection of surface water samples. Prior to the sampling effort, the forward deck space on the *Ross Island Sampler "1"* was fitted with a 350-lb capacity davit for raising and lowering the sampling device, navigational lights, anchors, basic sonar, and two stainless-steel tabletops. One stainless-steel tabletop was used for the Infiltrex pump, and the second stainless-steel tabletop was used for collecting the peristaltic pump samples and for sample handling/processing. The covered aft deck space included a dry, usable area for video-monitoring equipment, tables, and seating for maintaining and filing paperwork (e.g., field forms). A 20-foot-long steel boat equipped with a 90-horsepower outboard engine was used as a support boat to transport the field crew and sampling equipment to and from the sampling vessel.

3.2 NAVIGATION AND STATION POSITIONING

Navigation equipment aboard the R/V *Ross Island Sampler "1"* was provided and operated by Integral. Horizontal control was obtained using a computer-integrated, differential global positioning system (DGPS). The horizontal projection used for all sampling activities was the North American Datum of 1983 (NAD83) LatLong.

The navigation system consisted of a Trimble (Pro XRS) DGPS unit on the sampling vessel that received real-time differential corrections from the continuously operating reference station at Appleton, WA. The Trimble DGPS antenna was secured on top of the davit used to deploy the sampling gear to achieve the most accurate position for each sample. Positional accuracies on the order of ±2-3 meters were achieved with this system. The Trimble DGPS receiver output the real-time positions to an integrated navigation software package (Trimble TerraSync version 2.41) on a laptop computer.

The integrated navigation system displayed the vessel's position relative to the target sampling location in plan view on the laptop screen. The screen display and

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numeric navigation data, including range and bearing to the target sampling location, assisted the vessel operator in approaching and/or maintaining a station position while sampling. For the fixed sampling locations, the sampling vessel either tied off to available fixed structures (e.g., pilings, docks) and/or used two or three anchors once on station for the duration of the water sampling. For the three cross-river transect stations, sampling was initiated once the vessel was positioned at each equal-discharge-increment point, and the navigation system recorded the boat's positions throughout the sample collection effort. The actual sampling locations for the target stations and the actual, averaged equal distance increment (EDI) positions are included in Table 3-1. Figure 2-1 shows these actual locations as well as the target locations for all water samples collected.

3.3 PERISTALTIC PUMP SAMPLES

Round 2A standard volume surface water sample collection and processing generally followed the procedures specified in the Surface Water FSP (Integral 2004d), the Round 2 QAPP (Integral and Windward 2004), and QAPP Addendum 1 (Integral 2004c). Deviations from the FSP and QAPP are discussed in Sections 3.10 and 4.3.

3.3.1 Sample Collection

Surface water samples for standard chemical and conventional analyses were collected using a peristaltic pump with an extended Teflon™ sampling tube lowered to the desired depth. The peristaltic pump's water intake was secured with plastic zip-ties to the vane of the water sampler. The water sampler was then lowered to the appropriate depth by a calibrated electrical winch attached to a davit near the bow. The water sampler was tethered to the winch with a Technora™ cable to reduce the risk of metal contamination to the water samples. The bow anchors were also attached to their individual winches using the same Technora™ cable. The davit extended 10 feet from the bow with an additional 4 to 5 feet of sampling tube, placing the intake tubing approximately 15 feet away from the bow of the sampling vessel.

The outflow of the pump was directed through a Kynar™ Y-splitter into two composite mixing carboys. Equal volumes were pumped into the two large, pre-cleaned, 20-liter mixing carboys containing a Teflon™-coated magnetic stir bar and placed over magnetic stirring plates. The first carboy, made of polycarbonate, was used for compositing and mixing samples for subsequent analysis of trace metals, butyltin, and conventionals. The second carboy, made of glass, was used for compositing and mixing samples for subsequent analysis of organic compounds. Following sample compositing in the mixing carboys, appropriate sample bottles were filled using a second peristaltic pump, with the outflow directed into the

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sample bottle. The sample containers were capped, labeled, and placed inside a cooler.

Two types of surface water samples were collected: unfiltered, and filtered for metals and dissolved organic carbon (DOC). For filtered metals samples, a 0.45-µm filter was placed inline near the tubing outlet to filter samples immediately before the water was discharged into the sample bottle. The filter size for DOC, determined in coordination with the U.S. Environmental Protection Agency (EPA), was also 0.45 µm. Samples for total suspended solids (TSS) and total dissolved solids (TDS) were filtered at the laboratory.

Surface water samples were collected at the three cross-sectional stations using the flow-weighted method (see Surface Water FSP, Appendix B, Integral 2004d). Water was collected with the peristaltic pump as described above at each of the equal-discharge-increment (EDI) locations. A vertically integrated water column sample column was collected by lowering and raising the sample tubing intake while pumping water from near surface to near bottom and back for a predetermined period at a predetermined rate. The water sampled at each EDI was composited across all EDIs to generate the vertically and horizontally integrated transect sample.

In addition to surface water collection, general water quality parameters [temperature, pH, dissolved oxygen, oxidation-reduction potential (ORP), conductivity and depth] were measured *in situ* at all sampling stations using a YSI 600R sonde and a YSI 650 MDS monitor attached to the water sampler. Water quality data from each station are included in Table 3-1.

Surface water was collected at 23 stations using the peristaltic pump method (Table 2-1). A summary of the total number of samples collected is provided in Table 3-2. Table 3-3 lists each surface water station sampled and the specific analyses to be conducted on each sample.

Copies of all surface water field notebooks and water quality parameters log sheets are provided in Appendices A and B, respectively. Original logbooks and sample description forms are on file in the LWG Project Library at Integral's office in Olympia, WA.

3.4 HIGH-VOLUME SAMPLES

Round 2A high-volume surface water sample collection and processing generally followed the procedures specified in the Surface Water FSP (Integral 2004d) and the Round 2 QAPP (Integral and Windward 2004) and QAPP Addendum 1 (Integral 2004c). Deviations from the FSP and QAPP are discussed in Sections 3.10 and 4.3.

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3.4.1 Sample Collection

High-volume surface sampling was accomplished using an Infiltrex 300 pump system connected to XAD-2 resin columns. This sampling method was used to collect hydrophobic organic compounds from water that requires ultra-low analytical detection methods.

Large volumes of water were pumped through Teflon™-lined polypropylene tubing, a 140-µm stainless-steel pre-filter, 0.5-µm glass fiber filter cartridges, and XAD-2 resin beads packed inside stainless-steel canisters using an Infiltrex 300 pump system [Axys Analytical Services, Ltd. (Axys)]. The method retained particulates on the 0.5-µm glass fiber filters and extracted dissolved organic contaminants onto the resin. This method eliminates the need to collect, store, and transport large volumes of water. A total volume of approximately 1,000 liters was pumped at each high-volume sample station at a flow rate of approximately 1.25 liters per minute. The total volume for each XAD-2 sample collected at the transect stations is included on Table 3-4. Infiltrex water sampling log forms are included in Appendix B.

The Teflon™-lined polypropylene tubing intake for the XAD-2 samples was secured to the vane of the water sampler together with the Teflon™ sampling tube for the peristaltic pump samples. Glass fiber filters (0.5 µm) were used to filter out the particulate fraction of the water. Since hydrophobic analytes are preferentially bound to particulates, this material (less than 140 µm and greater than 0.5 µm) was isolated in the filter to determine the particulate-bound fraction of hydrophobic analytes present. The in-line pressure was monitored to determine the need for replacement filters, when necessary. Replacement filters were required at the majority of sampling stations (Table 3-2).

Once the desired volume was pumped, the column assembly was removed from the Infiltrex unit, and any residual water was drained out. XAD-2 canisters were labeled, inserted inside a zip-locked bag, wrapped in bubble wrap, placed inside its original cardboard box, which in turn was placed inside another zip-locked bag and then placed in a cooler with wet ice. The glass fiber filters were drained of any residual water, removed from the housing, placed in pre-cleaned sample jars or wrapped in pre-cleaned aluminum foil, inserted into resealable plastic bags, labeled, and stored in a cooler containing wet ice.

At the analytical laboratory, the column and filters will be analyzed individually to determine, respectively, the apparent dissolved and particulate concentrations of analytes in the samples. These analytical results can be combined later to determine the total analyte concentration in surface water.

High-volume samples were collected at seven stations. The high-volume stations and a summary of the total number of samples and replicates analyzed are listed in

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Table 3-2. Table 3-3 includes each high-volume surface water station sampled, the sample date, and the specific analyses to be conducted on each sample.

3.5 SAMPLE IDENTIFICATION SCHEME

All samples were assigned a unique identification code, as described in the FSP, based on a sample designation scheme designed to meet the needs of field personnel, data management, and data users. This code indicates the project phase, sample type, and level of replication/duplication. Station location identification numbers for each target location are listed in Table 2-1 and mapped in Figure 2-1.

3.6 EQUIPMENT DECONTAMINATION PROCEDURES

Decontamination procedures for all sample handling and compositing equipment followed procedures summarized below and detailed in Appendix C of the Portland Harbor RI/FS Round 2A Surface Water Field Sampling Report (Integral 2005c). Deviations from the standard procedures are noted in Section 3.10.

3.6.1 Teflon™ and C-Flex™ Pump Tubing for Intake Water and Teflon™-Coated Stir Bars for Carboys

The Teflon™ and C-Flex™ tubing used for the intake of site water and Teflon™ - coated stir bars used in the carboys were cleaned for all target parameters. The sample tubing was filled with reagent-grade methanol. The tubing and stir bars were allowed to soak in reagent-grade methanol for 24 hours. Next, they were removed from the methanol solution and rinsed thoroughly with deionized (DI) water. The tubing and stir bars were then soaked in dilute reagent-grade nitric acid (HNO_3) for 24 hours, removed, and flushed with DI water. The tubing and stir bars were stored in double-bagged polyethylene bags until assembly.

3.6.2 Teflon™ and C-Flex™ Pump Tubing From Filtration Units to Sample Jars

The Teflon™ and C-Flex™ tubing used from the filtration units to the sample jars was cleaned for metals or for organic and conventional parameters, as described below.

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3.6.2.1 Metals, Butyltin, and Conventional Analyses

Sample tubing was filled with dilute reagent-grade HNO_3 and allowed to soak for 24 hours. The acid was drained, and the tubing was flushed with DI water. Tubing was stored in double-bagged polyethylene bags until assembly.

3.6.2.2 Organic Analyses

Sample tubing was filled with reagent-grade methanol and allowed to soak for 24 hours. The methanol solution was drained, and the tubing was flushed with DI water. Tubing was stored in double-bagged polyethylene bags until assembly.

3.6.3 Filter Cartridges

Filter cartridges (0.45 µm) were used for sample collection. The 0.45-µm cartridges were used for the collection of dissolved trace metal samples and DOC in water. The filter size for DOC was selected in consultation with EPA. The DOC filter cartridge was cleaned according to the same procedure used for the 0.45-µm cartridges. The following procedures were used for cleaning the 0.45-µm filter cartridges for metals, butyltin species, and conventionals, and the selected cartridge for DOC.

3.6.3.1 Metals, Butyltin, and Conventional Analyses

The filter cartridge was filled with dilute reagent-grade HNO_3 and allowed to soak for 24 hours. The filter was drained of acid, flushed with DI water, and stored in double-bagged polyethylene bags until assembly.

3.6.3.2 Organic Analyses

The filter cartridge was filled with reagent-grade methanol and allowed to soak for 24 hours. The filter cartridge was drained of the methanol solution, flushed with DI water, and stored in double-bagged polyethylene bags until assembly.

3.6.4 20-Liter Glass and Polycarbonate Carboys

The glass and polycarbonate carboys were used to composite the sample prior to distribution to the sample carboys. The cleaning procedure for metals and for organic and conventional parameters is described below:

3.6.4.1 Metals, Butyltin, and Conventional Analyses

The polycarbonate carboys were filled with dilute reagent-grade HNO_3 and allowed to soak for 24 hours. The carboys were drained of acid, filled with DI water, drained, and rinsed with DI water. The components of the composite surface water sampling units (i.e., lids, tubing, and air filter) were assembled on the carboy and stored double-bagged in polyethylene bags until used in the field.

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3.6.4.2 Organic Analyses

The glass carboys were filled with reagent-grade methanol and allowed to soak for 24 hours. The carboys were drained of methanol solution and flushed with DI water. The components of the filtration units were assembled and stored double-bagged in polyethylene bags until used in the field.

3.7 FIELD QUALITY CONTROL/QUALITY ASSURANCE

Field quality assurance/quality control (QA/QC) samples were collected in association with the surface water sampling effort. The QC samples that were collected during this phase of the Round 2A sampling effort are described below.

3.7.1 Field Replicates

Two field replicate samples (W002 and W016) were collected for standard surface water sample volumes and one replicate sample (W013) was collected for high-volume surface water samples at the surface water sampling stations in the study area. Because the field replicate at W016 was not analyzed for all parameters, the frequency of collection of field replicates for the peristaltic samples was 4.4%, which is below the target 5% rate of collection in the Surface Water FSP (Table 3-5). Field replicates were generated by collecting new surface water at the original target sampling location, not by subsampling composited samples. Field replicates were collected to assess the within-station heterogeneity associated with the overall sampling process from station positioning through sampling homogenization. In Table 3-3, field replicated stations are indicated by a "-1" for the first sample and "-2" for the replicate sample at the end of the sample identification code.

3.7.2 Field Splits

Field splits were not requested by EPA or any other party during this sampling event.

3.7.3 Equipment Rinsates and Temperature Blanks

Inadvertent introduction of chemical contaminants during sampling and analytical activities is assessed by the analysis of rinsate blanks. Two rinsate blanks (LW2-W3901 and LW2-W3903) were collected for this sampling event. Two system blank samples (LW2-W3902C and LW2-W3902F) for high-volume surface water samples, consisting of a 0.5-µm glass fiber filter and an XAD-2 column, were generated by passing ultra clean water through the Infiltrex system. Peristaltic pump rinsate blank samples and Infiltrex system blank samples were submitted for analysis to the laboratories (see Tables 3-3 and 3-5).

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Temperature blanks are used to measure and ensure cooler temperature upon receipt to the laboratory. One temperature blank was prepared and submitted with each cooler shipped to the analytical laboratory. The temperature blank consisted of a sample jar containing deionized water that was packed into the cooler in the same manner as the rest of the samples and labeled "temp blank."

3.8 SAMPLE HANDLING, STORAGE, TRANSPORT, AND CUSTODY

Sample processing and storage for the two different sampling methods, as well as sample transport and custody, are described in the following sections.

3.8.1 Peristaltic Pump Sample Handling and Storage

Peristaltic pump samples were processed and handled as described in Section 3.3. The composite samples were transferred to preserved, pre-rinsed sample bottles using a peristaltic pump, with the outflow directed into the bottle. The sample containers were capped, labeled, and then placed in a cooler with ice. At the end of each day, samples were either stored in refrigerators at the field lab or shipped to the analytical laboratories. The samples were generally shipped on ice within 48 hours of collection.

3.8.2 XAD Resin/Filter Sample Handling and Storage

XAD resin/filter samples were processed and handled as described in Section 3.4. The resin column assembly was removed from the Infiltrex 300 system, labeled, inserted into a zip-locked bag, placed in its original cardboard box, and then placed in a cooler with ice. The glass fiber filters were drained of any residual water, removed from the housing, placed in sample jars or wrapped in pre-cleaned aluminum foil and place inside a zip-locked bag, labeled, and stored in a cooler with ice. At the end of each day, samples were stored in refrigerators at the field lab. At the end of the sampling event, the samples were delivered to the analytical laboratory.

3.8.3 Sample Transport and Custody

Samples were packed to prevent breakage and separated in the shipping container (ice cooler) by bubble wrap and/or other shock-absorbent material. Loose ice was then placed in the cooler to maintain a temperature of approximately 4°C. A temperature blank was added to each cooler, and the associated chain-of-custody forms were placed into a zip-locked bag and taped on the inside lid of each cooler. Each ice cooler was sealed with shipping tape and three chain-of-custody seals, which included the project name, date of shipment, and the name of the person sealing the cooler. Samples were transported to the analytical laboratories directly

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by courier or by an overnight shipping service, with the exception of the XAD resin/filter samples, which were delivered directly to Axys by Integral staff.

3.9 FIELD DOCUMENTATION

All field activities and observations were noted in bound field logbooks (Appendix A). Information included personnel, date, time, station designation, sampler, types of samples collected, and general observations. Any changes that occurred at the site (e.g., personnel, responsibilities, deviations from the Surface Water FSP) and the reasons for these changes were documented in the field logbook.

A sample collection checklist was produced prior to sampling and completed following sampling operations at each station. The checklist included station designations, types of samples to be collected (e.g., one jar for metals), and whether blind field replicates or additional sample volumes for laboratory QC analyses were collected. These checklists were similar in content to the detailed sample analyses lists provided in Table 3-3 of this field report.

Water quality parameters were recorded on log sheets for the YSI multiprobe data logger. Total volume filtered with time, pumping rates, pump rotations per minute (RPM), and pressure readings were also hand written on log sheets for the Infiltrex system. Copies of all log sheets for the YSI and Infiltrex are presented in Appendix B.

Finally, a sample chain-of-custody form was established in the field for each sample before it was shipped from the field lab to the analytical laboratories. A complete set of the project chain-of-custody forms are kept in the project file at Integral's Olympia, WA office.

3.10 DEVIATIONS FROM THE ROUND 2 FSP AND QAPP

This section discusses Round 2A water sampling deviations from the Surface Water FSP (Integral 2004d), the Round 2 QAPP (Integral and Windward 2004), the Round 2 QAPP Addendum 1 (Integral 2004c), and the HSP (Integral 2004b). Initial target station location changes occurred during the first surface water sampling event (November 8 to December 2, 2004) and are described in the Round 2A Surface Water Field Sampling Report (Integral 2005c).

3.10.1 Sampling Method Deviations

Several deviations from sampling methods described in the FSP occurred during the first surface water sampling event (Integral 2005c). These deviations were evaluated prior to the subsequent sampling events, and modifications to the

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sampling procedures for transect stations were implemented during this sampling event to be consistent with procedures used at the first and second sampling events (Integral 2005c,d), as stated below.

3.10.1.1 Transects

In order to decrease the total sampling time needed and consequently increase efficiency and crew and boat safety, sampling of surface water for all transects was done with only two passes of each transect as it was done during the first and second surface water sampling events (Integral 2005c,d). The first pass was used to collect the surface water composite samples with both the peristaltic pump and the Infiltrex 300 system (Infiltrex pump). The second pass was used to complete Infiltrex pump high-volume sample. The duration of the first pass was limited by the volume collected with the peristaltic pump at a rate of 200 mL/min (Table 3-4). The duration of the second pass was determined by subtracting the volume collected with the Infiltrex pump during the first pass from the 1,000 liters of surface water necessary for high-volume chemical analyses. The sampling time for each EDI during the second transect pass was calculated as follows:

1. 1,000 liters - (volume collected during first transect pass) = total volume needed/transect
2. (total volume needed) / (number of EDIs) = volume/EDI
3. (volume/EDI) / (1.25 L/min) = total sampling time/EDI.

The rate of ascent and descent for each EDI was then determined from the water depth at each EDI (measured with the onboard depth finder) as follows:

4. (depth of EDI) / (total sampling time/EDI) = rate of ascent/descent (m/min)

The rate of ascent and descent was controlled by an electrical winch and was calibrated using a timer and the depth readings from the YSI 600R sonde as the water sampler was lowered in the water column.

3.10.2 Equipment Decontamination Deviations

The following equipment decontamination procedures deviated from those described in the surface water FSP:

- A portion of the Teflon™ and C-Flex™ tubing was decontaminated as one piece rather than cutting it prior to cleaning, based on discussions with Battelle during the decontamination process. The decontamination process involved cleaning the tubing with reagent-grade methanol, rinsing with approximately 10 liters of DI water, cleaning with dilute HNO_3, and rinsing twice with DI water. After the tubing was decontaminated, Battelle cut the

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tubing using decontaminated ceramic knives in a clean environment to avoid introduction of contamination.

- The peristaltic pump samples were filtered in the field for the collection of samples for dissolved metals and DOC. Therefore, it was decided that the 0.45-µm filter only needed to be cleaned with dilute HNO_3. However, the 0.45-µm filters were hydrophobic and had to be "wetted" with methanol prior to rinsing with a water-based solution. The cleaning process involved pumping methanol through the filter unit to wet the filter, draining the methanol, rinsing the filter with DI water for approximately 10 minutes, filling the filter unit with dilute HNO_3, and allowing it to soak for 24 hours. The filter unit was drained of acid and flushed with DI water. The unit was then filled with DI water and allowed to soak for 24 hours, followed by a series of draining and rinsing procedures with DI water. Filter units were dried in a laminar flow hood and double-bagged in polyethylene bags.
- Due to the volume of acid required to fill the polycarbonate carboys, the cleaning procedure was modified. Each polycarbonate carboy was half-filled with dilute reagent-grade HNO_3. The lid was secured, and the carboy was placed on its side for 12 hours, followed by rotation to the other side for an additional 12 hours. The carboys were drained of acid, rinsed with DI water, drained, dried in a laminar flow hood, and double-bagged in polyethylene bags.
- Due to the volume of methanol required to fill the glass carboys, the cleaning procedure was modified. Each glass carboy was rinsed three times with methanol using a squeeze bottle to thoroughly coat all inner surfaces. The carboys were rinsed with DI water, dried, and double-bagged.
- Half of the total number of Teflon™-coated stir bars were cleaned in reagent-grade methanol and the other half cleaned in dilute reagent-grade HNO_3, rinsed with DI water, dried, and double-bagged separately.

3.10.3 Other Deviations

- Station W014 is a HHRA water sampling station, and water was sampled from surface to bottom as an integrated water column composite sample. The underwater camera, which was placed at the base of the water sampler, showed sediment being disturbed by the sampler when it touched the soft bottom. Some minor resuspension of sediments was observed in the carboys. This indicated that a trace amount resuspended sediment was pumped into the carboys before the peristaltic pump was turned off, as described by the field crew and recorded on page 22 of the logbook on July 15, 2005.
- A large boat wake disturbed the bottom and also turned off the power supply, ceasing the pumping of water at station W012 at 12:07 PM on July

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15, 2005. The field crew waited for resuspended sediment to settle down to the bottom by monitoring with the underwater camera before resuming pumping. However, the field crew noticed that the carboys showed darker water coloration than usual. Strong odors of petroleum were also noted on board. Tar stains and tar smears were noticed at the base of the water sampler after its retrieval from the water. The sampler was cleaned on board before continuing to the next sampling station. A thorough cleaning of the sampler was done at the field lab at the end of the sampling day.

- GPS coordinates were not recorded at the second round of EDI 2 at station W005 on July 13, 2005 from 15:38 to 16:38. The GPS coordinates for EDI2 at station W005 were averaged from the first round only.
- Samples were not contained within double zip-locked bags after collection in the field, as noted in Section 3.8 of the surface water FSP.

3.11 QUALITY ASSURANCE/QUALITY CONTROL

Throughout the 3-week surface water sampling effort, the Integral Sampling & Analysis Coordinator conducted a daily review of the previous day's sampling progress. These reviews flagged any inconsistencies or discrepancies from the approved FSP. These issues were then discussed and resolved during weekly teleconferences that included key field staff and EPA agency team members.

Table 3-3 summarizes the number of surface water samples collected by analyte group. Table 3-5 includes the target field QC sample (replicates, rinsate blanks) percentages and actual number of QC samples collected. Overall, the field QC program was implemented as defined in the surface water FSP and Round 2 QAPP.

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4.0 LABORATORY ANALYSES

This section summarizes the chemical analyses performed for the characterization of surface water samples from all Round 2A sampling events. Analytical methods generally followed those described in the Round 2 QAPP; several deviations from the QAPP are detailed in Section 4.3. Table 3-3 lists the analyses conducted on each sample. The analytical methods used for the samples are compiled in Table 4-1.

The standard chemical suite for all stations included metals, semivolatile organic compounds (SVOCs), pesticides, polychlorinated biphenyl (PCB) Aroclors, butyltin compounds, and herbicides. Hexavalent chromium and perchlorate were analyzed at one station (W016), as specified in the FSP. Conventional parameters, including TDS, TSS, total organic carbon (TOC), and DOC, were collected at all stations. Water quality parameters (temperature, dissolved oxygen, specific conductance, pH, and ORP) were also measured at all stations. XAD resin and filter samples were collected at seven specific stations (Table 3-3) and were analyzed for chemicals of interest, including dioxins, PCB Aroclors, phthalate esters, pesticides, and polycyclic aromatic hydrocarbons (PAHs).

4.1 CHEMICAL ANALYSES

4.1.1 Peristaltic Pump Samples

Two laboratories are conducting the chemical analyses of samples collected using the peristaltic pump. Columbia Analytical Services (CAS; Kelso, WA) is conducting the conventionals, metals, butyltin compounds, SVOCs, hexavalent chromium, perchlorate, and herbicide analyses. Northeast Analytical Laboratories (NEA; Schenectady, NY) is conducting the analyses for pesticides and PCB Aroclors.

4.1.2 XAD Resin/Filter Samples

Axys (Sydney, B.C., Canada) is extracting the XAD resins, and 0.5-µm glass fiber filters, and conducting the analyses for dioxins, phthalate esters, and PAHs on the XAD resin/filter extracts. Axys is conducting the analysis for PCB-congeners on aliquots of the XAD resin/filter extracts, which is a deviation from the QAPP (see Section 4.3).

Analytical methods generally followed those described in the Round 2 QAPP; several deviations from the QAPP are detailed in Section 4.3.

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4.2 DATA MANAGEMENT

Once the laboratories have completed their internal QA/QC checks, they will export the analytical data (sample, test, batch, and result information) into comma-delimited text files with data columns arranged in an order that is recognized by the project's Environmental Quality Information System (EQuIS) database. These electronic data deliverables (EDDs) are e-mailed to Integral where they are checked for proper EQuIS structure and appended with specific information that was unknown by the labs, such as sampling location, composite information, and field replicate and split information. If any problems are found in the structure of the EDDs, then the laboratory is notified and asked to correct the problem and resubmit the EDD. Each emailed EDD transmission, with the original, unaltered EDD attachment, is stored to document and track the laboratories' delivery of electronic data to Integral.

When the EDD is corrected and complete, they are checked electronically by loading them into the temporary section of Integral's LWG project database. In the process of loading, EQuIS checks the EDDs for correct lookup codes (such as for analytes, test methods, and sample matrices); proper relationships for results, tests, batches, and samples (to ensure all results match with a test, tests with samples, and sample/test pairs with batches); and that all derived samples (such as replicates, splits, and matrix spikes) have corresponding parent samples.

In addition to these checks, EQuIS also checks "less important" characteristics, such as date and time formats and text field lengths, to ensure consistency throughout the database. Any error prevents the EDD from loading until the error is corrected. If errors are found that are related to the way the laboratory is reporting the data or constructing the EDD, then the laboratory is notified and asked to correct the problem and resubmit the EDD. If errors are related to Excel automatically formatting date and time fields, for example, then the error is corrected and steps are taken to avoid repeats of the problem (such as changing default settings in the software). Sucessfully loaded EDDs are saved to document and track the data that were loaded into Integral's LWG project database.

Each verified and accurate EDD is provided to the Round 2 data validation contractor (EcoChem, Seattle, WA) for data review and validation. These EDDs are also stored in a temporary section of the project database, where they can be queried and examined, if desired, until validation is complete. As EcoChem completes validation of the data by sample delivery group (SDG) or small groups of SDGs, the validator qualifiers and reason codes are applied to the data in the temporary section of the database. The validated data are then merged into the permanent project database. During the merging process, all previously performed electronic checks are repeated to ensure nothing was incorrectly modified with the application of the validation results.

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Several queries have been set up in the permanent project database to translate the data structure to a form compatible with NOAA's Query Manager. The data translation includes creating station and sample identifiers, converting the sample type code, and changing the date format. The translated data are imported into an Access file provided by NOAA that contained template tables for the Query Manager structure.

Integral's LWG project database contains all of the data reported by the analytical laboratories. This includes field and lab replicates, lab dilutions, results for the same analyte from multiple analytical methods (SW8270 and SW8270-SIM, for example), and laboratory QA samples such as matrix spikes, surrogates, and method blanks.

4.3 LABORATORY DEVIATIONS FROM THE ROUND 2 FSPS AND QAPP

Samples were analyzed as described in the Round 2 QAPP (Integral and Windward 2004), and QAPP Addendum 1 (Integral 2004c), with the exceptions noted below:

- Because of pesticide interference encountered in the XAD PCB-Aroclor extracts during analysis of the November 2004 and March 2005 XAD column and filter samples, PCB-congener analysis was performed on the XAD pesticide extract, after completion of the pesticide analysis. For the July 2005 XAD samples, Axys performed PCB-congener analysis on the XAD column and filter extracts. Because the extracts were not slated for PCB-Aroclor analysis, solvent exchange from toluene to hexane was not necessary.

Additional detail regarding sample analyses and any specific difficulties encountered by the laboratories during analysis of the surface water samples will be provided in the Round 2A Surface Water Site Characterization Report.

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5.0 SUMMARY OF SURFACE WATER SAMPLING

As illustrated in Figure 2-1 and Tables 2-1, 3-2, 3-3, 3-4 and 3-5, the surface water sampling program was conducted in close accordance with the sampling program described in the Round 2A Surface Water FSP and the Round 2 QAPP and QAPP Addendum 1. Deviations from the planned approaches are described above and were generally coordinated with the EPA team prior to their implementation.

The surface water data being generated from this effort will be summarized in conjunction with the data collected and reported from the previous two sampling events in the Round 2A Surface Water Site Characterization Report.

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BZTO104(e)007148

6.0 REFERENCES

Integral. 2004a. Portland Harbor RI/FS Round 1 Site Characterization Report. Prepared for the Lower Willamette Group, Portland, OR. Integral Consulting Inc., Mercer Island, WA.

Integral. 2004b. Portland Harbor RI/FS Round 2 Health and Safety Plan. Prepared for the Lower Willamette Group, Portland, OR. Integral Consulting Inc., Mercer Island, WA.

Integral. 2004c. Portland Harbor RI/FS Round 2 Quality Assurance Project Plan Addendum 1: Surface Water. Prepared for the Lower Willamette Group, Portland, Oregon. Integral Consulting Inc. Mercer Island, WA.

Integral. 2004d. Portland Harbor RI/FS Round 2A Surface Water Field Sampling Plan. Prepared for the Lower Willamette Group, Portland, OR. Integral Consulting Inc., Mercer Island, WA.

Integral. 2005a. Portland Harbor RI/FS Round 2 Groundwater Pathway Assessment Sampling and Analysis Plan, Appendix B: Groundwater Pathway Assessment Pilot Study Data Report. Prepared for Lower Willamette Group, Portland, OR. Integral Consulting Inc., Mercer Island, WA.

Integral. 2005b. Draft. Portland Harbor RI/FS Round 2 Surface and Beach Sediment Field Sampling Report. Prepared for the Lower Willamette Group, Portland, OR. Integral Consulting Inc., Mercer Island, WA.

Integral. 2005c. Draft. Portland Harbor RI/FS Round 2A Surface Water Field Sampling Report. Prepared for the Lower Willamette Group, Portland, OR. Integral Consulting Inc., Mercer Island, WA.

Integral. 2005d. Draft. Portland Harbor RI/FS Round 2A Winter 2005 Surface Water Field Sampling Report. Prepared for the Lower Willamette Group, Portland, OR. Integral Consulting Inc., Mercer Island, WA.

Integral and Anchor. 2005. Draft. Portland Harbor RI/FS Round 2 Subsurface Sediment Field Sampling Report. Prepared for the Lower Willamette Group, Portland, OR. Integral Consulting Inc., Mercer Island, WA.

Integral and Windward. 2004. Portland Harbor RI/FS Round 2 Quality Assurance Project Plan. Prepared for the Lower Willamette Group, Portland, OR. Integral Consulting Inc., Mercer Island, WA.

Unger, M.A., W.G. MacIntyre, and R.J. Huggett. 1988. Sorption Behavior of Tributyltin on Estuarine and Freshwater Sediments. *Environ. Toxicol. Chem.* 7:907-915.

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This document is currently under review by US EPA and its federal, state, and tribal partners, and is subject to change in whole or in part.

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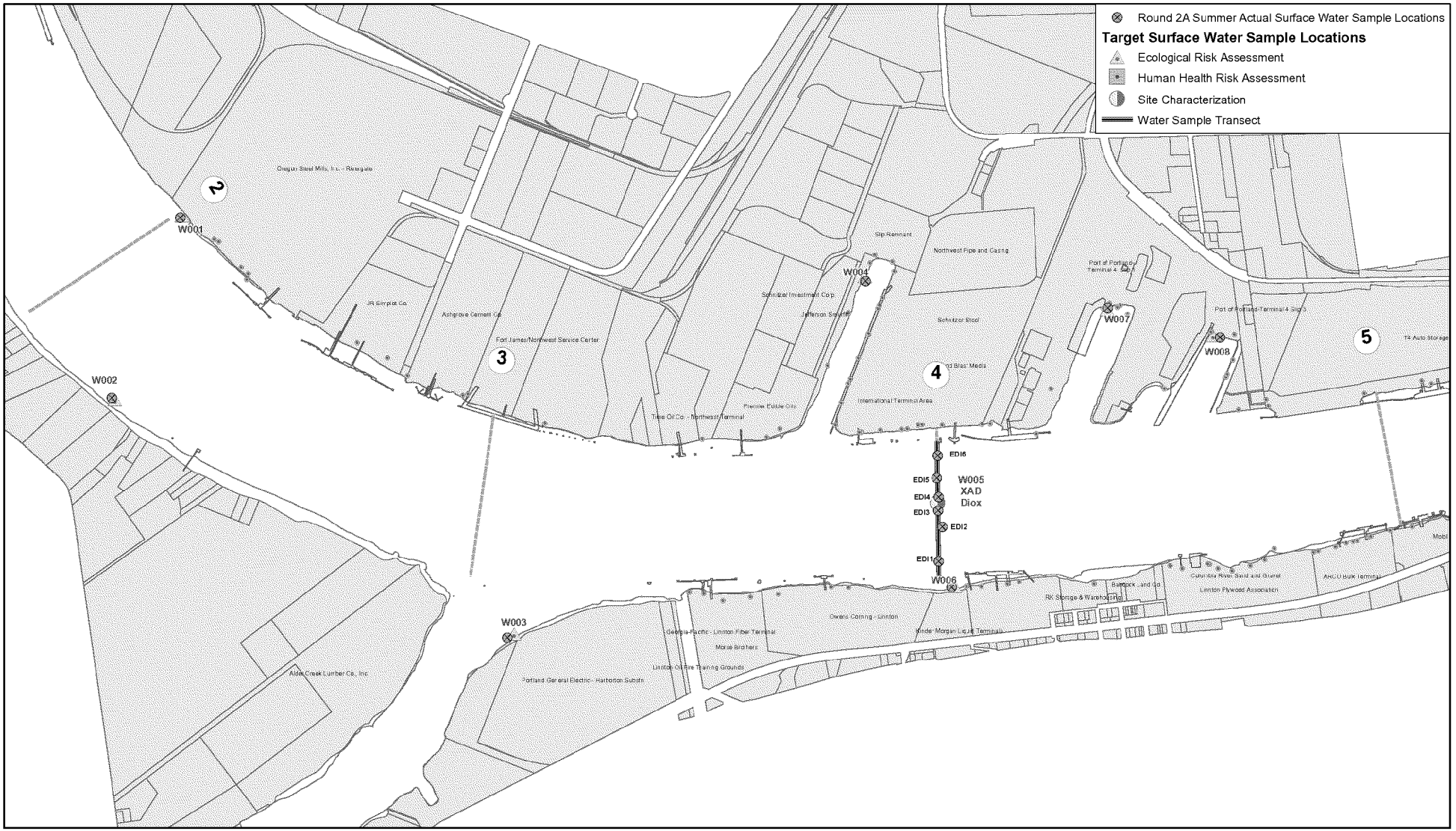

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LWG Lower Willamette Group

FEATURE SOURCES:
Taxlots, Property: Metro RLIS
Channel & River miles: Developed from US Army Corps of Engineers information
River Edge: created by heads-up digitizing from the October 2001 0.33 ft. resolution color orthophotos
Docks & In-water Structures: created by heads-up digitizing from the October 2001 0.33 f. resoution color orthophotos.
Map Document: (C:\GIS\Projects\Portland_-Iarbo\LWG-Map-Projects\Round_2A_Final\Round2Awinter_SurfaceWater_Final_20050425.mxd)
08/19/2005

0 500 1,000 2,000 Feet

N

Legend

- Outfalls
- River Miles
- Docks & Structures
- Waterfront Taxlots
- River Edge

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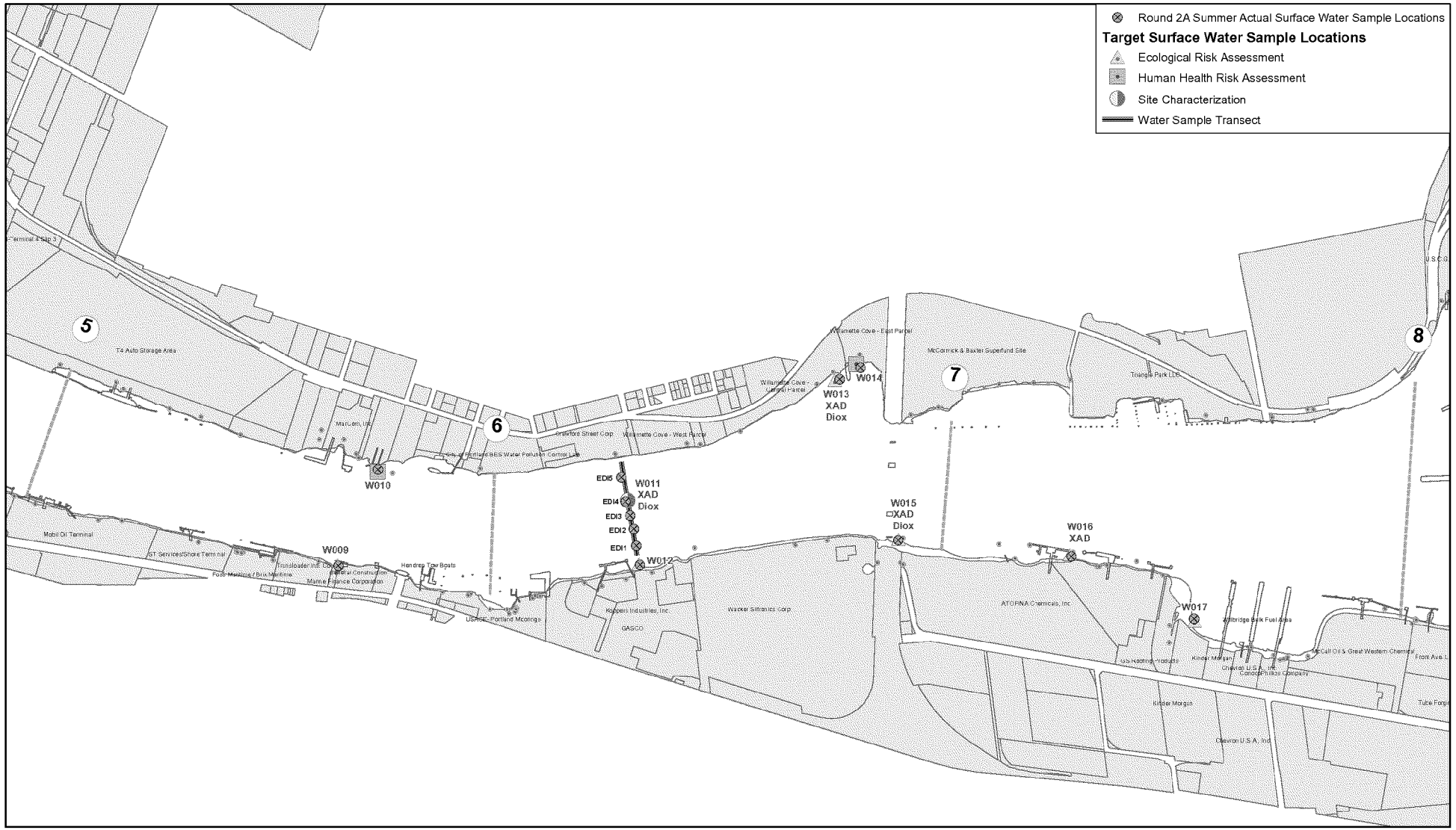
Figure 2-1a
Portland Harbor RI/FS
Round 2A Summer 2005
Surface Water Field Sampling Report
Actual Surface Water Sample Locations

ANC07150
BZT0104(e)007150



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LWG LOWER WILLAMETTE GROUP

FEATURE SOURCES:
Taxlots, Property: Metro RLIS
Channel & River miles: Developed from US Army Corps of Engineers information
River Edge: created by heads-up digitizing from the October 2001 0.33 ft. resolution color orthophotos
Docks & In-water Structures: created by heads-up digitizing from the October 2001 0.33 ft. resolution color orthophotos.
Map Document: (C:\GIS\Projects\Portland_Harbor\LWG-Map-Projects\Round_2A_Final\Round2Awinter_SurfaceWater_Final_20050425.mxd)
08/19/2005

0 500 1,000 2,000 Feet

N

Legend

- Outfalls
- River Miles
- Docks & Structures
- Waterfront Taxlots
- River Edge

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Figure 2-1b
Portland Harbor RI/FS
Round 2A Summer 2005
Surface Water Field Sampling Report
Actual Surface Water Sample Locations

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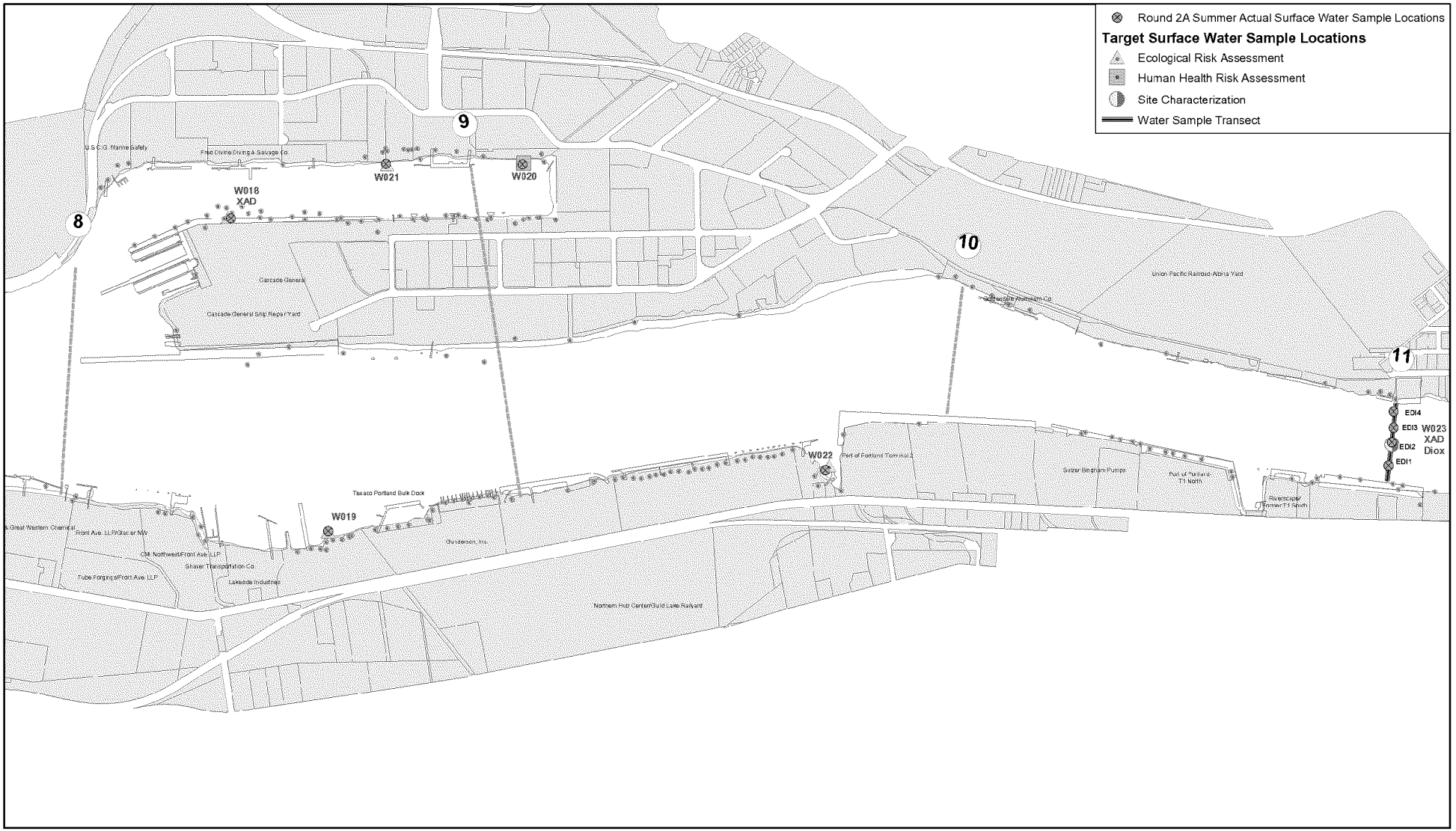

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LWG Lower Willamette Group

FEATURE SOURCES:
Taxlots, Property: Metro RLIS
Channel & River miles: Developed from US Army Corps of Engineers information
River Edge: created by heads-up digitizing from the October 2001 0.33 ft. resolution color orthophotos
Docks & In-water Structures: created by heads-up digitizing from the October 2001 0.33 ft. resolution color orthophotos
Map Document: (C:\GIS\Projects\Portland_Harbor\LWG-Map-Projects\Round_2A_Final\Round2Awinter_SurfaceWater_Final_20050425.mxd)
08/19/2005

0 500 1,000 2,000 Feet

N

Legend

- Outfalls
- River Miles
- Docks & Structures
- Waterfront Taxlots
- River Edge

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Figure 2-1c
Portland Harbor RI/FS
Round 2A Summer 2005
Surface Water Field Sampling Report
Actual Surface Water Sample Locations

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Table 2-1. Surface Water Sampling Stations and Sampling Methods for Summer 2005.

			Sampling Method	
Station ID	**River Mile**	**Sampling Station Description**	**Peristaltic Pump**	**High-volume XAD-2 Column**
W001	MILE 2-3	Amphibian Habitat - Downstream East Bank, Oregon Steel Mills	X	
W002[1]	MILE 2-3	Amphibian Habitat - Sauvie Island	X	
W003	MILE 3-4	Amphibian Habitat - near Multnomah Channel	X	
W004	MILE 3-4	Amphibian Habitat - International Slip	X	
W005	MILE 3-4	Downstream Transect - (RM 4.0)	X	X
W006	MILE 4-5	Amphibian Habitat - Linnton, Kinder Morgan	X	
W007	MILE 4-5	Amphibian Habitat - T4/Slip 1	X	
W008	MILE 4-5	Amphibian Habitat - T4/Slip 3	X	
W009	MILE 5-6	Amphibian Habitat - Downstream from St. Johns Bridge	X	
W010	MILE 5-6	Human Use Contact Area - Cathedral Park	X	
W011	MILE 6-7	Midstream Transect - (RM 6.3)	X	X
W012	MILE 6-7	Beach Area - Gasco	X	
W013[1]	MILE 6-7	Amphibian Habitat - Willamette Cove	X	X
W014	MILE 6-7	Human Use Contact Area - Willamette Cove	X	
W015	MILE 6-7	Beach Area - Rhone Polenc	X	X
W016[1]	MILE 7-8	Beach Area - Arkema (ATOFINA)	X	X
W017	MILE 7-8	Amphibian Habitat - Saltzman Creek, Willbridge	X	
W018[2]	MILE 8-9	Amphibian Habitat/Source Area - Cascade General (RM 8.4)	X	X
W019[2]	MILE 8-9	Amphibian Habitat/Source Area - Gunderson (RM 8.6)	X	
W020	MILE 8-9	Human Use Contact Area - Swan Island Lagoon	X	
W021	MILE 9-10	Amphibian Habitat - Swan Island Lagoon	X	
W022	MILE 9-10	Amphibian Habitat - Terminal 2	X	
W023	MILE 10-11	Upstream Transect - (RM 11)	X	X

Notes:

[1] Field replicates were collected at stations W002 and W016 using peristaltic pump and W013 using the Infiltrex pump.

[2] Original station was relocated to incorporate a source area.

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Table 2-2. Precipitation, River Flow, Stream Velocity, and Gage Height for Summer 2005.

Sampling Dates	Gage Height (ft)[1]			Average Stream velocity (ft/s)[1]	Precipitation (in)[2]	River Flow (ft^3/s)[3,4]
	Min	Max	Avg			
7/5/2005	2.22	5.68	3.79	0.30	0.00	11300
7/6/2005	3.31	6.52	4.64	0.23	0.01	8750
7/7/2005	2.48	5.89	4.03	0.26	0.00	9720
7/8/2005	3.40	6.25	4.65	0.25	0.24	9720
7/11/2005	3.01	5.31	4.18	0.27	0.00	10300
7/12/2005	2.82	5.32	4	0.20	0.00	7830
7/13/2005	2.62	5.17	3.7	0.21	0.00	7900
7/14/2005	2.89	5.42	3.77	0.17	0.00	6200
7/15/2005	3.54	5.59	4.14	0.15	0.00	5720
7/18/2005	--	--	--	0.22	0.00	--
7/19/2005	--	--	--	--	0.00	--
7/20/2005	--	--	--	--	0.00	--

Notes:

[1] USGS Water Resources Web Page - USGS 14211720 Willamete River at Portland, OR - http://waterdata.usgs.gov/nwis

[2] National Weather Service Forecast Office, Portland, OR - http://newweb.wrh.noaa.gov/climate/index.php?wfo=pqr

[3] River flow data are estimated daily mean values.

[4] USGS Water Resources Department, Portland, OR

-- Data not available for these dates.

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Table 3-1. Surface Water Sampling Stations, Dates Sampled, Positional Data, and Conventional Water Quality Data for Summer 2005.

Station ID	Date	Start Time	End Time	Anchored	State Plane Coordinates Oregon North Zone		Water Quality Parameters Measured with YSI[1]								Total sampling time
					Northing	Easting	log in time	log out time	Temperature (°C)	EC (uS/cm)	DO (mg/L)	Depth (m)	pH	ORP (mV)	
Peristaltic Samples															
W001[2]	7/5/2005	10:33	11:14	Yes	7617739	724791	10:30	11:12	20.43	143	10.99	0.27	8.17	201	0:30
W002-1	7/5/2005	12:14	12:45	Yes	7615565	724826	12:14	12:42	21.10	138	11.63	0.75	8.49	180	0:31
W002-2	7/5/2005	13:18	13:32	Yes	7615565	724826	13:18	13:32	21.53	138	11.95	0.66	8.60	186	0:14
W003	7/5/2005	16:03	16:38	Yes	7614549	719696	16:02	16:38	20.36	84	10.81	0.12	7.87	203	0:35
W004	7/5/2005	14:38	15:10	Yes	7619716	717272	14:36	15:22	23.67	89	11.54	0.17	8.68	183	0:32
W005															
EDI 1 (Round 1)	7/13/2005	7:43	8:31	No	7617059	715428	7:03	8:35	20.90	102	7.44	10.70	7.11	225	0:48
EDI 2 (Round 1)	7/13/2005	8:37	9:19	No	7617407	715508	8:35	9:17	20.79	107	7.41	13.82	7.12	230	0:42
EDI 3 (Round 1)	7/13/2005	9:35	10:25	No	7617583	715606	9:23	10:26	20.78	109	7.48	14.54	7.14	231	0:50
EDI 4 (Round 1)	7/13/2005	10:28	11:27	No	7617696	715640	10:26	11:27	20.66	116	7.57	16.61	7.17	235	0:59
EDI 5 (Round 1)	7/13/2005	11:31	12:16	No	7617885	715744	11:31	12:15	20.69	117	7.48	16.20	7.15	234	0:45
EDI 6 (Round 1)	7/13/2005	12:25	12:51	No	7618139	715834	12:21	12:51	20.92	107	7.47	11.85	7.13	230	0:26
W006	7/8/2005	8:10	8:38	Yes	7616804	715175	8:08	8:23	19.98	103	8.83	0.82	7.33	253	0:28
W007	7/8/2005	10:09	10:35	Yes	7620363	714595	9:49	10:34	20.54	101	9.24	2.57	7.54	240	0:26
W008	7/8/2005	11:17	11:50	Yes	7620488	713287	11:07	11:37	20.43	99	8.66	1.51	7.42	244	0:33
W009	7/8/2005	12:20	12:50	Yes	7621400	707777	12:19	12:49	20.55	100	8.50	0.31	7.43	242	0:30
W010	7/15/2005	14:42	15:12	Yes	7622445	708320	14:13	15:15	21.47	105	8.43	2.22	7.35	190	0:30
W011															
EDI 1 (Round 1)	7/12/2005	7:19	8:06	No	7624125	705765	7:25	8:04	20.97	103	7.15	13.13	7.00	214	0:42
EDI 2 (Round 1)	7/12/2005	8:11	9:03	No	7624231	705924	8:09	9:07	20.93	105	7.26	14.30	7.03	219	0:47
EDI 3 (Round 1)	7/12/2005	9:09	9:51	No	7624308	706091	9:07	9:50	20.83	106	7.29	13.85	7.05	222	0:38
EDI 4 (Round 1)	7/12/2005	10:10	10:46	No	7624333	706232	10:06	10:44	20.82	106	7.34	16.58	7.06	200	0:36
EDI 5 (Round 1)	7/12/2005	10:52	11:36	No	7624471	706490	10:49	11:37	21.06	102	7.47	13.01	7.06	211	0:34
W012	7/15/2005	11:51	12:34	Yes	7624020	705590	11:51	12:11	22.33	109	8.77	0.36	7.46	169	0:43
W013-1	7/6/2005	9:33	9:45	Yes	7627101	705744	8:13	9:45	20.12	148	9.76	3.21	7.56	210	0:12
W014	7/15/2005	10:25	10:53	Yes	7627364	705690	10:25	10:56	21.26	95	8.44	1.14	7.34	169	0:28
W015	7/19/2005	9:06	9:20	Yes	7626439	703923	8:28	9:28	21.39	109	9.08	0.62	7.39	192	0:14
W016-1	7/18/2005	8:48	9:03	Yes	7627819	702528	8:59	9:14	21.19	107	9.39	2.43	7.36	190	0:15
W016-2	7/18/2005	9:26	9:29	Yes	7627819	702528	9:14	9:44	21.25	106	9.50	2.39	7.43	187	0:03
W017	7/15/2005	8:56	9:26	Yes	7628432	701094	8:56	9:28	21.19	113	7.81	1.36	7.30	193	0:30
W018	7/14/2005	8:26	8:55	Yes	7633820	700793	8:25	8:55	21.04	96	7.20	7.72	6.98	185	0:29
W019	7/20/2005	8:01	8:30	Yes	7632345	697271	7:55	8:24	21.65	106	8.64	1.66	7.64	173	0:29
W020	7/20/2005	10:13	10:40	Yes	7636829	699088	10:10	10:32	23.19	106	9.70	1.34	8.46	176	0:27
W021	7/20/2005	9:10	9:40	Yes	7635614	700121	9:05	9:25	23.17	107	9.50	0.23	8.26	168	0:30
W022	7/20/2005	6:52	7:05	Yes	7637247	694087	6:47	7:16	21.90	112	8.97	0.45	7.54	184	0:13
W023															
EDI 1 (Round 1)	7/11/2005	9:53	10:42	No	7642345	689904	10:26	10:43	20.90	95	8.14	5.40	7.19	191	0:49
EDI 2 (Round 1)	7/11/2005	10:50	11:39	No	7642535	690110	10:59	11:39	20.89	99	8.15	15.52	7.19	202	0:49
EDI 3 (Round 1)	7/11/2005	11:53	13:12	No	7642649	690236	11:50	13:00	20.94	96	8.25	13.94	7.20	214	0:58
EDI 4 (Round 1)	7/11/2005	13:41	14:10	No	7642779	690350	13:45	14:12	21.10	96	8.32	12.50	7.22	208	0:29

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BZTO104(e)007155

Table 3-1. Surface Water Sampling Stations, Dates Sampled, Positional Data, and Conventional Water Quality Data for Summer 2005.

Station ID	Date	Start Time	End Time	Anchored	State Plane Coordinates Oregon North Zone		Water Quality Parameters Measured with YSI[1]								Total sampling time
					Northing	Easting	log in time	log out time	Temperature (°C)	EC (uS/cm)	DO (mg/L)	Depth (m)	pH	ORP (mV)	
XAD Samples															
W005															
EDI 1 (Round 1)	7/13/2005	7:46	8:27	No	7617059	715428	7:03	8:35	20.90	102	7.44	10.70	7.11	225	0:41
EDI 2 (Round 1)	7/13/2005	8:38	9:18	No	7617407	715508	8:35	9:17	20.79	107	7.41	13.82	7.12	230	0:40
EDI 3 (Round 1)	7/13/2005	9:37	10:24	No	7617583	715606	9:23	10:26	20.78	109	7.48	14.54	7.14	231	0:47
EDI 4 (Round 1)	7/13/2005	10:32	11:26	No	7617696	715640	10:26	11:27	20.66	116	7.57	16.61	7.17	235	0:54
EDI 5 (Round 1)	7/13/2005	11:36	12:15	No	7617885	715744	11:31	12:15	20.69	117	7.48	16.20	7.15	234	0:39
EDI 6 (Round 1)	7/13/2005	12:26	12:51	No	7618139	715834	12:21	12:51	20.92	107	7.47	11.85	7.13	230	0:25
EDI 1 (Round 2)	7/13/2005	13:21	14:52	Yes	7616999	715398	13:12	14:54	20.86	105	7.35	10.02	7.11	232	1:31
EDI 2 (Round 2)	7/13/2005	15:38	16:38	No	--	--	15:36	16:37	20.82	109	7.53	13.50	7.16	227	1:00
EDI 3 (Round 2)	7/13/2005	16:47	17:52	No	7617547	715619	16:45	17:50	20.91	110	7.69	13.81	7.18	234	1:05
EDI 4 (Round 2)	7/13/2005	17:54	19:24	No	7617715	715679	17:59	19:24	20.80	115	7.61	16.32	7.17	236	1:30
EDI 5 (Round 2)	7/13/2005	19:28	20:53	No	7617919	715765	19:28	20:53	20.97	109	7.62	15.11	7.16	237	1:25
EDI 6 (Round 2)	7/13/2005	20:59	22:23	No	7618147	715825	21:00	22:25	20.96	111	7.54	12.36	7.14	242	1:24
W011															
EDI 1 (Round 1)	7/12/2005	7:24	7:43	No	7624125	705765	7:25	8:04	20.97	103	7.15	13.13	7.00	214	0:19
EDI 2 (Round 1)	7/12/2005	8:15	9:01	No	7624231	705924	8:09	9:07	20.93	105	7.26	14.30	7.03	219	0:46
EDI 3 (Round 1)	7/12/2005	9:11	9:50	No	7624308	706091	9:07	9:50	20.83	106	7.29	13.85	7.05	222	0:39
EDI 4 (Round 1)	7/12/2005	10:10	10:46	No	7624333	706232	10:06	10:44	20.82	106	7.34	16.58	7.06	200	0:36
EDI 5 (Round 1)	7/12/2005	10:54	11:35	No	7624471	706490	10:49	11:37	21.06	102	7.47	13.01	7.06	211	0:34
EDI 1 (Round 2)	7/12/2005	11:53	13:46	No	7624122	705797	8:09	9:07	21.06	99	7.43	12.59	7.06	221	1:53
EDI 2 (Round 2)	7/12/2005	19:51	21:41	No	7624228	705959	19:51	21:41	21.08	94	7.77	12.72	7.13	231	1:50
EDI 3 (Round 2)	7/12/2005	18:04	19:45	No	7624283	706084	18:04	19:46	20.83	105	7.33	13.32	7.07	225	1:41
EDI 4 (Round 2)	7/12/2005	16:33	17:56	No	7624378	706245	16:33	17:56	21.21	99	8.06	12.84	7.18	221	1:23
EDI 5 (Round 2)	7/12/2005	14:14	16:10	Yes	7624521	706469	10:49	11:37	21.06	102	7.47	13.01	7.06	211	1:46
W013-1	7/6/2005	8:18	21:29	Yes	7627101	705744	8:13	21:37	16.36	156	10.09	2.98	7.66	218	13:05
W013-2	7/7/2005	7:55	21:53	Yes	7627101	705744	8:52	21:52	20.74	91	9.22	2.43	7.47	238	13:53
W015	7/19/2005	8:34	23:27	Yes	7626439	703923	8:48	23:15	22.91	110	10.30	0.43	8.30	185	14:18
W016-1	7/18/2005	8:49	22:54	Yes	7627819	702528	8:44	22:44	21.85	107	10.18	2.27	7.87	200	14:05
W018	7/14/2005	8:13	21:53	Yes	7633820	700793	8:10	21:40	20.97	103	7.19	7.54	6.98	129	13:40
W023															
EDI 1 (Round 1)	7/11/2005	9:53	10:42	No	7642345	689904	10:26	10:43	20.90	95	8.14	5.40	7.19	191	0:49
EDI 2 (Round 1)	7/11/2005	10:50	11:39	No	7642535	690110	10:59	11:39	20.89	99	8.15	15.52	7.19	202	0:49
EDI 3 (Round 1)	7/11/2005	11:53	13:12	No	7642649	690236	11:50	13:00	20.94	96	8.25	13.94	7.20	214	0:58
EDI 4 (Round 1)	7/11/2005	13:41	14:10	No	7642779	690350	13:45	14:12	21.10	96	8.32	12.50	7.22	208	0:29
EDI 1 (Round 2)	7/11/2005	14:31	17:01	No	7642292	689905	14:52	16:39	21.06	96	8.23	8.38	7.20	214	2:30
EDI 2 (Round 2)	7/11/2005	17:14	19:26	No	7642501	690065	17:15	19:26	20.91	100	8.15	16.30	7.19	204	2:12
EDI 3 (Round 2)	7/11/2005	19:33	22:00	No	7642635	690170	19:34	22:00	21.17	94	8.27	13.40	7.24	220	2:27
EDI 4 (Round 2)	07/11-12/2005	22:10	0:30	No	7642758	690350	22:09	0:33	21.09	96	8.31	10.93	7.23	212	2:20

Note:
[1] Averaged data were collected with a YSI 600R sonde and a 650 MDS monitor.

[2] Peristaltic pump was turned on and off numerous times to prevent pumping in bottom debris disturbed by boat wakes in shallow water. Start time and end time do not reflect total pumping time. Total pumping time is calculated on last column.

-- No GPS data available

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Table 3-2. Summary of Surface Water Stations and Sample Sets Collected for Summer 2005

Sample Type	Stations	Number of Samples Sets Collected[1]		Comments
Peristaltic Pump				
Amphibian Habitat (RM 2-10)	W001, W002, W003, W004, W006, W007, W008, W009, W013, W017, W021, W022	13		One replicate collected at W002.
Human Use Contact Area - Cathedral Park (RM 5.7)	W010	1		
Human Use Contact Area - Willamette Cove (RM 6.8)	W014	1		
Human Use Contact Area - Swan Island Lagoon (RM 9.1)	W020	1		
Downstream Transect (RM 4.0)	W005	1		
Midstream Transect (RM 6.3)	W011	1		
Upstream Transect (RM 11.0)	W023	1		
Source Area - Gasco (RM 6.3)	W012	1		
Source Area - Rhone Polenc (RM 6.9)	W015	1		
Source Area - ATOFINA (RM 7.4)	W016	2		One replicate collected.
Amphibian Habitat/Source Area - Cascade General (RM 8.4)*	W018	1		
Amphibian Habitat/Source Area - Gunderson (RM 8.6)*	W019	1		
Totals		***25***		
XAD-2 Resin and Pre-filter		**XAD-2 Resin**	**0.5µm-filter**	
Amphibian Habitat (RM 6.8)	W013	2	4	One replicate collected.
Downstream Transect (RM 4)	W005	1	1	
Midstream Transect (RM 6.3)	W011	1	1	
Upstream Transect (RM 11)	W023	1	1	
Source Area - Rhone Polenc (RM 6.9)	W015	1	2	
Source Area - Arkema (ATOFINA) (RM 7.4)	W016	1	2	
Amphibian Habitat/Source Area - Cascade General (RM 8.4)*	W018	1	1	
Totals		***8***	***12***	

Note:

[1] Number of samples sets includes all analytes listed in Table 3-3. It also includes surface water QC samples (i.e., field replicates).

* Original station was relocated to incorporate a source area.

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Table 3-3. Surface Water Samples Collected, Dates Sampled, and Analyses Conducted for Summer 2005.

		XAD-2 Resin & Prefilter					Peristaltic Pump										
Date Sampled	**Sample ID**	**Dioxin**	**PCB Aroclors**	**Phthalate Esters**	**Pesticides**	**PAHs**	**TSS & TDS**	**TOC**	**DOC**	**Metals Unfiltered**	**Metals Filtered & Hardness**	**Cr VI**	**TBT**	**Perchlorate**	**Herbicides**	**SVOCs**	**PCB Aroclors**	**Pesticides**
7/5/2005	**LW2-W3001**						X	X	X	X	X		X		X	X	X	X
7/5/2005	**LW2-W3002-1**[1]						X	X	X	X	X		X		X	X	X	X
7/5/2005	**LW2-W3002-2**[1]						X	X	X	X	X		X		X	X		
7/5/2005	**LW2-W3003**						X	X	X	X	X		X		X	X	X	X
7/5/2005	**LW2-W3004**						X	X	X	X	X		X		X	X	X	X
7/13/2005	**LW2-W3005**	X	X	X	X	X	X	X	X	X	X		X		X	X		
7/8/2005	**LW2-W3006**						X	X	X	X	X		X		X	X	X	X
7/8/2005	**LW2-W3007**						X	X	X	X	X		X		X	X	X	X
7/8/2005	**LW2-W3008**						X	X	X	X	X		X		X	X	X	X
7/8/2005	**LW2-W3009**						X	X	X	X	X		X		X	X	X	X
7/15/2005	**LW2-W3010**						X	X	X	X	X		X		X	X	X	X
7/12-7/1302005	**LW2-W3011**	X	X	X	X	X	X	X	X	X	X		X		X	X		
7/15/2005	**LW2-W3012**						X	X	X	X	X		X		X	X	X	X
7/6/2005	**LW2-W3013-1**[1]	X	X	X	X	X	X	X	X	X	X		X		X	X		
7/7/2005	**LW2-W3013-2**[1]	X	X	X	X	X												
7/15/2005	**LW2-W3014**						X	X	X	X	X		X		X	X	X	X
7/19/2005	**LW2-W3015**	X	X	X	X	X	X	X	X	X	X		X		X	X		
7/18/2005	**LW2-W3016-1**[1]		X	X	X	X	X	X	X	X	X	X	X	X	X	X		
7/18/2005	**LW2-W3016-2**[1]											X		X				
7/15/2005	**LW2-W3017**						X	X	X	X	X		X		X	X	X	X
7/14/2005	**LW2-W3018**		X	X	X	X	X	X	X	X	X		X		X	X		
7/20/2005	**LW2-W3019**						X	X	X	X	X		X		X	X	X	X
7/20/2005	**LW2-W3020**						X	X	X	X	X		X		X	X	X	X
7/20/2005	**LW2-W3021**						X	X	X	X	X		X		X	X	X	X
7/20/2005	**LW2-W3022**						X	X	X	X	X		X		X	X	X	X
7/11-7/12/2005	**LW2-W3023**	X	X	X	X	X	X	X	X	X	X		X		X	X		
7/6/2005	**LW2-W3901***							X	X	X	X		X		X	X	X	X
7/1/2005	**LW2-W3902****	X	X	X	X	X												
7/19/2005	**LW2-W3903***							X	X	X	X	X	X	X	X	X	X	X

Note:

[1] Field replicate samples were collected at stations W002, W013, and W016.

* Field persitaltic pump sampling system rinsate.

** Field Infiltrex pump sampling system blank collected in XAD-2 column and 0.5-um filter.

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Table 3-4. Surface Water Sampling Data from River Transects Using the Infiltrex 300 System for Summer 2005.

Equal Discharge Increment (EDI)	Actual Depth (m)[1]	Estimated Total Sampling Time per EDI (hour)[2]	Actual Total Sampling Time per EDI (hour:min)[3]	Estimated rate of descent/ascent (m/min)[2]	Measured rate of descent/ascent (m/min)[4]	Infiltrex 300 Average pumping rate (mL/min)[5]	Horizontal variability of EDI (m)[6]	Total Volume Pumped per Station (L)[7]
River Mile 4, LW2-W3005								
EDI 1 (Round 1)	10.7	1.7	0:52	0.64	0.64	1.24	46	1002
EDI 1 (Round 2)	10.0		1:32		0.42	1.26	38	
EDI 2 (Round 1)	13.8	1.7	0:42	0.73	0.65	1.23	61	
EDI 2 (Round 2)	12.8		0:59		0.29	1.27	--	
EDI 3 (Round 1)	14.5	1.7	0:56	0.82	0.62	1.26	18	
EDI 3 (Round 2)	13.8		1:05		0.45	1.26	27	
EDI 4 (Round 1)	16.6	1.7	0:56	0.91	0.60	1.24	40	
EDI 4 (Round 2)	16.3		1:25		0.41	1.29	58	
EDI 5 (Round 1)	16.2	1.7	0:39	0.82	0.77	1.25	9	
EDI 5 (Round 2)	15.1		1:25		0.43	1.27	82	
EDI 6 (Round 1)	11.9	1.7	0:25	0.55	0.83	1.26	21	
EDI 6 (Round 2)	12.4		1:24		0.46	1.24	73	
River Mile 6.3, LW2-W3011								
EDI 1 (Round 1)	13.1	2.0	0:42	0.61	0.59	1.28	27	1001
EDI 1 (Round 2)	12.6		1:54		0.66	1.26	55	
EDI 2 (Round 1)	14.3	2.0	0:47	0.69	0.61	1.28	55	
EDI 2 (Round 2)	12.7		1:50		0.36	1.28	88	
EDI 3 (Round 1)	13.9	2.0	0:38	0.69	0.59	1.29	43	
EDI 3 (Round 2)	13.3		1:42		0.33	1.27	43	
EDI 4 (Round 1)	16.6	2.0	0:35	0.53	0.88	1.27	55	
EDI 4 (Round 2)	12.8		1:22		0.43	1.30	46	
EDI 5 (Round 1)	13.0	2.0	0:34	0.23	0.82	1.29	52	
EDI 5 (Round 2)	6.0		1:46		0.27	1.28	18	
River Mile 11, LW2-W3023								
EDI 1 (Round 1)	15.3	2.5	0:52	0.49	0.53	1.25	55	1001
EDI 1 (Round 2)	8.4		2:30		0.36	1.28	67	
EDI 2 (Round 1)	15.5	2.5	0:49	0.61	0.97	1.29	140	
EDI 2 (Round 2)	16.3		2:12		0.38	1.27	52	
EDI 3 (Round 1)	13.9	2.5	0:58	0.67	0.66	1.29	76	
EDI 3 (Round 2)	13.1		2:27		0.53	1.28	91	
EDI 4 (Round 1)	12.5	2.5	0:29	0.49	0.55	1.28	52	
EDI 4 (Round 2)	10.9		2:02		0.41	1.32	43	

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Table 3-4. Surface Water Sampling Data from River Transects Using the Infiltrex 300 System for Summer 2005.

Equal Discharge Increment (EDI)	Actual Depth (m)[1]	Estimated Total Sampling Time per EDI (hour)[2]	Actual Total Sampling Time per EDI (hour:min)[3]	Estimated rate of descent/ascent (m/min)[2]	Measured rate of descent/ascent (m/min)[4]	Infiltrex 300 Average pumping rate (mL/min)[5]	Horizontal variability of EDI (m)[6]	Total Volume Pumped per Station (L)[7]
Non-Transect Stations								
W3013-1	3.0	13.3	13:12	stationary	stationary	1.27	NA	1005
W3013-2	2.4	13.3	13:30	stationary	stationary	1.26	NA	1016
W3015	0.4	13.3	14:18	stationary	stationary	1.20	NA	1005
W3016	2.3	13.3	13:18	stationary	stationary	1.26	NA	1008
W3018	7.5	13.3	13:18	stationary	stationary	1.26	NA	1005

Notes:
Cells including dashed lines indicated that the station/EDI data were not available.

[1] Actual depth was measured with a YSI 600R sonde. For transect stations depth is an average of the bottom depth readings. At non-transect stations a mean water depth which varied with tidal range is given.

[2] Estimated sampling time and rates of ascent and descent are from Table B-1 from Appendix B in the Round 2A Surface Water FSP

[3] Actual total sampling time was calculated from entries in the Infiltrex 300 log sheets in Appendix B.

[4] Measured rates of ascent and descent were calculated from actual depth and sampling time at each EDI. Boat winch was calibrated with a stop watch and depth readings from the YSI 600R sonde.

[5] Average pumping rate was calculated from field calibrated entries in the Infiltrex 300 log sheets in Appendix B.

[6] Distance was determined by a visual estimation of the plotted navigation files on GIS maps.

[7] Total volume reported is field calibrated value determined from field pumping rate measurements. The % error between Infiltrex flow meter volume readings and calibrated flow measurements varied between 6% and 8%.

NA = not applicable

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Table 3-5. Surface Water Sampling Field QC Samples for Summer 2005.

Parameter	Samples	Blind Field Replicates[1]	Blind Field Sample Splits[2]	Field Rinsate Blanks[3,4]	Decon Blank[5]	Total Number of Samples[6]
Peristaltic Pump						
Metals (unfiltered)	23	1	0	2	1	27
Metals (filtered)	23	1	0	2	1	27
PCB Aroclors	15	0	0	2	1	18
Chlorinated Herbicides	23	1	0	2	1	27
Organochlorine Pesticides	15	0	0	2	1	18
SVOCs	23	1	0	2	1	27
Butyltin compounds	23	1	0	2	1	27
Hexavalent chromium	1	1	0	1	0	3
Perchlorate	1	1	0	1	1	4
TSS	23	1	0	0	0	24
TDS	23	1	0	0	0	24
DOC	23	1	0	2	1	27
TOC	23	1	0	2	1	27
XAD-2 Resin						
PCB Aroclors[7]	7	1	0	1	0	9
Organochlorine Pesticides	7	1	0	1	0	9
Phthalate Esters	7	1	0	1	0	9
PAHs	7	1	0	1	0	9
Dioxins/Furans	5	1	0	1	0	7

Note:

[1] Field QC sample numbers were based on a frequency of 5%.

[2] Field split samples were not requested by EPA or any other parties.

[3] A field rinsate blank was collected near the beginning and end of each sampling event for the peristaltic pump.

[4] Prior to start of sampling event, 4 liters of certified ultra clean water (Axys) were passed through a new XAD-2 resin column and a new 0.5-um filter at the field lab. The column and filter were sent out to Axys as a system blank.

[5] Prior to the start of sample collection activities, a decon blank of the peristaltic pump sampling equipment was generated by Battelle's laboratory.

[6] Total number of samples includes laboratory QA/QC samples.

[7] An aliquot of the XAD extracts was archived for potential PCB congener analysis.

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Table 4-1. Laboratory Methods for Summer 2005 Surface Water Samples.

Analytes	Laboratory	Sample Preparation		Quantitative Analysis	
		Protocol	Procedure	Protocol	Procedure
Peristaltic Pump Samples					
Conventional Analyses	CAS				
Total Suspended Solids		EPA 160.2	Filtration and drying	EPA 160.2	Balance
Total Dissolved Solids		EPA 160.1	Filtration and drying	EPA 160.1	Balance
Total Organic Carbon		EPA 415.1	Chemical oxidation	EPA 415.1	Infrared detector
Dissolved Organic Carbon		EPA 415.1	Filtration, chemical oxidation	EPA 415.1	Infrared detector
Perchlorate		EPA 314.0	Filtration, 0.45-um filter	EPA 314.0	Ion chromatography
Metals	CAS				
		EPA 3005	Acid digestion	EPA 200.8	ICP/MS
Aluminum, antimony, cadmium, total chromium, copper, lead, nickel, selenium, silver, zinc					
Arsenic		EPA 3005A (Modified)	Acid Digestion/pre-concentration	EPA 200.8	ICP/MS
Chromium, hexavalent		EPA 7195	Coprecipitation	EPA 6010B	ICP/OES
Mercury		EPA 7470	Acid digestion/oxidation	EPA 7470	CVAA
Hardness (Ca, Mg)		EPA 3005	Acid digestion	EPA 200.8 or 6010B	ICP/MS or ICP/OES
				SM2340B	Calculation
		Beach Area - Arkema (ATOFINA)			
Butyltins	CAS	Unger et al. 1988	Solvent extraction Derivatization	M.A. Unger et al. 1988	GC/FPD
PCBs Aroclors	NEA	EPA 3545	Pressurized fluid extraction	EPA 8082	GC/ECD
		EPA 3640A	Gel permeation chromatography		
		EPA 3630C	Florisil® cleanup		
		EPA 3665A	Sulfuric acid cleanup		
Chlorinated Herbicides	CAS	EPA 8151A	Solvent extraction Esterification	EPA 8151A	GC/ECD
Organochlorine Pesticides	NEA	EPA 3545	Pressurized fluid extraction	EPA 8081A	
		EPA 3640A	Gel permeation chromatography		GC/ECD
		EPA 3660B	Sulfur cleanup (as needed)		
		EPA 3630C	Florisil® cleanup		

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BZTO104(e)007162 ANC07162

Table 4-1. Laboratory Methods for Summer 2005 Surface Water Samples.

Analytes	Laboratory	Sample Preparation		Quantitative Analysis	
		Protocol	Procedure	Protocol	Procedure
Semivolatile Organic Compounds	CAS	EPA 3520C	Continuous liquid-liquid extraction	EPA 8270C	GC/MS with LVI GC/MS-SIM (PAHs only)
XAD-2 Column Extracts **Column Extraction**	Axys	EPA 3540	Soxhlet extraction	--	--
PCBs Aroclors	NEA	EPA 3665A EPA 3620B	Sulfuric acid cleanup Florisil® cleanup	EPA 8082	GC/ECD
Organochlorine Pesticides	Axys	AXYS SOP MLA-028	Florisil® cleanup Extract fractionation	AXYS SOP MLA-028	HRGC/HRMS
Polycyclic Aromatic Hydrocarbons	Axys	AXYS SOP MLA-021	Extract fractionation	AXYS SOP MLA-021	HRGC/LRMS
Phthalate Esters	Axys	AXYS SOP MLA-027	Extract fractionation	AXYS SOP MLA-027	HRGC/LRMS
Chlorinated Dioxins and Furans	Axys	EPA 1613B[1]	Layered Acid/Base/SiO_3 column Florisil® cleanup Carbon/Celite clean-up column 1% deactivated basic Alumina	EPA 1613B	HRGC/HRMS
PCB congeners[2]	Axys	EPA 1668A	Florisil® cleanup Extract fractionation Layered Acid/Base SiO_3 Alumina	EPA 1668A	HRGC/HRMS

[1]Cleanup procedures indicated in this table will be used as needed for chlorinated dioxin and furan analyses.
[2] An aliquot of the XAD extracts will be archived for potential PCB congener analysis.

CAS - Columbia Analytical Services
EPA - U.S. Environmental Protection Agency
GC/ECD - gas chromatography/electron capture detection
GC/MS - gas chromatography/mass spectrometry
HRGC/HRMS - high resolution gas chromatography/high resolution mass spectrometry
ICP/OES - inductively coupled plasma/optical emission spectrometry
ICP/MS - inductively coupled plasma - mass spectrometry
LVI - large-volume injector
NEA - Northeast Analytical
SIM - selected ion monitoring
SOP - standard operating procedures

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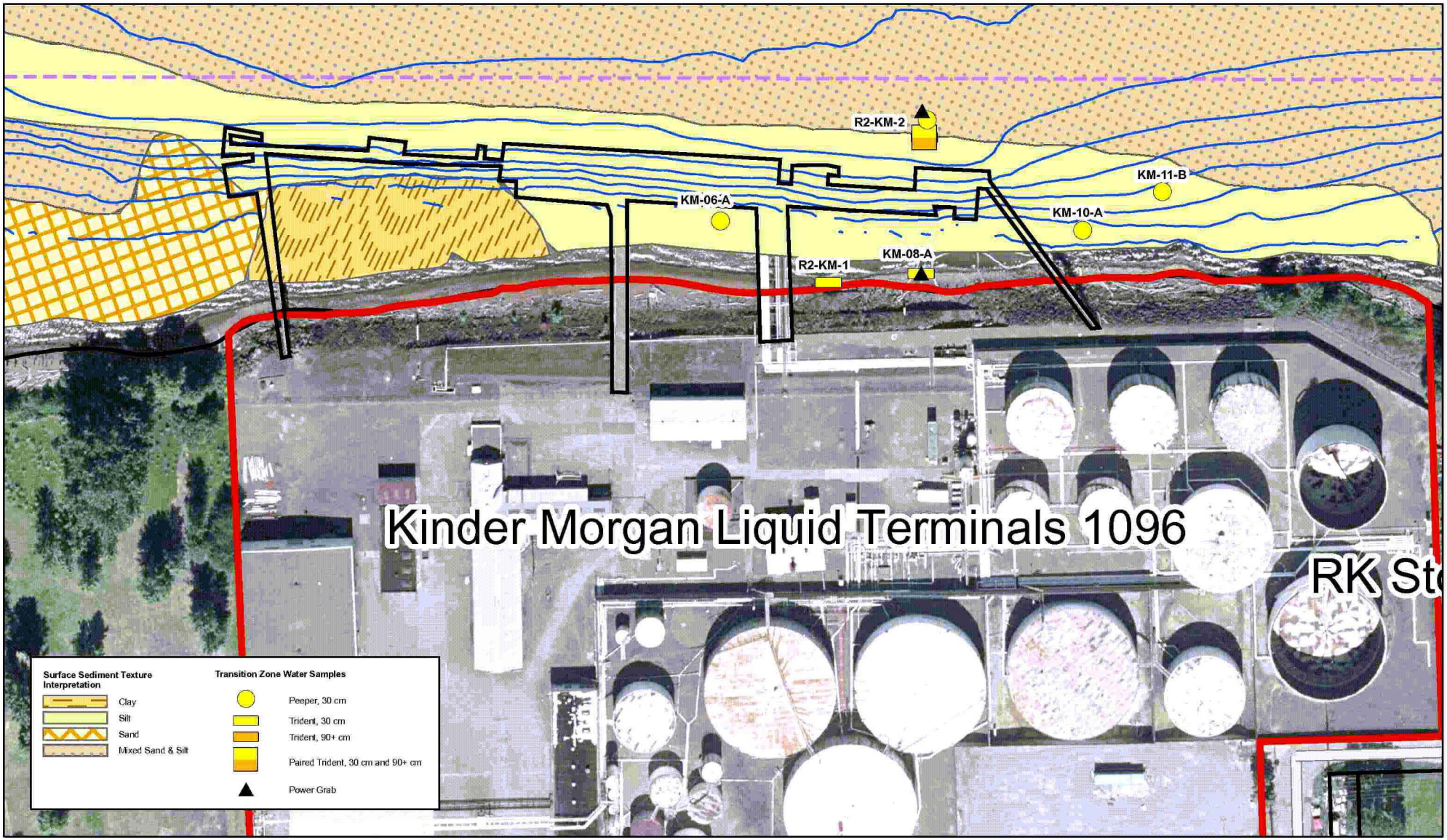

integral consulting inc.

LWG Lower Willamette Group

LEGEND
2003 - 5 Ft. Bathymetry (NAVD 88)
Site Property Boundary
Navigation Channel

N

0 25 50 100 Feet

FEATURE SOURCES:
Aerial Photo: Spencer B. Gross, October 2001.
Base Map features from Portland Metro's RLIS.
Channel and River Miles: Developed from US Army Corps of Engineers information.
Docks & In-water Structures: created by heads-up digitizing from the October 2001 0.33 ft. resolution color orthophotos.
Point KM-A: 60 cm temperature and conductivity readings could not be collected with the Trident probe due to probe refusal at 30 cm.
Map Document: (G:\Projects\Portland_Harbor\LWG-Map-Projects\Groundwater_Workplan\all_sites_Trident_FSR_200601_3.mxd)
1/18/2006 -- 3:32:42 PM

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This document is currently under review by US EPA and its federal, state, and tribal partners, and is subject to change in whole or in part.

Figure 2-1
Portland Harbor RI/FS
Round 2 Groundwater Pathway Assessment
Transition Zone Water Field Sampling Report
Kinder Morgan Linnton Transition Zone Water and Sediment Sampling Locations

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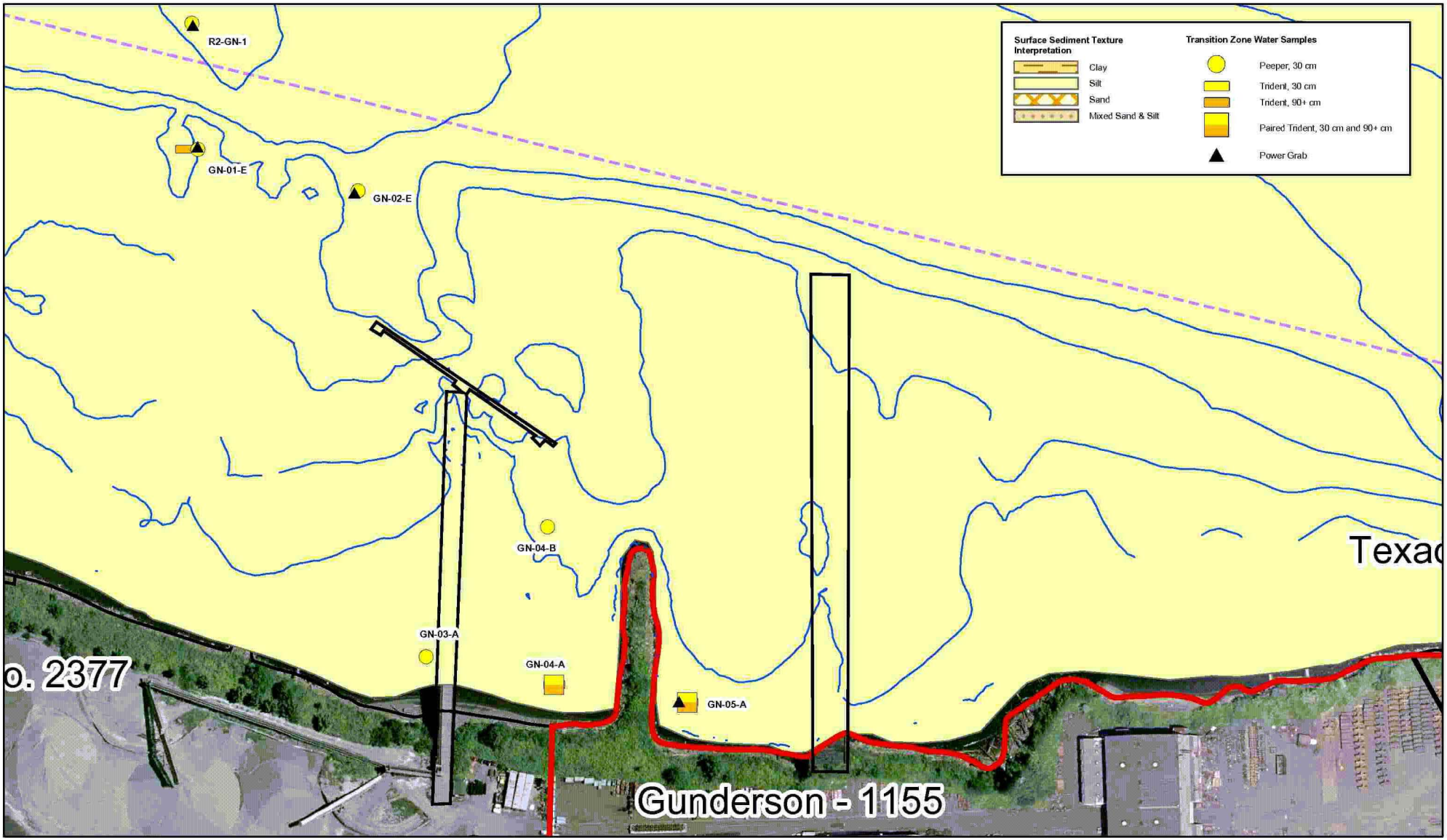

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LWG Lower Willamette Group

LEGEND
2003 - 5 Ft. Bathymetry (NAVD 88)
Site Property Boundary
Navigation Channel

0 25 50 100 Feet

FEATURE SOURCES:
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Base Map features from Portland Metro's RLIS.
Channel and River Miles: Developed from US Army Corps of Engineers information.
Docks & In-water Structures: created by heads-up digitizing from the October 2001 0.33 ft. resolution color orthophotos.
Point KM4-A: 60 cm temperature and conductivity readings could not be collected with the Trident probe due to probe refusal at 30 cm.

Map Document: (O:\Projects\Portland_Harbor\LWG-Map-Projects\Groundwater_Workplan\all_sites_Trident_FSR_200601_3.mxd)
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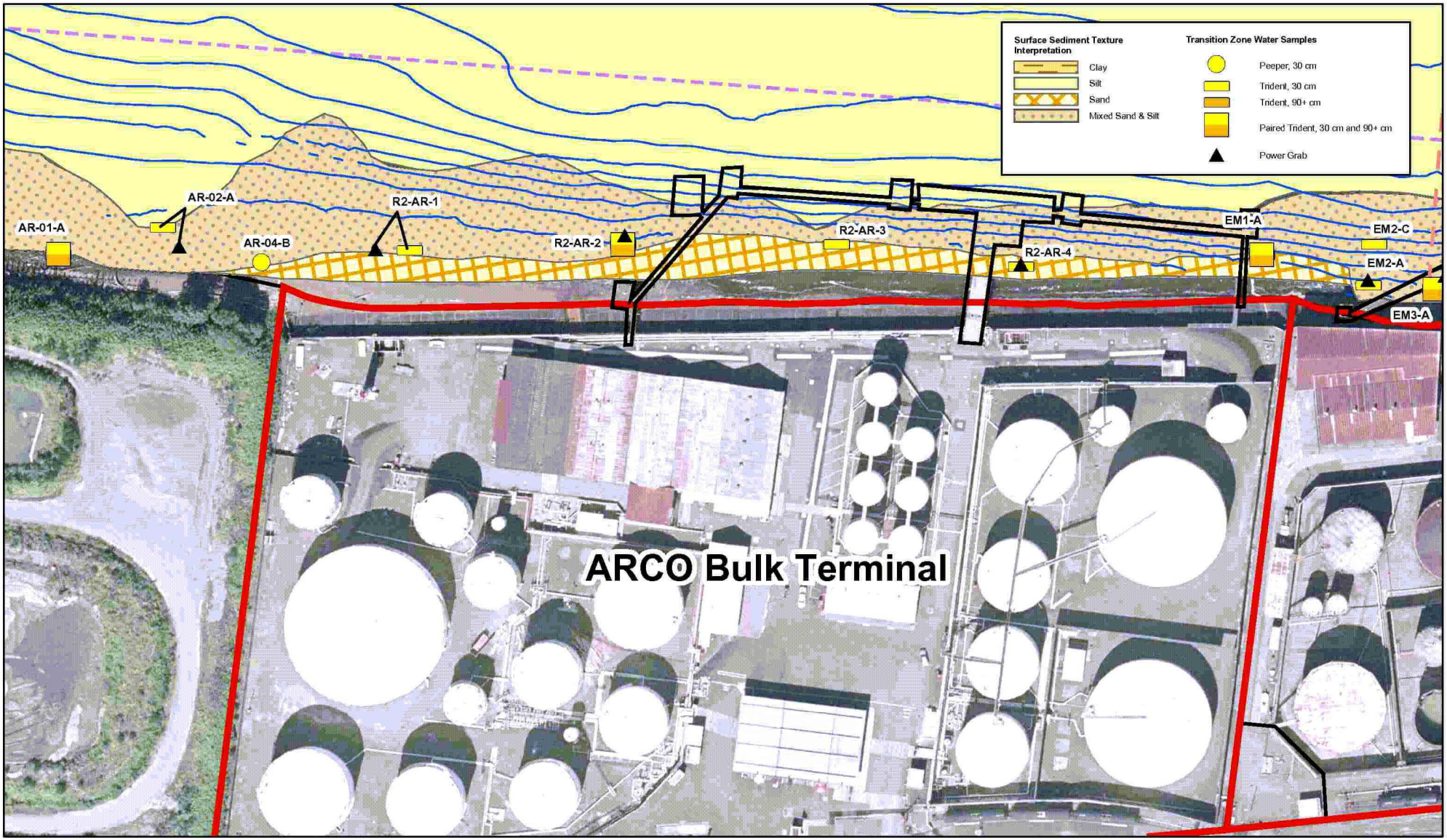
Figure 2-10
Portland Harbor RI/FS
Round 2 Groundwater Pathway Assessment
Transition Zone Water Field Sampling Report
Gunderson Transition Zone Water and Sediment Sampling Locations

BZTO104(e)007165
ANC07165



integral consulting inc.

LWG Lower Willamette Group

LEGEND
2003 - 5 Ft. Bathymetry (NAVD 88)
Site Property Boundary
Navigation Channel

0 25 50 100 Feet

N

FEATURE SOURCES:
Aerial Photo: Spencer B. Gross, October 2001.
Base Map features from Portland Metro's RLIS.
Channel and River Miles: Developed from US Army Corps of Engineers information.
Docks & In-water Structures: created by heads-up digitizing from the October 2001 0.33 ft. resolution color orthophotos.
Point KM4-A: 60 cm temperature and conductivity readings could not be collected with the Trident probe due to probe refusal at 30 cm.
Map Document: (G:\Projects\Portland_Harbor\LWG-Map-Projects\Groundwater_Workplan\wll_sites_Trident_FSR_200601_3.mxd)
1/18/2006 -- 3:32:42 PM

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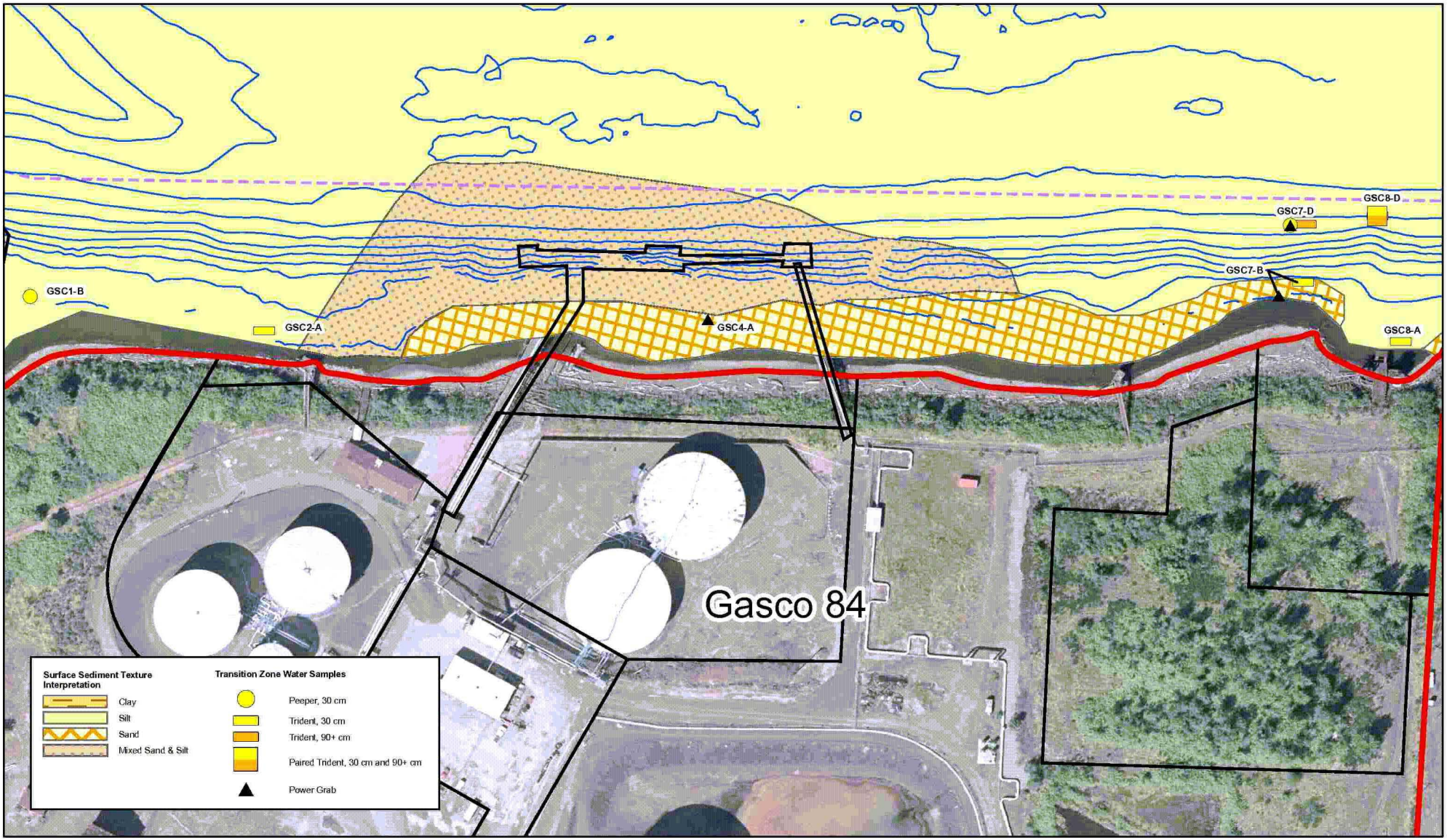
Figure 2-2
Portland Harbor RI/FS
Round 2 Groundwater Pathway Assessment
Transition Zone Water Field Sampling Report
ARCO Transition Zone Water and Sediment Sampling Locations

BZTO104(e)007166

ANC07166



integral consulting inc.

LWG Lower Willamette Group

LEGEND
2003 - 5 Ft. Bathymetry (NAVD 88)
Site Property Boundary
Navigation Channel

0 25 50 100 Feet

FEATURE SOURCES:
Aerial Photo: Spencer B. Gross, October 2001.
Base Map features from Portland Metro's RLIS.
Channel and River Miles: Developed from US Army Corps of Engineers information.
Docks & In-water Structures: created by heads-up digitizing from the October 2001 0.33 ft. resolution color orthophotos.
Point KM4-A: 60 cm temperature and conductivity readings could not be collected with the Trident probe due to probe refusal at 30 cm.
Map Document: (G:\Projects\Portland_Harbor\LWG-Map-Projects\Groundwater_Workplan\wll_sites_Trident_FSR_200601_3.mxd)
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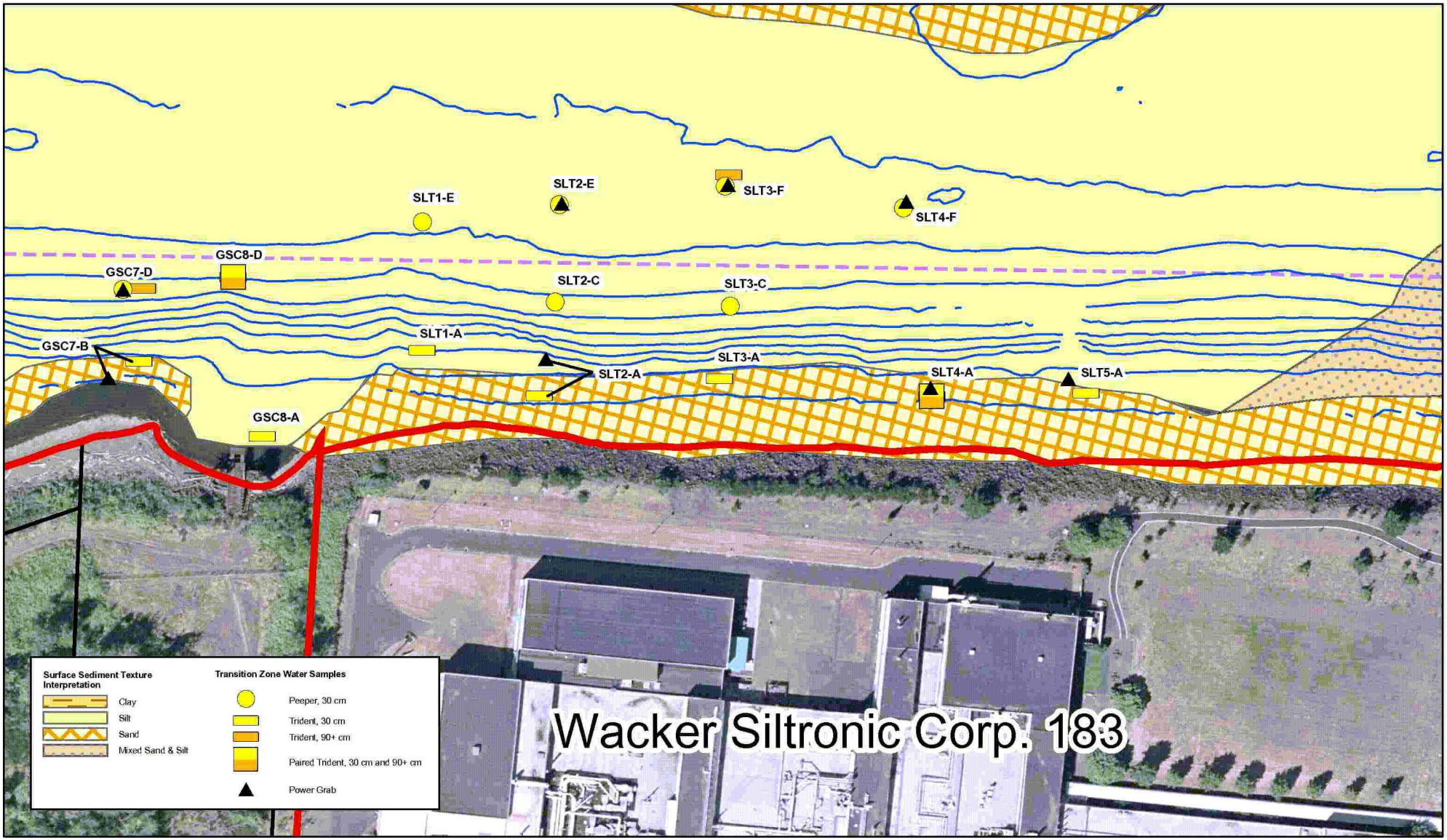
Figure 2-3
Portland Harbor RI/FS
Round 2 Groundwater Pathway Assessment
Transition Zone Water Field Sampling Report
Gasco Transition Zone Water and Sediment Sampling Locations

BZTO104(e)007167
ANC07167



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LWG Lower Willamette Group

LEGEND
2003 - 5 Ft. Bathymetry (NAVD 88)
Site Property Boundary
Navigation Channel

0 25 50 100 Feet

FEATURE SOURCES:
Aerial Photo: Spencer B. Gross, October 2001.
Base Map features from Portland Metro's RLIS.
Channel and River Miles: Developed from US Army Corps of Engineers information.
Docks & In-water Structures: created by heads-up digitizing from the October 2001 0.33 ft. resolution color orthophotos.
Point KM4-A: 60 cm temperature and conductivity readings could not be collected with the Trident probe due to probe refusal at 30 cm.
Map Document: (G:\Projects\Portland_Harbor\LWG-Map-Projects\Groundwater_Workplan\all_sites_Trident_FSR_200601_3.mxd)
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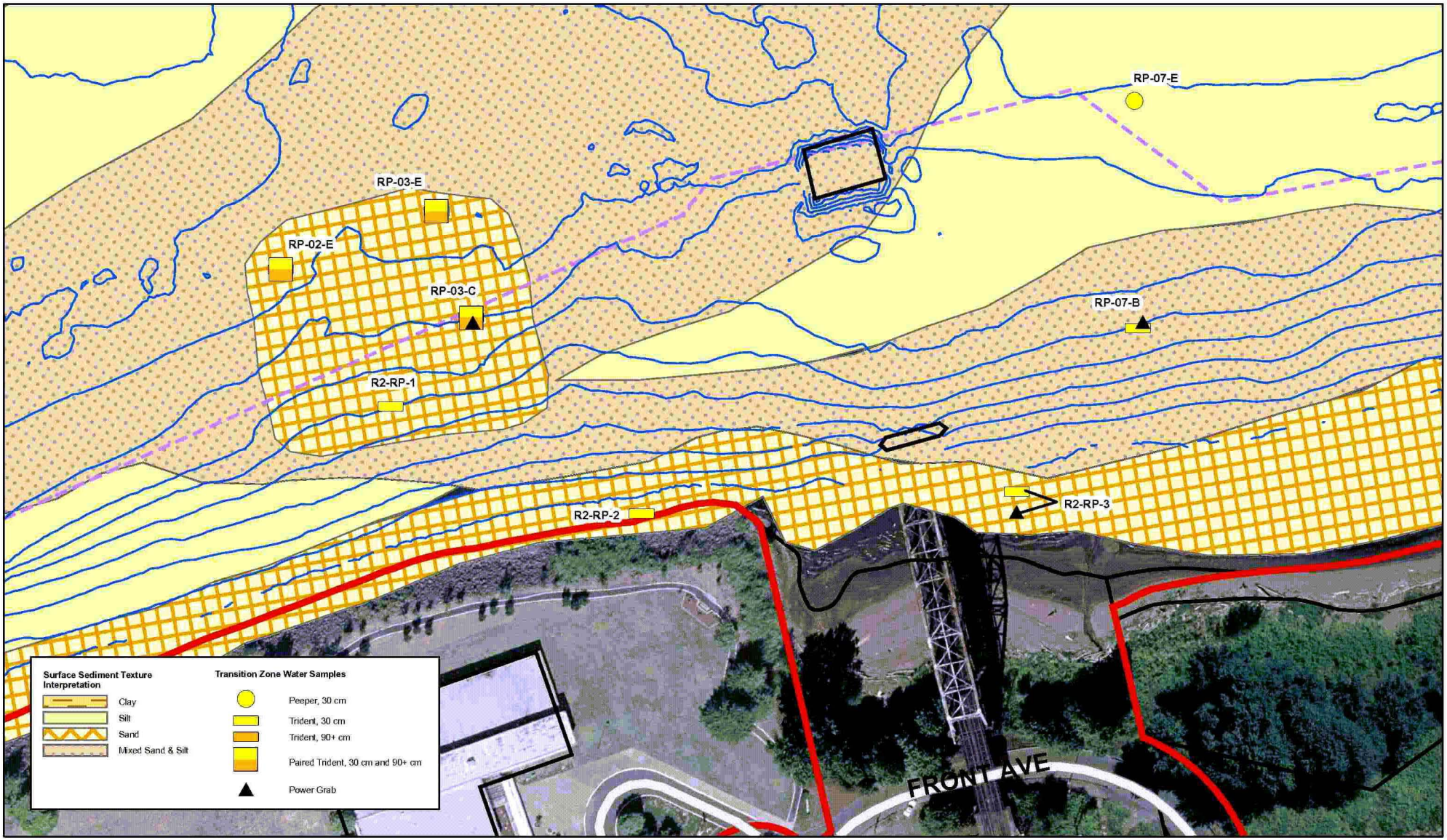
Figure 2-4
Round 2 Groundwater Pathway Assessment
Transition Zone Water Field Sampling Report
Siltronic Transition Zone Water and Sediment Sampling Locations

ANC07168
BZTO104(e)007168



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LWG Lower Willamette Group

LEGEND
2003 - 5 Ft. Bathymetry (NAVD 88)
Site Property Boundary
Navigation Channel

N

0 25 50 100 Feet

FEATURE SOURCES:
Aerial Photo: Spencer B. Gross, October 2001.
Base Map features from Portland Metro's RLIS.
Channel and River Miles: Developed from US Army Corps of Engineers information.
Docks & In-water Structures: created by heads-up digitizing from the October 2001 0.33 ft. resolution color orthophotos.
Point KM4-A: 60 cm temperature and conductivity readings could not be collected with the Trident probe due to probe refusal at 30 cm.
Map Document: (G:\Projects\Portland_Harbor\LWG-Map-Projects\Groundwater_Workplan\all_sites_Trident_FSR_200601_3.mxd)
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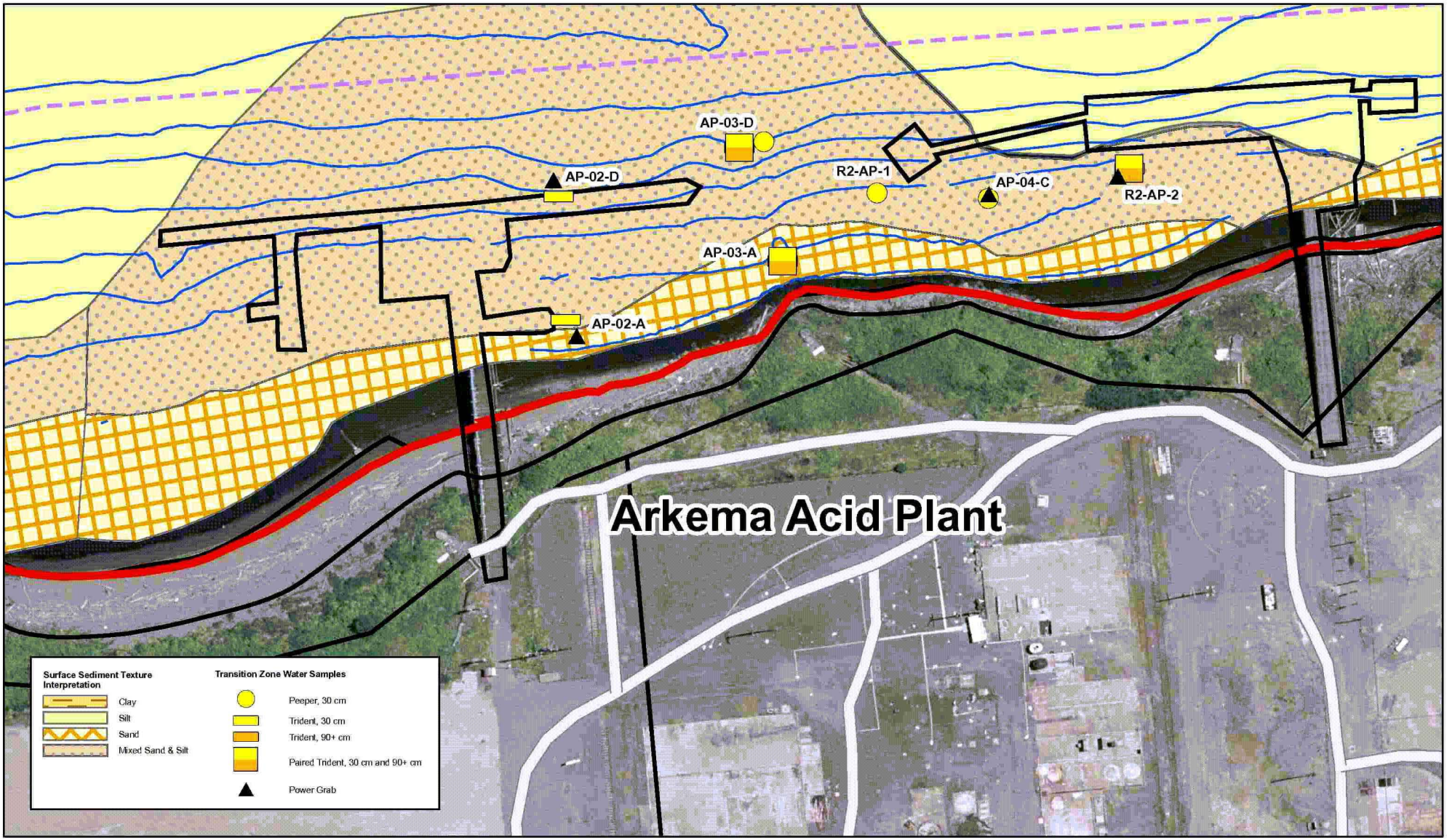
Figure 2-5
Portland Harbor RI/FS
Round 2 Groundwater Pathway Assessment
Transition Zone Water Field Sampling Report
Rhone Poulenc Transition Zone Water and Sediment Sampling Locations

BZTO104(e)007169
ANC07169



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LWG Lower Willamette Group

LEGEND
2003 - 5 Ft. Bathymetry (NAVD 88)
Site Property Boundary
Navigation Channel

N

0 25 50 100 Feet

FEATURE SOURCES:
Aerial Photo: Spencer B. Gross, October 2001.
Base Map features from Portland Metro's RLIS.
Channel and River Miles: Developed from US Army Corps of Engineers information.
Docks & In-water Structures: created by heads-up digitizing from the October 2001 0.33 ft. resolution color orthophotos.
Point KM4-A: 60 cm temperature and conductivity readings could not be collected with the Trident probe due to probe refusal at 30 cm.
Map Document: (G:\Projects\Portland_Harbor\LWG-Map-Projects\Groundwater_Workplan\all_sites_Trident_FSR_200601_3.mxd)
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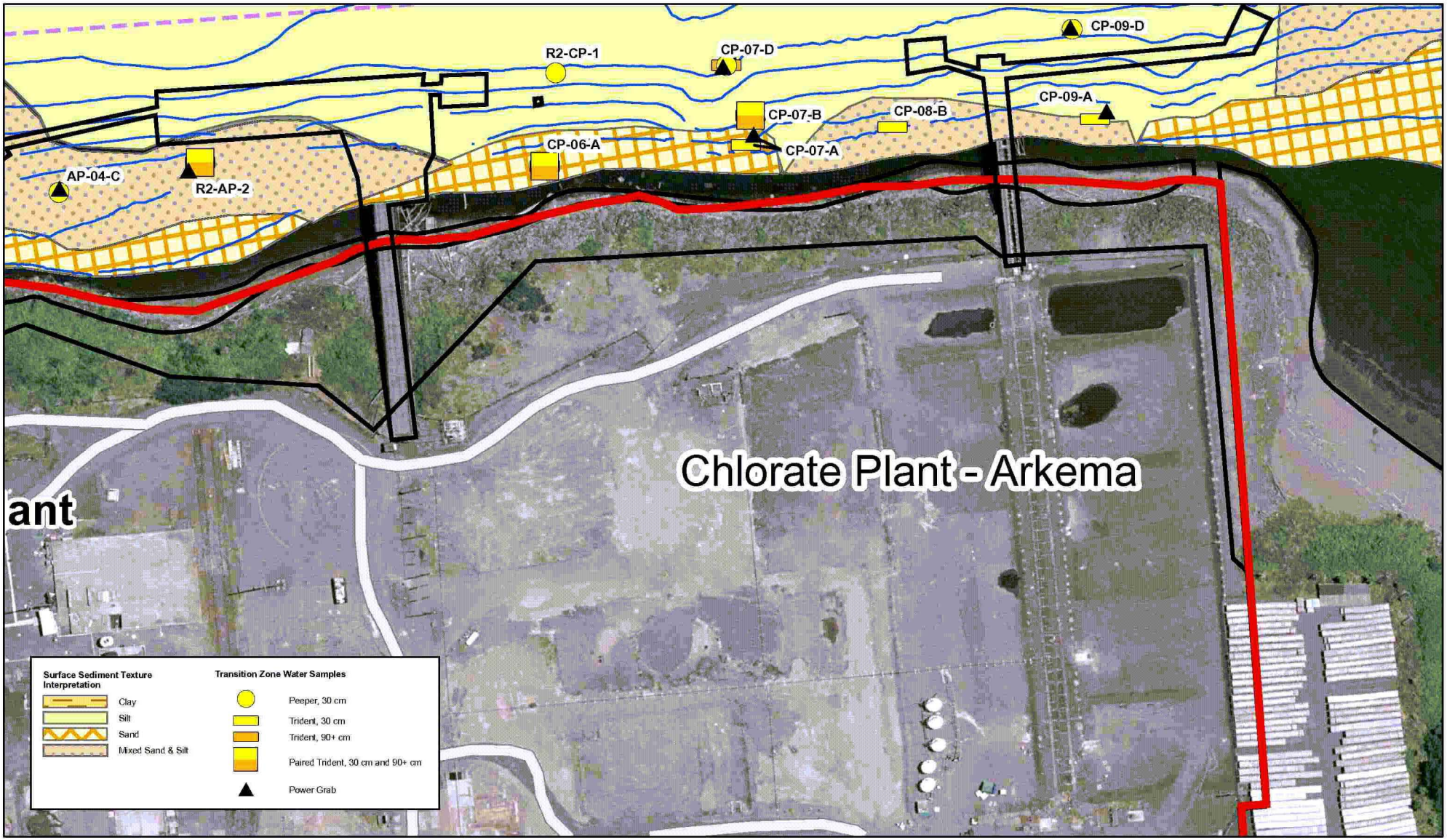
Figure 2-6
Portland Harbor RI/FS
Round 2 Groundwater Pathway Assessment
Transition Zone Water Field Sampling Report
Arkema Acid Plant Transition Zone Water and Sediment Sampling Locations

BZTO104(e)007170
ANC07170



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LWG Lower Willamette Group

LEGEND
2003 - 5 Ft. Bathymetry (NAVD 88)
Site Property Boundary
Navigation Channel
0 25 50 100 Feet

FEATURE SOURCES:
Aerial Photo: Spencer B. Gross, October 2001.
Base Map features from Portland Metro's RLIS.
Channel and River Miles: Developed from US Army Corps of Engineers information.
Docks & In-water Structures: created by heads-up digitizing from the October 2001 0.33 ft. resolution color orthophotos.
Point KM4-A: 60 cm temperature and conductivity readings could not be collected with the Trident probe due to probe refusal at 30 cm.
Map Document: (G:\Projects\Portland_Harbor\LWG-Map-Projects\Groundwater_Workplan\all_sites_Trident_FSR_200601_3.mxd)
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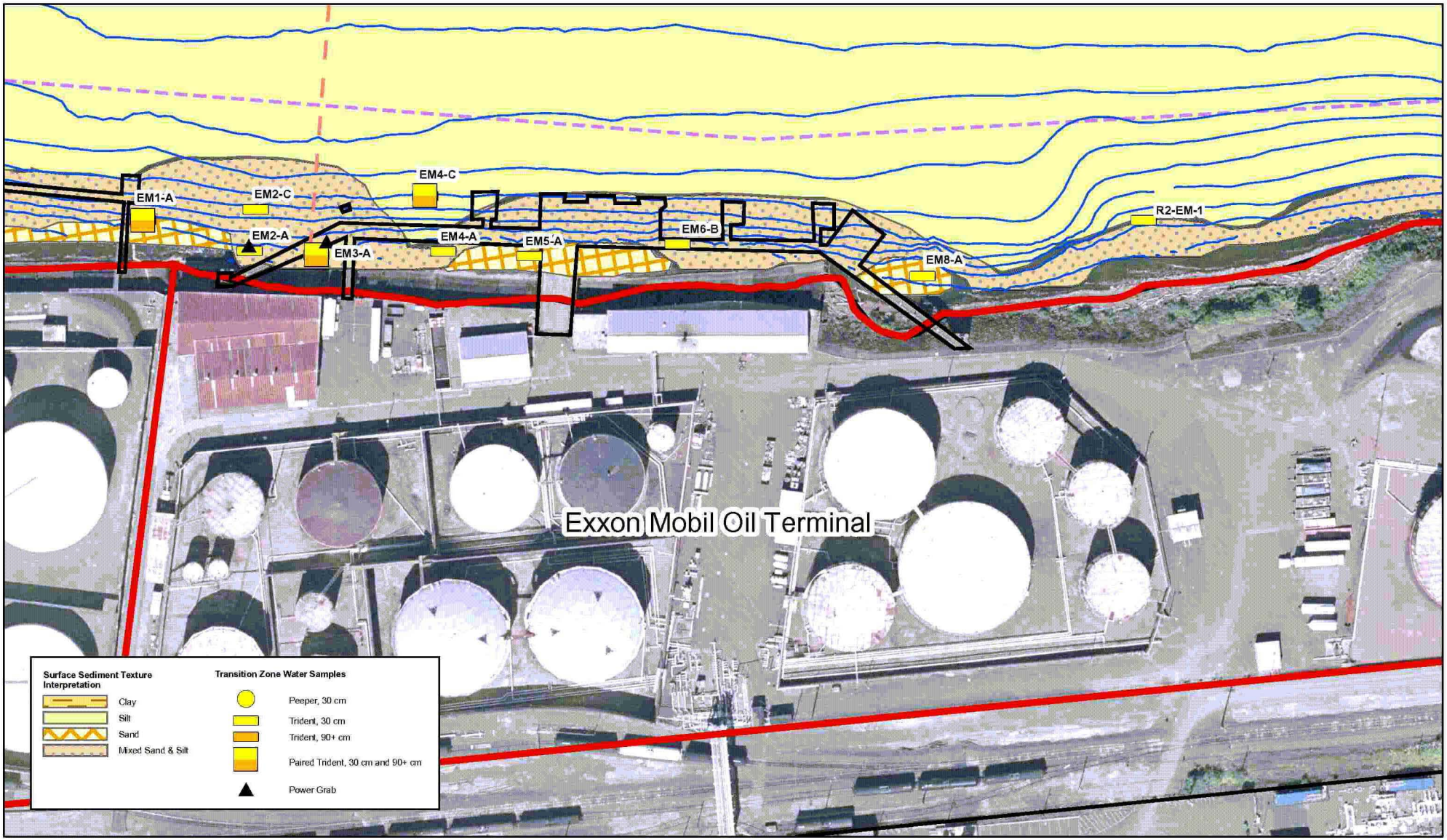
Figure 2-7
Portland Harbor RI/FS
Round 2 Groundwater Pathway Assessment
Transition Zone Water Field Sampling Report
Arkema Chlorate Plant Transition Zone Water and Sediment Sampling Locations

ANC07171
BZTO104(e)007171



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LWG Lower Willamette Group

LEGEND
2003 - 5 Ft. Bathymetry (NAVD 88)
Site Property Boundary
Navigation Channel

0 25 50 100 Feet

N

FEATURE SOURCES:
Aerial Photo: Spencer B. Cross, October 2001.
Base Map features from Portland Metro's RLIS.
Channel and River Miles: Developed from US Army Corps of Engineers information.
Docks & In-water Structures: created by heads-up digitizing from the October 2001 0.33 ft. resolution color orthophotos.
Point KM4-A: 60 cm temperature and conductivity readings could not be collected with the Trident probe due to probe refusal at 30 cm.
Map Document: (G:\Projects\Portland_Harbor\LWG-Map-Projects\Groundwater_Workplan\all_sites_Trident_FSR_200601_3.mxd)
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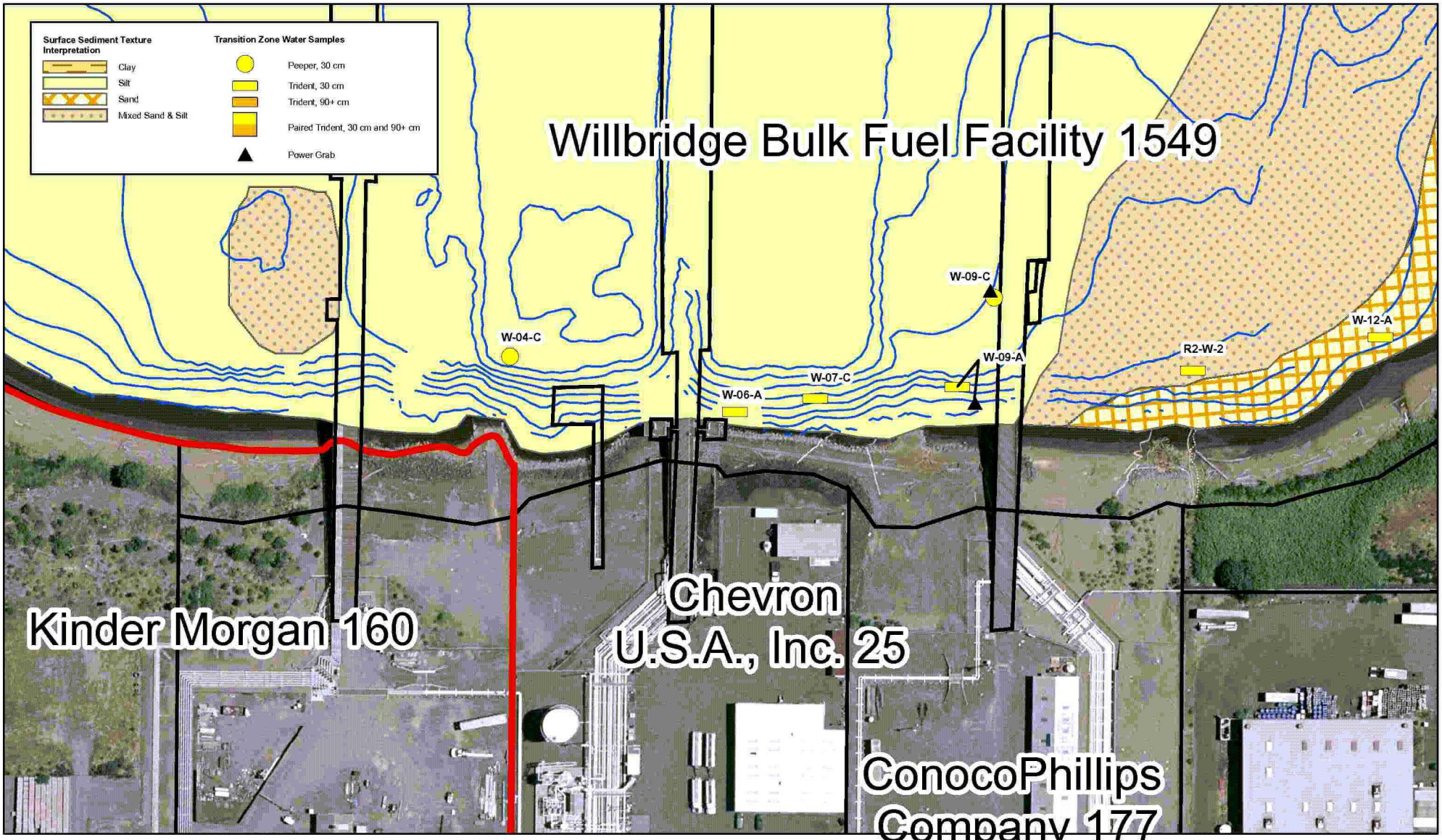
Figure 2-8
Portland Harbor RI/FS
Round 2 Groundwater Pathway Assessment
Transition Zone Water Field Sampling Report
ExxonMobil Transition Zone Water and Sediment Sampling Locations

ANC07172
BZTO104(e)007172



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LWG Lower Willamette Group

LEGEND
2003 - 5 Ft. Bathymetry (NAVD 88)
Site Property Boundary
Navigation Channel

0 25 50 100 Feet

FEATURE SOURCES:
Aerial Photo: Spencer B. Gross, October 2001.
Base Map features from Portland Metro's RLIS
Channel and River Miles: Developed from US Army Corps of Engineers information
Docks & In-water Structures: created by heads-up digitizing from the October 2001 0.33 ft. resolution color orthophotos.
Point KM4-A: 60 cm temperature and conductivity readings could not be collected with the Trident probe due to probe refusal at 30 cm
Map Document: (G:\Projects\Portland_Harbor\LWG-Map-Projects\Groundwater_Workplan\all_sites_Trident_FSR_200601_3.mxd)
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Figure 2-9
Portland Harbor RI/FS
Round 2 Groundwater Pathway Assessment
Transition Zone Water Field Sampling Report
WillbridgeTransition Zone Water and Sediment Sampling Locations

BZTO104(e)007173

ANC07173

LWG
LOWER WILLAMETTE GROUP

PORTLAND HARBOR RI/FS

ROUND 2 GROUNDWATER PATHWAY ASSESSMENT TRANSITION ZONE WATER SAMPLING FIELD SAMPLING REPORT

APPENDIX A
TRIDENT FIELD DATA SHEETS AND FIELD NOTES

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January 31, 2006

10/3/05 LWG TZW SAMPLING B01-01-52
J. MOORE

0730 : ARRIVE FIELD LAB, LOAD UP FOR THE DAY.
MOB TO FREDS MARINA.

PERSONNEL : J. MOORE - INTEGRAL
B. CHADWICK, J. GROVES, MIKE SCHAW - CMA

SCOPE : TO SET UP BOAT FOR TZW SAMPLING -
LOAD UP FOR WATER QUALITY + SAMPLING
WORK, EXXON MOBIL AS FIRST SITE.

WEATHER : WARM, WINDY. HEAVY SHOWERS.

0900 : ARRIVE FREDS MARINA, BEGIN WEATHERIZING
SHOAT, AND LOAD EQUIPMENT FOR 5FT + 2FT
SAMPLING.
CLEARANCE GIVEN FOR WORK AT EXXON MOBIL

0950 : CONDUCT FULL H & S MEETING, AND COVER
SCOPE OF WORK.

1200 MOB TO EXXON MOBIL

1345 : ARRIVE EM. SITE LOCATION R2-EM-1
NOTE: UPLAND IS CLAY BANK WITH RIP-RAP
WITH STRONG TPH SHEEN OOZING FROM CLAY

1350 : CALIBRATE ULTRAMETER GP - TDS/PH/URP/DO
CALIBRATE TRIDENT PROBE CONDUCTIVITY.

NOTE: PROBLEMS WITH ULTRAMETER - ONLY TDS/T°C/COND
CAN BE CALIBRATED.
PROBE CONDUCTIVITY ON 2FT IS 2000 µ/s
FOR 150 µ/s SOLUTION, REFERENCE PROBE IS
1600 µ/s.

1515 : SAMPLE LWG2-T30-R2EM1, FLOW 80 ml/min
ALSO DUPLICATE SAMPLE COLLECTED LWG2-T30-R2EM1-D

1700 : SAMPLING COMPLETE - DECON.
1710 : MOB TO FREDS MARINA, UNLOAD
1800 MOB TO LAB
1830 LEAVE LAB

JM

10/4/05 LWG TZW SAMPLING B01-01-52
J. MOORE

0730 : ARRIVE FIELD LAB, LOAD UP FOR THE DAY.
MOB TO FREDS MARINA

PERSONNEL : J. MOORE - INTEGRAL
B. CHADWICK, M. CHADWICK, M. SCHAW, J. GROVES

SCOPE : TO SAMPLE REMAINING LOCATIONS AT EXXON MOBIL
USING 5FT AND 30CM PROBE TRIDENT. TZW.
NOTE THAT DREDGE WORK IS STILL ACTIVE AT
GASCO + SILTRONIC SITES - TAR BODY REMOVAL
- CLEARANCE GIVEN AT EXXON MOBIL.

0800 : ARRIVE FREDS MARINA, CALIBRATE INSTRUMENTS
1FT PROBE CONDUCTIVITY - 1540 µ/s
REFERENCE PROBE - 1900 µ/s
ULTRAMETER CONDUCTIVITY - 1490 µ/s (STANDARD 1500 µ/s)

0900 : MOB TO EXXON MOBIL. CALL COAST GUARD/SHERIFF

0935 : ARRIVE AT EM8A. BEGIN DECON + READY
30cm + FT probe.

1000 : DEPLOY 1FT + 5FT PROBES, BEGIN PURGE

1005 : 1FT IS PURGING 100 ml/min DECIDE TO PURGE
3x FOR LAB QA.

1010 : 5FT PROBE WILL NOT PUMP BELOW 60 cm,
Sand w/ silt FROM 0-2 FT, FIRM SILT/CLAY
BELOW - CANNOT PUMP IN SILT/CLAY - ABORT
SAMPLE.

1020 : BEGIN SAMPLING LWG2-T30-EM8A.

1215 : END SAMPLING, DECON.

1230 : BEGIN PREPARING SAND PACK IN 30cm PROBE - ARRIVE
EM6B - 20FT SOUTH OF LOCATION DUE TO PILINGS
BUT SAME DISTANCE FROM SHORE.

1310 : BEGIN SAMPLING LWG2-T30-EM6B.

10/4/05 LNG TRIDENT TZW BOI-01-52
J. MOORE

1400 : STOP SAMPLING GB - DECON - MOB TO EM5A.
1420 - ARRIVE EM5A, BEGIN SAND PACK PROBE FOR 30cm + 5FT PROBES.
1435 : BEGIN PURGING 30cm PROBE - 100 ml/min
1445 : BEGIN SAMPLING LNG2-T30-EM5A.
1450 - TRY TO SAMPLE WITH 5FT PROBE - FROM SILT IS BELOW 2 FT - THE SCREEN CANNOT WORK BELOW 2 FT -
1600 : FINISH SAMPLING EM5A 30cm, ABORT 5FT SAMPLING EFFORT.
1615 : DECON.
1630 : MOB TO PRESS MARINA. CALL EXXONMOBIL, COAST GUARD, SHERIFF.
1715 : ARRIVE AT PRESS - UNLOAD - MOB TO LAB LAB
1735 : ARRIVE AT LAB - UNLOAD SAMPLES.
1800 : CLEAN LAB.

JM
10/4/05
1810 hrs

10/5/05 LNG TRIDENT TZW BOI-01-52
J. MOORE.

0745 : ARRIVE PRESS LAB, LOAD UP FOR THE DAY.
PERSONNEL : J. MOORE - INTEGRAL
M. CHADWICK, R. CHADWICK, J. GRUBB, M. SCHAW - EMA.
SCOPE : TO CONTINUE SAMPLING TZW USING 1FT + 5FT TRIDENT PROBES AT EXXONMOBIL
- CLEARANCE GIVEN TO BOARD AT EXXONMOBIL
0830 : ARRIVE PRESS MARINA, LOAD UP.
0855 : MOB TO EXXONMOBIL, CALL COAST GUARD/SHERIFF
0900 : CALIBRATE CONDUCTIVITY
1FT ~~REFERENCE~~ PROBE : 1560 m/s
REFERENCE PROBE : 1600 m/s
ULTRAMETER : 1490 m/s (1500 m/s STANDARD)
CALIBRATE SEPARATE PH PROBE
4mV / 7mV / 10mV
0935 : BEGIN PURGING AT LOCATION EM 4C, 30cm PROBE. 250 ml ~~PURGE~~ Purged
0945 : BEGIN SAMPLING LNG2-T30-EM4C
1000 : 5ft Probe inserted - begin purge (AT 5FT)
1015 : 250 ml Purged, Begin sampling LNG2-T90-EM4C
1200 : END SAMPLING BOTH T90 + T30 - ALL SAMPLES COLLECTED APART FROM FILTERED PAHS.
1210 : DECON - MOB TO EM 4A
1215 : SET UP FOR 30cm SAMPLE AT EM4A
1220 : BEGIN PURGE, 250 ml purged - begin sampling - LNG2-T30-EM4A.
1320 : END SAMPLING AT EM4A - DECON.
1335 : MOB TO EM3A
1400 : SET UP 5FT + 1FT Probes
1415 : BEGIN PURGING LNG2-T30-EM3A AFTER 250 ml Purged.

ANC07176
BZTO104(e)007176

10/5/05 LUG-TZU SAMPLING B01-01-S2
J. MOORE

1430 : BEGIN SAMPLING LUG-T90-EM3A, THE PROBE FILTER IS AT 4ft below mudline.
1500 : FINISH PURGING/SAMPLING EM3A 1ft SAMPLE. START SAMPLING EM3A 4ft DUPLICATE: LUG2-T90-EM3A-D.
1630 : STOP PURGING/SAMPLING EM3A 4ft SAMPLE + DUP.
1645 : DECON - MOB TO FREDS MARINA. CALL EXXONMOBIL / COAST GUARD / SHERIFF.
1710 : ARRIVE FREDS MARINA. UNLOAD MOB TO LAB
1730 : ARRIVE AT LAB, TRANSFER SAMPLES.
1810 : LEAVE LAB.

JM
10/5/05
18.10 hrs.

10/6/05 LUG TRIBUT TZU SAMPLING B01-01-SC
J. MOORE.

0730 : ARRIVE FREDS LAB, LOAD UP FOR THE DAY.
PERSONNEL : J. MOORE - INTEGRAL
S. CHADWICK, M. CHADWICK, M. SCHAW, J. CROWE - CMA
SCOPE : TO CONTINUE SAMPLING EXXONMOBIL TZU LUG 1ft + 5ft TRIBUT PROBES. COLLECT RINSATE.
0800 : ARRIVE FREDS MARINA, PREPARE 5ft + 1ft PROBE FOR RINSATE SAMPLE.
0830 : BEGIN SAMPLING RINSEATE LUG-RINSE-EM WHILST MOVING TO EXXONMOBIL EM2C.
1000 : END SAMPLING EM RINSEATE. MOB TO FINAL POSITION FOR LOCATION EM2C.
CALL COAST GUARD/SHERIFF/EXXONMOBIL - CLEARANCE GIVEN.
CALIBRATE PROBES + ULTRASEEA
ULTRAMETER 1524 m/s CONDUCTIVITY
1ft PROBE 1530 "
REFERENCE 1600 " (1500 µs STANDARD)
PH 4/7/10 mV
TSS, ORP.
1010 : BEGIN PREPARING FOR SAMPLES 5ft/1ft AT EM2C.
1030 : DEPLOY 1ft probe, begin purge. SAND
1040 : DEPLOY 5ft probe - try to purge - SILT FROM 2ft depth to 5ft, SAND ABOVE - PROBES PURGED.
1050 : BEGIN SAMPLING 1ft AFTER 500 ml purge LUG2-T30-EM2C.
1100 : ABORT SAMPLING 5ft SAMPLE - NO WATER.
1210 : FINISH SAMPLING 1ft SAMPLE - COULD NOT

ANC07177
BZTO104(e)007177

10/6/05 LWG TRIDENT TZW SAMPLING B01-01-52
J. MOORE

COLLECT FILTERED PAH. ALL ERSE COLLECTED.

1215 : PULL UP PROBES + DECON.
1220 : MOB TO EM2A. READY 5ft + 1ft PROBES
1230 : SET TRIDENT 5ft AND 1ft probes.
1240 : 250 ml Purged, BEGIN SAMPLING 1ft probe LWG2-T30-EM2A.
1300 : ABANDON 5ft PROBE - SAME PROBLEM AS EM2C.
1340 : STOP SAMPLING EM2A 1ft. COMPLETE SUITE
1345 : MOB TO EM1A - DECON + SET UP 5ft/1ft PROBES.
1400 : SET PROBES 1ft + 5ft, begin purge - 5ft not working
1420 : BEGIN SAMPLING LWG2-T30-EM1A. 1ft.
1510 : END SAMPLING LWG2-EM1A 1ft. - GET 5ft WORKING.
1530 : AFTER 250 ml purged begin sampling 5ft LWG2-T90-EM1A.
1640 : END SAMPLING 5ft SAMPLE, COULD NOT COLLECT FILTERED DRO or PAH AT 5ft location. no flow - sandy silt.
1650 : PULL PROBES. DECON - MOB TO FREDS MARINA.
1715 : ARRIVE FREDS - UNLOAD - MOB TO FIELD office.
1800 : ARRIVE FIELD LAB - UNLOAD.
1820 : LEAVE FIELD LAB

JM 10/6/05
1830 hrs.

10/7/05 LWG TZW TRIDENT SAMPLING B01-01-52
J. MOORE

0730 : ARRIVE FIELD LAB - LOAD UP FOR THE DAY. MOB TO FREDS MARINA

PERSONNEL: J. MOORE - INTEGRAL
M. CHADWICK, D. CHADWICK, J. GROVES, M. SCHAW - CSA

SLOPE : TO SAMPLE TZW AT SILTRONIC, USING 1ft/5ft PROBES.

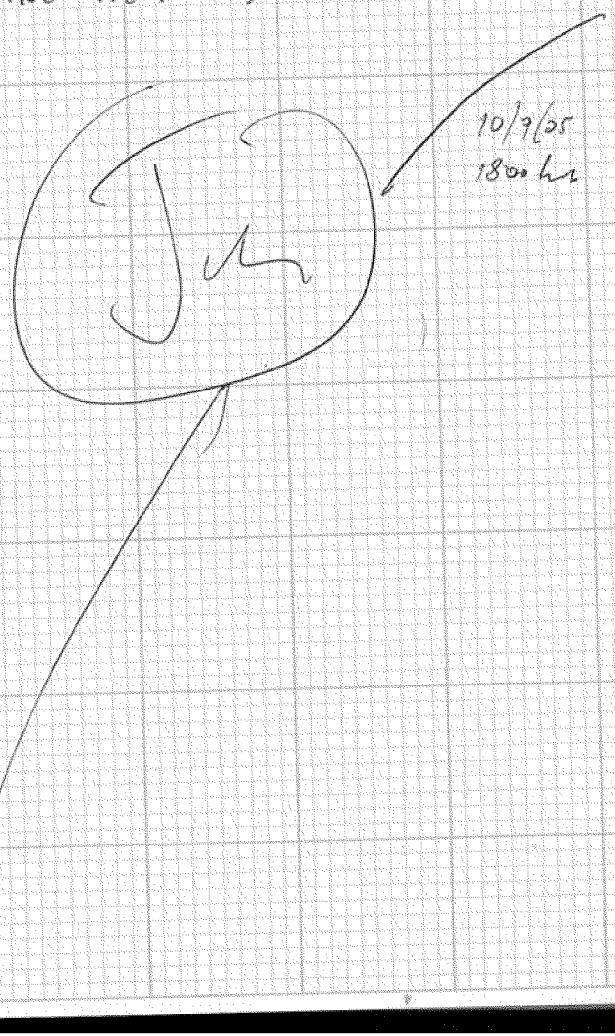
0810 : ARRIVE AT FREDS - LOAD UP FOR THE DAY. PROBLEMS WITH SHOAT OUTBOARD MOTOR - MECHANIC IS COMING TO FIX IT.

0900 : CALIBRATE PROBES + ULTRAMETER.
1ft probe cond : - 1550 µs
REFERENCE PROBE : 1600 µs
ULTRAMETER : 1529 µs (1500 µs STANDARD)
pH, ORP - TDS.

0930 : MOB TO SILTRONIC - MOTOR FIXED. CALL COAST GUARD SHERIFF.
1005 : ON LOCATION SL3A. SET UP 1ft PROBE.
1010 : DEPLOY 1ft probe. begin purging.
1020 : 500 ml/purged begin sampling LWG2-T30-SL3A
1050 : BEGIN SAMPLING DUPLICATE LWG2-T30-SL3A-D
1230 : END SAMPLING SL3A. MOB TO SL2A. DECON
1240 : PREPARE 1ft/5ft FOR SAMPLING.
1310 : PURGE 1ft SAMPLE - BEGIN SAMPLING 1ft, LWG2-T30-SL2A
1330 : BEGIN SAMPLING 5ft, LWG2-T90-SL2A.
1400 : ABORT 5ft SAMPLE - SILT FOULING SCREEN EVEN AFTER MULTIPLE DEPLOYMENTS.
1420 : END SAMPLING 1ft SL2A, DECON.
1425 : MOB TO SL1A. PREPARE 1ft PROBE
1430 : BEGIN PURGE/SAMPLE LWG2-T30-SL1A

10/7/05 LWG T2N TRIDENT SAMPLING BOI-01-5B J.MOORE

1600 : FINISH SAMPLING IFE SC1A. DECON.
1605 : MOB TO PRESS MARINA.
1650 : ARRIVE FLOAT - UNLOAD MOB TO FIELD LAB
1800 : LEAVE PRESS LAB.



10/8/05 LWG T2N TRIDENT SAMPLING BOI-01-5C J.MOORE

0730 : ARRIVE PRESS LAB, LOAD UP FOR THE DAY.

PERSONNEL : J.MOORE - INTEGRAL
B.CHADWICK, M.CHADWICK, J.GRAVES, M.SCHAD - CMA

SCOPE : TO CONTINUE SAMPLING SILTRONIC USING SFE/IFE TRIDENT PROBES.

0810 : ARRIVE PRESS MARINA, LOAD UP BOAT FOR THE DAY.
CALIBRATE PROBES.
ULTRAMETER COND - 1561 m/s
IFE PROBE - 1580 m/s
REFERENCE PROBE - 1600 m/s
ULTRAMETER PH. ORP. TDS

0900 : MOB TO SILTRONIC - CALL COAST GUARD (SHERCLIFF
0950 : ARRIVE AT SC3F, PREPARE SFE PROBE
1000 : INSERT SFE PROBE, BEGIN PURGE.
1020 : BEGIN SAMPLING LWG2-T90-SC3F, V. SLOW PROBE AT SFE DEPTH
*NOTE : NO FILTERED SAMPLES COLLECTED - NOT ENOUGH WATER TO FILL FILTER AND PUSH THROUGH.
1115 : END PURGE/SAMPLE - NO FILTERED SAMPLES TAKEN - NOTE WHEN PROBE PULLED BACK TO BOAT A 50° BEND IN PROBE OCCURRED - THE SAMPLE MAY HAVE BEEN ONLY 2-4 FT DEEP.
1125 : MOB TO SC4A
1230 : ARRIVE SC4A, PREP SFE/IFE PROBES
1240 : BEGIN PURGE OF IFE PROBE
1245 : BEGIN SAMPLING LWG2-T30-SC4A.
1315 : BEGIN SAMPLING LWG2-T90-SC4A - 3FT DEEP - ALSO SAMPLE IFE FOR LAB QA.
1450 : COMPLETE QA SAMPLE, AND END SFE SAMPLE - WITHOUT FILTERED DRO + PAH - NO WATER
1505 : PULL PROBES - DECON

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10/8/05 LWG TZW TRIDENT SAMPLING B01-01-52 J.MOORE

1500 : BEGIN SAMPLING EQUIPMENT BLANK LWG2 - RINSE - GL

1530 : FINISH SAMPLING EQUIPMENT BLANK. DECON MOB TO SLSA - PREPARE IRE PROBE.

1535 : INSERT IRE PROBE. BEGIN PURGE

1545 : BEGIN SAMPLING LWG2-T30-SLSA.

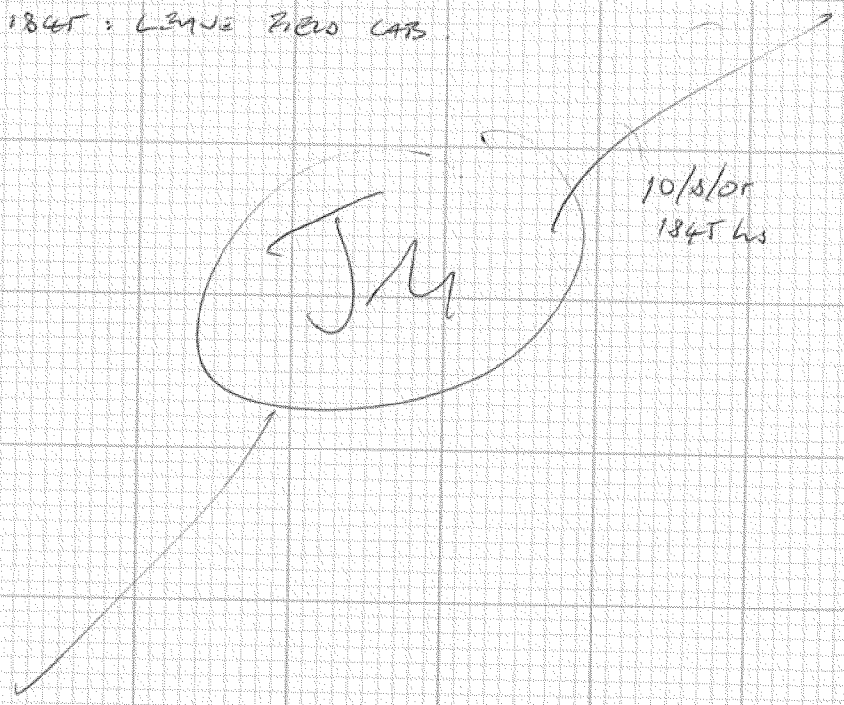
1630 : END SAMPLING SLSA. DECON

1640 : MOB TO FIELD MARINA

1710 : ARRIVE FIELD - UNLOAD - MOB TO FIELD LAB

1750 : ARRIVE FIELD LAB

1845 : LEAVE FIELD LAB.



10/10/05 LWG TRIDENT TZW SAMPLING B01-01-52 J.MOORE

0730 : ARRIVE FIELD LAB, LOAD UP FOR THE DAY.

PERSONNEL : J.MOORE - INTERTOX
S.CAMET, M.SCHAU, R.POULSON - CMA

SCOPE : TO BEGIN SAMPLING TZW AT ARKEMA ACID PLANT USING IRE/SRE TRIDENT PROBES.

0810 : ARRIVE FIELDS MARINA, LOAD UP SKIFF FOR THE DAY.

0845 : CMA AT FIELDS - DECON ALL EQUIPMENT. CALIBRATE PROBES / ULTRAMETER.

IRE PROBE COND - 1530 µs/s
REFERENCE PROBE - 1500 µs/s
ULTRAMETER - 1546 µs/s

ULTRAMETER PH, ORP, TDS.

0920 : MOB TO ARKEMA ACID PLANT. CALL COAST GUARD SHERCLIFF.

1000 : ON LOCATION ACID PLANT ZA - (AP-2A). PREPARE IRE PROBE.

1020 : BEGIN SAMPLING LWG2-T30-AP2A. ALSO SAMPLE LAB QA 3x SAMPLE

1150 : END SAMPLING IRE AP2A + LAB QA. DECON + PREPARE IRE/SRE PROBES FOR AP2D

1210 : ARRIVE AT AP2D

1225 : BEGIN PURGE IRE + SRE PROBES SRE IS SLOW.

1240 : BEGIN SAMPLING LWG2-T30-AP2D

1300 : ABORT SRE SAMPLE - NO FLOW - WATER QUALITY COLLECTED, AVERY STRONG PETROLEUM ODOR OBSERVED.

1350 : END SAMPLING IRE SAMPLE - NO FILTERED SAMPLE COLLECTED - NOT ENOUGH PRESSURE TO PUSH WATER THROUGH FILTER.

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10/10/05 LWG TZW TRIDENT SAMPLING B01-01-52
J. MOORE

1420 : ARRIVE AP3A, PREPARE 1ft/5ft PROBES.
1430 : BEGIN PURGE OF 1ft + 5ft.
~~1435~~ :
1440 : BEGIN SAMPLING LWG2-T30-AP3A
1455 : BEGIN SAMPLING LWG2-T90-AP3A (V-SLOW)
1515 : BEGIN SAMPLING LWG2-T30-AP3A-D (DUPLICATE)
1600 : END SAMPLING 1ft DUPLICATE, AND 5ft SAMPLE
~~[illegible]~~ - THE 5ft SAMPLE HAS NO FILTERED SAMPLES DUE TO V. POOR FLOW.
1610 : DECON - MOB TO FREDS MARINA.
1700 : ARRIVE FREDS - UNLOAD CALL COASTGUARD/SHERIFF.
1720 : MOB TO FIELD LAB.
1800 : LEAVE FIELD LAB

10/10/05
1805 hrs

10/11/05 LWG TZW TRIDENT SAMPLING B01-01-52
J. MOORE.

0730 : ARRIVE FIELD LAB - LOAD UP FOR THE DAY.
PERSONNEL : J. MOORE - INTEGRAL
R. POULSON, J. GROVES, M. SCHAU - CMA
SCOPE : TO CONTINUE SAMPLING TZW USING 1ft/5ft TRIDENT PROBES AT THE ARKEMA ACID PLANT.

0800 : ARRIVE FREDS MARINA, LOAD SHOAT FOR THE DAY.
0840 : CMA ARRIVE AT FREDS
CONDUCT ARKEMA SPECIFIC H & S MEETING, FOCUSING ON THE CONCENTRATION OF THE SITE CONTAMINATIONS, AND THE NEED FOR EXTRA CAUTION
0900 : CALIBRATE PROBES + ULTRAMETER.
1 ft PROBE COND - 1510 µ/s
REFERENCE PROBE - 1600 µ/s
ULTRAMETER - 1481 µ/s (1500 µ/s STANDARD)
ULTRAMETER PH, ORP, TDS
0915 : MOB TO ARKEMA ACID PLANT, CALL COAST GUARD + SHERIFF.
1010 : ARRIVE LOCATION AP-3D, PREPARE 1ft + 5ft probe.
1030 : BEGIN PURGING/SAMPLING 1ft PROBE - V. SLOW LWG2-T30-AP3D
1045 : BEGIN SAMPLING 5ft PROBE, LWG2-T90-AP3D
1140 : STOP SAMPLING BOTH 1ft + 5ft, V. SLOW FLOWS
∴ 1ft PROBE SAMPLES - VOC'S + PERCHLORATE + CONV'. ONLY
- 5ft PROBE SAMPLES - VOCS + PERCHLORATE + CONV' + METALS + PESTICIDES
- NO FILTERED SAMPLES COLLECTED.
1145 : PULL PROBES - DECON AND READY PROBES FOR R2AP2
1215 : ON LOCATION R2AP2
1230 : BEGIN PURGE AT R2AP2 1ft + 5ft
1245 : BEGIN SAMPLING 1ft PROBE: LWG2-T30-R2AP2

10/11/05 LWG TZW TRIDENT SAMPLING B01-01-S2 J. MOORE

1250 : BEGIN SAMPLING RZAP2 SPE PROBE LWG2-T90-RZAP2

1430 : STOP SAMPLING RZAP2.
IRT = ALL UNFILTERED SAMPLES + FILTERED METALS
SRT = VOC's, metals, perchlorate + conventionals (- NO FILTERED SAMPLES) + PESTICIDES

1435 : DECON, PREPARE IRT PROBE FOR ~~AM~~ CHLORATE PLANT SAMPLING.

1500 : ARRIVE CHLORATE PLANT CP-9A. PURGE.

1515 : BEGIN SAMPLING IRT PROBE, LWG2-T30-CP9A

1530 : BEGIN SAMPLING IRT DUPLICATE, LWG2-T30-CP9A-D

1555 : END SAMPLING CP9A.

1600 : DECON. MOB TO PREP MARINA.

1650 : ARRIVE PREP MARINA - UNLOAD - MOB TO PREP LAB.

1730 : ARRIVE PREP LAB - UNLOAD.

1800 : LEAVE PREP LAB.

10/11/05
1800 hrs.

10/12/05 LWG TRIDENT TZW SAMPLING B01-01-S2 J. MOORE

0730 : ARRIVE PREP LAB, LOAD UP FOR THE DAY. MOB TO PREP MARINA

PERSONNEL : J. MOORE - INTERTOX
R. POWELSON, I. GROSS, M. SCHAU - CMA

SCOPE : TO FINISH ARKEMA CHLORATE PLANT TZW SAMPLING USING TRIDENT IRT/SRT PROBE.
NOTE: DOUBLE THE WATER COLLECTED FOR METALS IE: AT LEAST 750 ml.

0845 : MOB TO ARKEMA CHLORATE PLANT. CALL COAST GUARD / SHERIFF

0930 : ON LOCATION CP8B, PREP IRT PROBE.

0935 : BEGIN PURGE.

0945 : BEGIN SAMPLING CP8B - LWG2-T30-CP8B

1015 : END SAMPLING CP8B - DECON, MOB TO CP7D PREP SRT PROBE

1020 : ARRIVE CP7D

1100 : BEGIN PURGE/SAMPLING OF LWG1-T90-CP7D

1215 : END SAMPLING - V. SLOW, ONLY UNFILTERED SAMPLES COLLECTED.

1220 : PULL PROBE - DECON. PREP IRT/SRT PROBES

1245 : ARRIVE LOCATION CP7B, PREP IRT/SRT PROBES

1255 : BEGIN PURGE/SAMPLING LWG2-T30-CP7B

1300 : BEGIN SAMPLING LWG2-T90-CP7B - V. SLOW

1400 : END SAMPLING IRT - COMPLETE FILTERED + UNFILT. SRT - ONLY VOC's, METALS COLLECTED

1405 : PULL PROBES - DECON, PREP FOR CP7A.

1415 : ARRIVE AT CP7A, PURGE

1430 : SAMPLE CP7A - LWG2-T30-CP7A

1505 : END SAMPLING CP7A - DECON - MOB TO CP6A

1520 : ARRIVE CP6A. PREP IRT/SRT PROBES

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10/12/05 LWG TRIDENT TZW SAMPLING B01-01-52
J. MOORE

1530 : BEGIN SAMPLING 1FT LWG2-T30-CPGA.
1545 : BEGIN SAMPLING 5FT LWG2-T90-CPGA
1610 : END SAMPLING 1FT PROBE - ALL SAMPLES COLLECTED
1615 : END SAMPLING 5FT PROBE - VOCS + PERCHLORATE SAMPLES ONLY.

1630 - DECON, MOB TO FREDS MARINA.
1510 : ARRIVE FREDS - UNLOAD - MOB TO FIELD LAB.
1550 : ARRIVE FIELD LAB.
1830 : LEAVE FIELD LAB.

JM

10/12/05
1830 hrs

10/13/05 LWG TZW TRIDENT SAMPLING B01-01-52
J. MOORE

0730 : ARRIVE FIELD LAB - LOAD UP FOR THE DAY.
PERSONNEL : J. MOORE - INTEGRAL
J. GROVES, M. SCHAW, R. POMSON - CMA
SCOPE : TO SAMPLE AT ARCO, LOCATIONS :
AR2A - T30 + T90
AR1A - T30 + T90
R2AR1 - T30
R2AR2 - T30 + T90
R2AR3 - T30
R2AR4 - T30

0830 : ARRIVE FREDS MARINA, DECON BOAT + CHANGE OK IN MOTOR - PROBLEMS WITH OUTBOARD.
0915 : MOB TO ARCO - CALL COAST GUARD/SHERIFF + URS ARCO.
1015 : ARRIVE AT AR2A, PREP 1FT/5FT PROBES.
100 : BEGIN PURGE/SAMPLE OF 1FT PROBE LWG2-T30-AR2A
1130 : ABORT 5FT PROBE - SILT BELOW 2.5FT.
1210 : FINISH SAMPLING 1FT PROBE AR2A
1215 : REMOVE PROBES - DECON - MOB TO AR1A
1300 : ARRIVE AR1A, PREP PROBES.
1310 : BEGIN SAMPLING 1FT LWG2-T30-AR1A
1320 : BEGIN SAMPLING 5FT LWG2-T90-AR1A
1350 : BEGIN SAMPLING 1FT DUPLICATE LWG2-T30-AR1A-D.
1600 : END SAMPLING - MOB TO FREDS - DECON.
1630 : ARRIVE FREDS - MOB TO LAB. CALL COAST GUARD/SHERIFF.
1715 : ARRIVE FIELD LAB - UNLOAD.
1740 : LEAVE FIELD LAB.

JM

1740 hrs
10/13/05

10/17/05 LWG TZW TRIDENT SAMPLING BD1-01-52 J. Moore

0720 : ARRIVE FRESS CAB - LOAD UP FOR THE DAY MOB TO FRESS MARINA.

PERSONNEL: J. MOORE - INTEGRAL
R. POWELSON, C. AKERELL, M. SCLAFANI - CMA

SCOPE - TO SET UP SHOAT, AND TRAIN NEW CMA PERSONNEL, COLLECT EQUIPMENT BLANK FOR ARCO - THEN MOB TO ARCO TO CONTINUE COLLECTING TZW SAMPLES USING IFF + SFF TRIDENT PROBES.

0815 : ARRIVE FRESS MARINA, PREP BOAT.

0845 : CMA ARRIVE.
CONDUCT COMPLETE H&S MEETING, BEGIN TRAINING NEW CREW

0930 : COLLECT EQUIPMENT BLANK FOR ARCO.

1030 : MOB TO ARCO - CALL COAST GUARD/SHERIFF BARGE WILL BE IN DOCK UNTIL 1100 hrs - BUT CLEAR TO WORK ON NORTH END.

1100 : ARRIVE ARCO RZ-AR1 (ONE)

1115 : INSERT IFF PROBE, BEGIN PUMP.

1130 : BEGIN SAMPLING LWG2-T30-R2AR1, AND LAB QA/QC 3X AMOUNT.

1330 : END SAMPLING, DECON, MOB TO RZ-AR2

1400 : ARRIVE RZ-AR2.

1415 : SET SFF + IFF PROBES

1420 : BEGIN SAMPLING IFF PROBE LWG2-T30-R2AR2

1430 : BEGIN SAMPLING SFF PROBE (PROBE IS AT SFF DEPTH) LWG2-T90-R2AR2. ALSO TAKE DUPLICATE SAMPLE LWG2-T90-R2AR2-D.

10/17/05 LWG TZW TRIDENT SAMPLING BD1-01-52 J. Moore

1525 : END SAMPLING ARCO R2AR2 IFF.

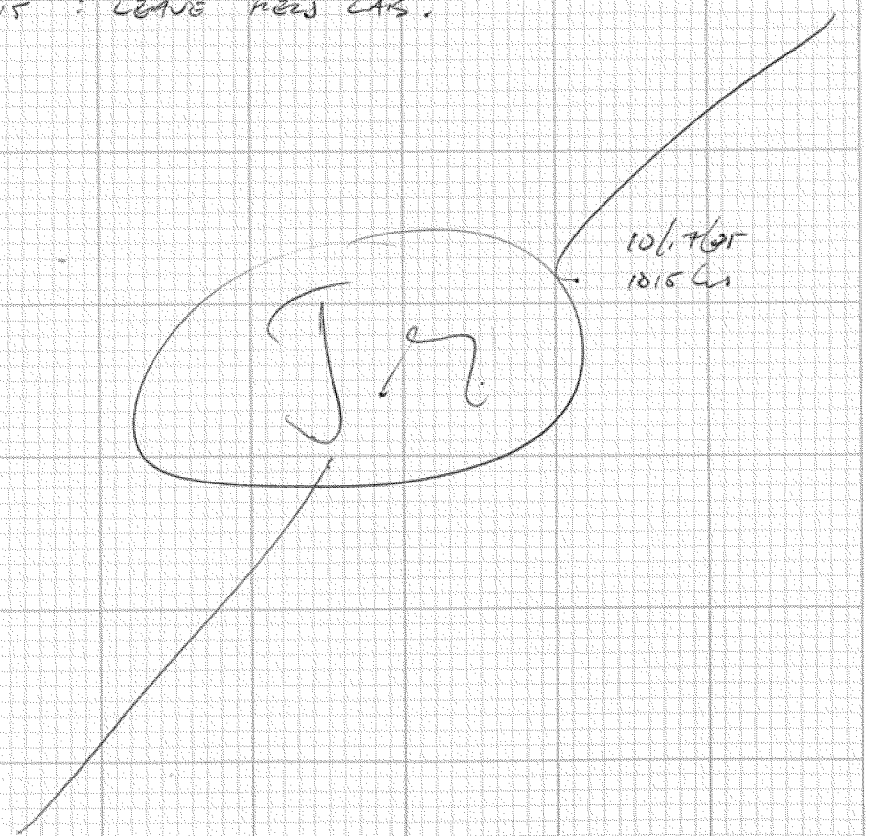
1600 : END SAMPLING ARCO R2AR2 SFF (3 FT DEPTH)

1615 : FULL PROBE-DECON - MOB TO FRESS MARINA.

1700 : ARRIVE FRESS, UNLOAD - MOB TO FRESS CAR.

1700 : ARRIVE FRESS CAB - UNLOAD, CAN CB/SHERIFF.

1815 : LEAVE FRESS CAB.



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10/18/05 TZW LWG TRIDENT SAMPLING B01-01-52
J. MOORE

0730 : ARRIVE AT FIELD LAB, LOAD UP FOR THE DAY. MOB TO FREDS MARINA.

PERSONNEL : J. MOORE - INTEGRAL
C. SMITH, M. SCLAFANI, C. PICKERAL, R. POLSON. CMA

SCOPE : TO FINISH SAMPLING ARCO USING 1FT/5FT TRIDENT TZW SAMPLER. THEN MOVE OVER TO KINDER MORGAN LINNTON TERMINAL.

0815 : ARRIVE FREDS MARINA, LOAD UP FOR THE DAY

0901 : CLEARANCE GIVEN BY ARCO - MOB TO ARCO R2AR3. CALL COAST GUARD/SHERIFF.

0935 : ARRIVE R2AR3, CALIBRATE PROBES + ULTRAMETER.

1FT PROBE COND : 1520 µ/s
REFERENCE PROBE COND : 1420 µ/s
ULTRAMETER COND : 1529 µ/s

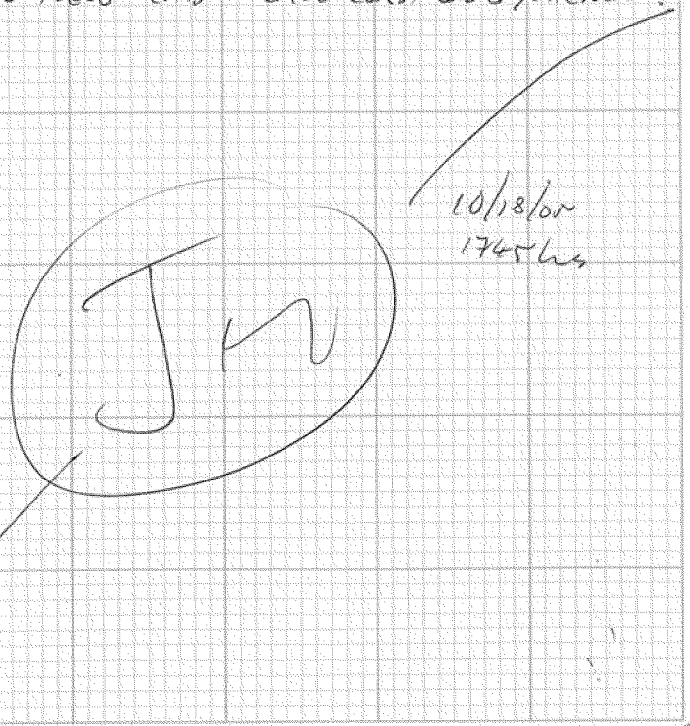
0940 : INSTALL 1FT PROBE AT R2AR2.
0950 : BEGIN SAMPLING LWG2-T30-R2AR3.
1100 : END SAMPLING 1FT SAMPLE.
1110 : PULL PROBE - DECON, MOB TO R2AR4
1130 : ARRIVE R2AR4. DEPLOY 1FT PROBE
1135 : BEGIN SAMPLING LWG2-T30-R2AR4
1220 : END SAMPLING R2AR4
1230 : PULL PROBE, DECON, MOB TO KINDER MORGAN LINNTON TERMINAL - CALL MADE TO ARCO SCOTT, AND TO W. STEVENS KM.
1245 : ARRIVE R2KM2 - PREP 1FT/5FT PROBE
1255 : INSERT 5FT PROBE - ONLY HAVE ENOUGH POLES TO INSERT ONE PROBE AT A TIME - 36 FT LINER DEPTH.
1300 : BEGIN 5FT PURGE - V. SLOW - SOFT SILT

10/18/05 TZW LWG TRIDENT SAMPLING B01-01-52
J. MOORE

1335 : BEGIN SAMPLING LWG2-T90-R2KM2
1415 : ABORT 5FT SAMPLE, ONLY VOCS AND UNFILTERED METALS COLLECTED
1425 : PULL 5FT PROBE - READY 1FT PROBE.
1430 : DEPLOY 1FT PROBE - BEGIN PURGE.
1440 : BEGIN SAMPLING LWG2-T30-R2KM2
1530 : ABORT SAMPLING 1FT - VOCS + WATER QUALITY COLLECTED ONLY.
1545 : PULL PROBE - DECON - MOB TO FREDS MARINA.
1615 : ARRIVE FREDS - UNLOAD - MOB TO FIELD LAB.
1745 : LEAVE FIELD LAB - CALL COAST GUARD/SHERIFF.

10/18/05
1745 hrs

JM



10/19/05 LWG TZW TRIDENT SAMPLING B01-01-52
J. MOORE

0730 : ARRIVE FIELD LAB. LOAD UP FOR THE DAY.
MOB TO FREDS MARINA

PERSONNEL : J. MOORE - INTEGRAL
R. POULSON, C. SMITH, C. PIKEREN, M. SCLAFANI - CMA

SCOPE : TO FINISH SAMPLING TZW AT KINDER MORGAN LINNTON TERMINAL. COLLECT LAB QA, SITE EQUIPMENT BLANK, DUPLICATES FOR IFE/SFE

0810 : ARRIVE FREDS MARINA. DECON ALL EQUIPMENT PREPARE FOR EQUIPMENT BLANK.

0850 : COLLECT KM RINSE EQUIPMENT BLANK.

0930 : CALIBRATE PROBES
REFERENCE PROBE : 1600 m/s
IFE PROBE : 1540 m/s
ULTRAMETER : 1524 m/s
+ PH, ORP, TDS

0950 : MOB TO KINDER MORGAN LINNTON TERMINAL

1030 : ARRIVE AT KMBA. PREP SFE/IFE PROBE

1045 : BEGIN SAMPLING LWG2-T30-KMBA, THE SFE PROBE IS IN A DENSE SILT - V. SLOW

1110 : ABORT SFE PROBE - NO WATER.

1130 : END SAMPLING KMBA IFE.

1140 : PULL PROBES - DECON - MOB TO R2KM1

1150 : ARRIVE R2KM1 - INSERT PROBE - IFE ONLY

1200 : BEGIN SAMPLING IFE LWG2-T30-R2KM1
AND ALSO LAB QC SAMPLE, AND SITE DUPLICATE

1440 : END SAMPLING R2KM1. PULL PROBE - DECON

1445 : MOB TO WILLBRIDGE. CLEARANCE GIVEN BY CONOCOPHILIPS TO ACCESS UPSTREAM OF DOCK.
MOB TO R2W2

10/19/05 LWG TZW TRIDENT SAMPLING B01-01-52
J. MOORE

1520 : ARRIVE AT R2W2.

1540 : BEGIN PURGE OF IFE PROBE.

1545 : BEGIN SAMPLING LWG2-T30-R2W2.

1650 : END SAMPLING R2W2, ALL UNFILTERED SAMPLES COLLECTED, ONLY UNFILTERED METALS COLLECTED.

1700 : MOB TO FREDS MARINA. CALL CONOCOPHILIPS COASTGUARD + SHERIFF.

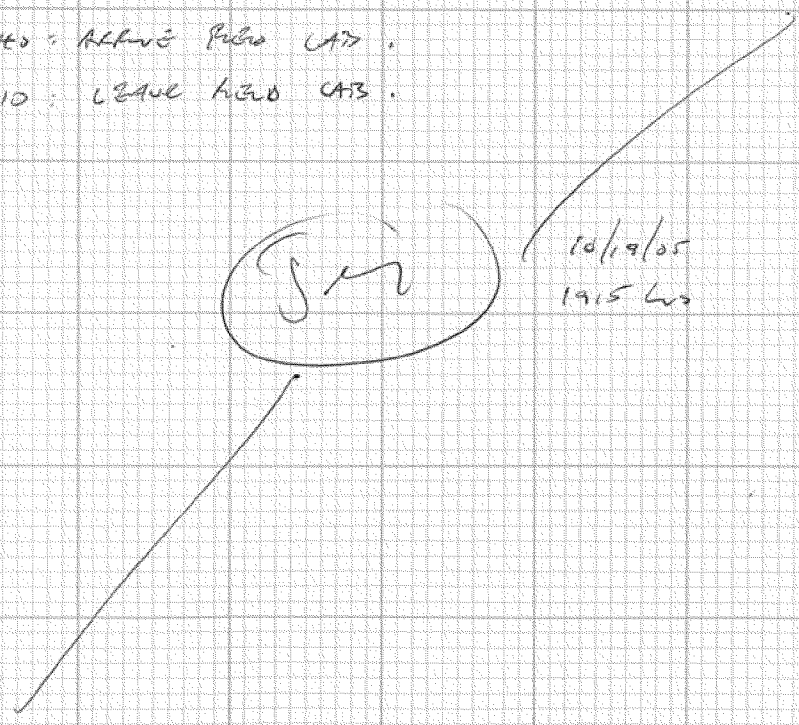
1750 : ARRIVE FREDS MARINA - UNLOAD - MOB TO FIELD LAB.

1840 : ARRIVE FIELD LAB.

1910 : LEAVE FIELD LAB.

JM

10/19/05
1915 LWG



10/20/05 TZW LWG TRIDENT SAMPLING B01-01-52
J. MOORE

0720 : ARRIVE FIELD LAB, LOAD UP FOR THE DAY
MOB TO FREDS MARINA.

PERSONNEL : J. MOORE - INTERPRAL
C. SMITH, C. PICKEREL, M. SCHLAPAN, R. POWSON
- CMA

SCORE : TO CONTINUE WITH SAMPLING WILLBRIDGE
TERMINAL TZW USING 1FT + 5FT TRIDENT
PROBES.

0800 : ARRIVE FREDS MARINA, LOAD UP FOR THE
DAY, PREP EQUIPMENT FOR EQUIPMENT
BLANK SAMPLE.

0830 : TAKE EQUIPMENT BLANK SAMPLE - WILLBRIDGE
LWG2 - RINSE - W

0910 : END EQUIPMENT BLANK - MOB TO WILLBRIDGE
CLEARANCE GIVEN BY CONOCOPHILIPS ON
EACH SIDE OF THE DOCK - THEY WILL
PAUSE FUELING OF BARGE ON UPSTREAM SIDE
UNTIL WE ARE CLEAR OF DOCKS.
CHEVRON GIVE TENTATIVE CLEARANCE TO
ENTER UPSTREAM SIDE OF DOCK - DIESEL BARGE
LOADING - WE SHALL ASSESS SITUATION UPON
ARRIVAL TO DOCK AREA.

- CALL COAST GUARD + SHERIFF.

1000 : ARRIVE W9A, SET UP 1FT + 5FT PROBES
1020 : BEGIN PURGE ON 1FT + 5FT PROBES.
BEGIN SAMPLING 1FT LWG2-T30-W9A
1040 : ABORT 5FT PROBE - NO WATER - CLAY/SILT
1100 : END SAMPLING W9A.
1110 : PULL PROBES - DECON - MOB TO W7C

10/20/05 LWG TZW TRIDENT SAMPLING B01-01-52
J. MOORE

1120 : ARRIVE W7C, PREP 1FT + 5FT PROBES
1140 : DEPLOY 1FT PROBE - FIRM SILT, DECIDE
NOT TO INSERT 5FT PROBE DUE TO CLAY
CONTENT, AND PLASTICITY OF THE SILT
1150 : BEGIN SAMPLING 1FT LWG2-T30-W7C.
1300 : END SAMPLING W7C. DECON - MOB TO
W6A
1330 : BEGIN SAMPLING W6A - LWG2-T30-W6A
1FT SAMPLE : DUE TO FIRM SILT/CLAY
NO ATTEMPT AT 5FT SAMPLE MADE.

*NOTE : THE SAMPLES IN 7C + 6A COULD HAVE SURFACE
WATER INFLUENCE - IN FIRM SILT/CLAY AN OPEN
HOLE WILL BE FORMED BY THE TRIDENT PROBES,
ALLOWING RIVER WATER TO PASS DOWN TO THE
SCREENS. ALSO FIRM SILT/CLAY IS UNLIKELY
TO BE ABLE TO PRODUCE AS MUCH PURE WATER AS
IS BEING PUMPED AT THESE LOCATIONS.

1415 : END SAMPLING W6A 1FT SAMPLE. - PULL
1FT PROBE - DECON.

1430 : MOB TO W12A
1445 : ARRIVE W12A, PREP 1FT + 5FT PROBE.
1500 : INSERT PROBES - BEGIN PURGE
1515 : BEGIN SAMPLING 1FT LWG2-T30-W12A
- 5FT PROBE V. SLOW.
1535 : ABORT 5FT - NO WATER - SAND ONLY TO
2.5 FT APPROX. FIRM SILT W/ SAND BELOW.
1710 : END SAMPLING W12A, PULL PROBES DECON -
MOB TO FREDS MARINA. CALL CG + SHERIFF.
1800 : ARRIVE FREDS - UNLOAD - MOB TO LAB.
1840 : ARRIVE FIELD LAB
1930 : LEAVE FIELD LAB

JM

10/21/05 TZW LWG Trident Sampling B010152 J. SUND

0730 Arrive @ Field lab. Load up for Day + Mob to Fred's Marina

0800 Arrive @ Freds Marina

Personnel: Jane Sund (Integral)
R. Poulson, C. Smith, C. Pikeul, M. Sclafan -CMA

Score: Begin Sampling @ Gunderson starting @ SA and collecting LAB QC sample (3x unfiltered + one filtered)

0815 CALL COAST GUARD + SHERIFF.
CALL DAVE KING-KLEINFELDER FOR GUNDERSON (HE WILL CONTACT GUNDERSON. CALL PAT @ LAKESIDE INDUSTRIES. CLEARANCE TO SAMPLE (POSSIBLY THERE IS A BARGE @ LAKESIDE BUT SHOULDNT INTERFERE)

0832 DEPART FREDS, MOB to GUNDERSON

0955 Arrive Gunderson, GN5A.
~~Anchor~~ tie off on piling on shore on bow + anchor off stern to get position

1005 set up 1ft + 5ft Probes

1010 Begin Purging 1ft + 5ft Probes, 1ft + 5ft pumping easily.

1025 Collect Sample
LWG2-T30-GN5A + LAB QC @ T30 (3x)
LWG2-T90-GN5A
LWG2-T90-GN5A-D

10/21/05 TZW LWG Trident B010152 J. SUND

1130 END SAMPLING 5ft, T90

1215 END SAMPLING 1ft, T30
PULL UP PROBE + DECON - MOB TO GN4A

1250 SET UP @ GN4A, 1ft + 5ft Probes
HAD TO DECON TUBING THAT RUNS THROUGH Pump head as there was no addt'l on boat (talked to Joss, he was on board with this)
Begin purging 5ft probe

1300 Install 1ft probe and begin purging (noted: silt where 1ft probe inserted)

1320 Begin Sampling T30
LWG2-T30-GN4A
LWG2-T30-GN4A-D

1340 Begin Sampling LWG2-T90-GN4A

1510 END Sampling LWG2-T30, GN4A + GN4A-D
Did not collect duplicate of Metals filtered, flow insufficient

1511 END sampling, LWG2-T90 GN4A, Did not collected Metals Filtered, flow insufficient
Pull up probes, decon 5' probe + mob to next location, GN1E.

1535 ON location, GN1E, set up 5.0' probe.

1548 Men on Shaver tug boat notify us that barge needs to pull into dock just south of us, Pull up sampler + move out of area. Shaver commented

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10/21/05 TZW LWG Trident B01 01 52
J. SUND

that the barges come in + out of this area every day. (usually barges stay in for ~12 hrs)
Trident probe bent @ 90° when pulled up.

1553 Mob back to Fred's Marina.
1445 Depart Freds Marina to Field lab to store samples.
1730 Depart Field lab

BLANK

10/21/05

10/22/05 TZW LWG TRIDENT SAMPLING B01-01-52
J. MOORE

0730 : ARRIVE FIELD LAB - LOAD UP FOR THE DAY - MOB TO FREDS MARINA.

PERSONNEL : J. MOORE - INTEGRAL
C. SMITH, R. POULSON, C. PICKERER, M. SCHLAFANY - CMA

SCORE : TO COMPLETE SAMPLING TZW AT GUNDERSON USING 1FT/5FT TRIDENT PROBES, THEN BEGIN SAMPLING RHONE POULENC.

0815 : ARRIVE FREDS MARINA - LOAD UP BOAT, AND FIX 5FT PROBE AFTER SERIOUS BEND 10/21/05. DECON ALL EQUIPMENT.

0900 : MOB TO GUNDERSON. CALL COAST GUARD/SHERIFF LAKESIDE AND KLEINFELDER. CLEARANCE GNIE

1000 : ARRIVE GNIE - SET 5FT PROBE

1020 : BEGIN SAMPLING 5FT LWG2-T90-GNIE U-SLOW.

1050 : ABORT SAMPLE - SHAVER BARGE HEADING RIGHT FOR SHOAT -

1115 : SHAVER BARGE MOORED - REPOSITION ON GNIE, AND INSERT PROBE. PURGE 250ml - NEW TUBING OLD TUBING WAS CUT DURING MOVING.

1125 : BEGIN SAMPLING 5FT AGAIN LWG2-T90-GNIE.

1200 : END SAMPLING GNIE - ALL SAMPLES COLLECTED - PULL PROBE, DECON, MOB TO RHONE POULENC.

1220 : ARRIVE R2RP3. INSERT 1FT PROBE.

1240 : BEGIN SAMPLING LWG2-T30-R2RP2.

1315 : END SAMPLING - PULL PROBE, MOB TO FREDS MARINA

1410 : ARRIVE FREDS - UNLOAD - MOB TO FIELD LAB.

1520 : ARRIVE FIELD LAB

1630 : LEAVE FIELD LAB

JM 10/22/05

10/24/05 LWG TZW TRIDENT SAMPLING B01-01-52
J. MOORE

0730 : ARRIVE FIELD LAB, LOAD UP FOR THE DAY
MOB TO FRESS MARINA.

PERSONNEL : J. MOORE - INTEGRAL
M. SCHLAFER, C. SMITH, C. PICKEREL - CMA

SCOPE : TO COLLECT SITE EQUIPMENT BLANKS, AND
BEGIN SAMPLING GASCO TZW USING 5FT AND
1FT TRIDENT PROBES.

0900 : ARRIVE FRESS MARINA - LOAD UP FOR THE DAY
- DECON ALL EQUIPMENT, AND BEGIN COLLECTING
EQUIPMENT BLANKS FOR RHONE POULENC AND
GUNDERSON.

0915 : MOB TO GASCO - CLEARANCE TO WORK ON
SOUTH END OF SITE, CALL COAST GUARD / SHERIFF

1030 : ARRIVE AT GASCO GS8A.

1100 : BEGIN SAMPLING 1FT PROBE LWG2-T30-GS8A
ALSO SAMPLE LAB QC 3X AMOUNT.

1240 : END SAMPLING GS8A.

1245 : PULL PROBES, DECON. MOB TO GS8D

1300 : INSERT 1FT + 5FT PROBES AT GS8D.

1315 : BEGIN SAMPLING 1FT, LWG2-T30-GS8D.

1330 : BEGIN SAMPLING 5FT, LWG2-T90-GS8D.

1450 : END SAMPLING 1FT GS8D

1500 : END SAMPLING 5FT GS8D - NO FILTERED SAMPLES
COLLECTED.

1505 : PULL PROBES, DECON. MOB TO GS7D
PROBLEMS WITH ON BOARD GPS.

1530 : DECIDE TO MOB TO FRESS MARINA.

1630 : ARRIVE FRESS - MOB TO FIELD LAB

1730 : ARRIVE FIELD LAB.

1800 : LEAVE FIELD LAB.

JM

10/25/05 LWG TZW TRIDENT SAMPLING B01-01-52
J. MOORE

0730 : ARRIVE FIELD LAB - LOAD UP FOR THE DAY.
MOB TO FRESS MARINA.

PERSONNEL : J. MOORE - INTEGRAL
C. SMITH, C. PICKEREL, M. SCHLAFANI - CMA.

SCOPE : COMPLETE SAMPLING TZW AT GASCO USING
1FT / 5FT TRIDENT PROBES, COLLECT GASCO EQUIPMENT
BLANK.

0810 : ARRIVE FRESS MARINA, PREP FOR EQUIPMENT
BLANK.

0830 : COLLECT GASCO EQUIPMENT BLANK LWG2-RINSE-GS

0930 : MOB TO GASCO - CALL T. STONE ANCHOR +
COAST GUARD + SHERIFF

1010 : ARRIVE GASCO GS7D, PREP 5FT PROBE.

1015 : PROBE INSERTED, BEGIN PURGE.

1040 : BEGIN SAMPLING LWG2-T90-GS7D,

1100 : ONLY VOAS COLLECTED (VOC + GAS) - ABORT
SAMPLING AFTER WATER QUALITY COLLECTED.

1115 : PULL 5FT PROBE - DECON - MOB TO GS7B

1125 : ONSITE AT GS7B, PREP 1FT + 5FT PROBES.

1140 : INSERT 5FT + 1FT PROBES

1200 : BEGIN SAMPLING 1FT LWG2-T30-GS7B

1225 : ABORT 5FT PROBE - NO WATER, FIRM SILT
- SCREENS FILLED WITH TAR + SEDIMENT.

1330 : END SAMPLING 1FT - NO FILTERED SAMPLES NOT
ENOUGH PRESSURE TO PUSH THRU FILTER.
- PULL PROBE - FULL OF TAR - REPLACE SCREENS
- MOB TO GS2A.

1350 : ARRIVE GS2A - PREP 1FT PROBE

1400 : BEGIN PURGE

1415 : BEGIN SAMPLING 1FT - LWG2-T30 GS2A + DUPLICATE

10/25/05 LWG TZW TRIDENT SAMPLING B01-01-52
J. MOORE.

*NOTE: PURGE WATER IS GREEN, HAS STAINED ALL TUBING BRIGHT GREEN, pH IS 5.52, AND HAS V. STRONG SULPHUR ODOUR.

1600: END SAMPLING GS2A. PULL PROBE - REMOVE ALL TUBING + JOINTS OFF TRIDENT AND REPLACE - DECON

1635: MOB TO FREDS MARINA - CALL ANCHOR, COAST GUARD + SHERIFF.

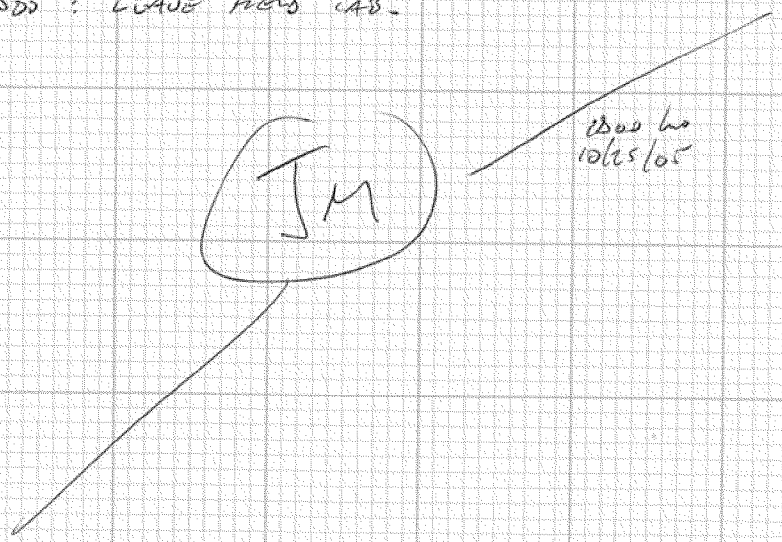
1700 - ARRIVE FREDS MARINA - MOB TO FIELD LAB

1730: ARRIVE FIELD LAB - UNLOAD.

1800: LEAVE FIELD LAB.

JM

1800 hrs
10/25/05



10/26/05 LWG TZW TRIDENT SAMPLING. B01-01-52
J. MOORE

0730: ARRIVE FIELD LAB - LOAD UP FOR THE DAY MOB TO FREDS MARINA

PERSONNEL: J. MOORE - INTEGRAL
C. SMITH, C. PICKERELL, M. SCLAFANI - CMA

SCOPE: TO DISMANTLE TRIDENT PROBES AND REPLACE ALL TUBING / FITTINGS PRIOR TO SAMPLING NEW SITE, THEN CONTINUE SAMPLING TZW USING IFF + ERE TRIDENT PROBES AT RHONE POULENC.

0815: ARRIVE FREDS MARINA - LOAD UP FOR THE DAY - DISMANTLE TRIDENT PROBE - REPLACE ALL TUBING + FITTINGS.

0900: MOB TO RHONE POULENC - CALL COAST GUARD + SHERIFF. CALIBRATE EQUIPMENT.

0950: ONSITE AT RP-7B, BEGIN IFF PURGE.

1010: BEGIN SAMPLING IFF LWG2-T30-RP7B, AND DUPLICATE INCLUDING DIOXINS.

1210: END SAMPLING IFF - PULL PROBE, DECON, MOB TO R2-RP2.

1225: ARRIVE R2-RP2, PREPARE IFF PROBE

1245: BEGIN SAMPLING LWG2-T30-R2RP2. + LAB QC 3X.

1400: END SAMPLING R2RP2 IFF.

1400: PULL PROBE + DECON - MOB TO R2RP1.

1420: ARRIVE R2RP1 - READY IFF PROBE.

1450: BEGIN SAMPLING LWG2-T30-R2RP1

1600: END SAMPLING R2RP1 IFF. - PULL PROBE, DECON.

1620: MOB TO FREDS MARINA - CALL COAST GUARD / SHERIFF.

1650: ARRIVE FREDS MARINA - MOB TO FIELD LAB

1730: ARRIVE FIELD LAB.

1800: LEAVE FIELD LAB.

JM

10/27/05 LWG TZW TRIDENT SAMPLING B01-01-52
J. MOORE

0730 : ARRIVE FIELD LAB - LOAD UP FOR THE DAY, MOB TO FREDS MARINA.

PERSONNEL : J. MOORE - INTEGRAL
C. SMITH, C. PICKERELL, M. SCHIAFANI - CMA
M. CHADWICK

SCOPE : TO COMPLETE RHONE POULENC TZW SAMPLING USING 5FT + 1FT TRIDENT PROBES.

0810 : ARRIVE FREDS MARINA, LOAD UP BOAT, + DECON ALL EQUIPMENT.
CALIBRATE PROBES + ULTRAMETER.
REFERENCE PROBE : 1600 µ/s
1FT PROBE : 1550 µ/s
ULTRAMETER : 1528 µ/s
- (1500 µ/s COND STANDARD)
+ ULTRAMETER PH, TDS, ORP

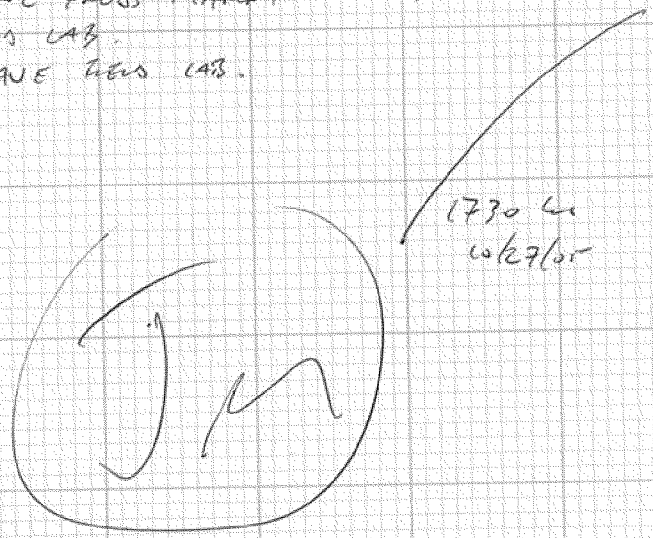
0840 : MOB TO RHONE POULENC, CALL COAST GUARD/SHERIFF
0930 : ARRIVE RP2E. PREP 1FT + 5FT PROBES.
0950 : BEGIN SAMPLING 1FT LWG2-T30-RP2E, ONLY ENOUGH POLES TO DO ONE PROBE AT A TIME
1050 : END SAMPLING 1FT. PREP 5FT.
1100 : BEGIN SAMPLING 5FT LWG2-T90-RP2E
1200 : END SAMPLING 5FT RP3E - PULL PROBES DECON - STRONG HERBICIDE ODOR.
1215 : ARRIVE RP3E, INSERT 1FT PROBE.
1235 : BEGIN SAMPLING 1FT LWG2-T30-RP3E.
1345 : END SAMPLING 1FT SAMPLE - NO FILTERED COLLECTED. V. SLOW.
1350 : PULL 1FT, DECON.
1400 : INSERT 5FT PROBE.

10/27/05 LWG TZW TRIDENT SAMPLING B01-01-52
J. MOORE

1415 : BEGIN SAMPLING 5FT : LWG2-T90-RP3E
1545 : END SAMPLING 5FT - ALL SAMPLES COLLECTED
1550 : PULL PROBE - DECON - MOB TO FREDS MARINA. CALL COAST GUARD/SHERIFF.
1630 : ARRIVE FREDS MARINA - UNLOAD. MOB TO FIELD LAB.
1730 : LEAVE FIELD LAB.

1730 LW
10/27/05

JM



ANC07192
BZTO104(e)007192

10/28/05 LWG TZW TRIDENT SAMPLING B01-01-52
J. MOORE

0730 : ARRIVE FIELD LAB, LOAD UP FOR THE DAY.
MOB TO FRESS MARINA.

PERSONNEL : J. MOORE - INTERPRAC
C. SMITH, C. PICKEREL, M. CHADWICK - CMA

SCOPE : TO COMPLETE RHONE POULENC TZW SAMPLING
USING 5FT + 1FT TRIDENT PROBES.

0800 : ARRIVE FRESS MARINA. LOAD UP SHOAT.

0820 : CALIBRATE PROBES + ULTRAMETER
REFERENCE COND : 1600 µ/s
1FT PROBE COND : 1500 µ/s
ULTRAMETER COND : 1528 µ/s
+ PH, TDS, ORP.

0840 : MOB TO RHONE POULENC. LAW CAST GUARD
+ SHERIFF.

0925 : ARRIVE RP3C, PREPARE 1FT/5FT PROBES.

0945 : BEGIN SAMPLING 1FT LWG2-T30-RP3C

1100 : END SAMPLING 1FT. - PREP 5FT

1125 : BEGIN SAMPLING 5FT LWG2-T90-RP3C.

1240 : END SAMPLING 5FT, PULL PROBE - DECON
ALL EQUIPMENT. MOB TO FRESS MARINA.

1330 : ARRIVE FRESS MARINA, MOB TO FIELD LAB.
COMPLETE FINAL DEMOB.

1430 : ARRIVE FIELD LAB.

1530 : LEAVE FIELD LAB.

JM

10/28/05
1575 hrs

ANC07193
BZTO104(e)007193

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/3/05

Field Crew: J. MOORE, B. CHADWICK, J. GRAVES, M. SCHALK

Site: EXXONMOBIL

Station ID: R2-EM1 Coordinates: 45 35.506 N 122 46.536 W

Sample Type: (real) calibration

Time: 1515 Photo No.: —

Water Depth (m): 7.2 ft

Sediment Texture ("feel"): SILT & SAND

Sediment Core Description: _____

Screening Sample: (collected) not collected

Sreening Sample ID: LWG2-T30-R2EM1

Purge Rate: 80 ml/min

~~Screening~~ Sample Analytes: PAH / SVOC / CONVENTIONALS VOC / TPH-DX / METALS

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	15.657	0.100
30 cm	16.815	0.780
60 cm	—	—

Notes: Ultrameter Temp 16.0 C
Cond 651.5 µS/cm
TDS 454.6 ppm
Turbidity Meter 53.7 NTU
* 250 ml purged prior to sampling

10/4/05

Station ID: EM8-A Coordinates: 45.59207 N -122.72623 W

Sample Type: (real) calibration

Time: 0944 Photo No.: _____

Water Depth (m): 5.2'

Sediment Texture ("feel"): Sand with silt

Sediment Core Description: _____

Screening Sample: (collected) not collected

Sreening Sample ID: LWG2-T30-EM84

Purge Rate: 100 ml/min

Screening Sample Analytes: PAH / SVOC / CONVENTIONALS VOC / TPH / METALS

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	15.744	0.100
30 cm		—
60 cm	16.458	0.280

Notes: TDS 309.1 ppm
Cond. 442.9 ms/cm
Turb. 35.8 ntu
pH 6.3
* ~ 250 ml purged PRIOR TO SAMPLING.

Initials: JM

ANC07194
BZT0104(e)007194

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/04/05
Field Crew: J. MOORE, D. CHADWICK, M. CHADWICK, J. GOUES, M. SCHAW
Site: Exxon

Station ID: EM6-B Coordinates: 45.59262 N -122.77665 W
Sample Type: ~~real~~ calibration
Time: 1240 Photo No.: _____
Water Depth (m): 11.6'

Sediment Texture ("feel"): SOFT SILT.

Sediment Core Description: _____

Notes: Temp: 15.6°C ~250 ml purged prior to sampling.
TDS: 319.0
cond.: 459.3
pH: 6.0
Turb: 29.2

Screening Sample: (collected) not collected
Sreening Sample ID: LWG2-T30-EM6B
Purge Rate: 100 ml/min
Screening Sample Analytes: PAH/DRO/CONV. METALS/TPH/VOC

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	15.480	0.100
30 cm		-----
60 cm	16.472	0.490

Station ID: EM5-A Coordinates: 45.59592 N -122.77642 W
Sample Type: real calibration
Time: 1420 Photo No.: _____
Water Depth (m): 9.7'

Sediment Texture ("feel"): SOFT SILT - TRACE SAND - FIRM SILT BELOW 2FT.

Sediment Core Description: _____

Notes: TDS: 605.7 Turb.: 74.8 NTU
Cond.: 858.5
pH: 6.4
Temp: 16.0

~250 ml purged prior to SAMPLE
-NO SEE SAMPLE

Screening Sample: (collected) not collected
Sreening Sample ID: LWG2-T30-EM5A
Purge Rate: ~~100~~ 70 ml/min
Screening Sample Analytes: PAH/DRO/CONV. METALS/TPH/VOC

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	15.595	0.100
30 cm		-----
60 cm	16.774	0.440

Initials: JM

ANC07195
BZT0104(e)007195

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/5/05
Field Crew: J. MOORE, M. CHADWICK, D. CHADWICK, T. GRAVES, M. SCHAN
Site: EXXONMOBIL

Station ID: EM4C Coordinates: 45.59320 N -122.77705 W
Sample Type: (real) calibration
Time: 0915 Photo No.: ____
Water Depth (m): 29.8

Screening Sample: (collected) not collected
Sreening Sample ID: LWG2 - T30/T80/EM4C (-FILT)
Purge Rate: 60 ml/min
Screening Sample Analytes: Full Suite

Sediment Texture ("feel"): SILT & SAND AT 1ft, SAND & SILT AT 4ft

Sediment Core Description: ____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	15.330	0.100
30 cm		____
60 cm	16.811	1.250

Notes: Temp: 14.9
TDS: 1073
Cond.: 1482
pH: 6.0
Turbidity: 82.8

5'
14.9
1189
1637
6.4
5.75

Station ID: EM4A Coordinates: 45.59308 N -122.77717 W
Sample Type: (real) calibration
Time: 1218 Photo No.: ____
Water Depth (m): 19.3

Screening Sample: (collected) not collected
Sreening Sample ID: LWG2 - T30 - EM4A (FILT)
Purge Rate: 100 ml/min
Screening Sample Analytes: Full Suite

Sediment Texture ("feel"): SAND & SILT

Sediment Core Description: ____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	15.360	0.100
30 cm		____
60 cm	16.571	0.356

Notes: Temp: 16.2
TDS: 454.6
Cond: 651.4
PH: 6.6
Turb.: 9.29

32.2

Initials: JM

ANC07196
BZTO104(e)007196

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/5

Field Crew: J. Moore, M. Schaw, M. Chadwick, D. Chadwick, J. Groves

Site: EXXON

Station ID: EM3-A

Coordinates: 45.59333 N -122.77745 W

Sample Type: (real) calibration

Time: 1351

Photo No.: ____

Water Depth (m): 5.4'

Sediment Texture ("feel"): "Sand" c silt

Sediment Core Description: ____

Screening Sample: (collected) not collected

Sreening Sample ID: [illegible] 3A (Field)

Purge Rate: 8 ml/min

Screening Sample Analytes: F M [illegible]

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	15.696	0.100
30 cm		----
60 cm	16.491	0.224

Notes: Turb.: 7.72 5'

Temp.: 17.7 18.3

TDS: 298.1 433.7

Cond.: 432.3 625.0

pH: 6.5

10/6

Station ID: EM 2C

Coordinates: 45.59352 N -122.77745 W

Sample Type: (real) calibration

Time: 1031

Photo No.: ____

Water Depth (m): 20.1

Sediment Texture ("feel"): Sandy (hard)

Sediment Core Description: ____

Screening Sample: collected not collected

Sreening Sample ID: ____

Purge Rate: ____

Screening Sample Analytes: ____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	15.370	0.100
30 cm		----
60 cm	16.412	0.545

Notes: 30cm Turb.: 74.6 5' probe "no-go"

Temp: 18.6

TDS: 348.0

Cond.: 519.3

pH: 6.71

ORP: -86

Initials: ____

ANC07197

BZTO104(e)007197

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/06/05
Field Crew: J. Moore, M. Schaw, J. Groves, D. Chadwick, M. Chadwick
Site: EXXON

Station ID: EM2-A Coordinates: 45.59347 N -122.77758 W
Sample Type: real calibration
Time: 1221 Photo No.: _____
Water Depth (m): 6.1'

Screening Sample: collected not collected
Sreening Sample ID: _____
Purge Rate: _____
Screening Sample Analytes: _____

Sediment Texture ("feel"): Sand

Sediment Core Description: _____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	15.481	0.100
30 cm		-------
60 cm	16.338	0.580

Notes: 30cm ↓ Turb: 16.8 5' no good.
Temp: 16.0
TDS: 199.4
Cond: 305.0
pH: 7.07 ORP: -66

Station ID: EM1-A Coordinates: 45.59373 N -122.77772 W
Sample Type: real calibration
Time: 1351 Photo No.: _____
Water Depth (m): 2'

Screening Sample: collected not collected
Sreening Sample ID: _____
Purge Rate: _____
Screening Sample Analytes: _____

Sediment Texture ("feel"): Sand all the way

Sediment Core Description: _____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	15.581	0.100
30 cm		------
60 cm	16.365	0.210

Notes: ~~30cm~~ Turb: 98.2 30cm pH: 7.02 ORP: -45 5' Turb: 2.77 pH: 6.65
Temp: 17.0 Temp: 16.7 ORP: -75
TDS: 118.8 TDS: 275.5
Cond: 183.9 Cond: 416.5

Initials: _____

ANC07198
BZT0104(e)007198

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/07/05
Field Crew: J. Moore, M. Schaw, M. Chadwick, D. Chadwick, J. Groves
Site: Siltronics

Station ID: SLT3-A Coordinates: 45.57873 N -122.75483 W
Sample Type: (real) calibration
Time: 1006 Photo No.: _____
Water Depth (m): 3.9'

Screening Sample: collected not collected
Sreening Sample ID: _____
Purge Rate: _____
Screening Sample Analytes: _____

Sediment Texture ("feel"): firm sand

Sediment Core Description: _____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	15.260	0.100
30 cm		------
60 cm	16.098	0.650

Notes: Turb.: 12.5 ORP: -49
Temp: 15.8
TDS: 275.6
Cond: 416.3
pH: 6.66

Station ID: SLT2-A Coordinates: 45.57890 N -122.75540 W
Sample Type: real calibration
Time: 1245 Photo No.: _____
Water Depth (m): 7.2'

Screening Sample: collected not collected
Sreening Sample ID: _____
Purge Rate: _____
Screening Sample Analytes: _____

Sediment Texture ("feel"): 5': silty sand 30cm: "

Sediment Core Description: _____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	15.347	0.100
30 cm		------
60 cm	16.036	0.810

Notes: Twb: 23.2 pH: 6.81
Temp: 16.5 ORP: -89
TDS: 282.0
Cond: 425.9

Initials: _____

ANC07199
BZT0104(e)007199

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/07/05
Field Crew: J. Moore, M. Chadwick, D. Chadwick, J. Groves, M. Schaw
Site: Siltronics

Station ID: SLT2-A Coordinates: 45.57913 N -122.75568 W
Sample Type: (real) calibration
Time: 1430 Photo No.: _____
Water Depth (m): 5.6'

Screening Sample: collected not collected
Sreening Sample ID: _____
Purge Rate: _____
Screening Sample Analytes: _____

Sediment Texture ("feel"): Sand

Sediment Core Description: _____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	15.270	0.100
30 cm		-----
60 cm	16.375	0.750

Notes: Turb: 3.33 ORP: -108
Temp: 16.1
TDS: 771.7
Cond: 112.8
pH: 6.65

Station ID: SLT3-F Coordinates: 45.57915 N -122.75447 W
Sample Type: (real) calibration
Time: 0930 Photo No.: _____
Water Depth (m): 47.6'

Screening Sample: collected not collected
Sreening Sample ID: _____
Purge Rate: _____
Screening Sample Analytes: _____

Sediment Texture ("feel"): _____

Sediment Core Description: _____

Trident Readings: N/A

	Temp (°C)	Cond (mS/cm)
Reference		
30 cm		-----
60 cm		

Notes: Turb: 36.8 pH: 6.64
Temp: 12.2 ORP: -20
TDS: 314.3
Cond: 469.5

Initials: _____

ANC07200
BZT0104(e)007200

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/08/05
Field Crew: J. Moore, M. Shaw, P. Chadwick, M. Chadwick, J. Garous
Site: Siltronics

Station ID: SLT4-A Coordinates: 45.57845 N -122.75422 W
Sample Type: (real) calibration
Time: 1235 Photo No.: _____
Water Depth (m): 3.5'

Screening Sample: collected not collected
Sreening Sample ID: _____
Purge Rate: _____
Screening Sample Analytes: _____

Sediment Texture ("feel"): 1': Sand 5': Silt

Sediment Core Description: _____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	15.214	0.100
30 cm		------
60 cm	16.047	0.571

Notes: 30cm Turb: 20.4 pH: 6.86 5' Turb: 127 ORP: -93
Temp: 14.6 ORP: -89 Temp: 14.5
TDS: 256 TDS: 868.0
Cond: 387.4 Cond: 1262
* 5' only went in 3' pH: 6.73

Station ID: SLT5-A Coordinates: 45.57828 N -122.75375 W
Sample Type: (real) calibration
Time: 1530 Photo No.: _____
Water Depth (m): 4.0'

Screening Sample: collected not collected
Sreening Sample ID: _____
Purge Rate: _____
Screening Sample Analytes: _____

Sediment Texture ("feel"): Sand

Sediment Core Description: _____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	15.113	0.100
30 cm		------
60 cm	16.024	0.790

Notes: 30cm Turb: 42.5 pH: 6.85
Temp: 15.3 ORP: -104
TDS: 576.5
Cond: 853.0

Initials: [redacted]

ANC07201
BZT0104(e)007201

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/10/05
Field Crew: T. MORÉ, J. CROSES, M. SCHAU, R. POMSON
Site: ARKEMA ACID.P.

Station ID: AP-2A Coordinates: 45.57200 N 122.74337 W
Sample Type: (real) calibration
Time: 1027 Photo No.: _____
Water Depth (m): 3.7'

Screening Sample: collected not collected
Sreening Sample ID: _____
Purge Rate: _____
Screening Sample Analytes: _____

Sediment Texture ("feel"): SILTY SAND 1' DEPTH

Sediment Core Description: _____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	14.551	0.100
30 cm		———
60 cm	15.822	0.870

Notes: TURB: 3.45 NTU pH: 6.68 1' DEPTH
TEMP °C: 14.5 ORP: -120
TDS: 797.6 1027 HRS
COND: 1159 µS

Station ID: AP-2D Coordinates: 45.57217 N 122.74308 W
Sample Type: (real) calibration
Time: 1252 Photo No.: _____
Water Depth ~~(m)~~ ft: 19.7'

~~Screening Sample~~: collected not collected — 5' (30 cm)
Sreening Sample ID: _____
Purge Rate: _____
Screening Sample Analytes: _____

Sediment Texture ("feel"): 1'-SILT, 5' SILT

~~Sediment Core Description~~ OBSERVATIONS: ONLY COLLECTED WATER QUALITY FROM 5' PROBE - FLOW SLOW

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	14.480	0.100
30 cm		———
60 cm	16.209	2.240

5' 15.2 5.254 (NOT CORRECTED)

30 cm	5'
Notes: TURB: 40.9 NTU pH: 6.49	TURB: 49.6 NTU pH: 6.49
TEMP °C: 16.209 ORP: -105	TEMP: 15.2 °C ORP: -86
TDS: 3360 ppm	TDS: 4078 ppm
COND: 4408 µS 1252 HRS	COND: 5,254 µS 1300 HRS

Initials: ~~GJG~~ GJG

ANC07202
BZTO104(e)007202

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/10/05
Field Crew: J MOORE, J GROVES, M SCHAW, R PAULSEN
Site: ARKEMA ACID PLANT

Station ID: AP-3A
Coordinates: 45.57170 N 122.74283 W
Sample Type: real calibration
Time: ____
Photo No.: ____
Water Depth (m): ____

~~Screening Sample~~: collected not collected
Sreening Sample ID: ____
Purge Rate: ____
Screening Sample Analytes: ____

Sediment Texture ("feel"): 1' - COBBLE GRAVEL SAND
Sediment Core Description: 5' ~~[illegible]~~ TOP 2' SAND, COBBLE GRAVEL BELOW SILTY

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	14.560	0.100
30 cm	—	—
~~60 cm~~	15.655	2.150
5'	15.8	14.32 mS

Notes: 30 CM		5'	
TURB: 11.1 NTU	pH: 6.70	TURB: 84.4	pH: 7.03
TEMP: 16.2	ORP: -120	TEMP: 15.8	ORP: -102
TDS: 5121 PPM		TDS: 12.48 PPT	
COND: 64.80 mS	1535 HRS	COND: 14.32 mS	1458 HRS

DATE 10/11/05

Station ID: AP-3D
Coordinates: 45.57192 N 122.74263 W
Sample Type: real calibration
Time: 1037
Photo No.: ____
Water Depth (~~m~~): 24'

~~Screening Sample~~: collected not collected PARTIAL
Sreening Sample ID: ____
Purge Rate: ____
Screening Sample Analytes: ____

Sediment Texture ("feel"): SILTY SAND FOR BOTH PW SAMPLERS
Sediment Core Description: ~~SILTY SAND FOR BOTH~~

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	14.170	0.100
30 cm		—
~~60 cm~~	15.369	3.373

Notes: 30 CM		5'	
TURB:	pH:	TURB:	pH:
TEMP: ~~15.369~~	ORP:	TEMP:	ORP:
TDS:	COND: ~~3.373~~	TDS:	COND:

WATER QUALITY NOT DONE IN FIELD

Initials: [illegible] OJG

ANC07203
BZTO104(e)007203

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/11/05

Field Crew: JOSS M, RON P, MIKE S, JON G

Site: ~~R2~~ ARKEMA ACID PLANT / CHLORATE PLANT

Station ID: R2-AP-2

Coordinates: 45.57122 N 122.74197 W

Sample Type: real calibration

Time: 1212

Photo No.: ____

Water Depth (m): 10.5

Sediment Texture ("feel"): 1' - SOFT SILT, 5' - SOFT SILT

Sediment Core Description: ____

Notes:

30 cm	5'
TURB: 40.2 NTU pH: 7.33	TURB: 84.3 pH: 7.47
TEMP: 14.8°C ORP: -112	TEMP: 15.2 ORP: -81
TDS: 48.55 PPT	TDS: 41.25
COND: 45.38	COND: 39.51

~~Screening~~ Sample: collected not collected

Sreening Sample ID: ____ PARTIAL

Purge Rate: ____

Screening Sample Analytes: ____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	14.360	0.100
30 cm	—	—
60 cm	16.618	6.578

DID NOT SAMPLE: R2-AP-1
AP-04-C

ONLY COLLECTED PARTIAL SAMPLES

Station ID: CP-09-A

Coordinates: 45.569783 N 122.740283 W

Sample Type: real calibration

Time: 1518

Photo No.: ____

Water Depth (m): 3'

Sediment Texture ("feel"): SILTY SAND

Sediment Core Description: ____

Notes: 30 cm
TURB: 14.5 NTU pH: 7.50
TEMP: 17.0°C ORP: +38
TDS: 27.95 PPT
COND: 28.60 TIME: 1518

Screening Sample: collected not collected

Sreening Sample ID: ____

Purge Rate: ____

Screening Sample Analytes: ____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	14.524	0.100
30 cm	—	—
60 cm	~~13.951~~ 16.072	~~16.~~ 13.951

Initials: GJG

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/12/05
Field Crew: Joss R., Mike S., Ron P., Tom G.
Site: ARKEMA - CHLORATE PLANT

Station ID: CP-8B Coordinates: 45.57007 N 122.74062 W
Sample Type: (real) calibration
Time: 0945 Photo No.: _____
Water Depth (m): 4.1

~~Screening Sample~~: (collected) not collected
Sreening Sample ID: _____
Purge Rate: _____
Screening Sample Analytes: _____

Sediment Texture ("feel"): _____
~~Sediment Core Description~~: SILT W/SAND (SANDY SILT)

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	14.231	0.100
30 cm		
~~60 cm~~	15.892	11.046

30cm

Notes:
TURB: 7.91 pH: 6.52
TEMP: 13.4 ~~TEMP~~:
TDS: 36.67 PPT ORP: 61
COND: 35.64 TIME: 0945

METALS COLLECTED:
900 ml/FILTERED METALS
900 ml/UNFILTERED METALS

Station ID: CP-07-D Coordinates: 45°34.226 N 122°44.444 W
Sample Type: (real) calibration
Time: 1133 Photo No.: _____
Water Depth (m): 22.7'

~~Screening Sample~~: (collected) not collected
Sreening Sample ID: _____
Purge Rate: _____
Screening Sample Analytes: _____

Sediment Texture ("feel"): SOFT SILT

* COLLECTED METALS 750 ml UNFILTERED

Trident Readings: NOT DEPLOYED HERE

	Temp (°C)	Cond (mS/cm)
Reference		
30 cm		
60 cm		

Sediment Core Description: _____

5'

Notes: TURB: 3.66 NTU pH: 5.79
TEMP: 13.6 ORP: 79
TDS: 167.1 PPT
COND: 106.2 TIME: 1153

~~COLLECTED: 900ml FILTERED~~
~~900ml UNFILTERED~~

Initials: TGS

ANC07205
BZTO104(e)007205

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/12/05
Field Crew: T Moore, Ron Paulsen, Mike S., Jon G
Site: Arkema - Chlorate Plant

Station ID: CP-07-B
Coordinates: 45.57033 N 122.74085 W
Sample Type: real calibration
Time: 1310
Photo No.: ____
Water Depth (~~m~~): 13.5'

Screening Sample: collected not collected
Sreening Sample ID: ____
Purge Rate: ____
Screening Sample Analytes: ____

Sediment Texture ("feel"): TOP 9' SILT - THEN SAND? (MORE FIRM)
TOP 12" ~~SOFT~~ VERY SILT - TO 3' SOFT - RESISTENCE/LAYERS
TO 4'

Sediment Core Description: ____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	14.331	0.100
30 cm	—	—
~~60 cm~~	16.102	11.953

Notes:

30 cm	5'
TURB: 20.8 NTU pH: 6.46	TURB: 1.675 NTU pH: 6.90
TEMP: 14.7 ORP: +5	TEMP: 15.1 ORP: +33
TDS: 47.87 PPT	TDS: 32.82 PPT
(mS) COND: 44.86, TIME: 1310	COND: 32.59 mS TIME: 1315

* METALS
VOL COLLECTED: 1l @ 30 cm FILT
1l @ 30 cm UNFILT
500ml @ 90 cm UNFILT.

Station ID: CP-7A
Coordinates: 45.57030 N 122.74093 W
Sample Type: real calibration
Time: ~~1310~~ 1442
Photo No.: ____
Water Depth (~~m~~): 8.0'

Screening Sample: collected not collected
Sreening Sample ID: ____
Purge Rate: ____
Screening Sample Analytes: ____

Sediment Texture ("feel"): SANDY

30 cm ONLY

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	14.589	0.133
30 cm	—	—
~~60 cm~~	15.845	9.303

Sediment Core Description: ____

Notes:

30 cm	5'	
TURB: ~~20.8 NTU~~ 31.7 pH: 6.78	TURB:	pH:
TEMP: 14.9 ORP: +30	TEMP:	ORP:
TDS: 35.78 PPT TIME: ~~1310~~ 1442 HRS	TDS:	
COND: 35.02	COND:	TIME:

VOL COLLECTED: 1l UNFILTERED
* METALS 1l FILTERED

Initials: [signature] / GJG

ANC07206
BZTO104(e)007206

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/12/05
Field Crew: J MOORE, MIKE S, RON P., JON G
Site: ARKEMA — CHLORATE PLANT

Station ID: 6P-6-A Coordinates: 45.57062 N 122.74135 W
Sample Type: (real) calibration
Time: 1543 Photo No.: ____
Water Depth (m): 2.5'

Screening Sample: (collected) not collected
Sreening Sample ID: ____
Purge Rate: ____
Screening Sample Analytes: ____

Sediment Texture ("feel"): TOP 1.5' SAND W/ SOFT SILT UNDERNEATH

Sediment Core Description: ____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	14.642	0.100
30 cm		------
~~60 cm~~ G	15.811	3.350

Notes:	30 cm	5'
	TURB: 27.6 pH: 6.81	TURB: 3,135 NTU pH: 6.18
	TEMP: 14.7 ORP: -96	TEMP: 15.0 ORP: +16
	TDS: 4316 PPM	TDS: 17.06 PPT
	COND: 5530 µS TIME: 1543	COND: 18.72 MS TIME 1547

METAL VOL COLLECTED:
1 L @ 30CM FILTERED
1 L @ 30 CM UNFILTERED

Station ID: ____ Coordinates: ____ N ____ W
Sample Type: real calibration
Time: ____ Photo No.: ____
Water Depth (m): ____

Screening Sample: collected not collected
Sreening Sample ID: ____
Purge Rate: ____
Screening Sample Analytes: ____

Sediment Texture ("feel"): ____

Sediment Core Description: ____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference		
30 cm		------
60 cm		

Notes: ____

Initials: [illegible] JG

ANC07207
BZTO104(e)007207

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/13/05
Field Crew: J Moore, Ron P., Mike S., Jon G.
Site: ARCO

Station ID: AR-2A Coordinates: 45.59598 N 122.77998 W
Sample Type: (real) calibration
Time: 1114 Photo No.: _____
Water Depth (m): 1'
Sediment Texture ("feel"): SILTY SANDY W/ AGGREGATE (1')
Sediment Core Description: _____

Screening Sample: (collected) not collected 1' 5'
Sreening Sample ID: _____
Purge Rate: _____
Screening Sample Analytes: _____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	NA	NA
30 cm		------
60 cm	15.654	0.213

Notes: 30 cm		5' ABORTED	
TURB: 95.3	pH: 6.67	TURB:	pH:
TEMP: 14.1	ORP: -99	TEMP:	ORP:
TDS: 358.5 PPM		TDS:	
COND: 536.8 µS	TIME: 1114	COND:	TIME:

Station ID: AR-1A Coordinates: ~~45.59598~~ 45.59615 N ~~122.77998~~ 122.78028 W
Sample Type: (real) calibration
Time: ~~1313~~ 1314 Photo No.: _____
Water Depth (m): 0' AT WATER'S EDGE
Sediment Texture ("feel"): 1' ~~SILT~~ SANDY/GRAVEL / 2'-4' SANDY SILT
>4' CLAY W/ SAND
Sediment Core Description: _____

Screening Sample: (collected) not collected
Sreening Sample ID: _____
Purge Rate: _____
Screening Sample Analytes: _____

REF PROBE ABOVE WATER

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	NA	NA
30 cm	———	------
60 cm	15.796	0.670

Notes: 30 cm		5'	
TURB: 32.4 NTU	pH: 6.49	TURB: 91.2	pH: 6.41
TEMP: 14.5	ORP: -37	TEMP: 14.3	ORP: -68
TDS: 232.8 PPM		TDS: 696	
COND: 352.4 µS	TIME: 1310	COND: 1020 µS	TIME: 1307

Initials: GJG

ANC07208
BZTO104(e)007208

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/17/05
Field Crew: Joss M, Ron P, Chris P, Mats
Site: R2 AR-1 ARCO

Station ID: R2-AR-1
Sample Type: real calibration
Time: 1122
Water Depth (m): 6"
Coordinates: 45.59545 N -122.77952 W
Photo No.: ____
Sediment Texture ("feel"): sandy
Sediment Core Description: ____

Screening Sample: collected not collected
Sreening Sample ID: ____
Purge Rate: ____
Screening Sample Analytes: ____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	—	—
30 cm		--------
~~60 cm~~	15.993	.420

Notes: 30 cm sample only w/ Duplicates
Turb 9.03 ntu ORP -98
Temp 16.8 TDS 604 ppm
Cond 895 uS
Ph 6.53 Time 1140

8 shoreline Reference probe
not in water

Station ID: R2-AR-2 ~~R2-AR-1~~
Sample Type: real calibration
Time: 1413
Water Depth (m): 8"
Coordinates: 45.59503 N -122.77905 W
45 35.7026 122 46.7438
Photo No.: ____
Sediment Texture ("feel"): 1' sand silt w/sand 3-5 silt
Sediment Core Description: 0-1 1-3 3-5

Screening Sample: collected not collected
Sreening Sample ID: ____
Purge Rate: ____
Screening Sample Analytes: ____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	NA	
30 cm		--------
~~60 cm~~	15.553	0.490

Notes: 30 cm + ~~5'~~ 3' samples & probe pulled to 3' for sample

Dup collected on 90 cm

	30 cm	3'
Cond	642 uS	642 uS
Temp	17.6	17.6
Ph	6.67	6.81
ORP	-90	-86
TDS	428 ppm	428 ppm
Turbit	7.01	[illegible]

Initials: [illegible]

ANC07209
BZTO104(e)007209

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/18/05
Field Crew: Josh M, Chris B, Chris S, Matt S, Ross P, Shane
Site: Area R2-AR-3

Station ID: R2-AR-3
Sample Type: (real) calibration
Time: 0945 approx
Water Depth (m): 10"
Coordinates: 45.594452 N -122.77865 W
45° 35.6716 -122° 46.719
Photo No.: ____

Screening Sample: (collected) not collected
Sreening Sample ID: ____
Purge Rate: ____
Screening Sample Analytes: ____

Sediment Texture ("feel"): Sand with Rip Rap

Sediment Core Description: ____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	—	—
30 cm	15.446	0.440 mS/cm
60 cm		

Notes: 30 cm sample
Turbidity 32.6 ntu ORP -30 mV
Temp 14.9
Cond 195.3 uS TDS 100.5 ppm
pH 6.22 Time 10:15

Station ID: R2-AR-4
Sample Type: (real) calibration
Time: 11:35
Water Depth (m): 4.5'
Coordinates: 45.594420 N -122.77925 W
45° 35.6530 -122° 46.6955
Photo No.: ____

Screening Sample: (collected) not collected
Sreening Sample ID: ____
Purge Rate: ____
Screening Sample Analytes: ____

Sediment Texture ("feel"): Hard Sand

Sediment Core Description: ____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	15.049	0.100
30 cm	15.236	0.240 mS
60 cm		

Notes: 30cm
Turbidity 9.29 ORP -90
Temp 15.9
Cond 393.5 uS TDS 259.9
pH 6.65 Time 11:43

Initials: CFS

ANC07210
BZTO104(e)007210

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/18/05
Field Crew: Joss M, Chris P, Chris S, Don P, Matt S
Site: Kinder Morgan

Station ID: R2-KM2
Sample Type: (real) calibration
Time: 1430
Water Depth (m): 36'
Coordinates: 45.60397 N -122.78543 W
45° 36.2317 -122° 47.~~1~~ 1262
Photo No.: ____
Screening Sample: (collected) not collected
Sreening Sample ID: ____
Purge Rate: ____
Screening Sample Analytes: ____

Sediment Texture ("feel"): Soft Silt with offgassing
30cm sample
Sediment Core Description: ____

Trident Readings: Time 1437

	Temp (°C)	Cond (mS/cm)
Reference	14.650	0.100
30 cm	15.636	0.891
60 cm		

Notes: 30 cm ORP -104
Turbidity 82.8
Temp 19.1 TDS 787.4
COND 1160 uS
pH 6.82 Time 1520

[Note: 5' sample taken but aborted after VOA + unfiltered sample taken]

Station ID: R2-KM-8A
Sample Type: (real) calibration
Time: 10:15
Water Depth (m): 2'
Coordinates: 45.60373 N -122.78595 W
45° 36.2249 -122° 47.1514
Photo No.: ____
Screening Sample: (collected) not collected
Sreening Sample ID: ____
Purge Rate: ____
Screening Sample Analytes: ____

Sediment Texture ("feel"): 0-2 SAND 2-4' SAND silty/clay
Sediment Core Description: 30cm + 4' water samples (not pushed all the way)

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	~~[illegible]~~	not in water
30 cm	15.293	0.720
60 cm		

Notes: 30 cm ORP -47
Turbidity 3.23
Temp 15.1 TDS 385.9
COND 577.5 uS
pH 6.79 Time 10152

Initials: CFS

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/19/05
Field Crew: Joss M, Ron P, Chris S, Chris P, Matt S
Site: Kinder - Morgan

Station ID: R2-KM-1 Coordinates: 45.60392 N -122.78602 W
45°36.2350 -122.47,1611
Sample Type: (real) calibration
Time: 1153 Photo No.: ____
Water Depth (m): 1'
Sediment Texture ("feel"): Gradual Sand
Sediment Core Description: ____

Screening Sample: (collected) not collected
Sreening Sample ID: ____
Purge Rate: ____
Screening Sample Analytes: ____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	out of water	
30 cm	16.137	0.350 ms S
60 cm		

Notes: 30 cm ORP -47
Turbidity 3.23
Temp 15.1 TDS 385.9
Cond 577.5 uS
pH 6.79 Time 1052

Station ID: R2-W-2 Coordinates: 45.56525 N -122.73782 W
45°33.9166 -122°44.2694
Sample Type: (real) calibration
Time: 1520 Photo No.: ____
Water Depth (m): 15.7'
Sediment Texture ("feel"): Sandy Silt
Sediment Core Description: ____

Screening Sample: (collected) not collected
Sreening Sample ID: ____
Purge Rate: ____
Screening Sample Analytes: ____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	14.810	0.100
30 cm	15.449	1.128
60 cm		

Notes: 30cm ORP -105 mV
Turbidity 34.2
Temp 15.8 TDS 1304 ppm
Cond 1.858 uS
pH 6.68 Time 1545

Initials: CFS

ANC07212
BZTO104(e)007212

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/20/05
Field Crew: Joss M., Ron P., Chris S., Chris P., Matt S.
Site: W-09-A Willbridge

Station ID: W-09-A
Sample Type: (real) calibration
Time: 10:00
Water Depth (m): 9.6'
Coordinates: 45.56567 N -122.73843 W
45° 33.9403 122° 44.3074
Photo No.: ____

Screening Sample: [collected] not collected
Sreening Sample ID: ____
Purge Rate: ____
Screening Sample Analytes: ____

Sediment Texture ("feel"): Firm Silt (0-1')
Firm Silty Clay (1-5')
Sediment Core Description: ____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	14.747	0.100
30 cm	15.085	0.580
60 cm		

Notes: 30 cm & 5' samples taken, but the 5' was aborted as it did not pump samples.
Temp = 14.4 C° pH = 6.40
TDS = 74.82 ORP = 128
Cond = 114 uS Turbidity = 32 Time = 11:03 AM

Station ID: W-07-C
Sample Type: (real) calibration
Time: 1120
Water Depth (m): 16.5'
Coordinates: 45.56492 N -122.73880 W
45°33.9551 -122° 44.3281
Photo No.: ____

Screening Sample: (collected) not collected
Sreening Sample ID: ____
Purge Rate: ____
Screening Sample Analytes: ____

Sediment Texture ("feel"): Clay Silt bottom
Sediment Core Description: ____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	14.760	0.100
30 cm	14.911	0.278
60 cm		

Notes: 30 cm sample taken no 5'
Temp 14.4 Ph 6.32
Cond 141.7 uS TDS 90.95
Turbidity 1495 ORP 75

No 5'

Initials:

ANC07213
BZTO104(e)007213

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/20/05
Field Crew: Jose M, Chris S, Chris P, Matt S, Ron P
Site: Willbridge

Station ID: W-06-A
Sample Type: real calibration
Time: 1307
Water Depth (m): ~~15~~ 12.3
Coordinates: 45.56605 N -122.73903 W
45° 33.9635 -122° 44.3428
Photo No.: ____
Screening Sample: collected not collected
Sreening Sample ID: ____
Purge Rate: ____
Screening Sample Analytes: ____

Sediment Texture ("feel"): Firm Silt to Clay

Sediment Core Description: ____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	14.760	0.100
30 cm	15.036	0.400
60 cm		

No 5'

Notes: 30cm ORP 138
Turbidity 29.2
Temp 14.5 TDS 84.5 ppm
Cond 129.9 uS
pH 6.10 Time 1335

Station ID: W-12-A
Sample Type: real calibration
Time: 1610
Water Depth (m): 3.1
Coordinates: 45.564951 N -122.73728 W
45° 33.4974 -122° 44.2375
Photo No.: ____
Screening Sample: collected not collected
Sreening Sample ID: ____
Purge Rate: ____
Screening Sample Analytes: ____

Sediment Texture ("feel"): Sand

Sediment Core Description: ____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	15.130	0.100
30 cm	16.263	0.2[illegible]
60 cm		

5' not take

Notes: 30cm ORP -64
Turbidity 6.02
Temp 15.8 TDS 352.5
Cond 529.3 uS
pH 6.70 Time

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/21/05
Field Crew: J.SUND, Chris S., Chris P, Matts, Ron P.
Site: Gunderson

Station ID: GN-05A Coordinates: 45.555803 N -122.72630 W
Sample Type: (real) calibration 45°33,4821 -122°43,5784
Time: 1005 Sample time Photo No.: 1025
Water Depth (m): 6.8'

Sediment Texture ("feel"): 30cm Silty Sand
5' silt & sand on top to 5:17

Sediment Core Description: _____

Notes: 30cm
Turbidity 63.5 ORP 44
Temp 14.9
Cond 442.5 us TDS 285.1
pH 6.44 Time 1110

5'
Turbidity 17.9 ORP 14
Temp 13.9
Cond 374.5 us TDS 251.1
pH 6.25 Time 10:50

Screening Sample: (collected) not collected
Sreening Sample ID: _____
Purge Rate: _____
Screening Sample Analytes: _____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	14.67	0.1004
30 cm	15.167	0.52
60 cm		

45.55827 -122.72677

Station ID: GN4A Coordinates: 45°33.4969 N ____ W
Sample Type: (real) calibration -122°43.6051
Time: 1247 (constant) Photo No.: _____
Water Depth (m): 5.3'

Sediment Texture ("feel"): 30cm Sandy silt, 5' silt

Sediment Core Description: _____

Notes: 30cm
Turbidity = 26.9 ntu
Temp = 17.9°C
Cond = 748 us/cm
pH = 6.67
TDS = 499.8
ORP = -91

90cm
Turbidity = 23.7 ORP = -100
Temp = 20.1°C
Cond = 726.7 us/cm
pH = 6.81
TDS = 482.6

Screening Sample: (collected) not collected
Sreening Sample ID: _____
Purge Rate: _____
Screening Sample Analytes: _____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	15.337	0.100
30 cm	15.733	0.660
60 cm		

Initials: CS

ANC07215
BZTO104(e)007215

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/21/05
Field Crew: J. SUND
Site: Gunderson

Probe Bent Aborted

Station ID: GN1E
Coordinates: _____ N _____ W
Sample Type: real calibration
Time: _____
Photo No.: _____
Water Depth (m): _____

Screening Sample: collected not collected
Sreening Sample ID: _____
Purge Rate: _____
Screening Sample Analytes: _____

Sediment Texture ("feel"): _____

Sediment Core Description: _____

Notes: 5' Probe bent effort aborted

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference		
30 cm		----
60 cm		

10/22/05
Station ID: GN-01-E
Coordinates: 45.56023 N -122.72707 W
45° 33.6448 -122° 43.6244
Sample Type: real calibration
Time: 1005
Photo No.: _____
Water Depth (m): 27.1

Screening Sample: collected not collected
Sreening Sample ID: _____
Purge Rate: _____
Screening Sample Analytes: _____

Sediment Texture ("feel"): Firm brown some silt

Sediment Core Description: Station Abandoned

Notes: 5' Probe only no Trident taken
Report effort

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference		
30 cm		----
60 cm		

Station Abandoned because tug + barge came in

Initials: CS

ANC07216
BZTO104(e)007216

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/22/05
Field Crew: JESS K, CHRIS S, CHRIS P, TOM P, MATT S
Site: GUNDERSON

Station ID: GW-01-E
Sample Type: (real) calibration
Time: 1100
Water Depth (m): 26.6'
Coordinates: 45.56023 N -122.72707 W
45°33.6139 -122°43.6242
Photo No.: _____

Screening Sample: (collected) not collected
Sreening Sample ID: _____
Purge Rate: _____
Screening Sample Analytes: _____

Sediment Texture ("feel"): Firm SAND some SILT

Sediment Core Description: ~~Rocks~~ ~~Water~~

Notes: 5' Probe only
Turbidity 1209 ORP 3
Cond 280 us
pH 6.08 TDS 202
Temp 16.3 Time 1140
Rhone Replicate

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference		
30 cm		-------
60 cm		

5' Probe only
no Trident

Station ID: R2-RP-3
Sample Type: (real) calibration
Time: 1220
Water Depth (m): 10"
Coordinates: 45.57545 N 45°34.5270 W
-122.74959 -122° 44.9759
Photo No.: _____

Screening Sample: (collected) not collected
Sreening Sample ID: _____
Purge Rate: _____
Screening Sample Analytes: _____

Sediment Texture ("feel"): FIRM SAND

Sediment Core Description: _____

Notes: 30cm ORP 2
Turbidity 32.1
Cond 119.9 us TDS 14.8
pH 6.5
Temp 16.7 Time 1243

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	—	—
30 cm	15.961	~~0.220~~
60 cm		

30cm only

Initials: CS

ANC07217
BZTO104(e)007217

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/24/05
Field Crew: Joss M, Chris S, Chris B, Matt S
Site: ~~[illegible]~~ GASCO

Station ID: GS-08-A
Coordinates: 45.579131 N -122.75630 W
45° 34.7484 -122° 45.3787
Sample Type: real calibration
Time: 1035
Photo No.:
Water Depth (m): 4.2'
Sediment Texture ("feel"): Gravely sand on top / silt underneath
Sediment Core Description:

Screening Sample: collected not collected
Sreening Sample ID:
Purge Rate:
Screening Sample Analytes:

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	14.890	~~[illegible]~~ 0.100
30 cm	15.366	0.880
60 cm		

Notes: 30 cm ORD -106
Turbidity 10.65
Cond 1541 µS TDS 1070 ppm
Temp 15.0
pH 6.52 Time 1055

Station ID: GS-08-D
Coordinates: 45.57950 N -122.75613 W
45° 34.7698 -122° 45.3695
Sample Type: real calibration
Time:
Photo No.:
Water Depth (m): 33.1'
Sediment Texture ("feel"): Gravely sand on top / silt underneath
Sediment Core Description:

Screening Sample: collected not collected
Sreening Sample ID:
Purge Rate:
Screening Sample Analytes:

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	14.890	0.100
30 cm	15.102	0.388
60 cm		

Notes: 30 cm ORD -88
Turbidity 12.1
Cond 577 µS TDS 384.7
pH 6.54
Temp 16.8 Time 1445

5' ORD -107
Turbidity 63.8
Cond 1210 µ TDS 828
pH 6.54
Temp 16.4 Time 14:18

Initials: CFS

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/25/04
Field Crew: JOSS M, CHRIS B, CHRIS S, MATT S
Site: GASCO

Station ID: GS-07-D
Sample Type: (real) calibration
Time: _____
Water Depth (m): 38.2'
Coordinates: 45.57958 N -122.75642 W
45° 34.7763 -122° 45.3846
Photo No.: _____

Screening Sample: (collected) not collected
Sreening Sample ID: _____
Purge Rate: _____
Screening Sample Analytes: _____

Sediment Texture ("feel"): Soft silt

Sediment Core Description: _____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference		
30 cm		-------
60 cm		

Notes: 5' only ORP -91
Turbidity 118
Cond 1503 uS TDS 1058 ppm
Temp 17.5
pH 6.55 Time 1103

Station ID: GS-07-B
Sample Type: (real) calibration
Time: 11:20
Water Depth (m): 3.2'
Coordinates: 45.57943 N -122.75655 W
45° 34.7667 -122° 45.3939
Photo No.: _____

Screening Sample: (collected) not collected
Sreening Sample ID: _____
Purge Rate: _____
Screening Sample Analytes: _____

Sediment Texture ("feel"): Sandy with some silt

Sediment Core Description: _____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	15.071	0.100
30 cm	15.346	0.432
60 cm		

Notes: 30cm ORP -52
Turbidity 11.3
Cond 441.1 uS TDS 295.1
pH 6.57
Temp 17.5 Time 1310

5' probe was not used

Initials: CFS

ANC07219
BZTO104(e)007219

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/25/05
Field Crew: Joss M, Chris S, Chris P, Matt S
Site: GASCO

Station ID: GS-02-A
Sample Type: (real) calibration
Time: 1400
Water Depth (m): 3.5'

Coordinates: 45.58080 N -122.76060 W
45°34.9482 -122°45.6369
Photo No.: ____

Screening Sample: (collected) not collected
Sreening Sample ID: ____
Purge Rate: ____
Screening Sample Analytes: ____

Sediment Texture ("feel"): Rock than silt

Sediment Core Description: ____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	15.112	0.100
30 cm	15.374	0.270
60 cm		

Notes: 30cm ORP -152
Turbidity 19.9
Cond 280.6 µS TDS 183.5
pH 5.52
Temp Time 1530

Rhone Poulenc
Station ID: RP-07-B
Sample Type: (real) calibration
Time: 1021
Water Depth (m): 27.8

Coordinates: 45.57545 N -122.74785 W
45°34.5254 -122°44.8729
Photo No.: ____

Screening Sample: (collected) not collected
Sreening Sample ID: ____
Purge Rate: ____
Screening Sample Analytes: ____

Sediment Texture ("feel"): Silty

Sediment Core Description: ____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	14.770	0.100
30 cm	15.328	1.095
60 cm		

Notes: 30 cm ORP -74
Turbidity 7.99
Cond 2497 µS TDS 18.01
pH 6.79
Temp 14.0 Time 1018

Initials: CS

ANC07220
BZTO104(e)007220

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/26/05
Field Crew: JOSS M, Chris S, Chris P, Matt S
Site: Alone Poulanc

Station ID: R2-RP-2
Sample Type: real calibration
Time: 1225
Water Depth (m): 2'
Coordinates: 45.57618 N -122.74945 W
45° 34.5716 -122° 44.9674
Photo No.: ____
Sediment Texture ("feel"): Sand + Rip Rap
Sediment Core Description: ____

Screening Sample: collected not collected
Sreening Sample ID: ____
Purge Rate: ____
Screening Sample Analytes: ____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	14.908	0.100
30 cm	15.401	0.640
60 cm		

Notes: 30 cm ORP -90
Turbidity 8.97
Cond 845.8 uS TDS 576.5
pH 6.86
Temp 15.6 TIME 1305

Station ID: R2-RP-1
Sample Type: real calibration
Time: 1420
Water Depth (m): 26.4
Coordinates: 45.57685 N -122.74968 W
45° 34.6067 -122° 44.9819
Photo No.: ____
Sediment Texture ("feel"): ~~Sand + Rip-Rap~~ Sand
Sediment Core Description: ____

Screening Sample: collected not collected
Sreening Sample ID: ____
Purge Rate: ____
Screening Sample Analytes: ____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	14.850	0.100
30 cm	15.198	0.729
60 cm		

Notes: 30 cm ORP -99
Turbidity 34.2
Cond 1906 uS TDS 1344
pH 6.58
Temp 14.8 Time 1500

Initials: CS

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/27/05
Field Crew: Jess, Chris S., Chris P., Matt C., Matt S.
Site: Rhone-Poulenc

Station ID: RP2-E Coordinates: 45.57728 N -122.74952 W
Sample Type: real calibration
Time: 0930 Photo No.: ____
Water Depth (m): 45'

Screening Sample: collected not collected
Sreening Sample ID: ____
Purge Rate: ____
Screening Sample Analytes: ____

Sediment Texture ("feel"): silty sand

Sediment Core Description: ____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	14.610	0.100
30 cm		------
60 cm	15.302	1.407

first trident reading faulted.

30cm
Notes: Cond: 2803 pH: 6.77
Temp: 13°
Turb: 50.9
TDS: 2050 ppm
ORP: -50

5'
Cond: 1418 ms pH: 6.65
Temp: 13.2°
Turb: 1.05
TDS: 981.8 ppm
ORP: 23

Station ID: RP3-E Coordinates: 45.57782 N -122.74913 W
Sample Type: real calibration
Time: 1213 Photo No.: ____
Water Depth (m): 44.5

Screening Sample: collected not collected
Sreening Sample ID: ____
Purge Rate: ____
Screening Sample Analytes: ____

Sediment Texture ("feel"): silty sand / sand (30cm / 5')

Sediment Core Description: ____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	14.590	0.100
30 cm		------
60 cm	15.271	1.426

30cm
Notes: Cond: 3511 ms ORP: -12
Temp: 13.7° Turb: 3200
TDS: 2624 ppm
pH: 6.58

5'
Cond: 368.6 ms
Temp: 14.4°
TDS: 244 ppm ORP: 54
pH: 6.55 Turb: 835

Initials: ____

ANC07222
BZTO104(e)007222

LWG Round 2 Groundwater Study Trident Field Data Sheet

Date: 10/28/05
Field Crew: Jess M., Chris S., Matt C., Chris P.
Site: Rhone-Poulenc

Station ID: RP3-C
Coordinates: 45.57682 N -122.74925 W
Sample Type: real calibration
Time: 0925
Photo No.: _____
Water Depth (m): 36.1'

Screening Sample: collected not collected
Sreening Sample ID: _____
Purge Rate: _____
Screening Sample Analytes: _____

Sediment Texture ("feel"): silty sand

Sediment Core Description: _____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference	14.473	0.100
30 cm		------
60 cm	14.222	0.490

30cm	5'
Notes: Cond: 4007uS Turb: 110	Cond: 3939 Turb: 71.5
Temp: 12.7	Temp: 13.3°
TDS: 3060	TDS: 2974
pH: 6.75	pH: 6.74
ORP: -29	ORP: -37
~~Turbidity 110~~	

Station ID: _____
Coordinates: _____ N _____ W
Sample Type: real calibration
Time: _____
Photo No.: _____
Water Depth (m): _____

Screening Sample: collected not collected
Sreening Sample ID: _____
Purge Rate: _____
Screening Sample Analytes: _____

Sediment Texture ("feel"): _____

Sediment Core Description: _____

Trident Readings:

	Temp (°C)	Cond (mS/cm)
Reference		
30 cm		------
60 cm		

Notes: _____

Initials: _____

ANC07223
BZTO104(e)007223

LWG
LOWER WILLAMETTE GROUP

PORTLAND HARBOR RI/FS

ROUND 2 GROUNDWATER PATHWAY ASSESSMENT TRANSITION ZONE WATER SAMPLING FIELD SAMPLING REPORT

APPENDIX B
SMALL-VOLUME PEEPER FIELD NOTES

DRAFT

DO NOT QUOTE OR CITE
This document is currently under review by US EPA and its federal, state, and tribal partners, and is subject to change in whole or in part.

January 31, 2006

ANC07224
BZTO104(e)007224

"Rite in the Rain®"
ALL-WEATHER WRITING PAPER

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Project LWG Pecper Deployment + Retrieval - Phase 1: Arkema Acid Plant, Arkema Chlorate Plant, Arco, Wacker Silfronics

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PAGE	REFERENCE	DATE
4-6	Arkema Chlorate Plant	10/17/05
1-4	Arkema Acid Plant	10/17/05
9-10	Arco	10/18/05
7-8	Wacker Silfronics	10/18/05
11-13	Wacker Silfronics	10/19/05

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ANC07225
BZTO104(e)007225

2 10/17/05

7am CH met ED at the field lab, reviewed argon sparging procedures, Health & Safety Plan meeting; transported coolers to vehicle. ~~CEP~~

7:45 am CH arrived at Cathedral Park, met Eric Parker & safety diver. Boat preparations, launching.

9:00 am: called coast guard, Sheriff's office, & Fred Wolfe at Arkema. Safety & health meeting

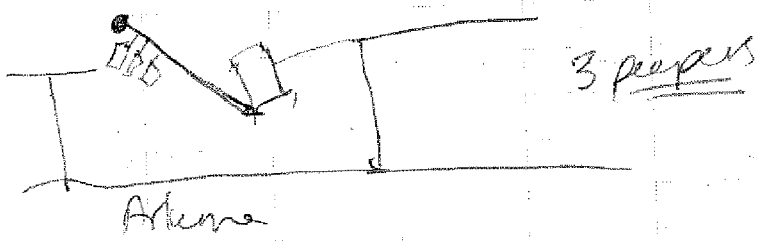
9:15 am: Divers change into dry suits. ~~CEP~~

9:30 am - depart boat ramp

9:40 am - arrive Arkema Acid Plant. Place buoys at all 3 stations. Measured trail lengths at all stations. 135ft trail needed for AP03D. 40ft trail needed for R2-AP1. This is the duplicate location. 75 ft trail needed for AP04C.

All three locations tied/anchored to same pile. This is the corner post of the square formation on the center dock.

AP03D 10:30am



Tied off to the most inshore of the four posts of the square - the one with the metal cable attached to it.

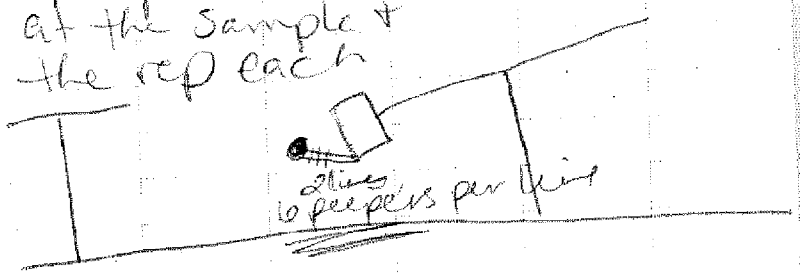
Smooth - no problems with installation.

3 peepers installed at this location

R2-AP-1 (Replicate location)

Tied off to same pile.

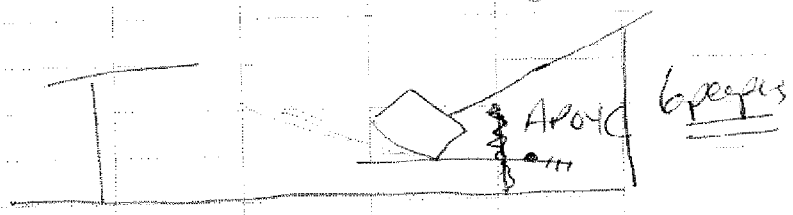
6 peepers tied off: at the sample & the rep each



ANC07226
BZTO104(e)007226

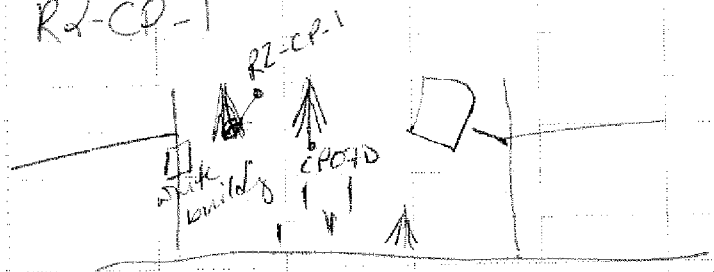
4

~~AP04C~~ CCA AP04C 11:30 am
Tied to same piling



Everything went in easily, no need for hammer

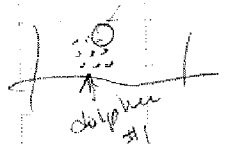
12:30 pm - lunch -
1:00 pm - Headed over to the Arkema Chlorate Plant
1:15 pm - Tied/anchored off to (upstream of) the first dolphin inside the center dock (the dock with the little white building on it.) (See pics 2-4).
RZ-CP-1



tied off to offshore upstream piling

5

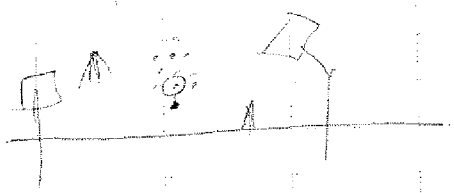
There are only 2 dolphins in between the Calvert Plant docks. Tied off to the dolphin closest to the center dock



RZ-CP-1 - 4 peepers

All silt - no need for hammer
CP-07-D: 1:54pm

Tied/anchored to the second dolphin between the chlorate plant docks. Tied to center inshore piling, 2ft inshore of this.



4 peepers

The GPS location was almost exactly on a dolphin structure, which matched the map of the site. On the map, the station was just inshore of the dolphin and therefore the samples

ANC07227
BZT0104(e)007227

were also placed just inshore. However, it should be noted that the samplers were placed ~2 ft from ~~creosoted~~ CCH creosote pilings. ~~CCH~~

2:30 pm: Finished two locations at the chlorate plant. Left area headed for Eric Parkers work at Gasco. ~~CCH~~

5:30 pm: Docked. Transported remaining 3 peepers to field lab to re-equilibrate.

6:00 pm: left field lab.

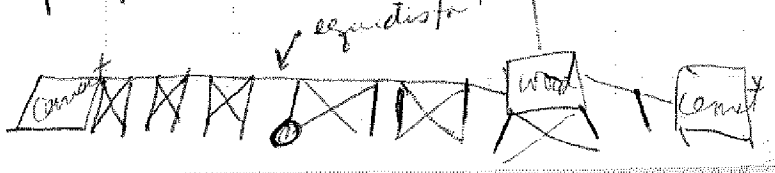
10/18/05 8:00 am arrived field lab, loaded truck.

8:30 am: Arrived boat ramp, called coast guard + sheriff's office Spoke with Fred Wolfe at Arkema. ~~CCH~~

9:00 am: Departed boat ramp for Arkema Chlorate plant.

CP-09-D (Replicate)

4 peepers each.



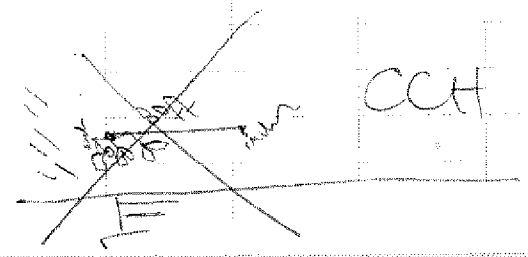
The tie-off is the pole immediately downstream (to the right) of the newer wood X

10:15 am: Joss called + said they were able to get a full sample at ~~CP-03-A~~ CCH all locations. Therefore, we will install at AR-03-A CCH ~~CCH~~

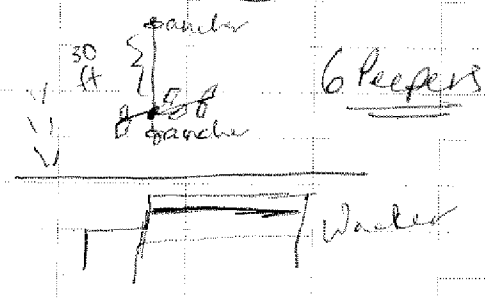
10:24 am: Chlorate plant peeper deployment complete. Headed to Sitronics.

11:00 am: Called Tom McCue, could not reach him, left a message. ~~CCH~~

SLT2-C - no structures. Buoy placed at coordinates. It is directly offshore of the most downstream end of the furthest downstream (closer to Gasco) building - the part with the teal striping.



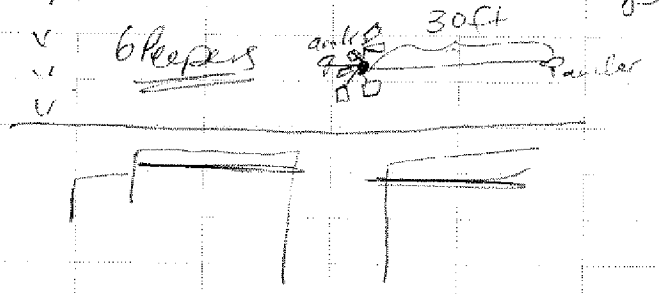
SLT2-C



line runs perpendicular to shore 30ft ——— CCH

12:20pm: SLT3-C

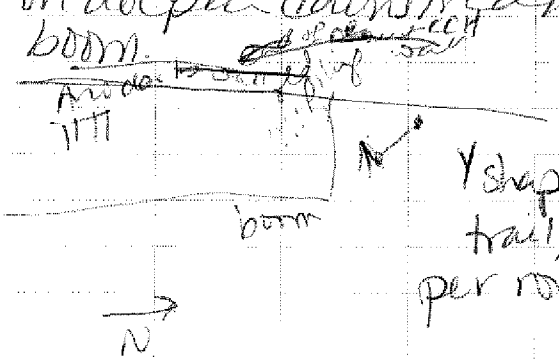
Directly offshore of gap between two big green-striped Siltronic buildings



All silt, no debris at bottom. ——— CCH

12:50 departed Siltronic for Arco. ——— CCH

1:00pm arrive at Arco. Joss spoke with Scott Vawter when he and the Trident crew were here earlier today and informed them of our visit. Scott gave clearance for our deployment. It is 2½ hrs before low tide and peeper location is 6 inches underwater. Therefore, to ensure that peepers would remain underwater at all tides, peepers were placed ~4 ft further offshore than actual station ID. Most shallow peeper is ~2 ft below surface at time of placement, with another 1ft drop in river depth expected. Tied off to broken piling on dolphin downstream of boom.



Y shaped trail, 5 peepers per route

One of the peepers came untied from the route line (untied from the beaner). This one is next to the anchor between the two legs. Should be able to find it in retrieval anyway. All peepers were put in by divers above water - shallow enough that no descent was necessary. Rocky bottom, hammer required to install all peepers. ——CCH

2:24 pm - Left Arco. ——CCH

2:40 pm - Arrived at Gasco for work Eric is doing for them.

4:40 pm - Left Gasco for Cathedral Park. ——CCH

5:10 pm: Arrived at field lab, offloaded coolers and argon tanks. ——CCH

5:30 pm: Left field lab for the day.

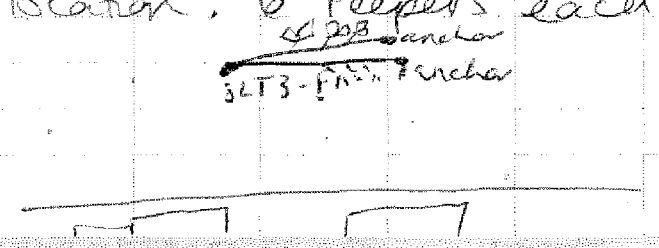
CCH

10/19/05 8:45 am arrived at field lab, checked all knots on peepers to be deployed today. Found 1 errant knot that slipped + needed to be retied. Loaded vehicle. ——CCH

9:30 am arrived Cathedral Park. Loaded coordinates for last 4 Siltronic stations.

10:15 am: arrived Siltronics. Called Coast Guard, Sheriff's Office, + Tom McCue at Siltronics. No answer from Tom McCue, so left a message explaining our deployment plan for the day and contact information. Placed three buoys for SLT1-E, SLT2-E, and SLT3-F.

10:30 am SLT3-F - replicate location. 6 Peepers each.



~~Lines~~ CCH lines are 25 ft long, extending upstream from the station location. The replicate line is 20 ft long. These line lengths do not include length necessary for knots - therefore, final length ~~could be~~ is shorter. CCH

12:05pm: SLT2-E - located directly offshore of edge of Siltronics most shoreward downstream building.
6 peepers down at this location. Diver reported logs and debris at bottom, but no trouble with peeper placement. ~~CCH~~

12:57pm: Since these two stations were so deep (45 ft), returned to boat ramp to get additional air. ~~CCH~~

1:20pm: Returned to Siltronics. Placed buoy at SLT4-F. This location is directly in front (offshore) of the cream-colored ducts on the upstream most Siltronics building.

Correction, this location is ~20 ft downstream of the duct work. ~~CCH~~

1:50pm: Diver down to lay trail parallel to shore and upstream of station. Diver reports a lot of wood debris on bottom.
Trail for SLT4-F runs slightly inshore (as opposed to parallel) along the inshore side of a log. ~~CCH~~

2:32pm: SLT4-F
Directly offshore of the two line of pilings at the downstream end of Siltronics site - only pilings at the site.
Trail laid parallel to shore heading upstream. Some logs at the end of the trail but otherwise unobstructed. ~~CCH~~

3:16pm: Dives completed, pulled up buoys

14

Coordinants:

Arkema Acid Plant 10/17

AP-03-D (3 peepers)

x	y
7627903.0	702564.7

R2-AP-1 (6 peepers, REPLICATE)

x	y	
7627920.9	702469.0	10/17

AP-04-C (6 peepers) 10/17

x	y
7627967.5	702395.1

Arkema Chlorate Plant - 10/17

R2-CP-1 (4 peepers)

x	y
7628267.77	702129.63

CP-07-D (4 peepers) 10/17

x	y
7628349.099	702023.4252

CP-09-D (4 peepers, replicate) 10/18

x	y
7628527.849	701817.855

CCH

10/18

15

ARCO

AR-03-A (5 peepers, replicate)

x	y
7618589.0	711566.6

Wacker Siltronics 10/19

SLT1-E (6 peepers)

x	y
7624677.5	705395.4

SLT2-C (6 peepers) 10/18

x	y
7624743.4	705276.9

SLT2-E (6 peepers) 10/19

x	y
7624788.9	705348.6

SLT3-C (6 peepers) 10/18

x	y
7624874.3	705196.6

SLT3-F (6 peepers, REPLICATE) 10/19

x	y
7624923.1	705290.1

SLT4-F (6 peepers) 10/19

x	y
7625048.5	705195.4

ANC07232
BZTO104(e)007232

11/14/05 8:00am. Met at field lab Cynnie Henderson Jane Sund, + Alice Wood. Loaded van.
8:15 am arrived at Cathedral Park, loaded boat, conducted heath and safety meeting.
9:15 Arrived Arkema Acid Plant, tied off. Found peeper location. First sample: AP04C. 6 peepers. No problems locating sample. First used spray bottle, ~~but~~ cut to clean peepers, but switched to hose (both using Willamette water). Collected metals, conventionals perchlorate, 2 VOAs for VOCs, and pesticides.
10:45 second sample R2-AP-1. During sampling of VOCs, one VOA vial ~~so~~ shattered. The remaining

water in this vial was poured (slowly, along the side) into a third VOA vial, and this vial was used.
11:30 - Replicate sampler - R2-AP-1, 2
12:00 - AP03D - 3 peepers, all pesticides.
No problems with retrieval, all samplers recovered, no cells were ~~th~~ compromised in any of the peepers. Extra volume added to metals containers in all cases. Diver reports lots of debris at this location.
12:45 - Back to boat ramp for break + lunch.
~~12~~ 13:20 - Left boat ramp for Chlorate Plant.
13:45 - R2-CP-1 - found peeper without trouble. Softer silt here, easier to clean peepers.

Water has a slight yellow tint. No cells are compromised.
14:25: CP-07-D. Again, softer mud here. No cells compromised. As with R2-CP-1, extra water to metres' container. Water in this sampler just a little bit yellower than R2-CP-1.
15:05: CP-09-D & CP-09-D2. One of the 8 samplers had a little brown staining at the top. The water from all of the peepers was the yellowest of all CP locations, though it was not orange. No problems with the retrieval.
16:10 Return to boat ramp, unload
16:40 Arrive field lab, prep for next day.

11/15/05
8:00: Arrive field lab, pack van. Heavy fog today. Can't see 15 ft in front.
9:00 Waiting at boat ramp for fog to lift. Spoke with Scott Vaughn at ACO, he said no barges today, so this will be our first location after the fog lifts. Called Sheriff and Coast Guard.
9:30 Still waiting for fog to lift.
10:15 - Arrive ACO. Locate peepers, but lanyard has been cut (AR04B), and lead rope, anchors, and beepers have been stolen. Four of the five peepers had had exposed top cells: 21 small and 9 large. These cells were excluded, and conveyances were excluded

ANC07234
BZT0104(e)007234

Missing cells were replaced with conventionals. Enough volume was collected for all other analytes.
ARO4B-2 - again, some cells at top were uncovered. However, less so than the other samples. One of the 5 peepers, that had crusty orange brown staining on the first 14 rows of the peeper. These rows may have been uncovered and were excluded. In total 17 small and 9 large cells were excluded, (14 small + 7 large were from one peeper). In addition, one large + one small cell on a different peeper were ripped, and those cells were also excluded. Again, no conventionals were collected, but

enough volume was available for all other analytes.
12:30: Returned to boat ramp for lunch and a break. ~~cct~~
13:15: Departed boat ramp for Siltronics. Called Tom McCue, but did not reach him, left a message. ~~cct~~
13:20: Arrived Siltronic, entered coordinates for SLT1-E + SLT2-E. Dropped buoy for SLT1E.
13:30: Dive down at SLT1E
14:30: Dive located peepers. Samples are bubbly, seem aerated somewhat. Water is clear.
15:20: Return to Cathedral Park. ~~cct~~
16:00: Unload at field lab.

cct

ANC07235
BZTO104(e)007235

~~Hillsboro~~ CCH 11/16/05

8:20: Arrive Cathedral Park

8:45: Depart for Wacker Siltronics. Locate SLT2E.

9:20: Diver down. Peepers located, brought to surface. One of the peepers had ~~[illegible]~~ CCH a material on the bottom wedge that appeared to be like tar. Water is somewhat bubbly. One torn small cell, no other difficulty.

10:40: SLT3F. Replicate location. SLT3F collected without difficulty, clear water, no broken cells.

12:00 Return to Cathedral Park for lunch and break

13:00: SLT3F-2, retrieved this replicate, no compromised cells, clear water. ~~CCH~~

14:00: SLT4F. 2 of the 6 peepers again had the sticky, tarry residue

on the wedge ends (see Photos). No cells were compromised, water was clear, all peepers retrieved. ~~CCH~~

~~16~~ 15:00: SLT2C. All peepers retrieved, no compromised cells, clear water. ~~CCH~~

16:10: Return to Cathedral Park ~~CCH~~

16:40: Return to Field Lab ~~CCH~~

CCH

11/17/05:
8:30 am: Arrive Cathedral Park.
9:00 am: Arrive Siltronic, made calls. Oliver ripped his suit and had to change suits.
9.45: SLT3C.

2

10/31/05 Peeper Deployment B010152 J. SUND

0715 At field lab to pack up gear.

0745 Eric Parker and Don (RSS) meet @ Field lab to load gear. & mob to Kinder Morgan Linnton (for deployment @ upland access location.

Health + Safety briefing prior to departure

Crew: J. Sund - Integral E. Parker & RSS Don Peterson

0820 At Kinder Morgan Linnton Eric's truck is acting up, he is not sure what's wrong - calling Ford.

Meet Nate Hemphill (Delta) @ KM + sign in @ Shop.

- Weather: rainy + cool (50's) -

Discuss deployment location

Nate says access is down bank - be careful of loose rocks + slippery conditions.

We all walked to docks

/JS

10/31/05 Peeper Deploy

to assess ac

was determi

It would be s

more efficie

Eric is going

truck in this

as he is not

towing boat w

engine probl

is having.

Called Christ

discuss. We

all locations

0900 Depart KM-

lab + Eric +

truck repai

0925 Eric called -

Seems to be

He + Don are

Park setting

0950 Tides for Po

Low @ 117,

High @ 504

Low @ 111,

2
10/31/05 Peeper Deployment B0101 52 J.SUND

0715 At field lab to pack up gear.

0745 Eric Parker and Don (RSS) meet @ Field lab to load gear. & mob to Kinder Morgan Linnton (for deployment @ upland access location.

crew: J.Sund-Integral E.Parker-RSS Don Peterson

Health + Safety briefing prior to departure

0820 At Kinder Morgan Linnton Eric's truck is acting up, he is not sure what's wrong — calling Ford.

Meet Nate Hemphill (Delta) @ KM + sign in @ shop.

- Weather: rainy + cool (50's) -

Discuss deployment location Nate says access is down bank - be careful of loose rocks + slippery conditions.

We all walked to docks

10/31/05 Peeper Deployment B0101 52 J.SUND

to assess access. IT was determined that it would be safer + more efficient.

Eric is going to take truck in this morning as he is not comfortable towing boat with the engine problems it is having.

Called Christine to discuss. We will access all locations from boat.

0900 Depart KM — Jane to lab & Eric to get truck repaired.

0925 Eric called - Truck seems to be doing better. He + Don are @ Cathedral Park setting up boat.

0950 Tides for today
Low @ 117am Hgt @ 500pm
High @ 504am
Low @ 111pm

ANC07239
BZTO104(e)007239

4

10/31/05 Peeper Deployment B010152 J. SUND

1000 At cathedral Park, load boat and set up argon tanks to bubble cool.

1035 Call Coast Guard, Sheriff, and Nate Hemphill (Delta for KM)

Mob to Kinder Morgan.

1st Location, KM-06A, dock boat on beach on DS side of docks.

Walk to Location w/ GPS. GPS not receiving b/t docks, so estimate ~30' from US inside dock

Tie off to 3rd piling on walkway from main dock. End of line in line w/ 4th piling from walkway on main dock.

1140 Deploy Peepers @ KM-06-A.

1212 Tie off lines for 10-A + 11-B on short piling onshore ~ 35' from walkway to dock.

/SB

10/31/05 Peeper Deployment B010152 J. SUND

1236 Set up for deployment @ KM-10-A + 11-B (11-B line ~ 100 feet off piling)

1250 Deploy 5 Peepers @ KM-11-B, Deploy Duplicate Peeper Set @ KM-11-B (5 peepers) (Helicopter circling in the above from St. Johns Bridge to KM)

1315 ON TO KM-10-A, DEPLOY 5 PEEPERS. ERIC SAYS PRETTY HARD HERE, MEDIUM SAND, DROP OFF ~4.0' FROM SUMPIERS (11-B sandy silt)

1340 PULL ANCHORS, MOB TO R2KM2.

1412 DIVER IN AT R2-KM-2

1423 DEPLOY 5 PEEPERS @ R2-KM-2

1430 Diver out, all peepers in @ Kinder Morgan.

1450 Mob to Gunderson, earlier contacted Dave King (Kleinfelder)

/SB

10/31/05 Peeper Deployment B01152 J.SUND

and Gunderson gate re: access. We are clear to deploy samplers @ Gunderson. Today Plan is to get 2 peepers @ GN-04B

1511 AT GUNDERSON, DROP BUOY and set up for peeper deploy (2) @ GN-04-B. tie off on 1-beam on dolphin

1515 Contacted Lakeside (Pat) and Shaver (Joe) regarding access for tomorrow (after 10am barge out, so all in morning for Shaver schedule

1545 Diver in.

1505 Deploy 2 peepers @ GN04B

1510 Pick up anchors and mob to GN 03 A.

Buoy set off 6th piling on DS side of Lake side dock (piling count is from diagonal beam on walkway @ shore)

1612 Diver in.

10/31/05 Peeper Deployment B01152 J.SUND

1615 Deploy 2 Peepers @ GW-03-A, complete deploy.

1625 Depart to Cathedral Park

1645 AT Cathedral Park, Mload & head to field lab. Call Coast Guard + Sheriff

1730 Depart Field Lab.

Blank

10/31/05

11/1/05 Peeper Deployment BZT0152 J.SUND

0215 Arrive @ Field Lab, Load Gear.

0530 Arrive @ Cathedral Park, load boat

Weather: raining & cool (50s)

Crew: J. Sund (Integral)
E. Parker } RSS
Don Peterson }

Call Coast Guard & Shell

Plan: Willbridge - Chevron/KM Gasco, RP

Called KM Willbridge & CP Chevron Willbridge - clear to work there

Called Tim (Anchor) - Gasco & Gina Creek (Olympic?) - clear there also.

0845 Head to Willbridge, W-04-C
Set up for Deployment

0930 Diver in, tie off on metal piling by metric grate.
Deploy 5 peepers @ W04C & 5 peepers for duplicate

11/1/05 Peeper Deployment @ W04-C BZT0152 J.SUND

0957 Head to W-09-C, set up for deployment.

1015 Diver in. Deploy 5 peepers @ W09-C, Tie off on piling with bent gage marker

1024 Diver out, complete Willbridge Deployment.

1050 Head to Gasco GSC 1-B Rhone Poulenc, RP-07-E,

1054 Eric Parker calls Coast Guard to let them know we are near channel, & for them to notify traffic of diver.
Sample location is midway b/t Buoy "16" and N. side bridge abutment on US RR bridge.

1110 Diver in to deploy 4 peepers & duplicate @ RP07E.

1140 Difficult to pound in peepers Eric thinks he hit clay.

ANC07242
BZT0104(e)007242

10 38
10 11/1/05 Peeper Deployment B010152 J.SUND

as peepers would not easily go in. Were able to deploy 2 peepers one to just below shoulder and one ~1/4 down peeper. Will attempt new location tomorrow. called Christine + she said to try + get in area around desired location even if need to move inshore. (@ same time try + be offshore of closest trident location.

1250 Head to Gunderson for GN-02-E, GN-01-E, R2-GN-1

1308 Set up for deployment @ GN-02-E

1335 Diver in to deploy 2 peepers @ GN-02-E + duplicate (2 peepers)

1350 Diver out, location complete Head to GN-01-E, R2-GN-1 mark w/ buoys.

1435 Diver in to deploy 2 peepers

11/1/05 Peeper Deployment B01015211 J.SUND

@ GN-01-E (location is on DS corner of Barge 20 + near ST41) Set trail out toward channel

1450 Diver out, head to R2-GN-1 Set up for deployment

1505 Diver in, deploy 2 peepers @ R2-GN-1. (Set trail out from location DS)

1521 ~~Head to~~ Diver out, GN locations complete. Head to Cathedral Park. Call Coast Guard + Sheriff.

1600 To lab to unload Note: Caribeeners on peepers from Day 1 + Day 2 deployment were beginning to rust.

1700 Depart Lab

BLANK

11/1/05

12

11/2/05 Peeper Deployment B010152 J.SUND

0730 At Field Lab, load gear to cathedral Park. Crew: J.Sund-Wkpd, E.Parker, D.Peterson, BSS
Weather: cool (50), cloudy
Plan: Gasco + Rhone Poulenc.

0815 Meet @ Cathedral Park load boat, call Coast Guard + Sheriff.

0843 To Rhone Poulenc to set trail off original location shoreward to determine good location to place peepers

0900 Set 150' of trail from RP-07-E original location towards shore.

0940 Diver in @ shore end of trail from RP07E location. Going to descend @ this end + follow trail to RP07E to determine good location for peeper deploy.
(Note: abundant debris floating on surface)
8 peepers deployed (4 sample, 4 duplicate)

11/2/05 Peeper Deployment B010152 J.SUND

1035 Diver out, says surface was pretty flutty then had to pound in last ~3 inches. Estimated to be ~50' inshore from original location. (@ end of tending line from boat here)
Coordinates for RP07-E-2
85' inshore from RP07-E
704050.906
7626677.722
Inshore coord
704009.2
7626595.3

1058 ON TO GASCO, GSC7-D + GSC1-B. Start @ GSC1-B. ~~Get permi~~ BS
Discuss access w/ USACE docks control. Have okay to work in area.
Set trail from sample location to dolphin on USACE dock by

11/2/05 Peeper Deployment B020152 JSUND

Essayon Ship.

1130 Diver in. Deploy 6 peepers @ ~~GCS~~ GSC1-B (considerable pounding required to get peepers in - rocky bank) Eric says some cobble size gravel + clayline material

1200 Diver out. ON TO GSC7-D Tie off @ dolphin + run trail ~ 92' out to Location (DS) (tie off on piling with cable running down.)

1255 Diver In. Deploy 6 peepers + duplicate @ GSC7-D (12 peepers total)

1325 Diver out. To catheduer parker to unload Peeper Deployment complete.

1500 Depart Lab

Note: Canbeeners on peepers beginning to rust.

[signature] 11/2/05

11/2/05 Peeper Deployment B010152 J.SUND

Essayons Ship.

1130 Diver in. Deploy 6 peepers @ ~~GCS~~ GSC1-B (considerable pounding required to get peepers in - rocky bank) Eric says some cobble size gravel + clay like material

1200 Diver out. ON TO GSC7-D Tie off @ dolphin + run trail ~92' out to Location (DS) (tie off on piling with cable running down.)

1255 Diver In. Deploy 6 peepers + duplicate @ GSC7-D (12 peepers total)

1325 Diver out. To cathedral parker to unload Peeper Deployment complete.

1500 Depart Lab

Note: Canbeeners on peepers beginning to rust.

[signature] 11/2/05

11/28/05 PEEPER RETRIEVAL B010152B 15 J.SUND

0730 Arrive @ Field Lab, load Gear

0830 Arrive @ Cathedral Park

Crew: weather - cold (30s) windy choppy, cloudy

J.SUND
A.WOOD } Integral
M.Tanner

E.Parker
Don Peterson } RSS

Call Willbridge + Gunderson Re access today.

Plan: Conoco Phillips Willbridge + Gunderson Locations on US Side of Lakeside Dock.

0850 Call Coast Guard + Sheriff Set up boat.

0940 HEAD to WILLBRIDGE - CP

1010 AT W09C

1030 W09C SAMPLE TIME

1105 AT GUNDERSON, START AT GN02E

1200 GN2E AND GN2E-2 SAMPLE TIME

[initials]

16

11/28/05 Peeper Retrieval B0101528 J.SUND

1230 Anchor stuck (hung up) on bottom. Diver in to retrieve.
1300 ON TO GN1E
1310 FOSS TUG IN TO TAKE BARGE STZ1 (SHAVER) BOUY ~10' FROM BARGE, PULL OUT + WAIT FOR TUG.
1320 BACK TO SET UP ANCHORS @ GN1E
1400 GN1E SAMPLE TIME PEEPERS REALLY STUCK, HAD TO USE VICE GRIPS TO RETRIEVAL, MATERIAL SILTY CLAYEY MATERIAL.
1425 ON LOCATION R2GN1, DIVER IN
1440 SAMPLE TIME R2GN1 Starting to RAIN, V. Windy
1455 ON TO GN3A
1510 DIVER IN
1530 SAMPLE TIME GN3A SILT W/SOME COARSE GRAINED SAND ON PEEPERS.

17

11/28/05 Peeper Retrieval B0101528 J.SUND

COMPLETE FOR DAY, HEAD TO BOAT RAMP.
1550 CALL COAST GUARD + SHERIFF HEAD TO LAB TO UNLOAD SAMPLES + FILL OUT COCS DEPART LAB

Blanks 11/28/05

ANC07247
BZT0104(e)007247

11/29 coll/rain BE104528
C Hawley
M Tanner
A Wood

Call - Gunderson, Shaver, Gasco
- Coast Guard, Sheriff

850 Underway to Gunderson
920 At Gunderson - setting up (1 Location)
GN 04-B
1010 Collection Complete - Successful
1015 Underway to Gasco

Discussion w/ Tim Brownlow
- Kinder Morgan access
this afternoon & Tomorrow

1025 On location @ GSC1B
Set up anchors
1045 Diver in
Peepers Difficult to retrieve
1115 Diver up with 5 peepers (1 Broken)
Diver getting more air + return
for last peeper → retrieved ✓
- Top 2 to 3 layers - show
iron staining on 3 peepers
(assumed above mudline + not used)
☆ STRONG PETROLEUM ODOR from peepers
- multiple ~15 cells w/ broken membranes (not used)
- No conventionals → limited volume on TPH-D/PERC

1153 → Cathedral Park for lunch

1248 - Onsite at Gasco GSC1B ✓

1306 Peepers up
+ Processed
No problems

1400 Replicate GSC1B pulled
(Peeper 5 → top 3 rows
iron oxide stain
→ not used)
- No odor

1503 On location @ Kinder Morgan
Linnton
KM11B → pull up Real sample
- leave replicate for tomorrow
KM11B retrieved @ 1540
- all 5 peepers
- Return to Cathedral Park

1620 - At Cathedral Park
- Call Coast Guard + Sheriff

ANC07248
BZTO104(e)007248

- Supplies for tomorrow
  - Sharps
  - Lg Nitrile Gloves
  - Paper towels
  - Sharpies

11/30/05

C Hawley
M Tanner
A Wood

8:30 - Call Coast Guard / Sheriff
- Call KM
- Call Willbridge - message left

9:00 - Call Recieved from Wally Stevens - Willbridge
Barge coming @ noon → no openings for access until next week.
∴ Redirect to Willbridge

9:30 on location W4-C + W4C-2

9:37 - Divers in
Peepers Recovered
3 rows of peepers showed iron oxide (not sampled)

Replicate Retrieved + sampled
- no problems

1055 - Underway to KM Linnton

1118 - Prep to collect replicate KM11B-2

1220 - Peepers Retrieved @ KM10A
- difficult to retrieve

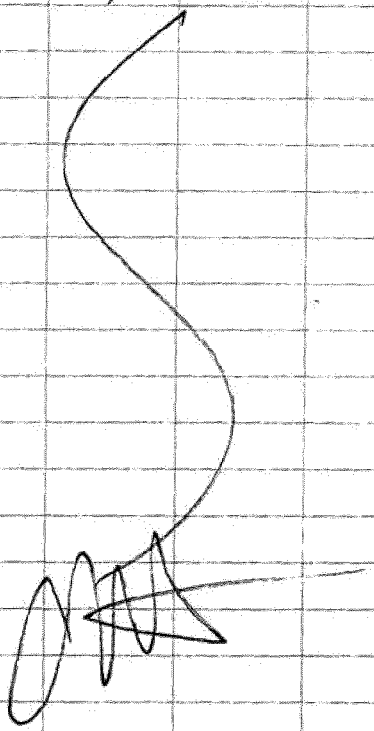
1315 - Divers walk in + retrieve KM6A ⇒ all in tact

ANC07249
BZTO104(e)007249

1415 Divers in @ RKM2

1537 Peeper Processing Complete
Return to Cathedral Park

- Call Coast Guard + tell them we are finished for the day



12/1/05

C Hawley
M Tanner
A Wood

8:30 Call Coast Guard
Call Sterritt
Call Tim Browning (let him know we are done @ KM Lynnton)

8:50 Underway to Rhone Poulenc

9:42 Diver in

9:57 Both Pairs of Peepers Recovered (9 total peepers)
RP07E
RP07E-2
* second peeper to the boat was used as a "probe" when diver was initially looking for place to deploy peepers. The peeper was only half buried & was marked by clear iron oxide staining. Peeper was not sampled

10:30 Back to Cathedral Park. Sampling Completed Call Coast Guard & Shaw

CH

ANC07250
BZTO104(e)007250

LWG
LOWER WILLAMETTE GROUP

PORTLAND HARBOR RI/FS

ROUND 2 GROUNDWATER PATHWAY ASSESSMENT TRANSITION ZONE WATER SAMPLING FIELD SAMPLING REPORT

APPENDIX C
POWER-GRAB FIELD DATA SHEETS

DRAFT

DO NOT QUOTE OR CITE
This document is currently under review by US EPA and its federal, state, and tribal partners, and is subject to change in whole or in part.

January 31, 2006

11/29/05 LWG TZW SEDIMENT SAMPLING B01-01-52B J. MOORE

0700 : ARRIVE FIELD LAB LOAD UP FOR THE DAY. MOB TO CATHEDRAL PARK.

PERSONNEL : J. MOORE, J. SUND - INTEGRAL
D. DICKINSON - MSS

SCOPE : TO SAMPLE SURFACE SEDIMENTS AT ARCO + SILTRONIC USING MSS PETER R. POWER GRAB VESSEL. COLLECTING CHEMISTRY SAMPLES ACCORDING TO THE TZW GW SEDIMENT FSP ADDENDUM + QAPP.

0730 : ARRIVE CATHEDRAL PARK, LOAD UP BOAT. READY BOAT FOR SAMPLING.

0800 : CONDUCT COMPREHENSIVE HEALTH AND SAFETY MEETING.
- CALL ARCO FOR CLEARANCE. - ACCESS GIVEN.
- CALL COAST GUARD + SHERIFF.

0900 - MOB TO ARCO - DECON ALL EQUIPMENT.

0920 - ARRIVE AR2A.

0925 - AR02A-g1 45°35.7554'N 122°46.8000'W 3.0 FT DEPTH.
White Boom extends from Arco property lines DS to ~ half way of Sand + Gravel property.
Shown on water inside Boom.

0945 End Sample @ AR2A. Jaws bent on PG due to gravel

1000 JAWS ON GRAB FIXED - DECON - MOB TO R2AR-1. MOVE INSIDE BOOM TO STATION

1019 R2AR1-g1 45°35.7312'N 122°46.7754'W 0.0 FT DEPTH
BOW AGROUND, ~~STATION~~ TARGET IS 20FT INSHORE @ BEARING 206°T

1038 R2AR1-g2 45°35.7317'N 122°46.7763'W 1.0 FT DEPTH
REPLICATE SAMPLE

11/29/05 LWG TZW Sediment B01-01-52B J. Moore

1055: ON TO R2AR2, 20' OS OF LOCATION DUE to Riprap + submerged pilings

1104: R2AR2-g1 REJECT DUE TO INSUFFICIENT MATERIAL

1106: R2AR2-g2 45°35.7026'N 122°46.7411'W 4.0 FT DEPTH
~~STATION~~ TARGET IS 22 FT INSHORE @ BEARING 209°T

1158: R2AR4-g1: Reject Due to steel rods + riprap (insufficient material) BAD GPS DATA

1203 R2AR4-g2: 45°35.6522'N 122°46.6954'W 3.5 FT DEPTH
TARGET 18 FT ALONGSHORE @ 287°T

1230: ARCO COMPLETE - LEAVE SITE, CONTACT ARCO. MOBE TO SILTRONIC.

1249 ARRIVE SILTRONIC

1254 SLT 2E-g1 REJECT; LOG IN JAW. NO GPS DATA

1302 SLT2E-g2 45°34.7569'N 122°45.3007'W 47.5 FT DEPTH

1323 SLT2A-g1 REJECT; GRAVEL IN JAW, WASHED

1325 SLT 2A-g2 REJECT; RIPRAP, WASHED

1333 SLT 2A-g3 45°34.7384'N 122°45.3194'W 15 FT DEPTH
QC collection location (3 X volume)

1405 END SAMPLE @ SLT 2A. JAWS BENT DUE TO GRAVEL; STRAIGHTEN DECON AND MOVE TO NEXT STATION

1427 SLT3F-g1 45°34.7480'N 122°45.2692'W 50 FT DEPTH

1446 SLT 4A-g1 REJECT; RIPRAP IN JAW. NO GPS OR ELECTRONIC DATA DUE TO COMPUTER FAILURE.

1451 SLT4A-g2 45°34.7083'N 122°45.2525'W 7.0 FT DEPTH
POSITION IS DEAD REACKONING; NO ACTUAL ELECTRONIC DATA DUE TO COMPUTER FAILURE. TARGET 20 FT INSHORE.

1514 SLT4F-g1 45°34.7335'N 122°45.2389'W 48 FT DEPTH

1534 SLT5A-g1 REJECT; RIPRAP IN JAW 9 FT DEPTH

1537 SLT5A-g2 45°34.6996'N 122°45.2269'W 10 FT DEPTH

1552 END SEDIMENT SAMPLING; DEPART GPS AREA FOR BOAT RAMP

1600 ARRIVE BOAT RAMP. CALL COAST GUARD + SHERIFF

1615 LEAVE CATHEDRAL PARK.

11/29/05 LWG TZW SEDIMENT B01-01-525
J. MOORE

1645: ARRIVE FIELD LAB, TAKE RINSATE SAMPLE FOR SILTRONIC & ARCO AT 1700 hrs

1730: LEAVE FIELD LAB

JM

11/29/05
1745 hrs

11/30/05 TZW SEDIMENT SAMPLING B01-01-525
J. MOORE

0715: ARRIVE FIELD LAB. LOAD UP FOR THE DAY. MOBE TO CATHEDRAL PARK.

PERSONNEL: J. SUNS J. MOORE - INTERPAC
D. DICKENSON - MOS

SCOPE: TO CONTINUE COLLECTING SEDIMENT SAMPLES FOR THE LWG GW TZW CHARACTERIZATION STUDY. AT THE ARKEMA ACID PLANT AND CHLORATE PLANT ALSO AT WILLBRIDGE.

WEATHER: COOL, DRY, LIGHT S BREEZE.

0740: ARRIVE CATHEDRAL PARK. LOAD UP PETER K.
- CONDUCT SITE SPECIFIC H & S MEETING
- CALL COAST GUARD + SHERIFF
- RECON ALL EQUIPMENT.

0845 - MOB TO ARKEMA.

0908: AP02A-g1 45°34.3195'N 122°44.6034'W 5 FT DEPTH
0931: AP02D-g1 45°34.3321'N 122°44.5833'W 25 FT DEPTH
ELECTRONIC DATA TIME INCORRECT, GPS POSITION GOOD
~~DUPLICATES AND~~ QC TAKEN STRONG PESTICIDE ODOR
LAB QC collection
1006: AP04C-g1 45°34.2856'N 122°44.5374'W 10 FT DEPTH
1029: AP04C-g2 45°34.2861'N 122°44.5386'W 10 FT DEPTH
REPLICATE GRAB SAMPLE LIGHT ODOR - PESTICIDES
1051: R2AP2-g1 45°34.2738'N 122°44.5207'W 9 FT DEPTH
1123: CP07A-g1 REJECT; WASHED, GRAVEL IN JAWS. SLOPE
1129: CP07A-g2 REJECT, WASHED, GRAVEL IN JAWS. SLOPE
1133: CP07A-g3 45°34.2180'N 122°44.4538'W 11 FT DEPTH
TARGET 20' @ BEARING 305°T.
1243: CP07D-g1 45°34.2264'N 122°44.4468'W 26 FT DEPTH
1309: CP09A-g1 45°34.1831'N 122°44.4117'W 6 FT DEPTH
TARGET 20 FT INSHORE @ BEARING 255°T
STATION ROUGHLY 30FT OFFSHORE AND DOWNSTREAM 12 INCH(?) OUTFALL PIPE

11/30/05 LWG TZW SEDIMENT B01-01-5653
J. MOORE

1336: CP09D-g1 45°34.1927'N 122°44.4029'W 27 FT DEPTH

AT CP09A collected sample for TPH-g and TPH-Dx due to visual observation of TPH odor + sheen in material (sand) ~~Hold~~ will confirm need for analysis. Location was 15-20' DS from outfall.

1400: MOBE TO WILLBRIDGE - CLEARANCE GIVEN TO SAMPLE W-9A + W-9C, BY CHEVRON AND CONOCOPHILLIPS.

1410 W09A-g1 45°33.9363'N 122°44.3056'W 7 FT DEPTH

1440 W09C-g1 45°33.9463'N 122°44.2854'W 30 FT DEPTH

1500 END SEDIMENT SAMPLING, DEPART OPS AREA FOR BOAT RAMP

1520: ARRIVE CATHEDRAL PARK - CONOCOPHILLIPS + CHEVRON CALLED TO NOTICE OF DEPARTURE.

1545: MOBE TO FIELD LAB.

1555: BELOW RUBATE - LWG2 - PG - RINSE-2 @ 1600 hrs.

1645: LEAVE FIELD LAB.

JM

11/30/05
1645 hrs

12/1/05 LWG TZW SEDIMENT B01-01-5265
J. MOORE

0715: ARRIVE FIELD LAB - LOAD UP, MOBE TO CATHEDRAL PARK.

PERSONNEL: J. MOORE, J. SAND - INTEGRAL
D. DICKINSON - MSS

SCOPE: CONTINUE SEDIMENT SAMPLING USING MSS PETER R. POWER GRAB FOR LWG TZW GW CHARACTERIZATION, AT SITES EXXON, KM LINNTON AND CASCO, TIME PERMITTING RHONE POULENC

0740: ARRIVE AT CATHEDRAL PARK, LOAD UP BOAT - PROBLEMS WITH WATER PUMP - HAVE TO CHANGE

0800: CALL FOR CLEARANCE AT EXXONMOBIL, KM LINNTON AND OLYMPIC - ALL CLEAR, ONE FUEL BARGE IN AT OLYMPIC BY 1500 hrs.
- CONDUCT SITE SPECIFIC H & S MEETING.

0930: PUMP NOT FUNCTIONING - MOBE TO KM LINNTON REGARDLESS - CALL COAST GUARD + SHERIFF.

0946: R2KM2-g1 45°36.2342'N 122°47.1212'W 38 FT DEPTH

1040: KM8A - Cannot access by boat, walk in and collect sample. Location @ waterline ~~beneath~~ in line with outfall. Collect VOAs @ station. Collect remaining in pot + homogenize/fill on boat.

1104: EM1A-g1 REJECT; RIPRAP IN JAWS, WASHED

1106: EM1A-g2 REJECT; RIPRAP IN JAWS, WASHED
LEAD LINE INDICATES IRREGULAR ROCK SLOPE; DECIDE TO MOVE ON.

1114: EM2A-g1 45°35.6096'N 122°46.6534'W 12 FT DEPTH

1138: EM3A-g1 45°35.6000'N 122°46.6434'W 11 FT DEPTH

1205: LEAVE EXXON MOB TO CASCO - CALL EXXON + KM.

12/01/05 LWGTZW SEDIMENT B01-01-525
J. MOORE

1243: GSC4A-g1 45°34.8118'N 122°45.5339'W 4 FT DEPTH

1306: GSC4A-g2 45°34.8130'N 122°45.5350'W 4 FT DEPTH
REPLICATE GRAB

1338: GSC7B-g1 ~~45°34.7661'N 122°45.4000'W~~ 5 FT DEPTH
REJECT; RIPRAP IN JAWS

1340: GSC7B-g2 45°34.7661'N 122°45.4000'W 5 FT DEPTH

1401: GSC7D-g1 45°34.7761'N 122°45.3890'W 38 FT DEPTH

1433: RP03C-g1 45°34.6081'N 122°44.9559'W 38 FT DEPTH

1457: RP07B-g1 REJECT; WOOD IN JAWS, WASHED

1500: RP07B-g2 45°34.5267'N 122°44.8694'W 29 FT DEPTH

1520: ~~DEPA~~ END SEDIMENT SAMPLING. DEPART OPS. AREA FOR BOAT RAMP. - CALL COAST GUARD + SHERIFF.

1550: ARRIVE CATHEDRAL PARK - MOBE TO LAB.

1605: ARRIVE FIELD LAB - BEGIN DAILY RINSATE
LWG2-PG-RINSE-3 @ 1620 hrs.

1645: END RINSATE.

1700: LEAVE FIELD LAB.

JM

12/01/05
1700 hrs

12/02/05 LWG TZW SEDIMENT B01-01-525
J. MOORE

0700 hrs: ARRIVE AT FIELD LAB, LOAD UP FOR THE DAY, MOBE TO CATHEDRAL PARK.

PERSONNEL: J. MOORE, J. SUNG - INTEGRAL
D. DICKINSON - MSS

SCOPE: TO CONTINUE SEDIMENT SAMPLING FOR LWG TZW GW CHARACTERIZATION AT RHONE POULENC AND GUNDERSON.

0760: ARRIVE CATHEDRAL PARK, LOAD UP BOAT, CALL COAST GUARD + SHERIFF.

0810: MOB TO RHONE POULENC
*NOTE - ACCESS GIVEN FOR RP, GUNDERSON, SHAVER AND LAKESIDE.

0840: DEPART RAMP FOR OPS AREA

0909: R2RP3-g1 45°34.5254'N 122°44.9186'W 3 FT DEPTH

0925: MOBE TO GUNDERSON

*NOTE: RP OUTFALL IN OPERATION UNTIL 0900 hrs - CAUSING NOTICEABLE HERBICIDE ODOR IN AMBIENT AIR UP TO 200 FT DOWNWIND.

0944: R2GN1-g1 45°33.6331'N 122°43.6078'W 36 FT DEPTH

1007: GN01E-g1 45°33.6130'N 122°43.6209'W 24 FT DEPTH

1036: GN02E-g1 45°33.5923'N 122°43.5911'W 28 FT DEPTH

1115: GN05A-g1 45°33.4827'N 122°43.5800'W 7.5 FT DEPTH

1141: GN05A-g2 45°33.4831'N 122°43.5788'W 7.5 FT DEPTH
REPLICATE SAMPLE

1215: END SEDIMENT SAMPLING, DEPART FOR BOAT RAMP

1237: ARRIVE AT RAMP CALL GUNDERSON / SHAVER / LAKESIDE.

12/02/05 LWG TBD SEDIMENT BD1-01-526
J. MOORE

1300 : MOB TO FIELD LAB. CALL COASTGUARD (SHERIFF.

1310 : ARRIVE FIELD LAB. PREP FOR RINSATE #4

1320 : COLLECT RINSATE LWG-2-PG-RINSE-4.

1345 : DECON ALL EQUIPMENT. DEMOBE

1400 : CLOSE FIELD LAB FOR PORTLAND OFFICE.

JM

12/02/05
1400 hrs.

ANC07256
BZTO104(e)007256

LWG GW TZW Bulk Sediment

SAMPLE LOG

Date: 12/2/05

Time	Station	Rep	Pen (cm)	Texture	Color	Debris	Odor	Sample Quality/Comments
0909	R2RP3	1	0-28	sand (f-m), subrounded tr. gravel (f), sub-rounded	brown	tr. wood frag	v. sl. naphthalene odor.	WD = 3.0' TP = 28 cm no sheen
0944	R2GN1	1	0-1 1-27	fine floc lyr silt, med plast. up to 10% f. sand	brown gray	— tr. wood frag (sm.)	none ↓	WD = 36.0' TP = 27 isolate fluorets of sheen.
1007	GN1E	1	0-1 1-21	fine floc lyr silt, high plast (clay)	brown gray	— tr. sm. wood frag	none ↓ ↖	WD = 24cm' TP = 21.0cm • isolate fluor of sheen sl. TPH odor
1036	GN2E	1	0-1 1-26	fine floc lyr silt, high plast (clay)	brown	— wood frag	— sl. TPH	WD = 28.0' TP = 26.0 cm • isolated fluorets of sheen
1115	GN5A	1	0-0.5 0.5-5.0 5.0-27	fine floc lyr sand (f-m), 30% silt silt, [illegible] sand	brown gray gray	— 10% wood frag, paint chips, uncontained fr. use (5-27)		WD = 7.5' TP = 27cm • tar paper in jaws. 1 lamprey in 0.5-5.0 light sheen (5.27cm) + mod TPH odor

Comments:

ANC07257
BZTO104(e)007257

Date: 12/2/05

SAMPLE LOG

Time	Station	Rep	Pen (cm)	Texture	Color	Debris	Odor	Sample Quality/Comments
1141	GN5A-2	1	0-0.5 0.5-5.0 5.0-27	fine floc lyr sand (f-m), 30% silt silt, up to 20% f. sand	brown gray ↓	– 10% wood frag, paint chips unconsolidated reduce		WD = 7.5' TP = 27 cm sl. TPH odor

12/2/05

Comments:

ANC07258
BZTO104(e)007258

SAMPLE LOG

Date: 12/1/05

Time	Station	Rep	Pen (cm)	Texture	Color	Debris	Odor	Sample Quality/Comments
1306	GS4A-2	1	0-1 1-26	fine floc lyr silt (med-low plast) tr fine sand, interbedded w/ up to 2cm distont. sand lenses (30% of unit)	brown gray	Milled wood	strong TPH/ tar odor	WD = 4.0' TP = 2" tar ball in top cm Mod-str. sheen
1340	GS7B	1	0-1 1-8 8-24	Sand (f-m) subrounded up to 10% f. gravel, subangular isolated riprap up to 8" Sand (med) subrounded 20% silt, silt w/ up to 10% f. sand, rounded	brown gray gray	wood frag	Mod TPH odor + sheen	WD = 5.0' TP = 24 cm 5 corbicula + tr. shell fragments
1401	GS7D	1	0-1.5 1.5-20 20-30	fine floc lyr silt, tr v.f. sand, low plast. Sand, (f-m). Subrounded 25% silt	brown gray	none	TPH sheen (mod) + blebs of free product, sl. odor	WD = 38" TP = 30
1433	RP3C	1	0-1 1-12 12-24	fine floc lyr silt, low plast. tr v.f sand sand (f-c) poorly sorted, up to 10% med gravel, subangular	brown gray	15.0' of electrical conduit in jaws	str. solv. odor (herbicide)	WD = 38.0' TP = 24 cm fluorets of sheen in sand
1500	RP7B	2	0-1 1-30	fine floc lyr silt, low plast, up to 15% f. sand, 15% up to 1cm lenses f-m sand (~~tr lenses 15% ss~~)	brown gray	15% lgt, sm wood frag in lenses	none	WD = ~~38~~ 28' TP = 30 cm Isolated fluorets sheen in sand

Comments:

12/1/05

ANC07259
BZT0104(e)007259

LWG GW TZW Bulk Sediment

SAMPLE LOG

Date: 12/1/05

Time	Station	Rep	Pen (cm)	Texture	Color	Debris	Odor	Sample Quality/Comments
0946	R2KM2	1	0-1	fine floc lyr silt, low plast. w/ tr f.gr. sand +	brown gray	tr. rootlets	none	WD = 38' TP = 30 cm isolated fluorets of sheen in silt
1040	KM8A	1	0-3	angular m-c gravel [riprap]	gray	none	none	Sample collected from shore @ waterline
			3-20	sand, med. subangular w/ up to 20% gravel (fine) subangular, 10% silt (brown)	brown			TP = 20 cm Foam in sediment
1114	EM2A	1	0-1	discontinuos med sand, subangular w/ lg. riprap	brown	non	none	WD = 12.0' TP = 15cm
			1-15	silt, w/ up to 10% f. sand, high plast.	gray	1 sm. wood fragment		isolated fluorets of sheen in silt 1 corbicula
1138	EM3A	1	0-0.5	discontinuos fine floc	brown	none	mod. TPH odor	WD = 11' TP = 27cm
			0.5-12	sand (f-m) subrounded, up to 10% f-m gravel (subrounded)	brown			1.5 sheen throughout
			12-27	sand (fm) subrounded 15% silt.	gray			
1243	GS4A	1	0-1	fine floc lyr	brown	tr. plant	strong TPH/tar odor	WD = 4.0'
			1-26	silt (med-low plast) tr. fine sand interbedded w/ up to 2cm discont. sand lenses [30% of unit]	gray	Asphalt + wood debris (roofing material?)		TP = 26 cm mod-str. sheen

Comments:

ANC07260
BZTO104(e)007260

LWG GW TZW BULK SEDIMENT
SAMPLE LOG

Date: 11/30/05

Time	Station	Rep	Pen (cm)	Texture	Color	Debris	Odor	Sample Quality/Comments
0908	AP2A	1	0-5 5-24	f. sand, up to 10% riprap angular (up to 5"), 15% silt. tr. rootlets sand (f-m), subrounded w/ 30% silt, low density	brown ↓ gray	1 bolt (metal)	none ↓ sl. pesticide odor	WD = 5.0' TP = 24 cm 4 corbicula (0-5cm)
0931	AP2D	1	0-1 1-30	fine floc lyr silt, low plast. discontinuous up to 0.5 cm lenses of fine sand w/ 40% silt. Main silt has tr. f. sand	brown gray ↓	tr. rootlets	— mod pest. odor	WD = 25.0' TP = 30 cm isolated fluorets of sheen
1006	AP4C	1	0-1 1-29	fine floc. lyr silt, tr. v.f sand low plasticity	brown gray ↓	tr. leaf litter	none sl. pest. odor	WD = 10.0' TP = 29 cm no sheen
1029	AP4C-2	1	0-1	fine floc lyr. silt, tr. v.f sand low plasticity	brown gray ↓	tr. leaf litter	none sl. pest odor	WD = 10.0' TP = 29 cm no sheen
1052	R2AP2	1	0-2 2-29cm	fine floc lyr of silt, tr v.f. sand low plast. up to 0.5 cm discon-lenses f. sand (40% silt) assoc. 20% black mottling	brown gray	- plant material 150.5 m. wood frag	— sl. pest. odor	WD = 9.0' TP = 29 cm no sheen

Comments:

11/30/05

ANC07261
BZTO104(e)007261

SAMPLE LOG

Date: 11/30/05

Time	Station	Rep	Pen (cm)	Texture	Color	Debris	Odor	Sample Quality/Comments
1133	CP7A	3	0-15	silt, no plasticity 15% concrete rip rap on sfc	brown			WD = ~~7.0'~~ 11.0' TP = 30 cm
			15-30	sand (f-m) subrounded, up to 15% fine gravel	gray-brown	some wood frag, sand blast grit (15%)	solvent odor in sand	fluorets on sand paint chips in sand
1243	CP7D	1	0-30	silt, tr. fine sand low plasticity	brown	tr. plant frag (sfc)	solvent odor throout	WD = 26.0' TP = 30 cm isolated blebs of free product (from plugs?)
1309	CP9A	1	0-1	fine floc lyr	brown	tr. leaflets paint chips sand blast grit (tr) 1 glass bottle	mod TPH odor, mod-strong sheen	WD = 6.0' TP = 26 cm
			1-19	sand (f-m), 35% silt 15% riprap up to 6"	gray			* adjacent to outfall (~25-30' DS of outfall)
			19-26	silt w/ 15% f. sand 20% blk + gray mottling	gray			
1336	CP9D	1	0-1.5	fine floc. layer	brown			WD = 27.0' TP = 30 cm
			1.5-30	silt, low plast, tr. f. sand 20-30 cm - 40% blk staining	gray		solvent odor (20-30)	no sheen
1416	W9A	1	0-1	fine floc lyr, 10% of fine gravel, subangular	l. brown	1 welding rod, yellow paint chips		WD = 7.0' TP = 23 cm
			1-23	silt, high plasticity (clay?)	gray		H_2S odor	1 corbicula

Comments:

Initial 11/30/05

ANC07262
BZT0104(e)007262

SAMPLE LOG

Date: 11/30/05

Time	Station	Rep	Pen (cm)	Texture	Color	Debris	Odor	Sample Quality/Comments
1440	W9C	1	0-1 1-30	fine floc lyr Silt, tr. f. sand low plasticity	l. brown gray-brown	none 1	— H_2S odor	WD = 30.0' TP = 30 cm Isolated fluvets of sheen

Comments:

11/30/05

ANC07263
BZTO104(e)007263

SAMPLE LOG

Date: 11/29/05

Time	Station	Rep	Pen (cm)	Texture	Color	Debris	Odor	Sample Quality/Comments
0925	AR2A	1	0-2	f-m med gr. sand rounded w/ tr. f. gravel subrounded (20% lg riprap up to 8")	brown ↓ vs ↓ gray	NO ↓ tr. wood fragments	NO ↓ mod TPH odor	WD = 3.0' TP = 23 cm
			2-23	Silt, med plasticity tr. v.f. grain sand				l. TPH sheen
1019	R2AR1	1	0-24	beach sand f-m, subrounded-rounded tr. subround gravel up to 15% silt	brown ↓	1 lg wood frag in grab teeth	sl. TPH odor + light sheen	WD = 0.0' TP = 24 cm
1038	R2AR1-2	1	0-24	f-m beach sand, subrounded-rounded tr. subrounded gravel up to 15% silt	brown ↓	NO ↓	sl. TPH odor + light sheen	WD = 1.0' TP = 24 cm
1106	R2AR2	2	0-4	f-m sand, subrounded w/ up to 30% riprap	brown ↓	no ↓	no ↓	WD = 4.0' TP = 19 cm
			4-19	Silt, low plasticity up to 10% f grained sand	gray ↓		l sh BS mod. sheen + mod TPH odor	4 corbicula
1203	R2AR4	2	0-4	f-m sand, up to 35% coarse gravel, rounded	brn ↓	metal bolt	no ↓	WD = 3.5' TP = 18 cm
			4-18	f-m sand, tr. med. grained gravel, subrounded	gray		sl. TPH odor	2 corbicula

Comments:

ANC07264
BZT0104(e)007264

SAMPLE LOG

Date: 11/29/05

Time	Station	Rep	Pen (cm)	Texture	Color	Debris	Odor	Sample Quality/Comments
1302	SL2E	2	0-1 1-20 10-21	fine floc. layer f-m sand, subrounded up to 20% silt tr. angular gravel silt, few v.f. sand low plast.	brown gray ↓ gray	none few wood frags. ↓	none ↓ tar odor	WD=47.5 TP=21cm no sheen
1333	SL2A	3	0-1 1-29	fine floc lyr silt, med plast. w/ discontinuous 1cm lenses of f-m sand	brown gray	Rip Rap (isolated) tr. sm. wood frag.	No mod acidic TPH odor	WD= 15.0' TP= 29cm 1. TPH sheen in sand lenses LAB QC collected here
1427	SL3F	1	0-1 1-24 24-30	fine floc lyr silt, (low plast. up to 10% V.f. sand sand (f-m) w/ up to 20% silt	brown gray ↓	none ↓	none 1s. fluorets ↓ v.sl. TPH odor	WD = 50.0' TP = 30 cm (1-24) isolated fluorets of sheen
1451	SL4A	2	0-0.5 0.5-12 12-18	fine floc lyr sand (f-m) subangular w/ up to 50% riprap, angular Sand (f-m), subrounded tr. fine gravel, subang.	brown ↓ gray 10% mottling l. brown	none ↓	none ↓	WD = 7.0' TP = 20cm Isolated fluorets of sheen on water corbicula shell
			16-20	silt, med. plast.	gray	↓	↓	

Comments:

ANC07265
BZTO104(e)007265

SAMPLE LOG

Date: 11/29/05

Time	Station	Rep	Pen (cm)	Texture	Color	Debris	Odor	Sample Quality/Comments
1514	SL4F	1	0-1 1-8 8-30	fine floc lyr silt, med plast, w up to 15% v.f. sand sand, med, subrounded w/ 15% silt (methane vesicles.	brown gray ↓ ↓	none ↓ ↓	none ↓ sl. TPH odor + l. sheen	WD = 48' TP = 30 cm
1537	SL5A	1	0-0.5 0.5-5.0 5-26	fine floc lyr f-m sand, subrounded 25% silt silt, med plast. up to 10% v.f sand	brown gray ↓ ↓	none ↓ ↓	slight TPH tr. sand	WD = 10.0' TP = 26 cm fluorets of sheen from sand

Comments:

11/29/05

ANC07266
BZTO104(e)007266

LWG
LOWER WILLAMETTE GROUP

PORTLAND HARBOR RI/FS

ROUND 2 GROUNDWATER PATHWAY ASSESSMENT TRANSITION ZONE WATER SAMPLING FIELD SAMPLING REPORT

DRAFT

DO NOT QUOTE OR CITE
This document is currently under review by US EPA and its federal, state, and tribal partners, and is subject to change in whole or in part.

January 31, 2006

Prepared for:
The Lower Willamette Group

Prepared by:
Integral Consulting Inc.

IC06-0002

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ANC07268
BZTO104(e)007268

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BZTO104(e)007269

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Table 2-19. Transition Zone Water and Bulk Sediment Sample Analyses – Willbridge
Table 2-20. Transition Zone Water and Bulk Sediment Sample Summary – Gunderson
Table 2-21. Transition Zone Water and Bulk Sediment Sample Analyses – Gunderson
Table 4-1. Summary of Sample Collection Deviations from the Field Sampling Planning Documents

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LIST OF ACRONYMS

CAS	Columbia Analytical Services
COI	chemical of interest
DGPS	differential global positioning system
DI	de-ionized
EDD	electronic data deliverable
EPA	U.S. Environmental Protection Agency
EQuIS	Environmental Quality Information System
FSP	field sampling plan
GPS	global positioning system
LWG	Lower Willamette Group
NAD	North American Datum
NAPL	nonaqueous phase liquid
ORP	oxidation reduction potential
PAH	polycyclic aromatic hydrocarbon
QA	quality assurance
QAPP	quality assurance project plan
QC	quality control
RI/FS	remedial investigation and feasibility study
SAP	sampling analysis plan
SOP	standard operating procedure
SVOC	semivolatile organic compound
TOC	total organic carbon
TPH	total petroleum hydrocarbon
TPH-D	diesel-range total petroleum hydrocarbon
TPH-G	gas-range total petroleum hydrocarbon
TPH-R	residual-range total petroleum hydrocarbon
TZW	transition zone water
VOC	volatile organic compound

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1.0 INTRODUCTION

This field sampling report describes transition zone water and associated bulk sediment sample collection activities performed as part of the Round 2 Groundwater Pathway Assessment for the Portland Harbor Superfund Site (Site) in Portland, Oregon. The Groundwater Pathway Assessment is an element of the remedial investigation and feasibility study (RI/FS) for the Site. The RI/FS is being conducted to investigate the nature and extent of contamination in the in-water portion of the Site, to assess potential risk to human health and the environment, and to develop cleanup alternatives.

The Round 2 Groundwater Pathway Assessment sampling activities were performed between October 3 and December 2, 2005. Except where noted, all Round 2 Groundwater Pathway Assessment sampling activities, including navigational positioning, sample collection, sample handling and processing, and data management, followed guidelines specified in the following planning documents:

- Round 2 Groundwater Pathway Assessment Sampling and Analysis Plan (SAP; Integral 2005e)
- SAP Attachment 2, Transition Zone Water Field Sampling Plan (TZW FSP; Integral 2005h)
- TZW FSP Addendum 1 (Integral 2005a)
- TZW FSP Addendum 2 (Integral 2005b)
- Round 2 Quality Assurance Project Plan supplement (QAPP supplement; Integral 2005d)
- Round 2 Groundwater Pathway Assessment Health and Safety Plan (Integral 2005c).

The SAP, TZW FSP, TZW FSP Addenda 1 and 2, and the Round 2 QAPP supplement are currently being revised. These revisions are being prepared following completion of the subject field work (completed December 2, 2005) to provide complete and final documents, which incorporate comment responses and reflect the modifications to the sampling effort agreed upon for conditional approval by U.S. Environmental Protection Agency (EPA) and their agency partners.

1.1 ROUND 2 TRANSITION ZONE WATER SAMPLING OBJECTIVES

The overall goal of the Round 2 Groundwater Pathway Assessment is to determine whether discharges of groundwater-related chemicals of interest (COIs) contribute to unacceptable risks to human health or the environment within the Site. The objective of Round 2 transition zone water sampling was to collect and analyze

samples of transition zone water to quantify concentrations of groundwater-related COIs in areas of plume discharge identified during the groundwater discharge mapping field effort.[1] Additionally, sediment samples were collected at a subset of locations where existing sediment chemical data are not available and to support chemical partitioning analysis. As described in the SAP, the following nine sites were included in the Round 2 transition zone water sampling effort:

- ExxonMobil Oil Terminal
- Gasco
- Siltronic
- Arkema Acid and Chlorate Plant
- Kinder Morgan Linnton Terminal
- ARCO Terminal 22T
- Rhone Poulenc (Bayer)
- Willbridge Bulk Fuels Terminal
- Gunderson.

1.2 REPORT ORGANIZATION

This report is organized in six sections. Section 2 provides a chronology and summary of the Round 2 transition zone water sampling activities. Section 3 documents sample collection, handling, and documentation procedures followed in the field, as well as data management procedures. All deviations from the TZW FSP (Integral 2005h) and QAPP (Integral 2005d) are noted and explained in Section 4. Finally, a brief summary of the sampling effort is presented in Section 5, followed by a list of references in Section 6. Field data sheets are provided in Appendices A, B, and C.

Note: Validated analytical results from this sampling program are not yet available.

[1] The findings of the Round 2 groundwater discharge mapping field effort are presented in the TZW FSP Addenda 1 and 2 (Integral 2005a,b).

2.0 CHRONOLOGY AND SUMMARY OF SAMPLING OPERATIONS

This section presents the chronology of the transition zone water sampling activities of the Round 2 Groundwater Pathway Assessment program, including a brief discussion of preceding events for context. An overall summary of samples collected at each site is presented in Table 2-1. Additionally, tabular and graphical summaries of all collected samples and requested analyses are presented, by site, in Figures 2-1 through 2-10 and Tables 2-2 through 2-21. Deviations in sample collection from the field sampling planning documents (Integral 2005a,b,h,d) are identified in the tables and detailed in Section 4.

2.1 ACTIVITIES PRECEDING ROUND 2 TRANSITION ZONE WATER SAMPLING

Prior to development of the Round 2 Groundwater Pathway Assessment SAP (Integral 2005e), a pilot study was conducted in late 2004 and early 2005 to evaluate selected groundwater discharge mapping tools and transition zone water sampling methods under realistic field conditions (Integral 2004). Results of the pilot study, presented in the Groundwater Pathway Assessment Pilot Study Data Report (Integral 2005f) and discussed in the TZW FSP Attachments 1 and 2 (Integral 2005g,h), were used to develop the Round 2 Groundwater Pathway Assessment approach to transition zone water sampling design.

Based on findings of the pilot study, a two-step approach was developed and applied to collect transition zone water and sediment samples for the Round 2 Groundwater Pathway Assessment. In the first step, potential areas of groundwater discharge were identified through discharge mapping. Discharge mapping consisted of an assessment of existing site upland and in-water hydrogeologic and chemical data, followed by collection of stratigraphic coring data, transect-based discharge mapping (temperature and conductivity measurement using the Trident Probe), and discharge verification measurements using seepage meters. Additionally, screening samples of transition zone water were collected at a subset of locations for preliminary screening-level chemical analysis of select groundwater COIs. The results of the discharge mapping effort and the selection of the transition zone water sampling locations are presented in Addenda 1 and 2 to the TZW FSP (Integral 2005a,b).

The purpose of groundwater discharge mapping was to identify locations for transition zone water sampling, which was the second step of the Round 2 Groundwater Pathway Assessment. Based on findings of the pilot study, two complementary transition zone water sampling techniques were selected for the Round 2 data collection: Trident sampling and small-volume peeper sampling. Additionally, bulk sediment sample collection by the power grab sampler was planned to address sediment characterization data gaps in the vicinity of transition

zone water sampling locations. A brief description of the Trident, small-volume peeper and power grab sampling techniques is provided in Section 3, and detailed discussion of these techniques is presented in the Pilot Study Field Sampling Plan (Integral 2004) and in the TZW FSP (Integral 2005h).

The Round 2 Groundwater Pathway Assessment sample collection by the Trident, small-volume peeper, and power grab sampling techniques was performed between October 3 and December 2, 2005. The following sections provide a summary description of the sampling conducted by each of these three methods, as well as the chronology of the sampling activities.

2.2 TRANSITION ZONE WATER SAMPLING BY TRIDENT PROBE

Trident sampling was completed between October 3 and October 28, 2005. In accordance with the TZW FSP (Integral 2005h), locations targeted for transition zone water sampling which had coarse- to moderately coarse-grained sediment textures were first attempted using the Trident probe positioned at a depth of 30 cm below the mudline. If sufficient flow rates (>20 mL/min) could not be achieved at a given location, sampling by Trident was abandoned, and the location was later targeted for sampling by small-volume peepers. Trident sampling was also attempted at locations specified in the planning documents (Integral 2005a,b,h) for transition zone water collection at a depth of 90 to 150 cm below the mudline. Small-volume peeper sampling was not targeted at the 90- to150-cm depth locations where the Trident yielded insufficient flow to collect samples due to the inability to deploy the peeper samplers at depths below 38 cm.[2] Field measurements of select water quality parameters were collected at all Trident locations as specified in the TZW FSP (Integral 2005h). In addition to the specified field parameters of pH, conductivity, and turbidity, temperature and oxidation reduction potential (ORP) were also measured at most sampling locations.

Samples collected by the Trident are presented along with other sampling methods, by site, in Figures 2-1 through 2-10 and in Tables 2-2 through 2-21. The tables include information on sediment texture observations, coordinates, purge rates, river water depth, transition zone water sample depth below the mudline, and chemical analyses requested from the laboratory. Copies of the original field data sheets are presented in Appendix A. In all, 191 transition zone water samples, including replicate samples and paired filtered samples, were collected at a total of 80 distinct locations. Of these 191 samples, 155 samples were collected by the

[2] Peepers are manually inserted into the sediment by a diver. Burial of the peepers at depths greater than 38 cm would require significant excavation, resulting in severe disturbance of the surrounding sediments and likely loss of fine materials.

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Trident probe (the remaining 36 samples were collected by small volume peepers[3], discussed in the following section). Of the Trident probe samples, 117 were collected at 30 cm depth below the mudline and 38 were collected at 90 to 150 cm depth below the mudline. Paired filtered samples were collected at 78% of the target Trident samples, resulting in 57% collection of paired filtered samples across the target transition zone water sampling effort.

Sample collection by Trident at 30-cm depth was more successful than anticipated in fine-grained sediments due to simultaneous use of two adjacent Trident sampling points at this sampling depth. This effectively doubled the achievable flow rate, increasing the number of locations meeting the sampling cutoff of 20 mL/min. This procedural modification/improvement is discussed further in Section 3.2.

2.3 TRANSITION ZONE WATER SAMPLING BY SMALL-VOLUME PEEPERS

In accordance with the TZW FSP (Integral 2005h), initiation of transition zone water sampling using small-volume peepers was staggered behind the Trident sampling to allow for deployment of peepers at the 30-cm locations where the Trident system could not meet the specified flow rate. Small-volume peepers were deployed in two mobilizations and, following equilibration, were retrieved in two subsequent mobilizations. Sampling of transition zone water by small-volume peepers was performed at all study sites except ExxonMobil, where the Trident successfully collected all targeted samples. All sampling locations are shown on Figures 2-1 through 2-10. Samples are listed individually in Tables 2-2 through 2-21, along with sample information details and requested analyses.

The first peeper deployment took place October 17 through 20, 2005. 17 sets of peepers (a total of 89 individual small-volume peeper devices) were installed during this first deployment offshore of the ARCO, Siltronic, and Arkema (former Acid Plant and Chlorate Plant areas) sites. The peepers were allowed to equilibrate for three weeks, and then retrieved between November 14 and 18, 2005.

The second deployment mobilization took place October 31 through November 3, 2005. 19 sets of peepers (a total of 78 individual small-volume peeper devices) were deployed during this phase offshore of the Kinder Morgan, Gasco, Rhone Poulenc, Willbridge, and Gunderson sites. The peepers were allowed to equilibrate for three weeks, and then retrieved between November 28 and December 1, 2005.

Of the 36 sets of small-volume peepers deployed, nine were replicates (one replicate pair was deployed at each site where peeper sampling was performed). In

[3] All 36 small-volume peeper sampling locations represent sediment textures not conducive to Trident sampling. Several of these were first attempted with the Trident; however, due to schedule limitations, locations where sediment textures were well-known were not attempted with the Trident.

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accordance with the TZW FSP (Integral 2005h), no filtered samples were collected from the small-volume peepers due to volume limitations.

2.4 BULK SEDIMENT SAMPLING BY POWER GRAB SAMPLER

To avoid disturbance/damage of the peepers during the equilibration period, collocated bulk sediment sampling was not performed at a given site until the peeper retrieval was complete. The bulk sediment sampling took place between November 29 and December 2, 2005. The sediment samples were collected from transition zone water sampling locations where bulk sediment chemistry data results were not available within approximately 50 feet for a similar sediment type.

A total of 38 bulk sediment samples were collected by power grab sampler across the nine study sites, with two to six locations sampled at each site. Of these, four were replicate samples. Power grab sampling locations are shown on Figures 2-1 through 2-10. Samples are listed individually in Tables 2-2 through 2-21, along with sampling depths and requested analyses.

3.0 FIELD SAMPLING PROCEDURES

The following sections summarize the procedures and methods used to collect transition zone water and bulk sediment samples for the Round 2 Groundwater Pathway Assessment. Detailed procedures specified in the standard operating procedures (SOPs) in the TZW FSP (Integral 2005h) are briefly summarized or referenced here to provide context for documentation of additional details of implementation. Specifically, on-water logistics, sample collection procedures, quality assurance/quality control procedures, sample handling, and data management are described as implemented in the sampling effort. All sampling procedures followed the specifications of the TZW FSP (Integral 2005h), except as noted in Section 4.0, which summarizes deviations from the planning documents.

3.1 SAMPLING VESSELS, NAVIGATION, AND POSITIONING

One sampling vessel was used for the Trident probe transition zone water sampling. Coastal Monitoring Associates provided a 20-foot Carolina skiff fitted with a 90-horsepower engine and a cabin to store a computer-integrated differential global positioning system (DGPS) navigation system and all sampling equipment. Bow and stern anchors were deployed to hold the skiff on position at each sampling location during sampling. The foredeck was used for Trident probe deployment and as a peristaltic pump and sample collection staging area. At each Trident probe sampling location, the DGPS receiver was placed on top of the Trident base stabilizing poles, and remained in place for the duration of sampling at that station. Mean coordinates were calculated and recorded on the field data sheets (Appendix A).

For the small-volume peeper sampling, Research Support Services provided a 24-foot aluminum boat fitted with a removable shelter, A-frame, winch, and Garmin GPS/chartplotter and Nobeltec navigation software. The boat was either tied to pilings or bow and stern anchors were deployed, as needed, to maintain the boat's position at each sample location. The foredeck was used for diver staging, diver line tending, peeper deployment/retrieval, and sample processing. A 12.5-foot inflatable boat was tied to the main vessel and was used for extra equipment storage and sampling crew transport.

For the bulk sediment sampling, Marine Sampling Systems provided the power grab sampling device as well as the research vessel *Peter R*, a flat-deck, 26-foot catamaran with twin, 120-horsepower engines. The *Peter R* is equipped with a hydraulically operated A-frame with a boom, a 1,000-lb capacity hydraulic winch, and a computer-integrated DGPS navigation system. The DGPS receiver was situated on top of the A-frame over the sampling equipment to record the most accurate position for each sample. A position was recorded when the sampling

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device first impacted the sediment surface. Horizontal positions were acquired using a Trimble AG132 DGPS.

On all three research vessels, the DGPS receiver outputs station positions to the integrated navigation software package. The GPS receiver displayed and transmitted data to the computer in North American Datum 1983 (NAD83) geographic coordinates (latitude/longitude). The integrated navigation system, acting as a data manager, displayed the vessel's position relative to a proposed sampling location in plan view on an onboard video screen. The screen display and numeric navigation data, including range and bearing to the target sampling location, assisted the vessel operators in approaching and maintaining a station position while sampling. The actual geodetic coordinates for all locations sampled were used for generating Figures 2-1 through 2-10, and are included in the even-numbered sample location summary Tables 2-2 through 2-20.

3.2 TRIDENT SAMPLING AND DOCUMENTATION

The Trident probe is a simple, direct-push system equipped with temperature, conductivity, and water sampling probes. Transition zone water is collected through a small-diameter, Teflon®-coated, stainless-steel probe. The tip of the probe holds a sample port covered by a small mesh stainless-steel screen. Aluminum poles were used to drive the Trident probe to the desired depth in the sediment. Water is drawn through tubing connected to the sampling probe using a peristaltic pump. A clean sand pack was placed over the sampling probe prior to collection of each sample to minimize clogging of the intake by silt and clay.

The Trident probe was used to collect transition zone water samples at a depth of 30 cm below the mudline, as well as samples at depths of 90 to 150 cm below the mudline at a subset of locations. A minimum transition zone water purge rate of at least 20 mL/min, as specified in the TZW FSP, was required in order to minimize the loss of volatile chemicals from the water samples during sample collection. At sample locations sampled at 30-cm depth where low-permeability sediments (silts, clays) resulted in purge rates of less than 20 mL/min, the Trident probe was repositioned a maximum of 2 times within 10 feet of the target location and the purging process repeated. If low yield rates persisted following repositioning, the location was scheduled for sampling with small-volume peepers. If purge rates at 90- to 150-cm depths could not meet the 20-mL/min minimum requirement after three attempts, the station was abandoned (small-volume peeper sampling could not be performed at this depth). Specific Trident sampling deviations from the FSP are detailed in Section 4.0.

Prior to collection of each sample, the Trident probe was washed with Alconox™ and rinsed with de-ionized (DI) water. The stainless steel screens and sampling ports were fully decontaminated following the procedures detailed in the TZW FSP

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(Integral 2005h). Additionally, at each sample station, a new sand pack, which had been triple-rinsed with DI water, was placed around the Trident sample intake point. To minimize sample cross-contamination, the nitrile gloves worn by the crew were replaced between each sampling location. Decontamination rinse waters were discarded into the river.

Integral staff recorded field activities and observations in bound field logbooks. This information included personnel, date, time, station designation, sampler type, sample collection specifics, and general observations. Any deviations from the TZW FSP were also documented in these field logbooks.

A sample collection log sheet was completed following sampling operations at each station (Appendix A). This log sheet included station designations, types of samples to be collected, and any other relevant sampling information (e.g., collection of field replicates, additional sample volumes for laboratory quality control, etc.). Water quality parameters were also recorded on these log sheets during Trident probe sampling. Additionally, samples collected by Trident probe and requested analyses are detailed in Tables 2-2 through 2-21.

3.3 SMALL-VOLUME PEEPER SAMPLING AND DOCUMENTATION

The small-volume peepers used during Round 2 transition zone water sampling are commercially available, 6-inch × 18-inch plate peepers, manufactured by Rickly Hydrological Company. Each plate peeper is equipped with 28 rows of sample ports ranging in volume between 3.5 and 9 mL, and is capable of collecting a total of approximately 225 mL of water over a 38-cm sediment depth. The peepers were fitted with an approximate 5-µm Teflon® membrane.

Prior to deployment, the new small-volume peepers were decontaminated using Alconox™ and DI water (DI water for peeper rinsing and soaking was provided by Cedar Canyon). Following decontamination, the peepers were filled with anoxic DI water. The entire peeper assembly was maintained in an anoxic (argon-sparged) water bath until immediately prior to deployment. The small-volume peepers were deployed manually by a diver, using hand strength or a small mallet to push the peepers directly into the sediments such that the uppermost sampling port was just below the sediment mudline. Two to six peepers were deployed at each sampling location, as necessary, to achieve sufficient total sample volume for required analyses. Peepers were deployed in a grid pattern, separated by 2 ft in each direction. Each grid was 2 ft wide (one peeper on each end). The grid length depended on the number of peepers to be deployed, with each separated by 2 ft.

All of the peepers were left in place to equilibrate for a 3-week period, after which they were retrieved by a diver. Water was then extracted from each of the sample ports of each peeper by inserting a new, sterile syringe needle through the

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membrane and extracting the water into a syringe. The water in the syringe was then discharged to the appropriate sample bottle. Each sample bottle was filled with water from sample ports distributed across the entire set of peepers to ensure that the composite sample was representative of the entire 38-cm vertical depth, as well as integrated laterally. Laminated, prefabricated extraction templates, specific to each site and analyte list, were used to guide the extraction, and were found to greatly increase processing efficiency.

Integral staff provided onboard project oversight, performed all sample collection activities once peepers were retrieved to the surface, and recorded field activities and observations in bound field logbooks. This information included personnel, date, time, station designation, sampler type, sample collection specifics, and general observations. Any changes or deviations from the TZW FSP were documented in these field logbooks. Small-volume peeper field notes are presented in Appendix B. Samples collected by small-volume peepers and requested analyses are detailed in Tables 2-2 through 2-21.

3.4 BULK SEDIMENT SAMPLING AND DOCUMENTATION

Bulk sediment sampling was performed using a commercially available, stainless steel, hydraulic power grab sampler with footprint area of 0.3 m^2 and a sample depth of up to 30 cm. The targeted surface sediment sampling interval was 0 to 30 cm below the sediment-water interface, with a minimum acceptable penetration depth of 20 cm.

Once an acceptable grab sample was obtained, overlying water was siphoned off the top of the grab. An experienced Integral staff geologist described the contents of the grab and recorded the description onto a sample log sheet. Sample time, penetration depth, texture/grain size, sediment color, notable odors, debris, and sample quality were recorded on the timesheets. The log sheets are provided in Appendix C.

With a minimum penetration depth of 20 cm into the sediment, a single cast of the power grab sampler provided adequate sediment volume for all required analyses. Once logged, samples for volatile organic compounds (VOCs), gasoline-range total petroleum hydrocarbons (TPH-G), and/or total sulfides were subsampled directly from the grab with a small stainless-steel spoon prior to homogenization, and placed directly into the appropriate sample jars. Sediments for these subsamples were collected as a vertically integrated sample from the top to the bottom of the grab. Following collection of the sample for volatiles analysis, 3 liters of sediment were removed from the power grab sampler using a spoon and placed in large stainless-steel bowl for mixing. The sample was mixed using the spoons until it was fully homogenized (i.e., a uniform color and texture) and subsamples were then transferred to the appropriate glass sample jars provided by the analytical

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laboratory for chemical analyses. Decontamination procedures for all sample handling and homogenization equipment (e.g., stainless-steel spoons and bowls) followed procedures described in the TZW FSPs.

Integral staff provided onboard project oversight, performed all sample handling, and recorded field activities and observations in bound field logbooks. This information included personnel, date, time, station designation, sampler type, sample collection specifics, and general observations. Any deviations from the TZW FSP were documented in these field logbooks. Sample and lithologic observations recorded during the power grab bulk sediment sampling are presented in Appendix C. Samples collected by the power grab sampler and requested analyses are detailed in Tables 2-2 through 2-21.

3.5 QUALITY ASSURANCE/QUALITY CONTROL

Field quality assurance/quality control (QA/QC) samples were collected in accordance with the specification in the TZW FSP and Addendum 1 and 2. The QA/QC sampling program consisted of rinsate samples, replicate samples, additional sample volume for lab QA work, and trip and temperature blanks. All field-collected QC samples are presented in Tables 2-2 through 2-21, and described further below.

Rinsate samples (equipment rinsate blanks) for the Trident system were collected in the field, following equipment decontamination procedures. Equipment rinsate blanks were collected from the peepers using different two methods: one for VOC analytes, and one for non-VOC analytes. New peepers received from the supplier were cleaned in accordance with decontamination procedures prior to sampling. For the peeper VOC rinsate, one peeper was cut into six sections and placed in a 32-ounce, clear, wide-mouth jar filled with DI water and sealed with a Teflon®-lined cap. After four weeks, the water in the jar was transferred to VOA vials for VOC analysis. For the non-VOC peeper rinsate, two whole peepers were soaked in DI water in large, sealed Teflon® bags for one month. At the end of this equilibration period, the water was sampled and submitted to the laboratory. No rinsate samples were collected as part of the power grab sampling program (as specified in the TZW FSP).

Replicate samples were collected with the Trident samples at the specified frequency of one per site for the 30-cm sampling depth. At the 90- to 150-cm sampling depth, only three replicate samples could be successfully collected due to limitations in the ability to produce adequate sample volume. TZW FSP Addenda 1 and 2 (Integral 2005a,b) specify that replicates at 90- to 150-cm sampling depth will be collected at a frequency of one per site, where possible. For the sediment sampling by power grab sampler, four replicate samples were collected, meeting the 10% replicate requirement specified in the TZW FSP.

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Due to transition zone water volume limitations associated with the Trident and small-volume peeper sampling techniques, the sample volumes collected were limited to the least amount required to meet required minimum reporting limits. To allow for complete internal laboratory QA/QC work, additional volume (typically tripling the minimum volume) is required. Additional volume for internal laboratory QA/QC was provided for Trident samples at a frequency of one per site, as planned. Also, as planned, no additional volume for laboratory QA/QC was provided as part of the peeper sampling due to even more restrictive volume limitations.

Laboratory-provided trip blanks and temperature blanks were included in all sample coolers and were submitted to the laboratory for analysis, as specified in the QAPP (Integral 2005d).

3.6 SAMPLE IDENTIFICATION, HANDLING, STORAGE, TRANSPORT, AND CUSTODY

All samples were assigned a unique identification code, as described in the FSP, based on a sample designation scheme designed to meet the needs of field personnel, data management and data users. This code indicates the project phase, sample type, and level of replication/duplication. Station location identification numbers for each target location are listed in Tables 2-2 through 2-21 and mapped in Figures 2-1 through 2-10.

Trident probe water samples, small-volume peeper water samples, and bulk sediment samples were collected as described in Sections 3.2, 3.3 and, 3.4, respectively. Following collection, transition zone water sample containers were capped and labeled. Similarly, sediment sample jars were capped, labeled, and individually bagged. All samples were stored in a cooler on ice until the end of each day, when samples were either stored in secured refrigerators at the field laboratory located in Portland (3247 NW 29th Avenue) or were shipped on ice directly to the analytical laboratory.

Samples were packed for shipping to prevent breakage and were separated in the shipping container by bubble wrap and/or other shock-absorbent material. Loose ice was then placed in the cooler to maintain a temperature of approximately 4°C. Sample chain-of-custody forms were established in the field for each sample prior to shipment, and copies of chain-of-custody forms were placed into a zip-locked bag and taped on the inside lid of each cooler. A complete set of the project chain-of-custody forms were kept in the project file at Integral's Portland, OR office. Each cooler was sealed with shipping tape and three chain-of-custody seals, which included the project name, date of shipment, and the name of the person sealing the cooler. Samples were transported directly to the analytical laboratory by a courier

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provided by the laboratory. Shipments were typically made within 48 hours of sample collection.

3.7 DATA MANAGEMENT

Laboratory analysis and data validation of Round 2 transition zone water and sediment samples is anticipated to be completed near then end of February 2006. This section describes data management procedures that will be followed to manage laboratory data.

Following internal laboratory QA/QC procedures, analytical data (including sample identifiers and results) will be exported into comma-delimited text files designed for recognition by the project's Environmental Quality Information System (EQuIS) database. These text files will be sent to Integral as electronic data deliverables (EDDs). Upon receipt, EDDs will be checked for proper EQuIS structure, and will be appended with additional information (e.g., sampling location, field replicate and split information, etc.). Any problems identified in the structure of the EDDs will be reported to the laboratory, and the EDDs were subsequently corrected and resubmitted. Each EDD transmission, along with the original, unaltered EDD attachment, will be stored to document and track all electronic data submissions. Accuracy of completed EDDs will be verified electronically in EQuIS.

The electronic verification process incorporates checks for correct lookup codes (such as for analytes, test methods and sample matrices) and proper relationships for results, tests, batches and samples. The process also checks that all derived samples (such as replicates, splits, and matrix spikes) had corresponding parent samples. In addition, EQuIS verifies other characteristics, such as date and time formats and text field lengths, to ensure consistency throughout the database. Any errors would prevent the EDD from loading until the error was corrected. Errors related to laboratory reporting or EDD construction will be corrected by the laboratory, and the EDD will be subsequently resubmitted. All successfully loaded EDDs will be saved in order to document and track all data loaded into Integral's Lower Willamette Group (LWG) project database.

Each verified EDD will be provided to the Round 2 data validation contractor (EcoChem, Seattle, WA) for data review and validation. Throughout the validation process, qualifiers and reason codes will be applied to the data in the temporary section of the database. The validated data will then be merged into the permanent project database. During the merging process, all previously performed electronic checks were repeated. The data will also be translated into a form compatible with NOAA's Query Manager. Integral's LWG permanent project database will contain all final data reported by the analytical laboratory, including field and lab replicates, lab dilutions, results for the same analyte from multiple analytical

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methods, and laboratory QA samples such as matrix spikes, surrogates, and method blanks.

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4.0 Deviations from the Round 2 Transition Zone Water Field Sampling Plan

This section presents all deviations from the TZW FSP (Integral 2005h) and supporting planning documents, including Addenda 1 and 2 (Integral 2005a,b), and QAPP supplements (Integral 2005d; Integral, in press). Deviations from planned sampling methods, sample collection, and laboratory procedures are presented in the following sections.

4.1 SAMPLING METHOD DEVIATIONS

In the field, there were two deviations from the sampling methods described in the SOPs in the TZW FSP (Integral 2005h). Both deviations were performed to allow for sample collection where sampling would have otherwise not been possible. These two deviations are described below:

- To increase the production flow rate of transition zone water from the Trident system, two sampling points (instead of one) were attached at 30-cm depth settings to the mounting base. The two intake points were identical and included Teflon®-coated, stainless steel probes, with a sample port at the base consisting of a slot covered by a small mesh (241-µm) stainless-steel screen. The two probes fed into the same outlet tubing via a Teflon®-lined 'T' valve. This allowed the suction pressure to drop by half on each of the sediment interface screens while maintaining the same pump rate. This modification is responsible for the better-than-anticipated sampling success of the Trident tool in fine-grained sediments at the sampling depth of 30 cm. It is possible that such a modification may have also been applied for the deeper samples (90 – 150 cm); however, only one sample intake was available for these deeper samples (fabrication of this equipment was special-ordered for this project). The modified two-intake setup was used at all 30-cm depth Trident sampling locations.
- During bulk sediment sampling activities with the power grab sampler, it was discovered that proposed sediment sampling station KM-8-A (at the Kinder Morgan site) was inaccessible to the sample vessel due to obstruction by facility dock pilings. Therefore, the boat-mounted power grab system could not be used. To allow for sampling of sediment at this location, the boat was beached near the target location to allow sampling crews to go ashore. The sampling crews used a hand-held DGPS to pinpoint the target location, and then proceeded to collect a sediment sample using clean, stainless-steel sampling spoon and bowls. The station was shallow enough to allow for the top 30 cm of sediment to be removed manually and placed in the stainless-steel bowls. The sample was then processed in the same manner as the power grab samples.

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4.2 SAMPLE STATION LOCATION DEVIATIONS

This section describes deviations from the target sampling locations. Deviations in collection of samples (planned samples which were not collected) are described in the following section (4.3). Most samples were successfully collected within 25 feet of the target locations. The exceptions to this are listed and briefly discussed below:

- **SLT1-A** – The 30-cm transition zone water sample from SLT1-A at the Siltronic site was collected by Trident at a position roughly 50 feet offshore of the target location (see Figure 2-4). This slight positioning error was not discovered until the actual positions were plotted. According to the field notes, the sample was collected from the targeted, near-shore sand zone, though it was a bit farther offshore than intended.
- **W-09-A** – The 30-cm transition zone water sample from W-09-A at the Willbridge site was collected by Trident at a position roughly 30 feet offshore and downstream of the target location (see Figure 2-9). This slight positioning error was not discovered until the actual positions were plotted.
- **RP-07-E** – In accordance with the letter of conditional approval received by EPA on October 13, 2005 (EPA 2005, pers. comm.), RP-07-E at the Rhone Poulenc site was targeted as far offshore as practicable; however, due to gravel encountered by the diver deployment of the peeper devices, the small-volume peepers could not be deployed farther offshore than the original RP-07-E target location.
- **EM-06-B** – The 30-cm transition zone water sample from EM-06-B at the ExxonMobil site was collected by Trident at a position roughly 50 feet upstream of the target location (see Figure 2-8), due to concern for the sampling vessel given the presence of pilings near the target location.

4.3 SAMPLE COLLECTION DEVIATIONS

Most of the targeted transition zone water and sediment samples were collected and submitted for analyses as planned. There were, however, a number of deviations from the plan either from in ability to collect samples or inability to collect adequate volume for analysis of all analytes. Nearly all of these deviations were attributable to access limitations (primarily due to in-water remedial activities at the Gasco site) or inability of the sampling tools to produce adequate sample

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volume[4]. In one instance (RP-03-C), however, incorrect analyses were unintentionally specified on the chain-of-custody form submitted to the laboratory[5]. All deviations and associated explanations are documented in Table 4-1.

4.4 LABORATORY ANALYSIS DEVIATIONS

A complete set of results has not yet been received from the analytical laboratory [Columbia Analytical Services (CAS); Kelso, WA]. As such, a complete account of any deviations from the planned laboratory analyses is not yet available. To date, the laboratory has reported only one case of deviation from the QAPP (Integral 2005d). Because of the extremely high salinity in transition zone water samples collected from the Arkema site, ranging from 1.2 to 106.2 mS/cm, the laboratory specified the need for additional sample volume for metals analyses. Specifically, on October 11, 2005, CAS indicated that they required a minimum volume of 620 mL for analysis of metals in high salinity samples. The previous target volume was 120 mL. The additional sample volume was needed to perform a combination of procedures including pre-treatment by reductive precipitation (EPA 1640)/6020 analysis, as well as alternate methods for selenium analysis (selenium by graphite furnace atomic absorption spectrometry or hydride).

At the time that this request was received from the laboratory, the field crews were in the process of collecting Trident transition zone water samples at the Arkema site, and were immediately directed to target 620 mL for metals analyses at all remaining Arkema locations. Dilution at the laboratory may be necessary for samples collected prior to the updated volume requirements, which will affect the sample detection limits. The appropriate additional volume was collected in the peeper samples at the Arkema site, which were deployed on October 18, following the October 11 notification from the lab regarding the need for additional volume. Final detection limits, reporting limits, and analytical methods used are not yet available from the analytical laboratory.

[4] Volume limitations were anticipated in the TZW FSP (Integral 2005h), particularly for the 90- to 150-cm samples for which backup small-volume peeper sampling was not possible. These are listed with unanticipated deviations to provide a complete documentation of volume limitation issues.

[5] The chain of custody was completed incorrectly for 30 cm and 90+ cm Trident samples for the RP-03-C location. Specifically, pesticides analysis was indicated (though herbicides were also circled). The lab did not recognize the conflicting direction and analyzed the samples for pesticides, consuming all sample volume collected for analysis of herbicides.

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5.0 Summary of Round 2 Groundwater Pathway Assessment Sampling Activities

The objective of Round 2 transition zone water sampling was to collect and analyze samples of transition zone water to quantify concentrations of groundwater-related COIs in areas of plume discharge identified during the groundwater discharge mapping field effort. Additionally, sediment samples were collected at a subset of locations to support partitioning analysis. As described in the SAP, the following nine sites were included in the sampling effort:

- ExxonMobil Oil Terminal
- Gasco
- Siltronic
- Arkema Acid and Chlorate Plant
- Kinder Morgan Linnton Terminal
- ARCO Terminal 22T
- Rhone Poulenc (Bayer)
- Willbridge Bulk Fuels Terminal
- Gunderson.

A total of 191 transition zone water samples were successfully collected at 80 locations using the Trident probe and small-volume peepers. At total of 38 sediment samples from 34 locations were successfully collected using the power grab system. An overall summary of samples collected at each site is presented in Table 2-1. Additionally, tabular and graphical summaries of all collected samples and requested analyses are presented by site in Figures 2-1 through 2-10 and Tables 2-2 through 2-21.

The sampling program was completed between October 3 and December 2, 2005, and was conducted in close accordance with the sampling plans described in the TZW FSP documents (Integral 2005a,b,h) as well as the QAPP (Integral 2005d; Integral, in press). Deviations were primarily limited to access issues at the Gasco site and anticipated volume limitations in transition zone water sampling.

All sample analyses for this project are being conducted by CAS. Laboratory data will be provided to the Round 2 data validation contractor (EcoChem, Seattle, WA) for data review and validation.

6.0 REFERENCES

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RESEARCH NOTEBOOK

Vegetables, fruit can ...risk of breast cancer

...nd science agree: Eating your ...s good for you. It could even ...ge breast cancer.
...n Shannon, a researcher at ...Health & Science University, ...the conclusion after studying ...n 1,400 women working for a ...m in Shanghai, China. The ...completed detailed surveys ...eir eating habits and their ...festyle. Shannon compared ...ers of 378 women who had ...ncer with those of 1,070 can...peers, presenting the results ... at an Arizona cancer re...nference.
...n who ate more than four ...of fruits and vegetables a day ...t half the risk of developing ...ncer as women who ate two ...servings, Shannon said. That ... when Shannon adjusted the ...on for known breast-cancer ...rs, such as whether they have ...ldren, and other diet factors, ...meat and fat consumption. ...rveys hinted that some fruits ...ies might have extra cancer-...e power, especially persim... lotus root. But Shannon ...de mix of fruits and vegeta...ed best overall.

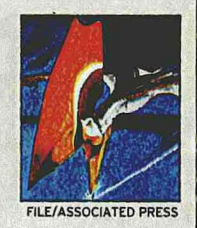
...mineral suggests Mars ...d no water for ages

...esence of a common green ...on Mars suggests the planet ...ve been cold and dry for more ...llion years, according to a ...he Oct. 24 issue of the journal

...Hoefen, a geophysicist with ...Geological Survey, led a re...am that found abundant ...s of olivine on Mars. They got ...a from an instrument on the ...bal Surveyor spacecraft. ..., a transparent, green-col...eral, readily alters to other ... in the presence of water. ...am detected an 18,720-...ile area rich in olivine in the ...ae region of Mars. ...mount of olivine exposed at ...ce indicates there has been ...o weathering caused by wa...

...n of one gallon of gas ...ns of plant material

...98 tons of prehistoric, buried ...terial is required to produce ...on of gasoline, a study indi...



FILE/ASSOCIATED PRESS

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...iled by Richard L. Hill

Getting to the bottom of the WILLAMETTE

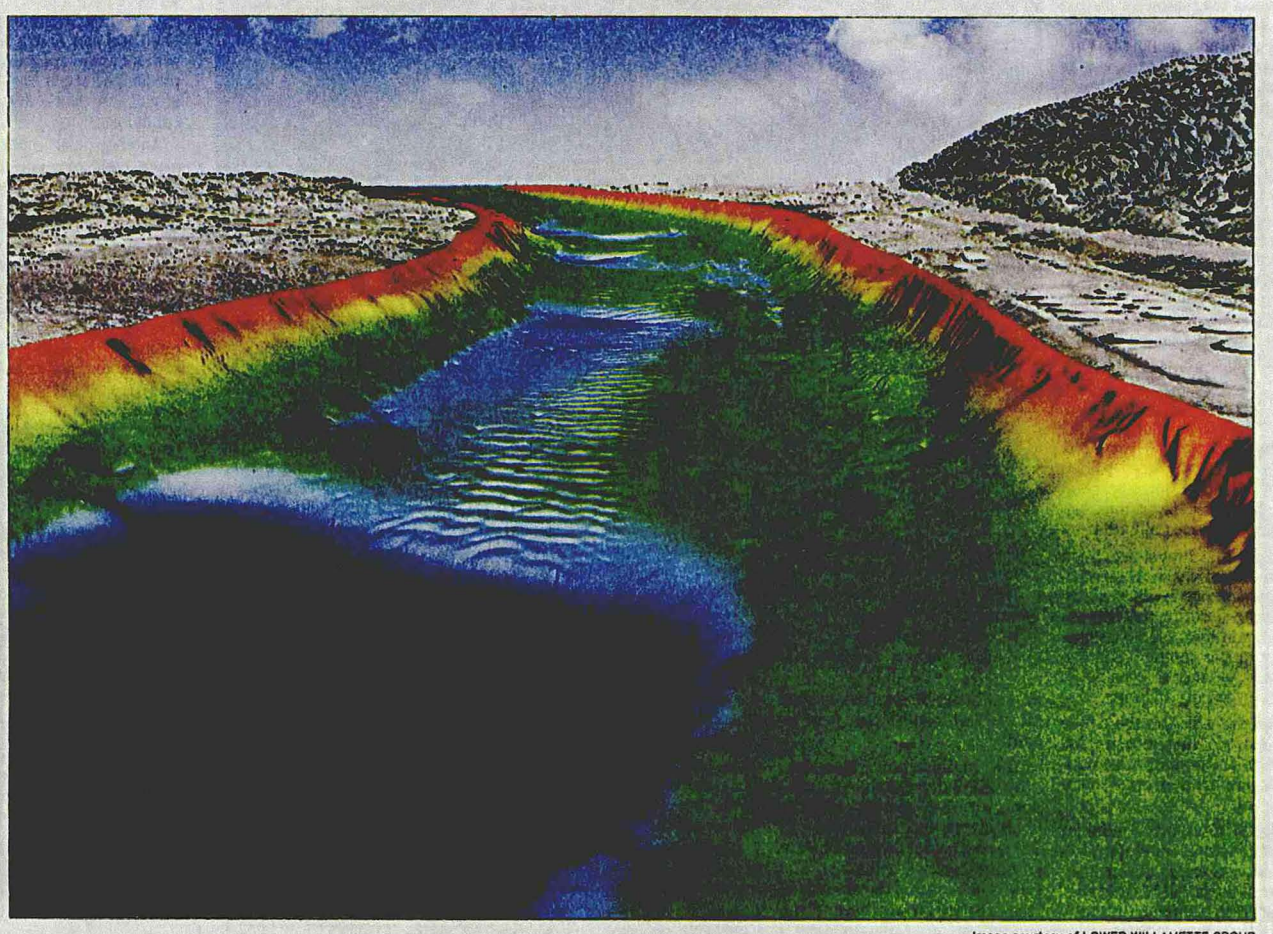


Image courtesy of LOWER WILLAMETTE GROUP

A computer-generated image shows the bed of the Willamette River looking south toward Portland, with St. Johns on the left and Forest Park on the right. The detailed image, made using a multibeam sonar system that mapped the river bottom, shows sand waves in the center that are similar to dunes on land. The 30-foot-deep hole (lower left) in front of Terminal 4 was caused by dredging and prop wash from ships.

For a Superfund cleanup, Portland, the Port and eight companies are evaluating pollution from Swan Island to Sauvie Island and beyond

By **RICHARD L. HILL**
THE OREGONIAN

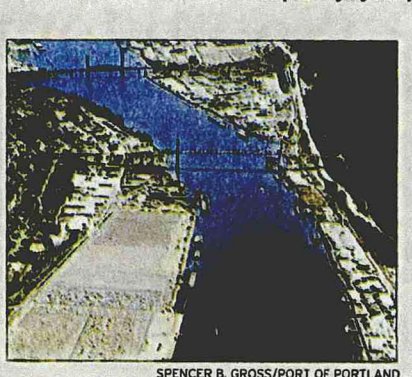
When a section of the Willamette River in Portland's bustling harbor was named a Superfund site three years ago, it was no surprise.

Industry has dominated the area for decades, and testing detected a potpourri of contaminants in the river's sediment: pesticides, dioxin, metals, PCBs and petroleum products. A study was launched of a 5.7-mile stretch of the riverbed from Swan Island to the southern tip of Sauvie Island.

Identifying the problem was the easy part. The more difficult task is figuring out the extent of the pollution and what should be done to clean it up.

Investigating a river bottom isn't as simple as examining a land-based Superfund site. The ever-changing Willamette doesn't sit still while scientists labor to reveal what lurks in the muck.

But with the use of high-tech instruments, the river is giving up many of its secrets, making the Portland harbor one of the most intensely studied sections of riverbed in the country.



SPENCER B. GROSS/PORT OF PORTLAND

An aerial photograph of the area shows the St. Johns Bridge and the railroad bridge, features that don't appear on the sonar image.

While the Willamette cleanup of the 1970s zeroed in on water quality, the new work is aimed at the bottom and near-shore sediments. The half-completed study, overseen by the Environmental Protection Agency, is revealing the river's physical, biological and chemical characteristics.

The research — which will cost between $10 million and $20 million — is being funded and conducted by the Lower Willamette Group, made up of the city of Portland, the Port of Portland and eight companies: Atofina Chemicals, Gunderson, Oregon Steel Mills, ConocoPhilips, ChevronTexaco, Northwest Natural, Time Oil and Union Pacific Railroad. They were among nearly 70 parties notified by the EPA in December 2000 that they may have some liability for the cleanup.

Robert J. Wyatt, the group's co-chairman and an environmental compliance specialist with Northwest Natural, said the group found little information about how the river system works.

"How does the sediment come in, how does it go out, how does it move, where do things live in the system, and what kinds of things are they, how are chemicals in the sediments affecting those living organisms?" Wyatt asked. "So far, our effort has been on looking at those questions."

The work has involved a variety of studies, including a look at the sediment, the river-bottom structure, the fish and other life.

The study has produced colorful three-dimensional images of the riverbed that engineers can use to get a better understanding of the river's dynamics. The detailed images were taken with a high-resolution, multibeam sonar mapping system mounted on a research boat. Three surveys have imaged not only the riverbed in the Superfund site but also a nearly 16-mile stretch of the river, from Ross Island to where the Willamette ends at the Columbia River.

Jonathan L. Dasler, a hydrographer and direc-

Please see **RIVER,** Page B11

ON THE WEB

- www.epa.gov/r10earth (Click on "Index A-Z" then scroll to "Portland Harbor, Oregon")
- www.deq.state.or.us/nwr/ph.htm
- www.willamette-riverkeeper.org/superfund
- www.portlandharborcag.org

EYE ON THE RIVER BOTTOM

An underwater camera makes images that will give scientists an idea of how sediments in the lower Willamette River shift and settle, and what the sand, silt and mud contain.

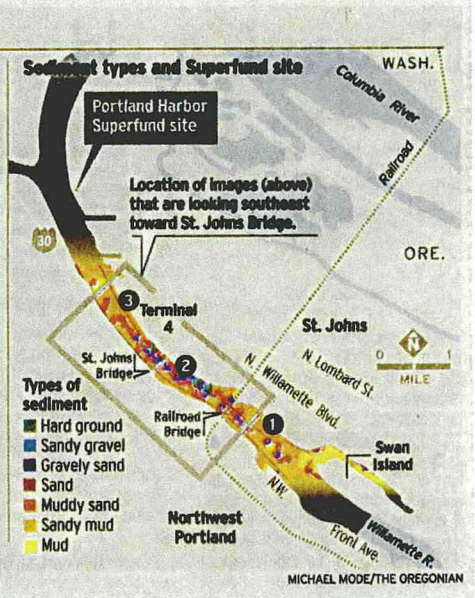
How it works

1. The underwater camera is lowered into the water.
2. Mechanism drops to the river bottom and the winch wire goes slack.
3. The camera drops, a picture is made of the sediment and water.
4. A ping is heard over a hydrophone on the boat at the surface, indicating a picture has been taken. The underwater camera is lifted off the bottom and moved to the next site.

Where the camera was used

Images were made in December 2001 at 478 spots on the lower Willamette from the upper end of Ross Island to the convergence with the Columbia River. (See map at right for location.)

1. Surface ripples indicate some sediment movement in a sandy silt area. The dark cavities are methane-filled pockets. The gas is from the breakdown of organic matter.
2. Mud over sand over a compacted mud bottom are found just downstream of the railroad bridge. This area appears to undergo sediment shifts from changes in water flows and river height.
3. Subsurface feeding pockets created by small animals (the vertical line at lower right is believed to be a worm) are visible in the soft, muddy bottom off Terminal 4.



MICHAEL MODE/THE OREGONIAN

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"It's very difficult for them to die."

PETE RAIMONDI,
PROFESSOR AT THE UNIVERSITY OF CALIFORNIA AT SANTA CRUZ

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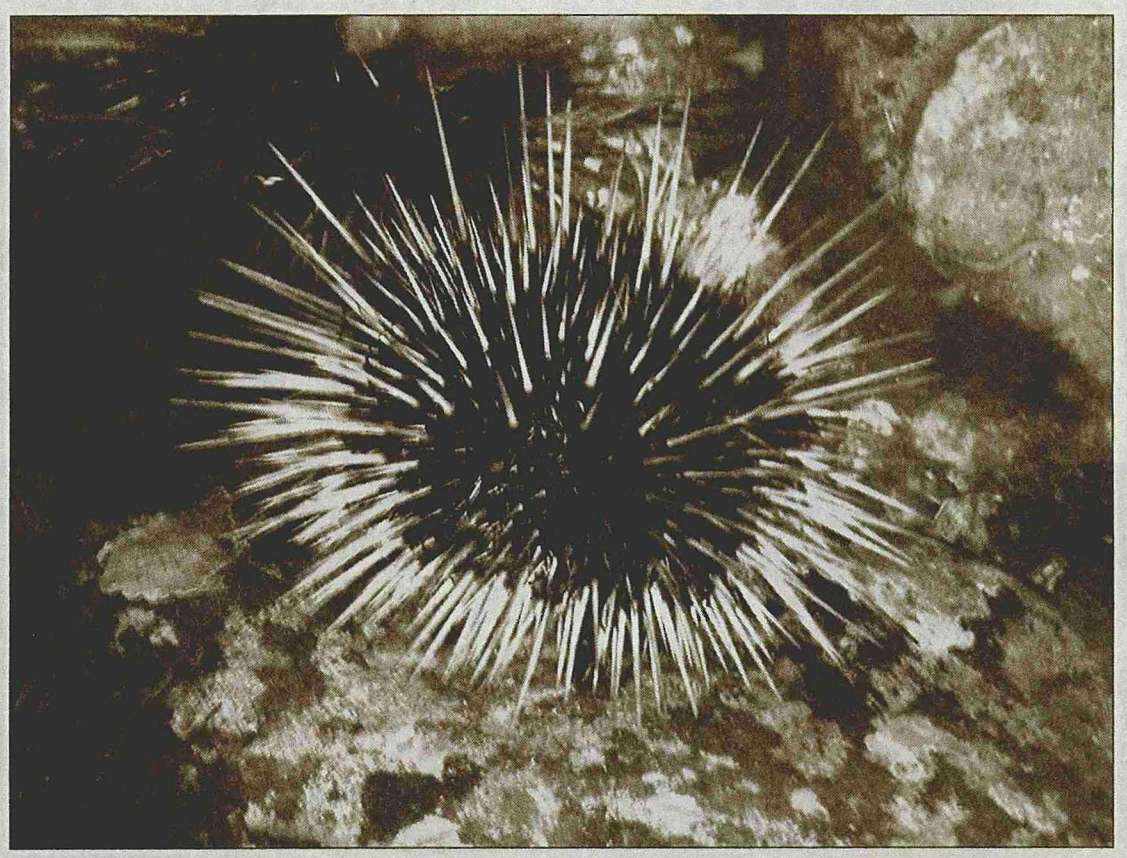

RICHARD STRATHMANN/FRIDAY HARBOR LABORATORY

The red sea urchin forages for algae and organic debris on rocky shores from Mexico to Alaska.

AGE CHAMPS

Giant tortoise: The Galapagos Islands natives live 100 to 150 years in the wild; captive individuals may live even longer.

Geoduck: Clams older than 100 are common in Pacific Northwest shores; a specimen 146 years old has been documented.

Red sea urchin: One of the most common sea urchins from California to Alaska; lifespan is more than 100 years, possibly more than 200 years.

Ocean quahog: A clam widely distributed in the Atlantic, capable of surviving without oxygen for a week; maximum age was thought to be around 225 years, but researchers recently reported a 267-year-old.

the jaw bones of animals collected off of Washington's San Juan Island.

The radiocarbon technique provided independent confirmation of earlier age estimates by Ebert. In the first studies, he and colleagues tagged living sea urchin jawbones with a chemical, and they later captured the animals to measure jaw growth beyond the tagged area to estimate growth rates. Urchins never stop growing, but they grow very slowly, adding about one one-hundredth of a centimeter a year in jaw size.

Louis Botsford, a professor of conservation biology at the University of California at Davis, called the findings valuable, but said the age estimates remain somewhat uncertain.

"We can be positive that urchins can be at least 50 years old and more confident that they can probably reach even older ages," Botsford said.

But Pete Raimondi, a professor of marine ecology at the University of California at Santa Cruz, said the results confirm what ecologists have long suspected: that sea urchins can live almost indefinitely in the absence of predation and disease.

"It's very difficult for them to die," Raimondi said. When deprived of food, he said urchins can shrivel in size and slip into a kind of suspended animation until conditions improve.

With the widespread extermination of sea otters, the main predator, sea urchins have overgrazed kelp forests, in some areas eliminating all large kelp.

Extreme longevity may have evolved in urchins as strategy against the loss of large numbers of offspring. Urchin larvae spend weeks as free-floating plankton at the mercy of ocean currents and defenseless to predators.

Ebert said regulations for urchin fishing typically have assumed the animals live a much shorter lifespan, on the order of 10 years. The valuable food part is the bright yellow sex organs, which are set in brine and called "uni" or sea urchin roe. The U.S. exported more than 2.7 million pounds last year, most of it to Japan.

Ebert said fishery managers should consider imposing upper size limits to maintain numbers of older animals, which provide a disproportionately large share of offspring. Washington has had such rules for many years, but Oregon and California do not.

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Joe Rojas-Burke: 503-412-7073; joerojas@news.oregonian.com

# of good cholesterol has dramatic effect on arteries

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The treatment used a laboratory-produced version of an unusually effective form of HDL, the good cholesterol that helps protect against heart disease by removing plaque, or fatty buildups, from the bloodstream.

"This is clearly on the level of a breakthrough that will have far-reaching implications," pointing the way toward a rapid treatment for fatty buildups, said Dr. Bryan Brewer, chief of molecular diseases at the National Heart, Lung and Blood Institute.

The surprisingly quick results, though preliminary, shatter a long-standing belief that heart disease is a slow progressing disease that takes a long time to undo, said Rader, who wrote an editorial accompanying the study in today's Journal of the American Medical Association.

While some existing medicines target HDL, most conventional drug treatment works by reducing LDL cholesterol, the bad kind that contributes to the formation of plaques that can clog arteries and lead to heart attacks.

The findings stem from an unusual discovery about 25 years ago in the northern Italian village of Limone Sul Gardia. Italian researchers found that 40 residents there had very low HDL levels, yet paradoxically had low rates of coronary artery disease.

Lab tests revealed a probable explanation: All had a gene variation in a key protein component of HDL. The variation contributed to larger-than-normal HDL particles, which is thought to make HDL cholesterol especially efficient at removing plaque.

Scientists made a synthetic form of the protein, which was found to reduce plaque buildups rapidly in mice and rabbits. This is the first time the substance has been used to treat narrowing of the arteries in people.

The study was financed by Esperion Therapeutics of Ann Arbor, Mich., a small biotechnology company that makes the product.

In the study, 36 patients who had had heart attacks or severe chest pain received weekly intravenous infusions of the substance for five weeks. Eleven patients received dummy treatments.

At six weeks, imaging tests showed the patients receiving the synthetic protein had a visible 4 percent reduction in plaque buildup in their coronary arteries. By contrast, the most powerful statin drugs, which lower levels of LDL, take years to show more modest effects. There was no significant change in the placebo group.

◆

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River: Surveys examine sediment, animals, chemicals

Continued from Page B12

tor of marine services for David Evans and Associates, said 17 million soundings of the river bottom were used to produce the images. The bathymetric work also used the satellite-based global positioning system to obtain even higher-resolution images.

The images aren't "just pictures of what the bottom looks like," Wyatt said. "You can compare the series of bathymetry through time and see how the bottom changes. Then you can match that data up with sediment analyses, then make predictions about how this system is going to work under different conditions."

Another instrument that uses sound energy to analyze the river is an acoustic Doppler current profiler, which determines the velocity of water flow. The boat-mounted instrument has four transducers that emit sound pulses into the water. The pulses bounce off sediment particles that are moving through the water. The pitch that returns to the boat is processed by software that converts it into a velocity.

The system also records "backscatter," the strength of sound energy that bounces back. With that information, the scientists can identify suspended sediments in the water.

Researchers also analyzed the types of sediment in the river bottom. They have found how sediment is distributed, the size of the grains in different locations, the paths sediment follow into and out of the area, and the kinds of organisms living in the sediment.

Nearly 850 sediment samples were collected from Ross Island to the Willamette's mouth. An encapsulated camera also was placed into the sediment and took more than 523 images to examine the top eight inches of river bottom.

Sedimental journeys

"The sediment profile camera is good at picking up thin layers of deposits," said Eugene C. Revelas, a senior scientist with Stripling Environmental Associates. "You also can see where the animals are living in this sediment-water interface. Generally, they live closer to the top in recently disturbed systems. As time goes on with the lack of disturbance, they burrow deeper down and are longer-lived."

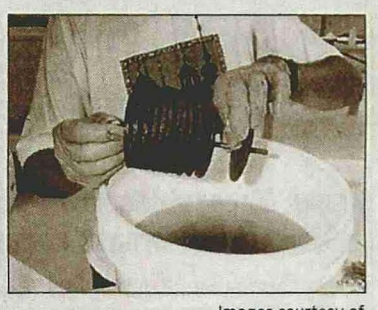
The data collected by these and other instruments are integrated into a digitized geographical information system, which produces an easy-to-use format that gives a complete look at the riverbed.

In addition to the river's physical characteristics, the study is looking at what animals are on the bottom of the river, from the smallest to the largest.

Tools called multiplate samplers were placed in the water in a dozen locations to see what organisms would colonize them. Each sampler is made up of 14 plates of tempered hardwood, 3 inches in diameter.

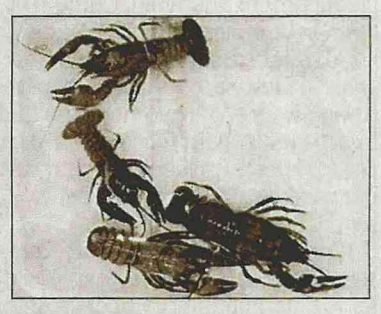
Researchers also collected crayfish, clams, amphibians and nearly 1,500 fish of a dozen species, including carp, sculpin, smallmouth bass, large-scale sucker, black crappie and juvenile chinook. The Lower Willamette Group and the EPA decided not to analyze adult salmon and sturgeon because the fish don't spend their entire lives in the river, and it would be hard to determine where any contaminants in their systems originated.

Wyatt said the fish sampling gives information about where different species live, their diets and their home range. "Determining a fish's feeding area and how far it travels in its life is important because it may help us locate where the risks are," he said.

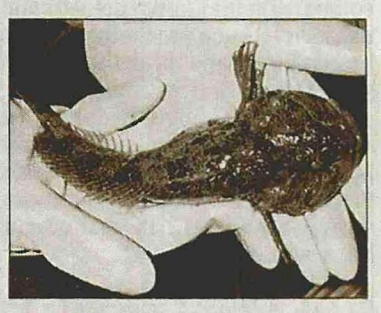


Images courtesy of LOWER WILLAMETTE GROUP

Hardwood discs called multiplates were submerged to collect small animals from the river bottom.



More than 400 crayfish collected from different sites were tested for contaminants.



More than 850 sculpin, one of 12 fish species studied, were collected for the research.

Sculpin have the smallest home range, only venturing about 50 to 100 feet, Wyatt said. If sculpins in one area have a lot of chemicals in their tissues, while those in another location don't, "then that gives us an idea of where the problem might be," he said.

Tests for hundreds of chemicals

Laboratories have tested fish tissue for 399 chemicals, with detection levels at parts per million or parts per billion. The fish-tissue data, which are being analyzed, will be used to determine the next sampling steps. The data will be included in the Lower Willamette Group's human health and ecological risk assessments, and Oregon's health department also will review the information.

With many of the details about the riverbed's physical and biological systems in hand, the project now will focus on the chemistry of the riverbed sediment.

After the study is completed in 2006, a comprehensive cleanup plan will be developed.

Based on the contamination found in the river, an analysis will determine what the risk is to humans or to the animals that live in the river, said Chip Humphrey of the EPA.

"When you're dealing with sediments on the bottom of a river, there's only so many cleanup options," he said. "There's not a lot of exotic, promising technologies that we're aware of — there's dredging, and capping, and there are some places where natural processes would help clean the sediments.

"We just will have to wait and see what this comprehensive study shows, then decide on what cleanup steps are needed."

◆

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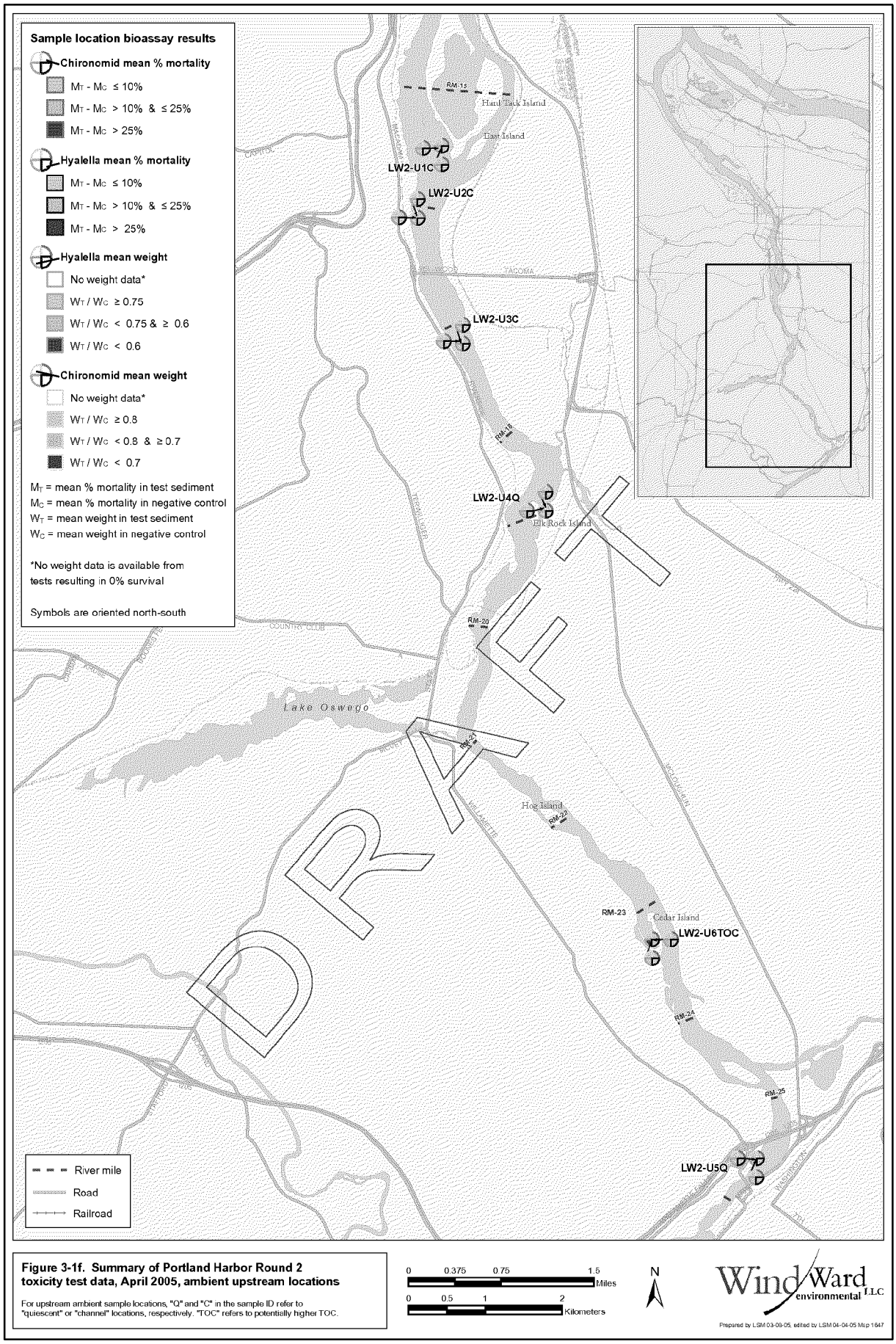

Figure 3-1f. Summary of Portland Harbor Round 2 toxicity test data, April 2005, ambient upstream locations

For upstream ambient sample locations, "Q" and "C" in the sample ID refer to "quiescent" or "channel" locations, respectively. "TOC" refers to potentially higher TOC.

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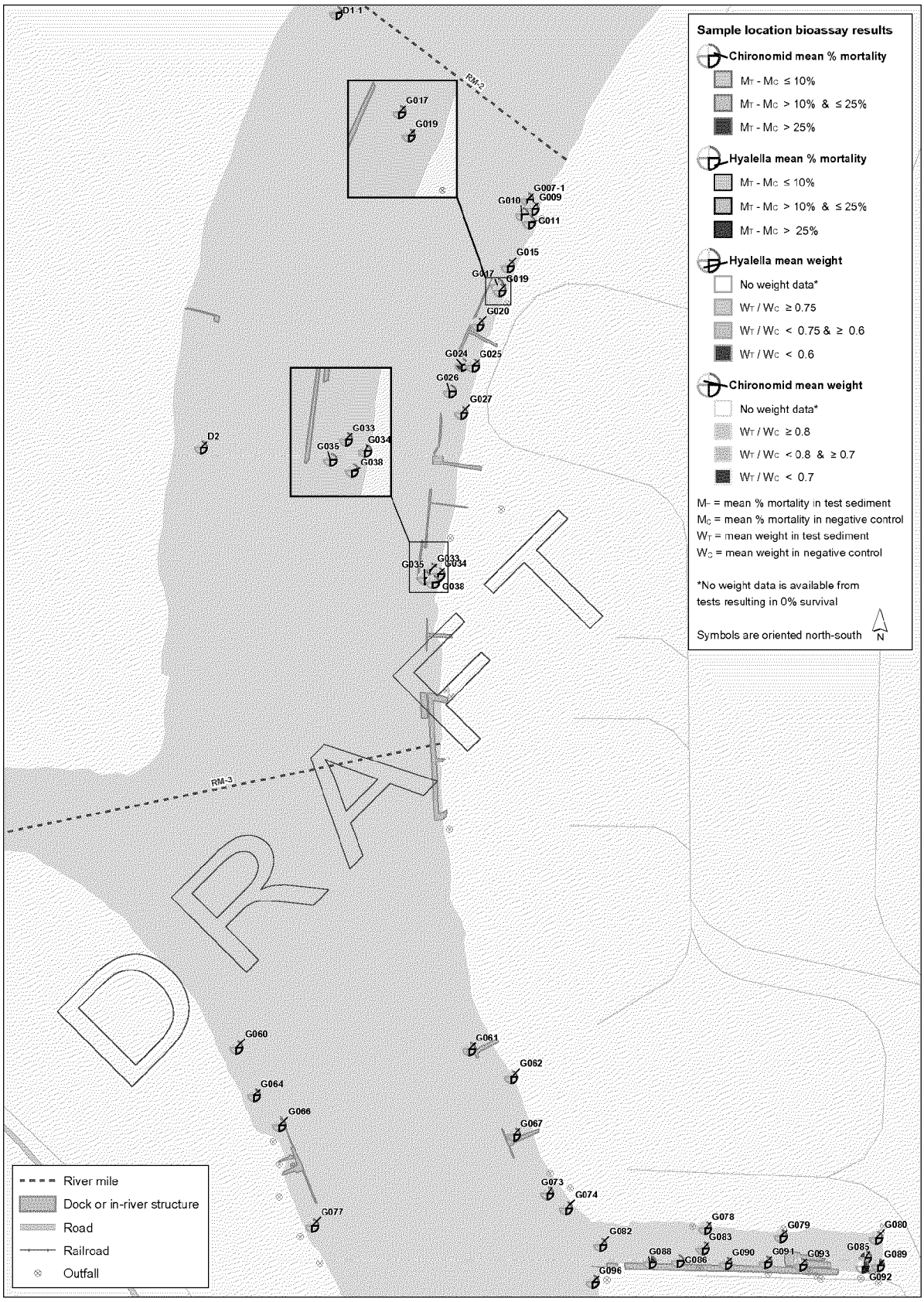

Figure 3-1b. Summary of Portland Harbor Round 2 toxicity test data, April 2005, river miles 2-3.8

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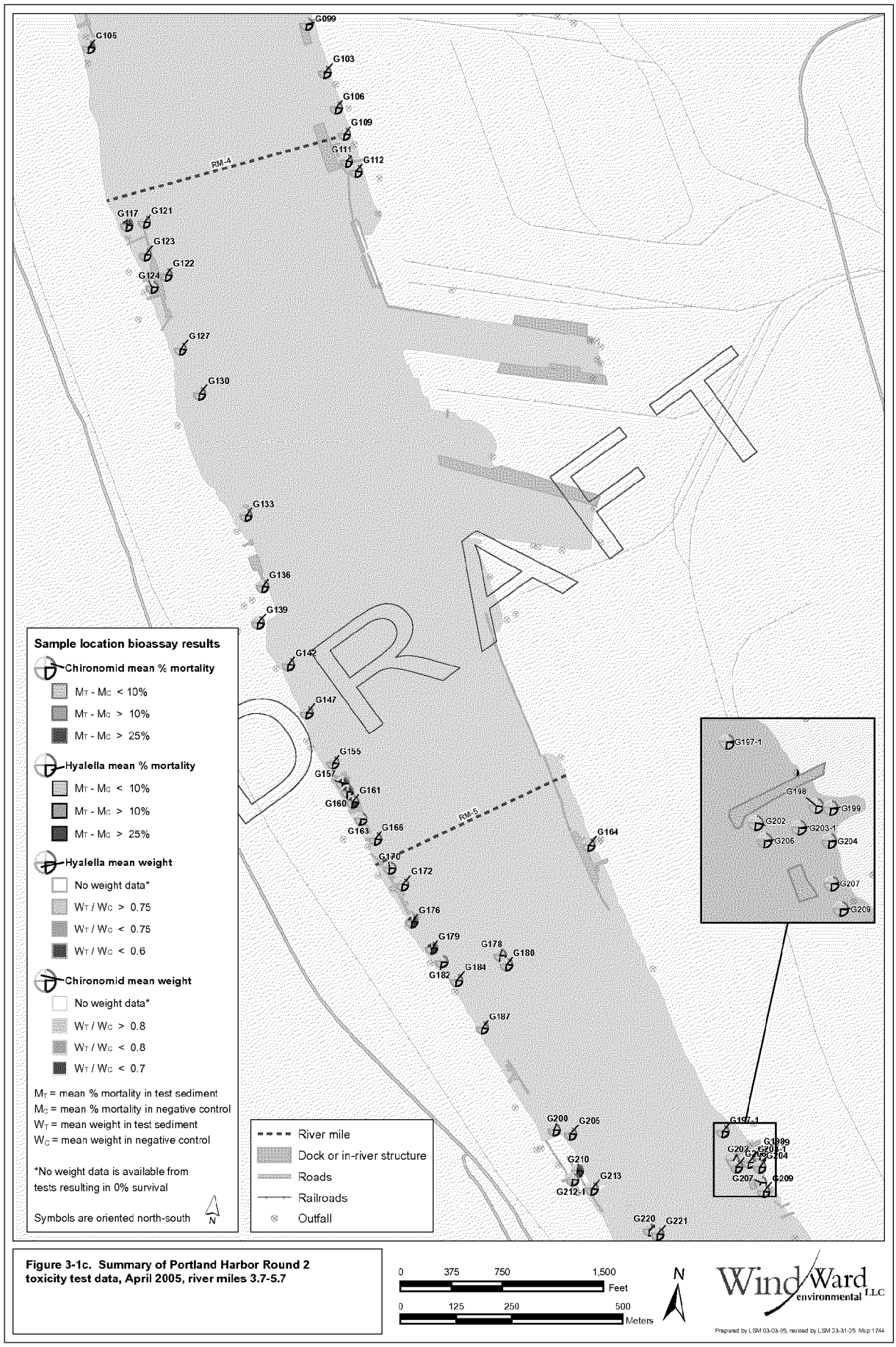

Figure 3-1c. Summary of Portland Harbor Round 2 toxicity test data, April 2005, river miles 3.7-5.7

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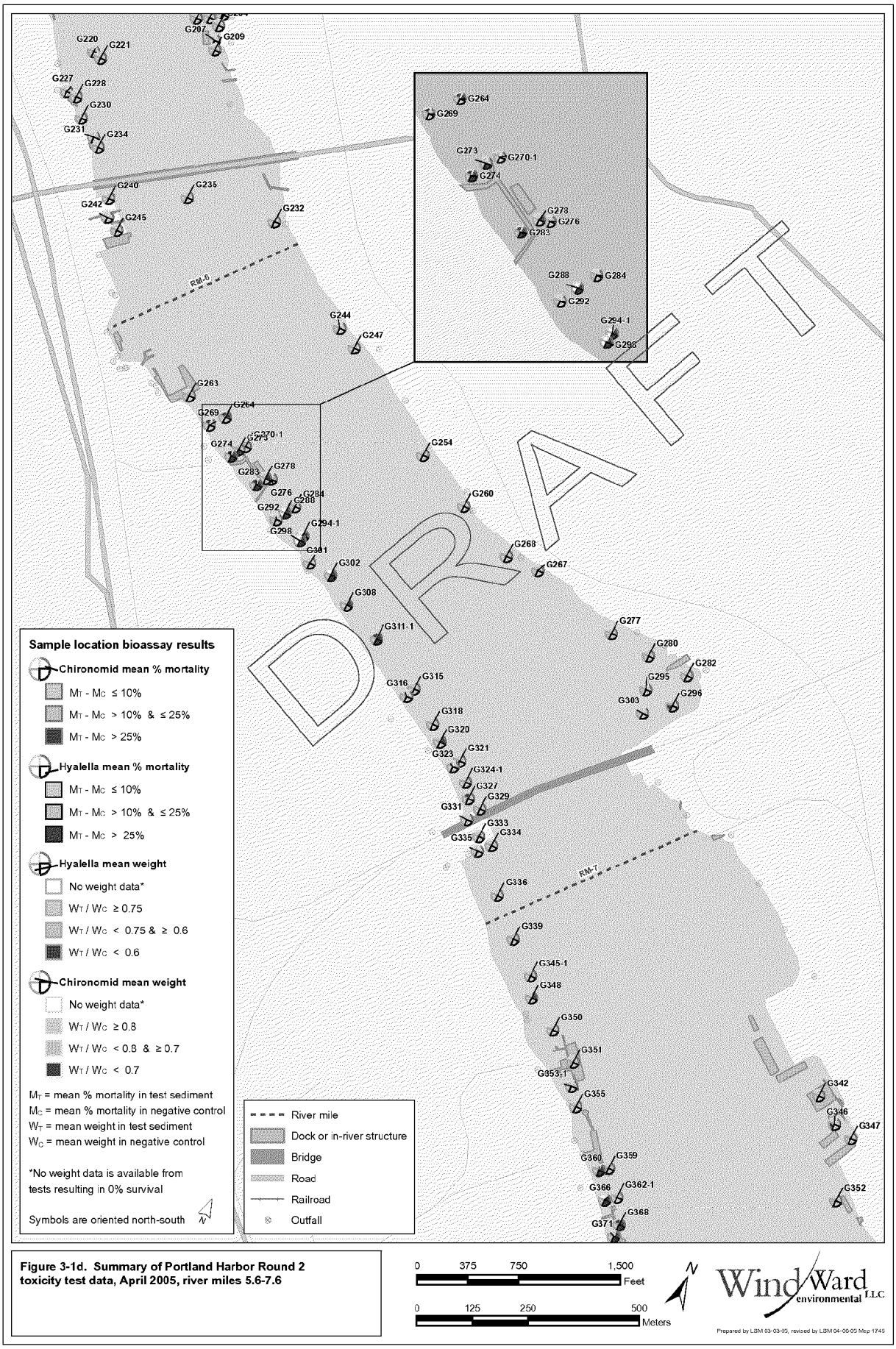

Figure 3-1d. Summary of Portland Harbor Round 2 toxicity test data, April 2005, river miles 5.6-7.6

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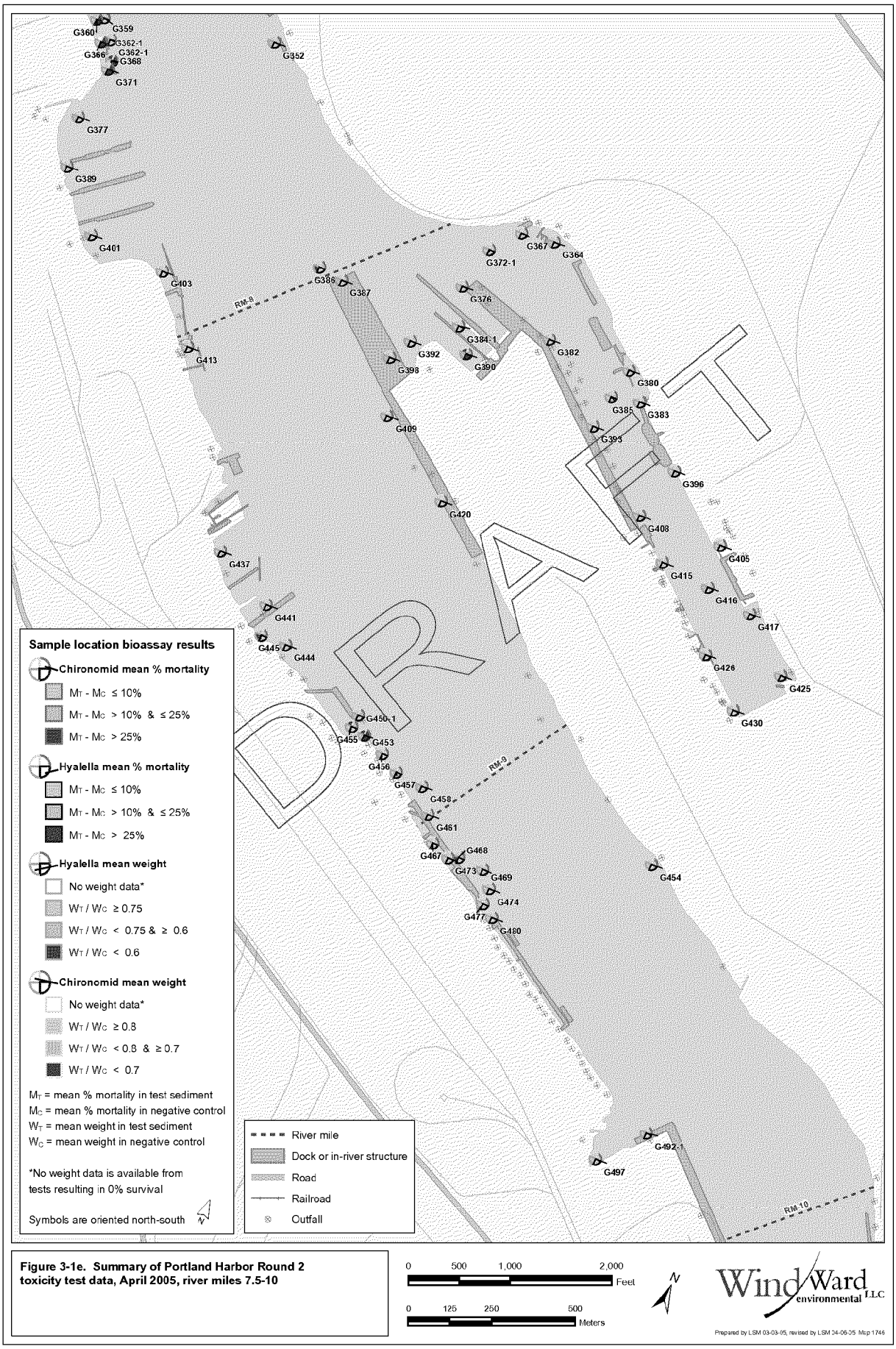

Figure 3-1e. Summary of Portland Harbor Round 2 toxicity test data, April 2005, river miles 7.5-10

0 500 1,000 2,000 Feet

0 125 250 500 Meters

Wind Ward environmental LLC

Prepared by LSM 03-03-05, revised by LSM 04-06-05 Map 1746

W:\Projects\01-25-01 Portland Harbor ERA\Data\GIS\Bioassay\

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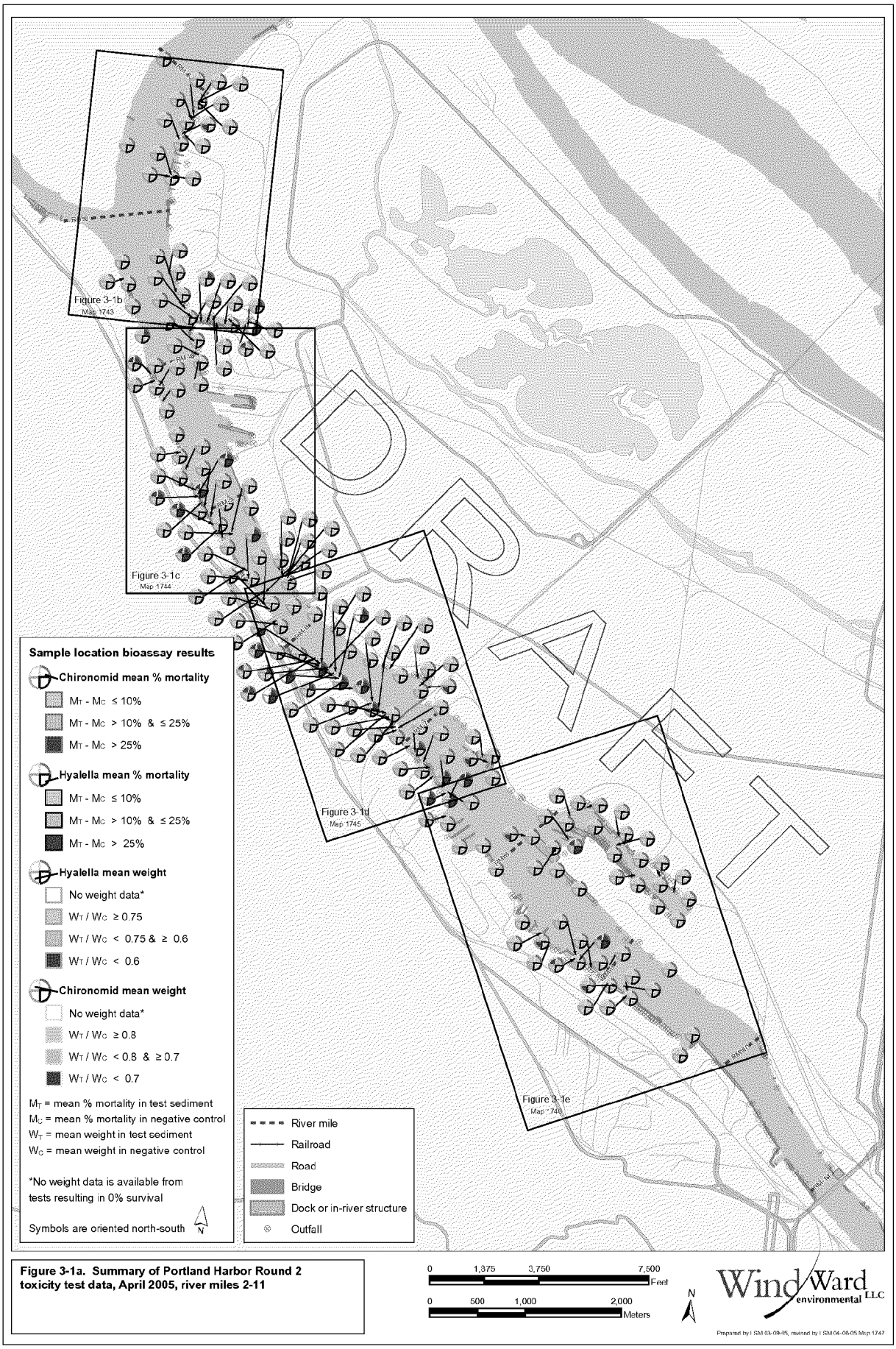

Figure 3-1a. Summary of Portland Harbor Round 2 toxicity test data, April 2005, river miles 2-11

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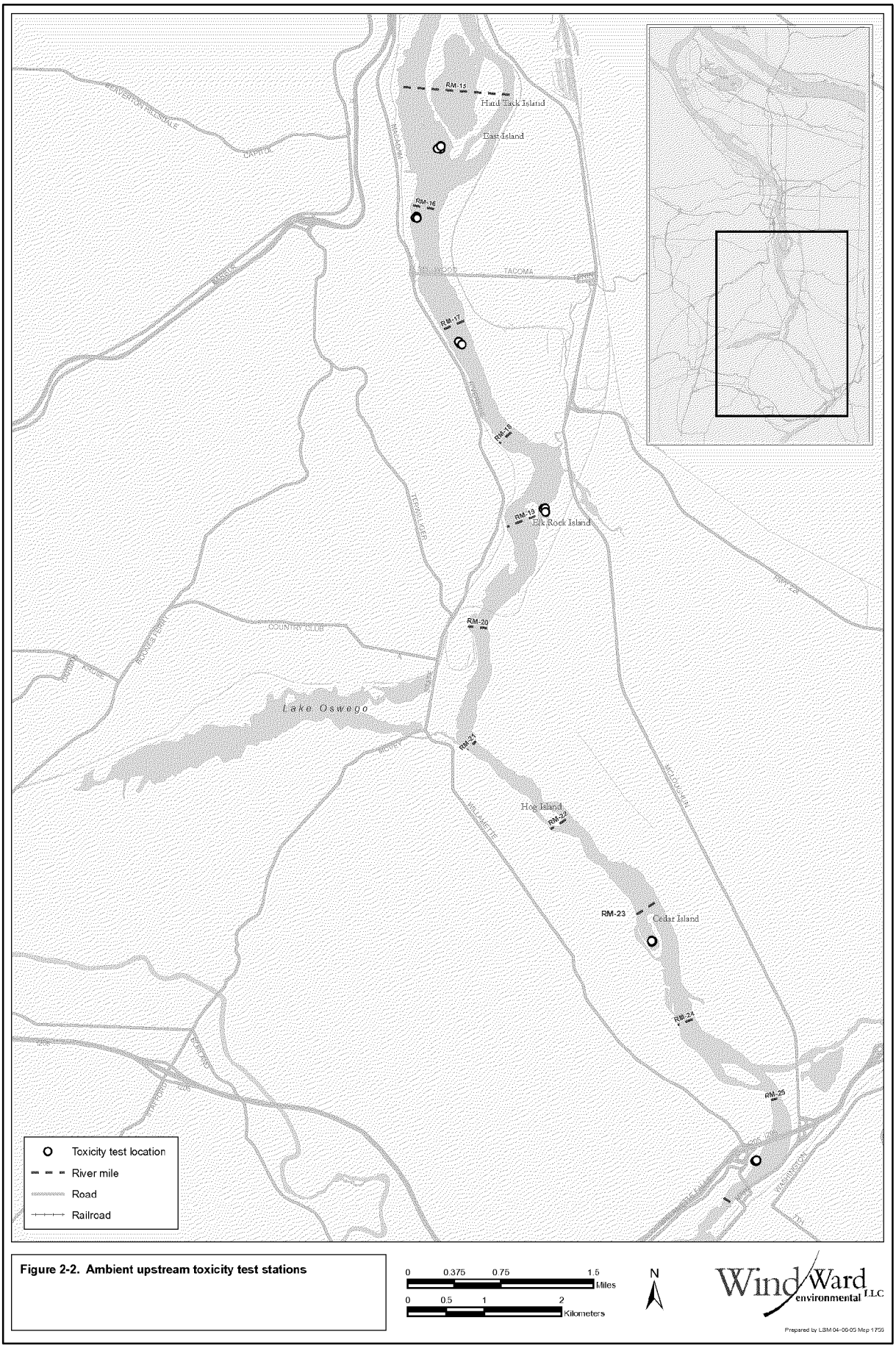

Figure 2-2. Ambient upstream toxicity test stations

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Figure 2-1. Toxicity test stations within Portland Harbor

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Test Number: P686-1

Freshwater Sediment Test
28-day Hyalella azteca

Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or
dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

INITIAL WEIGHT				
pan #	tare wt (mg)	final wt (mg)	wt count	avg. wt/ organism
1	23.309	24.703	20	0.070
2	29.641	30.837	20	0.060
3	28.849	29.996	20	0.057
4	30.767	31.959	20	0.060
5	27.756	28.949	20	0.060

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)
1	104	9208F	Control	1		10	10	0	100.0	0.0	29.617	10	32.319	2.70	0.27
2	152	9208F	Control	2		10	10	0	100.0	0.0	27.665	10	30.831	3.17	0.32
3	38	9208F	Control	3		10	10	0	100.0	0.0	27.806	10	29.966	2.16	0.22
4	46	9208F	Control	4		10	10	0	100.0	0.0	29.066	10	32.252	3.19	0.32
5	44	9208F	Control	5		10	10	0	100.0	0.0	28.266	10	30.793	2.53	0.25
6	66	9208F	Control	6		10	10	0	100.0	0.0	30.367	10	33.257	2.89	0.29
7	10	9208F	Control	7		10	10	0	100.0	0.0	28.576	9	30.487	1.91	0.21
8	167	9208F	Control	8	wq replicate	10	10	0	100.0	0.0	27.289	10	29.687	2.40	0.24
9	110	9213F	LW2-G009	1		10	10	0	100.0	0.0	27.947	10	31.314	3.37	0.34
10	82	9213F	LW2-G009	2		10	9	1	90.0	10.0	30.660	9	32.899	2.24	0.25
11	168	9213F	LW2-G009	3		10	7	3	70.0	30.0	30.378	7	31.819	1.44	0.21
12	107	9213F	LW2-G009	4		10	8	2	80.0	20.0	28.067	8	31.808	3.74	0.47
13	69	9213F	LW2-G009	5		10	10	0	100.0	0.0	29.218	10	31.545	2.33	0.23
14	133	9213F	LW2-G009	6		10	9	1	90.0	10.0	27.504	9	30.556	3.05	0.34
15	71	9213F	LW2-G009	7		10	10	0	100.0	0.0	29.503	10	31.815	2.31	0.23
16	70	9213F	LW2-G009	8	wq replicate	10	10	0	100.0	0.0	30.949	10	33.101	2.15	0.22
17	154	9214F	LW2-G010	1		10	9	1	90.0	10.0	28.510	9	30.459	1.95	0.22
18	47	9214F	LW2-G010	2		10	9	1	90.0	10.0	27.843	9	30.108	2.27	0.25
19	73	9214F	LW2-G010	3		10	10	0	100.0	0.0	28.650	10	30.709	2.06	0.21
20	126	9214F	LW2-G010	4		10	10	0	100.0	0.0	27.804	10	30.463	2.66	0.27
21	1	9214F	LW2-G010	5		10	9	1	90.0	10.0	28.080	9	29.467	1.39	0.15
22	137	9214F	LW2-G010	6		10	10	0	100.0	0.0	28.674	10	30.935	2.26	0.23
23	88	9214F	LW2-G010	7		10	10	0	100.0	0.0	28.488	10	29.955	1.47	0.15
24	164	9214F	LW2-G010	8	wq replicate	10	10	0	100.0	0.0	28.106	10	29.708	1.60	0.16
25	128	9215F	LW2-G011	1		10	10	0	100.0	0.0	30.265	10	32.594	2.33	0.23
26	142	9215F	LW2-G011	2		10	10	0	100.0	0.0	29.270	10	32.608	3.34	0.33
27	14	9215F	LW2-G011	3		10	9	1	90.0	10.0	28.795	9	31.680	2.89	0.32
28	161	9215F	LW2-G011	4		10	10	0	100.0	0.0	29.953	10	33.494	3.54	0.35
29	67	9215F	LW2-G011	5		10	10	0	100.0	0.0	31.433	10	33.719	2.29	0.23
30	63	9215F	LW2-G011	6		10	10	0	100.0	0.0	29.792	10	32.533	2.74	0.27
31	155	9215F	LW2-G011	7		10	9	1	90.0	10.0	28.703	9	30.698	2.00	0.22
32	74	9215F	LW2-G011	8	wq replicate	10	10	0	100.0	0.0	28.709	10	31.878	3.17	0.32

	SURV	MORT	PSURV	PMORT	WT
Mean	10.0	0.0	100.0	0.0	0.26
SD	0.0	0.0	0.0	0.0	0.04
n	8	8	8	8	8
Mean	9.1	0.9	91.3	8.8	0.28
SD	1.1	1.1	11.3	11.3	0.09
n	8	8	8	8	8
Mean	9.6	0.4	96.3	3.8	0.20
SD	0.5	0.5	5.2	5.2	0.05
n	8	8	8	8	8
Mean	9.8	0.3	97.5	2.5	0.29
SD	0.5	0.5	4.6	4.6	0.05
n	8	8	8	8	8

ANC07302
BZTO104(e)007302

Test Number: P686-1

Freshwater Sediment Test
28-day Hyalella azteca

		NAS	CLIENT								TARE	WT	DRY	TWT	WT						
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	WT (mg)	COUNT	WT (mg)	(mg)	(mg)		SURV	MORT	PSURV	PMORT	WT
33	27	9216F	LW2-G007-1	1		10	9	1	90.0	10.0	28.937	9	30.431	1.49	0.17						
34	83	9216F	LW2-G007-1	2		10	10	0	100.0	0.0	28.679	10	30.530	1.85	0.19						
35	23	9216F	LW2-G007-1	3		10	10	0	100.0	0.0	28.983	9	30.324	1.34	0.15						
36	165	9216F	LW2-G007-1	4		10	9	1	90.0	10.0	29.808	9	30.980	1.17	0.13						
37	149	9216F	LW2-G007-1	5		10	10	0	100.0	0.0	30.308	10	32.248	1.94	0.19	Mean	9.8	0.3	97.5	2.5	0.18
38	157	9216F	LW2-G007-1	6		10	10	0	100.0	0.0	27.798	10	29.921	2.12	0.21	SD	0.5	0.5	4.6	4.6	0.03
39	19	9216F	LW2-G007-1	7		10	10	0	100.0	0.0	29.585	10	31.507	1.92	0.19	n	8	8	8	8	8
40	32	9216F	LW2-G007-1	8	wq replicate	10	10	0	100.0	0.0	27.301	10	29.581	2.28	0.23						
41	118	9217F	LW2-G026	1		10	10	0	100.0	0.0	27.865	10	29.590	1.73	0.17						
42	153	9217F	LW2-G026	2		10	10	0	100.0	0.0	28.035	10	29.508	1.47	0.15						
43	138	9217F	LW2-G026	3		10	9	1	90.0	10.0	29.220	9	31.545	2.33	0.26						
44	26	9217F	LW2-G026	4		10	10	0	100.0	0.0	27.995	10	30.542	2.55	0.25						
45	130	9217F	LW2-G026	5		10	10	0	100.0	0.0	28.904	10	31.245	2.34	0.23	Mean	9.6	0.4	96.3	3.8	0.22
46	28	9217F	LW2-G026	6		10	10	0	100.0	0.0	29.171	10	31.268	2.10	0.21	SD	0.5	0.5	5.2	5.2	0.04
47	36	9217F	LW2-G026	7		10	9	1	90.0	10.0	29.169	9	31.350	2.18	0.24	n	8	8	8	8	8
48	148	9217F	LW2-G026	8	wq replicate	10	9	1	90.0	10.0	30.130	8	31.977	1.85	0.23						
49	52	9218F	LW2-G060	1		10	10	0	100.0	0.0	28.984	10	30.984	2.00	0.20						
50	101	9218F	LW2-G060	2		10	9	1	90.0	10.0	27.616	9	30.925	3.31	0.37						
51	96	9218F	LW2-G060	3		10	10	0	100.0	0.0	28.511	10	31.109	2.60	0.26						
52	8	9218F	LW2-G060	4		10	10	0	100.0	0.0	28.277	10	31.024	2.75	0.27						
53	53	9218F	LW2-G060	5		10	10	0	100.0	0.0	28.531	10	31.369	2.84	0.28	Mean	9.6	0.4	96.3	3.8	0.27
54	159	9218F	LW2-G060	6		10	9	1	90.0	10.0	27.215	9	29.019	1.80	0.20	SD	0.5	0.5	5.2	5.2	0.06
55	123	9218F	LW2-G060	7		10	10	0	100.0	0.0	28.627	10	30.915	2.29	0.23	n	8	8	8	8	8
56	37	9218F	LW2-G060	8	wq replicate	10	9	1	90.0	10.0	30.268	9	33.251	2.98	0.33						
57	122	9219F	LW2-G064	1		10	10	0	100.0	0.0	29.037	10	31.648	2.61	0.26						
58	160	9219F	LW2-G064	2		10	8	2	80.0	20.0	29.886	8	32.509	2.62	0.33						
59	140	9219F	LW2-G064	3		10	9	1	90.0	10.0	27.827	9	29.996	2.17	0.24						
60	41	9219F	LW2-G064	4		10	10	0	100.0	0.0	29.191	10	31.482	2.29	0.23						
61	115	9219F	LW2-G064	5		10	10	0	100.0	0.0	29.433	10	32.377	2.94	0.29	Mean	9.5	0.5	95.0	5.0	0.27
62	22	9219F	LW2-G064	6		10	10	0	100.0	0.0	28.074	10	30.248	2.17	0.22	SD	0.8	0.8	7.6	7.6	0.04
63	11	9219F	LW2-G064	7		10	10	0	100.0	0.0	30.784	10	33.349	2.57	0.26	n	8	8	8	8	8
64	17	9219F	LW2-G064	8	wq replicate	10	9	1	90.0	10.0	27.935	9	30.717	2.78	0.31						
65	13	9220F	LW2-G203-1	1		10	10	0	100.0	0.0	28.470	10	30.631	2.16	0.22						
66	57	9220F	LW2-G203-1	2		10	9	1	90.0	10.0	27.769	9	30.168	2.40	0.27						
67	113	9220F	LW2-G203-1	3		10	10	0	100.0	0.0	28.784	10	30.612	1.83	0.18						
68	25	9220F	LW2-G203-1	4		10	10	0	100.0	0.0	27.531	10	29.530	2.00	0.20						
69	48	9220F	LW2-G203-1	5		10	9	1	90.0	10.0	28.928	9	30.440	1.51	0.17	Mean	9.4	0.6	93.8	6.3	0.20
70	4	9220F	LW2-G203-1	6		10	9	1	90.0	10.0	29.194	9	30.522	1.33	0.15	SD	0.5	0.5	5.2	5.2	0.04
71	40	9220F	LW2-G203-1	7		10	9	1	90.0	10.0	28.090	9	29.956	1.87	0.21	n	8	8	8	8	8
72	31	9220F	LW2-G203-1	8	wq replicate	10	9	1	90.0	10.0	28.808	9	30.940	2.13	0.24						

ANC07303
BZTO104(e)007303

Test Number: P686-1

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
73	105	9221F	LW2-G066	1		10	9	1	90.0	10.0	28.169	9	31.414	3.25	0.36						
74	156	9221F	LW2-G066	2		10	6	4	60.0	40.0	29.213	6	34.144	4.93	0.82						
75	79	9221F	LW2-G066	3		10	10	0	100.0	0.0	27.971	10	30.442	2.47	0.25						
76	54	9221F	LW2-G066	4		10	10	0	100.0	0.0	28.387	10	31.052	2.67	0.27						
77	6	9221F	LW2-G066	5		10	10	0	100.0	0.0	29.081	10	31.103	2.02	0.20	Mean	9.1	0.9	91.3	8.8	0.33
78	77	9221F	LW2-G066	6		10	10	0	100.0	0.0	29.004	10	31.011	2.01	0.20	SD	1.5	1.5	14.6	14.6	0.21
79	120	9221F	LW2-G066	7		10	8	2	80.0	20.0	29.214	8	31.101	1.89	0.24	n	8	8	8	8	8
80	147	9221F	LW2-G066	8	wq replicate	10	10	0	100.0	0.0	27.200	10	30.291	3.09	0.31						
81	3	9222F	LW2-G015	1		10	10	0	100.0	0.0	28.464	10	29.553	1.09	0.11						
82	21	9222F	LW2-G015	2		10	10	0	100.0	0.0	29.302	10	31.382	2.08	0.21						
83	55	9222F	LW2-G015	3		10	9	1	90.0	10.0	28.556	9	30.857	2.30	0.26						
84	59	9222F	LW2-G015	4		10	10	0	100.0	0.0	30.430	9	32.468	2.04	0.23						
85	29	9222F	LW2-G015	5		10	6	4	60.0	40.0	26.991	6	28.566	1.58	0.26	Mean	9.4	0.6	93.8	6.3	0.21
86	18	9222F	LW2-G015	6		10	10	0	100.0	0.0	27.778	10	29.588	1.81	0.18	SD	1.4	1.4	14.1	14.1	0.06
87	81	9222F	LW2-G015	7		10	10	0	100.0	0.0	27.094	10	28.665	1.57	0.16	n	8	8	8	8	8
88	43	9222F	LW2-G015	8	wq replicate	10	10	0	100.0	0.0	29.526	10	32.378	2.85	0.29						
89	143	9223F	LW2-G019	1		10	6	4	60.0	40.0	27.208	6	30.762	3.55	0.59						
90	62	9223F	LW2-G019	2		10	9	1	90.0	10.0	27.287	9	31.268	3.98	0.44						
91	116	9223F	LW2-G019	3		10	10	0	100.0	0.0	29.475	10	35.331	5.86	0.59						
92	163	9223F	LW2-G019	4		10	9	1	90.0	10.0	28.752	9	33.165	4.41	0.49						
93	129	9223F	LW2-G019	5		10	10	0	100.0	0.0	29.416	10	33.492	4.08	0.41	Mean	9.1	0.9	91.3	8.8	0.44
94	135	9223F	LW2-G019	6		10	10	0	100.0	0.0	29.954	10	33.988	4.03	0.40	SD	1.4	1.4	13.6	13.6	0.12
95	65	9223F	LW2-G019	7		10	9	1	90.0	10.0	29.637	9	31.728	2.09	0.23	n	8	8	8	8	8
96	162	9223F	LW2-G019	8	wq replicate	10	10	0	100.0	0.0	30.143	10	33.765	3.62	0.36						
97	103	9224F	LW2-G017	1		10	10	0	100.0	0.0	27.612	10	29.803	2.19	0.22						
98	132	9224F	LW2-G017	2		10	10	0	100.0	0.0	30.758	10	33.190	2.43	0.24						
99	112	9224F	LW2-G017	3		10	9	1	90.0	10.0	29.829	9	31.842	2.01	0.22						
100	56	9224F	LW2-G017	4		10	10	0	100.0	0.0	29.660	10	31.614	1.95	0.20						
101	117	9224F	LW2-G017	5		10	10	0	100.0	0.0	29.073	10	31.003	1.93	0.19	Mean	9.5	0.5	95.0	5.0	0.22
102	33	9224F	LW2-G017	6		10	9	1	90.0	10.0	28.196	9	30.029	1.83	0.20	SD	0.8	0.8	7.6	7.6	0.03
103	5	9224F	LW2-G017	7		10	8	2	80.0	20.0	29.032	8	30.484	1.45	0.18	n	8	8	8	8	8
104	146	9224F	LW2-G017	8	wq replicate	10	10	0	100.0	0.0	30.157	10	32.775	2.62	0.26						
105	84	9225F	LW2-G294-1	1		10	0	10	0.0	100.0	28.993	0									
106	134	9225F	LW2-G294-1	2		10	0	10	0.0	100.0	26.399	0									
107	72	9225F	LW2-G294-1	3		10	0	10	0.0	100.0	30.874	0									
108	87	9225F	LW2-G294-1	4		10	0	10	0.0	100.0	29.958	0									
109	30	9225F	LW2-G294-1	5		10	0	10	0.0	100.0	30.218	0				Mean	0.0	10.0	0.0	100.0	
110	145	9225F	LW2-G294-1	6		10	0	10	0.0	100.0	28.198	0				SD	0.0	0.0	0.0	0.0	
111	109	9225F	LW2-G294-1	7		10	0	10	0.0	100.0	28.614	0				n	8	8	8	8	0
112	45	9225F	LW2-G294-1	8	wq replicate	10	0	10	0.0	100.0	28.698	0									

ANC07304
BZTO104(e)007304

Test Number: P686-1

Freshwater Sediment Test
28-day Hyalella azteca

		NAS	CLIENT								TARE	WT	DRY	TWT	WT						
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	WT (mg)	COUNT	WT (mg)	(mg)	(mg)		SURV	MORT	PSURV	PMORT	WT
113	39	9226F	LW2-G270	1		10	9	1	90.0	10.0	28.003	9	29.901	1.90	0.21						
114	93	9226F	LW2-G270	2		10	10	0	100.0	0.0	28.727	10	31.170	2.44	0.24						
115	111	9226F	LW2-G270	3		10	10	0	100.0	0.0	29.569	10	31.369	1.80	0.18						
116	91	9226F	LW2-G270	4		10	9	1	90.0	10.0	28.789	9	30.532	1.74	0.19						
117	158	9226F	LW2-G270	5		10	9	1	90.0	10.0	29.885	9	31.419	1.53	0.17	Mean	9.3	0.8	92.5	7.5	0.20
118	12	9226F	LW2-G270	6		10	9	1	90.0	10.0	31.042	9	33.041	2.00	0.22	SD	0.7	0.7	7.1	7.1	0.04
119	24	9226F	LW2-G270	7		10	8	2	80.0	20.0	28.630	8	29.608	0.98	0.12	n	8	8	8	8	8
120	94	9226F	LW2-G270	8	wq replicate	10	10	0	100.0	0.0	28.822	10	31.351	2.53	0.25						
121	114	9227F	LW2-G311-1	1		10	8	2	80.0	20.0	31.071	8	33.042	1.97	0.25						
122	49	9227F	LW2-G311-1	2		10	8	2	80.0	20.0	27.978	8	30.501	2.52	0.32						
123	144	9227F	LW2-G311-1	3		10	3	7	30.0	70.0	28.332	3	29.424	1.09	0.36						
124	16	9227F	LW2-G311-1	4		10	6	4	60.0	40.0	30.766	5	32.433	1.67	0.33						
125	89	9227F	LW2-G311-1	5		10	6	4	60.0	40.0	29.189	6	31.537	2.35	0.39	Mean	6.1	3.9	61.3	38.8	0.33
126	166	9227F	LW2-G311-1	6		10	5	5	50.0	50.0	28.892	5	30.747	1.86	0.37	SD	2.5	2.5	24.7	24.7	0.05
127	7	9227F	LW2-G311-1	7		10	3	7	30.0	70.0	30.924	3	31.819	0.90	0.30	n	8	8	8	8	8
128	60	9227F	LW2-G311-1	8	wq replicate	10	10	0	100.0	0.0	27.779	10	30.937	3.16	0.32						
129	151	9228F	LW2-G324-1	1		10	9	1	90.0	10.0	32.089	9	34.445	2.36	0.26						
130	80	9228F	LW2-G324-1	2		10	9	1	90.0	10.0	29.270	9	32.276	3.01	0.33						
131	102	9228F	LW2-G324-1	3		10	9	1	90.0	10.0	30.965	9	33.926	2.96	0.33						
132	90	9228F	LW2-G324-1	4		10	10	0	100.0	0.0	28.361	10	30.006	1.65	0.16						
133	51	9228F	LW2-G324-1	5		10	9	1	90.0	10.0	29.778	8	31.021	1.24	0.16	Mean	9.4	0.6	93.8	6.3	0.24
134	50	9228F	LW2-G324-1	6		10	10	0	100.0	0.0	27.732	10	29.925	2.19	0.22	SD	0.5	0.5	5.2	5.2	0.08
135	2	9228F	LW2-G324-1	7		10	10	0	100.0	0.0	28.639	10	30.334	1.70	0.17	n	8	8	8	8	8
136	76	9228F	LW2-G324-1	8	wq replicate	10	9	1	90.0	10.0	27.879	9	30.620	2.74	0.30						
137	127	9229F	LW2-G334	1		10	9	1	90.0	10.0	27.349	9	29.990	2.64	0.29						
138	15	9229F	LW2-G334	2		10	10	0	100.0	0.0	29.933	10	32.124	2.19	0.22						
139	95	9229F	LW2-G334	3		10	10	0	100.0	0.0	28.851	10	31.538	2.69	0.27						
140	97	9229F	LW2-G334	4		10	7	3	70.0	30.0	26.856	7	29.037	2.18	0.31						
141	86	9229F	LW2-G334	5		10	10	0	100.0	0.0	28.141	10	30.057	1.92	0.19	Mean	9.3	0.8	92.5	7.5	0.25
142	92	9229F	LW2-G334	6		10	10	0	100.0	0.0	28.972	10	31.586	2.61	0.26	SD	1.0	1.0	10.4	10.4	0.04
143	64	9229F	LW2-G334	7		10	9	1	90.0	10.0	27.148	9	29.484	2.34	0.26	n	8	8	8	8	8
144	139	9229F	LW2-G334	8	wq replicate	10	9	1	90.0	10.0	29.132	9	30.996	1.86	0.21						
145	99	9230F	LW2-G345-1	1		10	10	0	100.0	0.0	29.725	10	31.653	1.93	0.19						
146	20	9230F	LW2-G345-1	2		10	10	0	100.0	0.0	28.416	10	29.915	1.50	0.15						
147	78	9230F	LW2-G345-1	3		10	8	2	80.0	20.0	30.285	8	31.967	1.68	0.21						
148	9	9230F	LW2-G345-1	4		10	8	2	80.0	20.0	27.369	8	28.783	1.41	0.18						
149	106	9230F	LW2-G345-1	5		10	10	0	100.0	0.0	29.781	10	31.902	2.12	0.21	Mean	9.5	0.5	95.0	5.0	0.21
150	121	9230F	LW2-G345-1	6		10	10	0	100.0	0.0	30.448	10	33.123	2.68	0.27	SD	0.9	0.9	9.3	9.3	0.05
151	61	9230F	LW2-G345-1	7		10	10	0	100.0	0.0	28.275	10	31.144	2.87	0.29	n	8	8	8	8	8
152	125	9230F	LW2-G345-1	8	wq replicate	10	10	0	100.0	0.0	27.948	10	29.771	1.82	0.18						

ANC07305
BZTO104(e)007305

Test Number: P686-1

Freshwater Sediment Test
28-day Hyalella azteca

		NAS	CLIENT								TARE	WT	DRY	TWT	WT						
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	WT (mg)	COUNT	WT (mg)	(mg)	(mg)			SURV	MORT	PSURV	PMORT	WT
153	85	9231F	LW2-G221	1		10	10	0	100.0	0.0	28.742	10	31.143	2.40	0.24							
154	136	9231F	LW2-G221	2		10	10	0	100.0	0.0	28.113	10	32.182	4.07	0.41							
155	141	9231F	LW2-G221	3		10	10	0	100.0	0.0	27.232	10	30.691	3.46	0.35							
156	75	9231F	LW2-G221	4		10	9	1	90.0	10.0	27.798	9	30.081	2.28	0.25							
157	58	9231F	LW2-G221	5		10	8	2	80.0	20.0	27.773	8	30.168	2.40	0.30		Mean	9.6	0.4	96.3	3.8	0.29
158	131	9231F	LW2-G221	6		10	10	0	100.0	0.0	28.775	10	31.149	2.37	0.24		SD	0.7	0.7	7.4	7.4	0.06
159	34	9231F	LW2-G221	7		10	10	0	100.0	0.0	26.524	10	28.874	2.35	0.24		n	8	8	8	8	8
160	124	9231F	LW2-G221	8	wq replicate	10	10	0	100.0	0.0	30.603	10	33.997	3.39	0.34							
161	100	9232F	LW2-G220	1		10	9	1	90.0	10.0	29.816	9	31.901	2.09	0.23							
162	150	9232F	LW2-G220	2		10	9	1	90.0	10.0	29.442	9	31.745	2.30	0.26							
163	68	9232F	LW2-G220	3		10	10	0	100.0	0.0	28.636	10	31.002	2.37	0.24							
164	42	9232F	LW2-G220	4		10	9	1	90.0	10.0	28.165	9	30.396	2.23	0.25							
165	119	9232F	LW2-G220	5		10	10	0	100.0	0.0	27.982	10	30.278	2.30	0.23		Mean	9.4	0.6	93.8	6.3	0.22
166	35	9232F	LW2-G220	6		10	10	0	100.0	0.0	34.438	10	36.204	1.77	0.18		SD	0.7	0.7	7.4	7.4	0.05
167	108	9232F	LW2-G220	7		10	8	2	80.0	20.0	28.327	8	30.326	2.00	0.25		n	8	8	8	8	8
168	98	9232F	LW2-G220	8	wq replicate	10	10	0	100.0	0.0	28.326	10	29.385	1.06	0.11							
	One animal lost in each of beakers 10, 16, 23, 59 and 148 during transfer into weighing pans																					

ANC07306
BZTO104(e)007306

Test Number: 686-1

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
BULK SEDIMENT POREWATER														
	9208F	Control											<0.5	7.2
	9213F	LW2-G009											0.5	7.0
	9214F	LW2-G010											2.5	6.7
	9215F	LW2-G011											7.9	6.8
	9216F	LW2-G007-1											6.3	6.6
	9217F	LW2-G026											4.2	6.7
	9218F	LW2-G060											1.1	7.1
	9219F	LW2-G064											0.5	7.1
	9220F	LW2-G203-1											5.1	6.7
	9221F	LW2-G066											4.2	6.8
	9222F	LW2-G015											4.3	6.9
	9223F	LW2-G019											1.1	7.8
	9224F	LW2-G017											6.2	7.0
	9225F	LW2-G294-1											7.6	6.8
	9226F	LW2-G270											12.5	6.6
	9227F	LW2-G311-1											18.2	6.8
	9228F	LW2-G324-1											0.5	7.0
	9229F	LW2-G334											3.1	7.0
	9230F	LW2-G345-1											12.4	6.5
	9231F	LW2-G221											1.9	7.0
	9232F	LW2-G220											1.6	7.2

Test Number: 686-1

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
OVERLYING WATER														
17	9219F	LW2-G064	8	0	22.7	7.2	165	7.3	51	40	0.2			
31	9220F	LW2-G203-1	8	0	22.6	7.0	170	7.1	43	50	0.6			
32	9216F	LW2-G007-1	8	0	22.6	7.1	160	7.0	51	50	0.5			
37	9218F	LW2-G060	8	0	22.7	6.9	160	7.1	51	40	0.2			
43	9222F	LW2-G015	8	0	22.8	6.9	170	7.1	51	60	0.6			
45	9225F	LW2-G294-1	8	0	23.0	6.8	160	7.0	51	40	0.7			
60	9227F	LW2-G311-1	8	0	22.9	6.9	170	7.1	43	40	1.7			
70	9213F	LW2-G009	8	0	22.9	7.1	165	7.2	43	40	0.2			
74	9215F	LW2-G011	8	0	22.9	7.0	160	7.2	43	50	0.4			
76	9228F	LW2-G324-1	8	0	22.8	6.9	155	7.2	34	40	0.1			
94	9226F	LW2-G270	8	0	22.7	6.6	170	7.0	51	40	0.9			
98	9232F	LW2-G220	8	0	22.8	6.8	160	7.0	43	40	0.2			
124	9231F	LW2-G221	8	0	22.9	6.9	160	7.2	51	40	0.3			
125	9230F	LW2-G345-1	8	0	23.1	7.0	225	7.0	43	40	0.8			
139	9229F	LW2-G334	8	0	23.1	6.9	220	7.2	51	50	0.4			
146	9224F	LW2-G017	8	0	23.0	7.1	170	7.3	43	50	0.5			
147	9221F	LW2-G066	8	0	22.8	7.0	160	7.2	51	40	0.4			
148	9217F	LW2-G026	8	0	22.7	6.9	160	7.1	51	40	0.5			
162	9223F	LW2-G019	8	0	22.8	6.8	170	7.1	51	40	0.2			
164	9214F	LW2-G010	8	0	22.9	6.8	160	7.4	43	40	0.4			
167	9208F	Control	8	0	22.9	6.6	170	7.3	43	50	0.2			
17	9219F	LW2-G064	8	1	22.7	7.3	165	7.3						
31	9220F	LW2-G203-1	8	1	22.8	6.9	165	7.1						
32	9216F	LW2-G007-1	8	1	22.8	7.0	160	7.0						
37	9218F	LW2-G060	8	1	22.8	7.2	160	7.0						
43	9222F	LW2-G015	8	1	22.9	7.2	165	7.0						
45	9225F	LW2-G294-1	8	1	23.4	6.0	165	6.9						
60	9227F	LW2-G311-1	8	1	23.2	6.6	165	6.9						
70	9213F	LW2-G009	8	1	23.2	6.8	165	7.0						
74	9215F	LW2-G011	8	1	23.0	6.8	165	7.1						
76	9228F	LW2-G324-1	8	1	23.0	7.0	160	7.1						
94	9226F	LW2-G270	8	1	22.9	7.0	165	7.0						
98	9232F	LW2-G220	8	1	22.9	7.0	160	7.0						
124	9231F	LW2-G221	8	1	23.2	7.0	165	7.1						
125	9230F	LW2-G345-1	8	1	23.3	7.0	195	7.0						
139	9229F	LW2-G334	8	1	23.3	6.7	190	7.1						
146	9224F	LW2-G017	8	1	23.0	6.6	170	7.1						
147	9221F	LW2-G066	8	1	22.9	6.7	160	7.1						
148	9217F	LW2-G026	8	1	22.9	6.8	160	7.0						
162	9223F	LW2-G019	8	1	23.0	6.8	170	7.3						
164	9214F	LW2-G010	8	1	23.2	6.8	165	7.1						
167	9208F	Control	8	1	22.9	7.0	170	7.3						

Test Number: 686-1

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
17	9219F	LW2-G064	8	2	22.8									
31	9220F	LW2-G203-1	8	2	22.9									
32	9216F	LW2-G007-1	8	2	22.8									
37	9218F	LW2-G060	8	2	22.8									
43	9222F	LW2-G015	8	2	22.9									
45	9225F	LW2-G294-1	8	2	23.1									
60	9227F	LW2-G311-1	8	2	23.2									
70	9213F	LW2-G009	8	2	23.2									
74	9215F	LW2-G011	8	2	23.0									
76	9228F	LW2-G324-1	8	2	23.1									
94	9226F	LW2-G270	8	2	23.0									
98	9232F	LW2-G220	8	2	22.9									
124	9231F	LW2-G221	8	2	23.1									
125	9230F	LW2-G345-1	8	2	23.3									
139	9229F	LW2-G334	8	2	23.2									
146	9224F	LW2-G017	8	2	23.2									
147	9221F	LW2-G066	8	2	23.0									
148	9217F	LW2-G026	8	2	23.0									
162	9223F	LW2-G019	8	2	23.1									
164	9214F	LW2-G010	8	2	23.4									
167	9208F	Control	8	2	23.1									
17	9219F	LW2-G064	8	3	22.5	6.6		7.0						
31	9220F	LW2-G203-1	8	3	22.5	6.3		7.0						
32	9216F	LW2-G007-1	8	3	22.5	6.3		7.0						
37	9218F	LW2-G060	8	3	22.5	6.4		7.0						
43	9222F	LW2-G015	8	3	22.6	6.4		7.0						
45	9225F	LW2-G294-1	8	3	22.7	5.5		7.0						
60	9227F	LW2-G311-1	8	3	22.8	6.0		7.0						
70	9213F	LW2-G009	8	3	22.8	6.4		7.0						
74	9215F	LW2-G011	8	3	22.8	6.2		7.1						
76	9228F	LW2-G324-1	8	3	22.7	6.5		7.1						
94	9226F	LW2-G270	8	3	22.7	5.9		7.0						
98	9232F	LW2-G220	8	3	22.7	6.0		7.0						
124	9231F	LW2-G221	8	3	22.7	6.2		7.0						
125	9230F	LW2-G345-1	8	3	22.9	6.0		7.0						
139	9229F	LW2-G334	8	3	23.0	5.8		7.0						
146	9224F	LW2-G017	8	3	23.1	6.0		7.0						
147	9221F	LW2-G066	8	3	23.0	5.9		7.0						
148	9217F	LW2-G026	8	3	22.9	5.8		7.0						
162	9223F	LW2-G019	8	3	22.8	6.0		7.2						
164	9214F	LW2-G010	8	3	23.0	5.7		7.0						
167	9208F	Control	8	3	23.0	6.0		7.0						

Test Number: 686-1

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
17	9219F	LW2-G064	8	4	22.2									
31	9220F	LW2-G203-1	8	4	22.4									
32	9216F	LW2-G007-1	8	4	22.3									
37	9218F	LW2-G060	8	4	22.3									
43	9222F	LW2-G015	8	4	22.4									
45	9225F	LW2-G294-1	8	4	22.6									
60	9227F	LW2-G311-1	8	4	22.6									
70	9213F	LW2-G009	8	4	22.6									
74	9215F	LW2-G011	8	4	22.5									
76	9228F	LW2-G324-1	8	4	22.6									
94	9226F	LW2-G270	8	4	22.5									
98	9232F	LW2-G220	8	4	22.5									
124	9231F	LW2-G221	8	4	22.7									
125	9230F	LW2-G345-1	8	4	22.8									
139	9229F	LW2-G334	8	4	22.8									
146	9224F	LW2-G017	8	4	22.7									
147	9221F	LW2-G066	8	4	22.6									
148	9217F	LW2-G026	8	4	22.6									
162	9223F	LW2-G019	8	4	22.5									
164	9214F	LW2-G010	8	4	22.7									
167	9208F	Control	8	4	22.5									
17	9219F	LW2-G064	8	5	22.1									
31	9220F	LW2-G203-1	8	5	22.2									
32	9216F	LW2-G007-1	8	5	22.2									
37	9218F	LW2-G060	8	5	22.2									
43	9222F	LW2-G015	8	5	22.2									
45	9225F	LW2-G294-1	8	5	22.4									
60	9227F	LW2-G311-1	8	5	22.4									
70	9213F	LW2-G009	8	5	22.4									
74	9215F	LW2-G011	8	5	22.4									
76	9228F	LW2-G324-1	8	5	22.4									
94	9226F	LW2-G270	8	5	22.4									
98	9232F	LW2-G220	8	5	22.4									
124	9231F	LW2-G221	8	5	22.7									
125	9230F	LW2-G345-1	8	5	22.9									
139	9229F	LW2-G334	8	5	22.9									
146	9224F	LW2-G017	8	5	22.7									
147	9221F	LW2-G066	8	5	22.7									
148	9217F	LW2-G026	8	5	22.5									
162	9223F	LW2-G019	8	5	22.6									
164	9214F	LW2-G010	8	5	22.6									
167	9208F	Control	8	5	22.4									

Test Number: 686-1

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
17	9219F	LW2-G064	8	6	22.3	6.8		7.2						
31	9220F	LW2-G203-1	8	6	22.4	6.0		7.1						
32	9216F	LW2-G007-1	8	6	22.4	6.3		7.1						
37	9218F	LW2-G060	8	6	22.3	6.4		7.0						
43	9222F	LW2-G015	8	6	22.4	6.5		7.0						
45	9225F	LW2-G294-1	8	6	22.5	6.0		6.9						
60	9227F	LW2-G311-1	8	6	22.6	6.0		7.0						
70	9213F	LW2-G009	8	6	22.6	6.2		7.0						
74	9215F	LW2-G011	8	6	22.5	6.0		7.0						
76	9228F	LW2-G324-1	8	6	22.5	6.5		7.1						
94	9226F	LW2-G270	8	6	22.5	5.8		7.0						
98	9232F	LW2-G220	8	6	22.4	6.0		7.0						
124	9231F	LW2-G221	8	6	22.7	6.4		6.9						
125	9230F	LW2-G345-1	8	6	22.8	6.0		7.0						
139	9229F	LW2-G334	8	6	22.8	6.2		6.9						
146	9224F	LW2-G017	8	6	22.7	6.3		7.0						
147	9221F	LW2-G066	8	6	22.5	6.2		7.0						
148	9217F	LW2-G026	8	6	22.5	6.2		6.9						
162	9223F	LW2-G019	8	6	22.5	6.3		7.1						
164	9214F	LW2-G010	8	6	22.5	6.3		7.0						
167	9208F	Control	8	6	22.4	6.4		7.1						
17	9219F	LW2-G064	8	7	22.7									
31	9220F	LW2-G203-1	8	7	22.8									
32	9216F	LW2-G007-1	8	7	22.8									
37	9218F	LW2-G060	8	7	22.7									
43	9222F	LW2-G015	8	7	22.7									
45	9225F	LW2-G294-1	8	7	22.8									
60	9227F	LW2-G311-1	8	7	22.9									
70	9213F	LW2-G009	8	7	22.9									
74	9215F	LW2-G011	8	7	22.8									
76	9228F	LW2-G324-1	8	7	22.8									
94	9226F	LW2-G270	8	7	22.8									
98	9232F	LW2-G220	8	7	22.8									
124	9231F	LW2-G221	8	7	22.9									
125	9230F	LW2-G345-1	8	7	23.1									
139	9229F	LW2-G334	8	7	22.9									
146	9224F	LW2-G017	8	7	22.9									
147	9221F	LW2-G066	8	7	22.8									
148	9217F	LW2-G026	8	7	22.9									
162	9223F	LW2-G019	8	7	23.1									
164	9214F	LW2-G010	8	7	23.1									
167	9208F	Control	8	7	22.9									

Test Number: 686-1

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
17	9219F	LW2-G064	8	8	22.6	6.2	165	6.9						
31	9220F	LW2-G203-1	8	8	22.6	5.8	165	6.9						
32	9216F	LW2-G007-1	8	8	22.7	6.2	165	6.8						
37	9218F	LW2-G060	8	8	22.6	6.2	165	6.8						
43	9222F	LW2-G015	8	8	22.7	5.8	170	6.9						
45	9225F	LW2-G294-1	8	8	22.9	5.2	170	6.8						
60	9227F	LW2-G311-1	8	8	22.9	5.1	165	6.7						
70	9213F	LW2-G009	8	8	22.9	6.1	170	6.8						
74	9215F	LW2-G011	8	8	22.9	5.0	170	6.8						
76	9228F	LW2-G324-1	8	8	22.9	6.0	165	6.8						
94	9226F	LW2-G270	8	8	22.8	5.6	165	6.8						
98	9232F	LW2-G220	8	8	22.8	6.0	170	6.8						
124	9231F	LW2-G221	8	8	23.1	5.9	165	6.8						
125	9230F	LW2-G345-1	8	8	23.2	6.0	175	6.9						
139	9229F	LW2-G334	8	8	23.2	5.8	180	6.8						
146	9224F	LW2-G017	8	8	23.1	5.6	170	6.8						
147	9221F	LW2-G066	8	8	23.0	5.8	165	6.8						
148	9217F	LW2-G026	8	8	22.9	5.8	170	6.8						
162	9223F	LW2-G019	8	8	23.0	6.0	170	6.9						
164	9214F	LW2-G010	8	8	23.0	6.0	165	6.9						
167	9208F	Control	8	8	23.0	6.2	170	6.9						
17	9219F	LW2-G064	8	9	23.0									
31	9220F	LW2-G203-1	8	9	23.0									
32	9216F	LW2-G007-1	8	9	23.0									
37	9218F	LW2-G060	8	9	23.0									
43	9222F	LW2-G015	8	9	23.0									
45	9225F	LW2-G294-1	8	9	23.0									
60	9227F	LW2-G311-1	8	9	23.0									
70	9213F	LW2-G009	8	9	23.1									
74	9215F	LW2-G011	8	9	23.2									
76	9228F	LW2-G324-1	8	9	23.2									
94	9226F	LW2-G270	8	9	23.2									
98	9232F	LW2-G220	8	9	23.2									
124	9231F	LW2-G221	8	9	23.4									
125	9230F	LW2-G345-1	8	9	23.4									
139	9229F	LW2-G334	8	9	23.4									
146	9224F	LW2-G017	8	9	23.2									
147	9221F	LW2-G066	8	9	23.2									
148	9217F	LW2-G026	8	9	23.2									
162	9223F	LW2-G019	8	9	23.2									
164	9214F	LW2-G010	8	9	23.2									
167	9208F	Control	8	9	23.2									

Test Number: 686-1

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
17	9219F	LW2-G064	8	10	22.7	6.2		7.2						
31	9220F	LW2-G203-1	8	10	22.8	6.2		7.2						
32	9216F	LW2-G007-1	8	10	22.8	5.6		7.1						
37	9218F	LW2-G060	8	10	22.8	5.9		7.0						
43	9222F	LW2-G015	8	10	22.8	5.5		7.1						
45	9225F	LW2-G294-1	8	10	23.0	4.8		6.9						
60	9227F	LW2-G311-1	8	10	23.0	4.4		6.8						
70	9213F	LW2-G009	8	10	23.0	5.8		7.0						
74	9215F	LW2-G011	8	10	23.0	4.8		7.0						
76	9228F	LW2-G324-1	8	10	23.0	5.8		7.0						
94	9226F	LW2-G270	8	10	22.9	5.2		7.0						
98	9232F	LW2-G220	8	10	22.9	5.4		7.0						
124	9231F	LW2-G221	8	10	23.1	5.6		7.0						
125	9230F	LW2-G345-1	8	10	23.2	5.3		7.0						
139	9229F	LW2-G334	8	10	23.2	5.2		7.3						
146	9224F	LW2-G017	8	10	23.0	5.4		7.1						
147	9221F	LW2-G066	8	10	23.0	5.7		7.0						
148	9217F	LW2-G026	8	10	23.0	5.4		7.0						
162	9223F	LW2-G019	8	10	22.9	5.6		7.1						
164	9214F	LW2-G010	8	10	23.1	5.6		7.1						
167	9208F	Control	8	10	22.9	5.7		7.1						
17	9219F	LW2-G064	8	11	22.6									
31	9220F	LW2-G203-1	8	11	22.7									
32	9216F	LW2-G007-1	8	11	22.7									
37	9218F	LW2-G060	8	11	22.8									
43	9222F	LW2-G015	8	11	22.8									
45	9225F	LW2-G294-1	8	11	23.0									
60	9227F	LW2-G311-1	8	11	23.0									
70	9213F	LW2-G009	8	11	23.0									
74	9215F	LW2-G011	8	11	23.0									
76	9228F	LW2-G324-1	8	11	22.9									
94	9226F	LW2-G270	8	11	22.9									
98	9232F	LW2-G220	8	11	22.9									
124	9231F	LW2-G221	8	11	23.2									
125	9230F	LW2-G345-1	8	11	23.4									
139	9229F	LW2-G334	8	11	23.4									
146	9224F	LW2-G017	8	11	23.1									
147	9221F	LW2-G066	8	11	23.1									
148	9217F	LW2-G026	8	11	23.1									
162	9223F	LW2-G019	8	11	23.3									
164	9214F	LW2-G010	8	11	23.2									
167	9208F	Control	8	11	23.3									

Test Number: 686-1

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
17	9219F	LW2-G064	8	12	22.8									
31	9220F	LW2-G203-1	8	12	22.8									
32	9216F	LW2-G007-1	8	12	22.9									
37	9218F	LW2-G060	8	12	22.9									
43	9222F	LW2-G015	8	12	22.9									
45	9225F	LW2-G294-1	8	12	23.0									
60	9227F	LW2-G311-1	8	12	23.1									
70	9213F	LW2-G009	8	12	23.1									
74	9215F	LW2-G011	8	12	23.2									
76	9228F	LW2-G324-1	8	12	23.2									
94	9226F	LW2-G270	8	12	23.2									
98	9232F	LW2-G220	8	12	23.2									
124	9231F	LW2-G221	8	12	23.4									
125	9230F	LW2-G345-1	8	12	23.4									
139	9229F	LW2-G334	8	12	23.3									
146	9224F	LW2-G017	8	12	23.3									
147	9221F	LW2-G066	8	12	23.2									
148	9217F	LW2-G026	8	12	23.2									
162	9223F	LW2-G019	8	12	23.2									
164	9214F	LW2-G010	8	12	23.4									
167	9208F	Control	8	12	23.4									
17	9219F	LW2-G064	8	13	22.5	6.3		7.0						
31	9220F	LW2-G203-1	8	13	22.6	6.0		6.9						
32	9216F	LW2-G007-1	8	13	22.5	6.2		6.9						
37	9218F	LW2-G060	8	13	22.5	6.5		6.9						
43	9222F	LW2-G015	8	13	22.6	6.0		7.0						
45	9225F	LW2-G294-1	8	13	22.8	5.2		6.8						
60	9227F	LW2-G311-1	8	13	22.8	5.2		6.8						
70	9213F	LW2-G009	8	13	22.9	6.1		6.9						
74	9215F	LW2-G011	8	13	22.8	5.7		6.9						
76	9228F	LW2-G324-1	8	13	22.8	6.4		6.9						
94	9226F	LW2-G270	8	13	22.8	5.5		6.9						
98	9232F	LW2-G220	8	13	22.7	5.8		7.0						
124	9231F	LW2-G221	8	13	23.1	6.2		6.8						
125	9230F	LW2-G345-1	8	13	23.3	5.8		6.9						
139	9229F	LW2-G334	8	13	23.1	5.3		7.7						
146	9224F	LW2-G017	8	13	22.9	5.9		7.0						
147	9221F	LW2-G066	8	13	22.8	6.1		7.0						
148	9217F	LW2-G026	8	13	22.8	5.9		7.0						
162	9223F	LW2-G019	8	13	22.9	6.1		7.0						
164	9214F	LW2-G010	8	13	23.1	5.9		7.0						
167	9208F	Control	8	13	23.1	6.1		7.0						

Test Number: 686-1

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
17	9219F	LW2-G064	8	14	22.8									
31	9220F	LW2-G203-1	8	14	22.9									
32	9216F	LW2-G007-1	8	14	22.9									
37	9218F	LW2-G060	8	14	22.9									
43	9222F	LW2-G015	8	14	22.9									
45	9225F	LW2-G294-1	8	14	23.1									
60	9227F	LW2-G311-1	8	14	23.1									
70	9213F	LW2-G009	8	14	23.2									
74	9215F	LW2-G011	8	14	23.1									
76	9228F	LW2-G324-1	8	14	23.1									
94	9226F	LW2-G270	8	14	23.1									
98	9232F	LW2-G220	8	14	23.0									
124	9231F	LW2-G221	8	14	23.3									
125	9230F	LW2-G345-1	8	14	23.4									
139	9229F	LW2-G334	8	14	23.3									
146	9224F	LW2-G017	8	14	23.2									
147	9221F	LW2-G066	8	14	23.1									
148	9217F	LW2-G026	8	14	23.1									
162	9223F	LW2-G019	8	14	23.3									
164	9214F	LW2-G010	8	14	23.1									
167	9208F	Control	8	14	23.1									
17	9219F	LW2-G064	8	15	22.9	5.0	170	7.1						
31	9220F	LW2-G203-1	8	15	23.0	4.2	165	7.1						
32	9216F	LW2-G007-1	8	15	23.0	4.4	170	7.0						
37	9218F	LW2-G060	8	15	23.0	4.6	165	6.9						
43	9222F	LW2-G015	8	15	23.2	4.2	170	7.0						
45	9225F	LW2-G294-1	8	15	23.3	4.0	165	7.0						
60	9227F	LW2-G311-1	8	15	23.3	4.4	165	6.9						
70	9213F	LW2-G009	8	15	23.3	5.0	170	7.0						
74	9215F	LW2-G011	8	15	23.4	4.4	170	7.0						
76	9228F	LW2-G324-1	8	15	23.2	5.0	170	7.0						
94	9226F	LW2-G270	8	15	23.3	4.0	175	7.1						
98	9232F	LW2-G220	8	15	23.2	4.2	175	7.2						
124	9231F	LW2-G221	8	15	23.5	4.8	180	7.1						
125	9230F	LW2-G345-1	8	15	23.6	4.4	180	7.0						
139	9229F	LW2-G334	8	15	23.5	3.6	205	8.6						
146	9224F	LW2-G017	8	15	23.3	4.2	175	7.1						
147	9221F	LW2-G066	8	15	23.3	4.6	170	7.1						
148	9217F	LW2-G026	8	15	23.3	4.6	170	7.1						
162	9223F	LW2-G019	8	15	23.2	4.8	190	7.1						
164	9214F	LW2-G010	8	15	23.2	4.6	175	7.1						
167	9208F	Control	8	15	23.2	4.8	175	7.1						

Test Number: 686-1

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
17	9219F	LW2-G064	8	16	22.8									
31	9220F	LW2-G203-1	8	16	22.9									
32	9216F	LW2-G007-1	8	16	22.9									
37	9218F	LW2-G060	8	16	22.9									
43	9222F	LW2-G015	8	16	22.9									
45	9225F	LW2-G294-1	8	16	23.0									
60	9227F	LW2-G311-1	8	16	22.9									
70	9213F	LW2-G009	8	16	23.0									
74	9215F	LW2-G011	8	16	23.0									
76	9228F	LW2-G324-1	8	16	23.0									
94	9226F	LW2-G270	8	16	23.0									
98	9232F	LW2-G220	8	16	23.0									
124	9231F	LW2-G221	8	16	23.2									
125	9230F	LW2-G345-1	8	16	23.2									
139	9229F	LW2-G334	8	16	23.2									
146	9224F	LW2-G017	8	16	23.2									
147	9221F	LW2-G066	8	16	23.1									
148	9217F	LW2-G026	8	16	23.0									
162	9223F	LW2-G019	8	16	23.0									
164	9214F	LW2-G010	8	16	23.0									
167	9208F	Control	8	16	22.9									
17	9219F	LW2-G064	8	17	22.6	5.8		7.2						
31	9220F	LW2-G203-1	8	17	22.7	5.6		7.2						
32	9216F	LW2-G007-1	8	17	22.7	5.6		7.2						
37	9218F	LW2-G060	8	17	22.8	5.7		7.1						
43	9222F	LW2-G015	8	17	22.8	5.4		7.1						
45	9225F	LW2-G294-1	8	17	22.9	4.8		7.1						
60	9227F	LW2-G311-1	8	17	22.9	5.0		7.0						
70	9213F	LW2-G009	8	17	22.9	5.8		7.0						
74	9215F	LW2-G011	8	17	22.9	5.6		7.0						
76	9228F	LW2-G324-1	8	17	22.9	5.8		7.1						
94	9226F	LW2-G270	8	17	22.9	5.0		7.2						
98	9232F	LW2-G220	8	17	22.9	5.2		7.3						
124	9231F	LW2-G221	8	17	23.1	5.6		7.2						
125	9230F	LW2-G345-1	8	17	23.2	5.4		7.1						
139	9229F	LW2-G334	8	17	23.3	4.7		8.2						
146	9224F	LW2-G017	8	17	23.0	5.2		7.2						
147	9221F	LW2-G066	8	17	23.0	5.2		7.1						
148	9217F	LW2-G026	8	17	22.9	5.4		7.1						
162	9223F	LW2-G019	8	17	22.9	5.4		7.2						
164	9214F	LW2-G010	8	17	23.0	5.6		7.3						
167	9208F	Control	8	17	22.9	5.8		7.3						

Test Number: 686-1

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
17	9219F	LW2-G064	8	18	22.8									
31	9220F	LW2-G203-1	8	18	23.0									
32	9216F	LW2-G007-1	8	18	22.9									
37	9218F	LW2-G060	8	18	22.9									
43	9222F	LW2-G015	8	18	22.9									
45	9225F	LW2-G294-1	8	18	23.1									
60	9227F	LW2-G311-1	8	18	23.0									
70	9213F	LW2-G009	8	18	23.0									
74	9215F	LW2-G011	8	18	23.1									
76	9228F	LW2-G324-1	8	18	23.1									
94	9226F	LW2-G270	8	18	23.1									
98	9232F	LW2-G220	8	18	23.1									
124	9231F	LW2-G221	8	18	23.4									
125	9230F	LW2-G345-1	8	18	23.4									
139	9229F	LW2-G334	8	18	23.4									
146	9224F	LW2-G017	8	18	23.2									
147	9221F	LW2-G066	8	18	23.1									
148	9217F	LW2-G026	8	18	23.1									
162	9223F	LW2-G019	8	18	23.0									
164	9214F	LW2-G010	8	18	23.2									
167	9208F	Control	8	18	23.0									
17	9219F	LW2-G064	8	19	22.6									
31	9220F	LW2-G203-1	8	19	22.9									
32	9216F	LW2-G007-1	8	19	22.9									
37	9218F	LW2-G060	8	19	22.9									
43	9222F	LW2-G015	8	19	22.9									
45	9225F	LW2-G294-1	8	19	23.1									
60	9227F	LW2-G311-1	8	19	23.1									
70	9213F	LW2-G009	8	19	23.1									
74	9215F	LW2-G011	8	19	23.1									
76	9228F	LW2-G324-1	8	19	23.1									
94	9226F	LW2-G270	8	19	23.1									
98	9232F	LW2-G220	8	19	23.1									
124	9231F	LW2-G221	8	19	23.3									
125	9230F	LW2-G345-1	8	19	23.4									
139	9229F	LW2-G334	8	19	23.4									
146	9224F	LW2-G017	8	19	23.2									
147	9221F	LW2-G066	8	19	23.2									
148	9217F	LW2-G026	8	19	23.2									
162	9223F	LW2-G019	8	19	23.1									
164	9214F	LW2-G010	8	19	23.3									
167	9208F	Control	8	19	23.1									

Test Number: 686-1

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
17	9219F	LW2-G064	8	20	23.0	5.4		7.1						
31	9220F	LW2-G203-1	8	20	23.1	5.1		7.0						
32	9216F	LW2-G007-1	8	20	23.0	5.2		7.0						
37	9218F	LW2-G060	8	20	23.0	5.6		7.0						
43	9222F	LW2-G015	8	20	23.1	4.8		7.0						
45	9225F	LW2-G294-1	8	20	23.2	4.4		7.0						
60	9227F	LW2-G311-1	8	20	23.2	4.7		6.9						
70	9213F	LW2-G009	8	20	23.2	5.6		7.0						
74	9215F	LW2-G011	8	20	23.2	5.4		7.0						
76	9228F	LW2-G324-1	8	20	23.2	5.8		7.0						
94	9226F	LW2-G270	8	20	23.1	4.6		7.0						
98	9232F	LW2-G220	8	20	23.1	5.2		7.1						
124	9231F	LW2-G221	8	20	23.4	5.4		7.0						
125	9230F	LW2-G345-1	8	20	23.5	5.0		7.0						
139	9229F	LW2-G334	8	20	23.5	4.4		7.3						
146	9224F	LW2-G017	8	20	23.2	4.8		7.1						
147	9221F	LW2-G066	8	20	23.1	5.0		7.1						
148	9217F	LW2-G026	8	20	23.2	4.8		7.1						
162	9223F	LW2-G019	8	20	23.1	5.8		7.1						
164	9214F	LW2-G010	8	20	23.2	4.8		7.1						
167	9208F	Control	8	20	23.1	5.4		7.1						
17	9219F	LW2-G064	8	21	23.0									
31	9220F	LW2-G203-1	8	21	23.1									
32	9216F	LW2-G007-1	8	21	23.0									
37	9218F	LW2-G060	8	21	23.0									
43	9222F	LW2-G015	8	21	23.0									
45	9225F	LW2-G294-1	8	21	23.0									
60	9227F	LW2-G311-1	8	21	23.1									
70	9213F	LW2-G009	8	21	23.0									
74	9215F	LW2-G011	8	21	23.1									
76	9228F	LW2-G324-1	8	21	23.1									
94	9226F	LW2-G270	8	21	23.1									
98	9232F	LW2-G220	8	21	23.1									
124	9231F	LW2-G221	8	21	23.1									
125	9230F	LW2-G345-1	8	21	23.2									
139	9229F	LW2-G334	8	21	23.3									
146	9224F	LW2-G017	8	21	23.2									
147	9221F	LW2-G066	8	21	23.2									
148	9217F	LW2-G026	8	21	23.2									
162	9223F	LW2-G019	8	21	23.2									
164	9214F	LW2-G010	8	21	23.1									
167	9208F	Control	8	21	23.1									

Test Number: 686-1

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
17	9219F	LW2-G064	8	22	22.0	5.5	160	6.9						
31	9220F	LW2-G203-1	8	22	22.1	5.2	165	6.9						
32	9216F	LW2-G007-1	8	22	22.0	5.5	165	6.9						
37	9218F	LW2-G060	8	22	22.0	5.5	165	6.8						
43	9222F	LW2-G015	8	22	22.0	5.1	165	6.9						
45	9225F	LW2-G294-1	8	22	22.0	4.6	165	6.8						
60	9227F	LW2-G311-1	8	22	22.0	5.1	165	6.7						
70	9213F	LW2-G009	8	22	22.1	5.6	165	7.0						
74	9215F	LW2-G011	8	22	22.1	5.5	165	7.0						
76	9228F	LW2-G324-1	8	22	22.2	6.0	165	6.9						
94	9226F	LW2-G270	8	22	22.1	4.6	170	7.0						
98	9232F	LW2-G220	8	22	22.1	5.5	170	7.2						
124	9231F	LW2-G221	8	22	22.4	5.3	170	6.9						
125	9230F	LW2-G345-1	8	22	22.4	5.1	165	6.9						
139	9229F	LW2-G334	8	22	22.4	5.0	180	7.1						
146	9224F	LW2-G017	8	22	22.3	5.0	170	7.0						
147	9221F	LW2-G066	8	22	22.2	5.5	165	7.0						
148	9217F	LW2-G026	8	22	22.2	5.2	170	7.1						
162	9223F	LW2-G019	8	22	22.0	5.8	170	7.0						
164	9214F	LW2-G010	8	22	22.1	5.3	170	7.0						
167	9208F	Control	8	22	22.0	5.7	165	7.0						
17	9219F	LW2-G064	8	23	22.6									
31	9220F	LW2-G203-1	8	23	22.7									
32	9216F	LW2-G007-1	8	23	22.6									
37	9218F	LW2-G060	8	23	22.6									
43	9222F	LW2-G015	8	23	22.6									
45	9225F	LW2-G294-1	8	23	22.8									
60	9227F	LW2-G311-1	8	23	22.8									
70	9213F	LW2-G009	8	23	22.8									
74	9215F	LW2-G011	8	23	22.7									
76	9228F	LW2-G324-1	8	23	22.7									
94	9226F	LW2-G270	8	23	22.6									
98	9232F	LW2-G220	8	23	22.6									
124	9231F	LW2-G221	8	23	22.8									
125	9230F	LW2-G345-1	8	23	22.9									
139	9229F	LW2-G334	8	23	22.8									
146	9224F	LW2-G017	8	23	22.8									
147	9221F	LW2-G066	8	23	22.7									
148	9217F	LW2-G026	8	23	22.6									
162	9223F	LW2-G019	8	23	22.6									
164	9214F	LW2-G010	8	23	22.8									
167	9208F	Control	8	23	22.6									

Test Number: 686-1

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
17	9219F	LW2-G064	8	24	22.9	6.0		6.9						
31	9220F	LW2-G203-1	8	24	23.0	5.8		6.9						
32	9216F	LW2-G007-1	8	24	22.9	5.8		6.9						
37	9218F	LW2-G060	8	24	22.9	6.2		6.9						
43	9222F	LW2-G015	8	24	22.9	5.4		6.8						
45	9225F	LW2-G294-1	8	24	23.0	5.0		6.7						
60	9227F	LW2-G311-1	8	24	23.0	5.3		6.7						
70	9213F	LW2-G009	8	24	23.0	6.2		6.8						
74	9215F	LW2-G011	8	24	23.0	6.0		6.9						
76	9228F	LW2-G324-1	8	24	23.0	6.4		6.9						
94	9226F	LW2-G270	8	24	22.9	5.1		6.9						
98	9232F	LW2-G220	8	24	22.9	6.0		7.0						
124	9231F	LW2-G221	8	24	23.2	5.8		7.0						
125	9230F	LW2-G345-1	8	24	23.2	5.6		6.9						
139	9229F	LW2-G334	8	24	23.2	5.5		6.9						
146	9224F	LW2-G017	8	24	23.1	5.6		6.9						
147	9221F	LW2-G066	8	24	23.0	5.8		6.9						
148	9217F	LW2-G026	8	24	23.0	5.5		7.0						
162	9223F	LW2-G019	8	24	23.0	6.1		7.0						
164	9214F	LW2-G010	8	24	23.1	5.6		7.0						
167	9208F	Control	8	24	23.0	6.1		7.0						
17	9219F	LW2-G064	8	25	22.6									
31	9220F	LW2-G203-1	8	25	22.7									
32	9216F	LW2-G007-1	8	25	22.7									
37	9218F	LW2-G060	8	25	22.7									
43	9222F	LW2-G015	8	25	22.8									
45	9225F	LW2-G294-1	8	25	22.9									
60	9227F	LW2-G311-1	8	25	22.9									
70	9213F	LW2-G009	8	25	22.9									
74	9215F	LW2-G011	8	25	22.9									
76	9228F	LW2-G324-1	8	25	22.9									
94	9226F	LW2-G270	8	25	22.8									
98	9232F	LW2-G220	8	25	22.8									
124	9231F	LW2-G221	8	25	23.1									
125	9230F	LW2-G345-1	8	25	23.2									
139	9229F	LW2-G334	8	25	23.2									
146	9224F	LW2-G017	8	25	23.0									
147	9221F	LW2-G066	8	25	23.0									
148	9217F	LW2-G026	8	25	22.9									
162	9223F	LW2-G019	8	25	22.9									
164	9214F	LW2-G010	8	25	22.9									
167	9208F	Control	8	25	22.9									

Test Number: 686-1

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
17	9219F	LW2-G064	8	26	23.1									
31	9220F	LW2-G203-1	8	26	23.1									
32	9216F	LW2-G007-1	8	26	23.1									
37	9218F	LW2-G060	8	26	23.0									
43	9222F	LW2-G015	8	26	23.1									
45	9225F	LW2-G294-1	8	26	23.1									
60	9227F	LW2-G311-1	8	26	23.1									
70	9213F	LW2-G009	8	26	23.1									
74	9215F	LW2-G011	8	26	23.1									
76	9228F	LW2-G324-1	8	26	23.2									
94	9226F	LW2-G270	8	26	23.1									
98	9232F	LW2-G220	8	26	23.1									
124	9231F	LW2-G221	8	26	23.1									
125	9230F	LW2-G345-1	8	26	23.2									
139	9229F	LW2-G334	8	26	23.2									
146	9224F	LW2-G017	8	26	23.2									
147	9221F	LW2-G066	8	26	23.2									
148	9217F	LW2-G026	8	26	23.1									
162	9223F	LW2-G019	8	26	23.1									
164	9214F	LW2-G010	8	26	23.1									
167	9208F	Control	8	26	23.1									
17	9219F	LW2-G064	8	27	23.0	5.7		6.5						
31	9220F	LW2-G203-1	8	27	23.0	5.8		6.4						
32	9216F	LW2-G007-1	8	27	23.0	5.2		6.4						
37	9218F	LW2-G060	8	27	23.0	5.7		6.4						
43	9222F	LW2-G015	8	27	23.0	4.8		6.4						
45	9225F	LW2-G294-1	8	27	23.1	4.0		6.2						
60	9227F	LW2-G311-1	8	27	23.0	5.1		6.3						
70	9213F	LW2-G009	8	27	23.1	5.4		6.4						
74	9215F	LW2-G011	8	27	23.1	5.3		6.4						
76	9228F	LW2-G324-1	8	27	23.1	6.0		6.4						
94	9226F	LW2-G270	8	27	23.0	4.8		6.4						
98	9232F	LW2-G220	8	27	23.0	5.1		6.5						
124	9231F	LW2-G221	8	27	23.2	5.2		6.5						
125	9230F	LW2-G345-1	8	27	23.2	4.7		6.4						
139	9229F	LW2-G334	8	27	23.2	4.9		6.4						
146	9224F	LW2-G017	8	27	23.2	4.6		6.5						
147	9221F	LW2-G066	8	27	23.0	4.9		6.5						
148	9217F	LW2-G026	8	27	23.0	5.0		6.5						
162	9223F	LW2-G019	8	27	23.0	5.7		6.5						
164	9214F	LW2-G010	8	27	23.0	4.8		6.6						
167	9208F	Control	8	27	22.9	5.4		6.6						

Test Number: 686-1

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
17	9219F	LW2-G064	8	28	23.0	6.9	150	6.7	43	50	<0.1			
31	9220F	LW2-G203-1	8	28	23.1	6.6	155	6.6	51	40	<0.1			
32	9216F	LW2-G007-1	8	28	23.1	6.7	155	6.6	51	40	<0.1			
37	9218F	LW2-G060	8	28	23.0	6.9	155	6.6	43	40	0.2			
43	9222F	LW2-G015	8	28	23.1	6.4	160	6.6	43	40	0.1			
45	9225F	LW2-G294-1	8	28	23.1	6.4	155	6.6	43	50	<0.1			
60	9227F	LW2-G311-1	8	28	23.1	6.5	155	6.5	43	40	0.1			
70	9213F	LW2-G009	8	28	23.1	6.8	160	6.5	43	40	<0.1			
74	9215F	LW2-G011	8	28	23.2	6.7	160	6.6	43	50	0.1			
76	9228F	LW2-G324-1	8	28	23.2	7.0	155	6.6	43	40	<0.1			
94	9226F	LW2-G270	8	28	23.1	6.5	155	6.6	43	50	<0.1			
98	9232F	LW2-G220	8	28	23.1	6.7	160	6.6	51	40	0.1			
124	9231F	LW2-G221	8	28	23.1	6.8	160	6.7	43	50	0.1			
125	9230F	LW2-G345-1	8	28	23.3	6.4	160	6.7	43	50	<0.1			
139	9229F	LW2-G334	8	28	23.3	6.3	160	6.7	43	40	<0.1			
146	9224F	LW2-G017	8	28	23.2	6.3	160	6.8	43	50	<0.1			
147	9221F	LW2-G066	8	28	23.2	6.7	155	6.8	43	40	<0.1			
148	9217F	LW2-G026	8	28	23.2	6.4	160	6.7	43	50	0.2			
162	9223F	LW2-G019	8	28	23.2	7.2	160	6.8	43	40	<0.1			
164	9214F	LW2-G010	8	28	23.2	6.5	160	6.8	43	50	<0.1			
167	9208F	Control	8	28	23.2	7.0	160	6.8	43	40	<0.1			
				Mean	22.9	5.8	167	7.0	45	44	---		5.1	6.9
				SD	0.3	0.8	11	0.2	4	5	---		4.7	0.3
				n	609	294	126	294	42	42	42		21	21
				Min	22.0	3.6	150	6.2	34	40	<0.1		<0.5	6.5
				Max	23.6	7.3	225	8.6	51	60	1.7		18.2	7.8

Test Number: 686-2

Freshwater Sediment Test
10-Day Chironomus tentans

Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

ASHED DRY WT= weight of ashed pan + weight of ashed test organisms recovered at test termination
TAFDW=DRY WT - ASHED DRY WT= total ash-free organism weight for given replicate
AFDW=average individual ash-free biomass=TAFDW/WT COUNT

INITIAL WEIGHT

pan #	tare wt (mg)	final wt (mg)	wt count	avg. wt/ organism
1	100.62	103.52	20	0.15
2	104.90	108.31	20	0.17
3	110.95	114.29	20	0.17

INDEX	NAS BKR SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)		SURV	MORT	PSURV	PMORT	WT	AFDW
1	65 9208F	Control	1		10	8	2	80.0	20.0	110.49	8	117.62	112.16	7.13	0.89	5.46	0.68							
2	100 9208F	Control	2		10	8	2	80.0	20.0	93.90	8	101.27	95.55	7.37	0.92	5.72	0.72							
3	157 9208F	Control	3		10	9	1	90.0	10.0	91.79	9	101.15	94.19	9.36	1.04	6.96	0.77							
4	99 9208F	Control	4		10	7	3	70.0	30.0	107.89	7	114.78	109.31	6.89	0.98	5.47	0.78							
5	143 9208F	Control	5		10	9	1	90.0	10.0	91.16	9	98.95	93.19	7.79	0.87	5.76	0.64	Mean	8.5	1.5	85.0	15.0	0.91	0.69
6	88 9208F	Control	6		10	10	0	100.0	0.0	96.03	10	104.75	98.28	8.72	0.87	6.47	0.65	SD	0.9	0.9	9.3	9.3	0.09	0.07
7	152 9208F	Control	7		10	8	2	80.0	20.0	104.90	8	112.42	106.60	7.52	0.94	5.62	0.70	n	8	8	8	8	8	8
8	168 9208F	Control	8	wq replicate	10	9	1	90.0	10.0	100.88	9	107.60	102.36	6.72	0.75	5.24	0.58							
17	104 9213F	LW2-G009	1		10	7	3	70.0	30.0	93.68	7	101.07	95.76	7.39	1.06	5.31	0.76							
18	150 9213F	LW2-G009	2		10	8	2	80.0	20.0	91.29	8	99.77	93.83	8.48	1.06	5.94	0.74							
19	95 9213F	LW2-G009	3		10	8	2	80.0	20.0	98.16	8	108.90	101.32	10.74	1.34	7.58	0.95							
20	18 9213F	LW2-G009	4		10	9	1	90.0	10.0	103.88	9	113.46	106.81	9.58	1.06	6.65	0.74							
21	114 9213F	LW2-G009	5		10	10	0	100.0	0.0	106.96	10	115.34	109.26	8.38	0.84	6.08	0.61	Mean	8.3	1.8	82.5	17.5	1.08	0.76
22	87 9213F	LW2-G009	6		10	10	0	100.0	0.0	91.51	10	101.69	94.38	10.18	1.02	7.31	0.73	SD	1.7	1.7	16.7	16.7	0.15	0.10
23	49 9213F	LW2-G009	7		10	9	1	90.0	10.0	93.99	9	103.32	96.75	9.33	1.04	6.57	0.73	n	8	8	8	8	8	8
24	8 9213F	LW2-G009	8	wq replicate	10	5	5	50.0	50.0	97.18	5	103.33	99.22	6.15	1.23	4.11	0.82							
25	164 9214F	LW2-G010	1		10	7	3	70.0	30.0	105.09	7	115.20	108.46	10.11	1.44	6.74	0.96							
26	103 9214F	LW2-G010	2		10	9	1	90.0	10.0	103.17	9	112.45	106.26	9.28	1.03	6.19	0.69							
27	9 9214F	LW2-G010	3		10	10	0	100.0	0.0	102.16	9	111.45	105.50	9.29	1.03	5.95	0.66							
28	102 9214F	LW2-G010	4		10	9	1	90.0	10.0	106.23	9	114.87	109.18	8.64	0.96	5.69	0.63							
29	17 9214F	LW2-G010	5		10	3	7	30.0	70.0	101.37	3	105.97	103.03	4.60	1.53	2.94	0.98	Mean	8.1	1.9	81.3	18.8	1.10	0.72
30	1 9214F	LW2-G010	6		10	8	2	80.0	20.0	100.78	8	109.98	104.01	9.20	1.15	5.97	0.75	SD	2.3	2.3	23.0	23.0	0.26	0.17
31	111 9214F	LW2-G010	7		10	10	0	100.0	0.0	91.69	10	99.84	94.36	8.15	0.82	5.48	0.55	n	8	8	8	8	8	8
32	37 9214F	LW2-G010	8	wq replicate	10	9	1	90.0	10.0	91.26	9	98.85	93.77	7.59	0.84	5.08	0.56							
33	140 9215F	LW2-G011	1		10	9	1	90.0	10.0	92.93	9	104.60	96.69	11.67	1.30	7.91	0.88							
34	5 9215F	LW2-G011	2		10	9	1	90.0	10.0	97.26	9	108.82	101.02	11.56	1.28	7.80	0.87							
35	10 9215F	LW2-G011	3		10	8	2	80.0	20.0	86.60	8	95.51	89.47	8.91	1.11	6.04	0.76							
36	154 9215F	LW2-G011	4		10	4	6	40.0	60.0	93.27	4	99.45	94.88	6.18	1.55	4.57	1.14							
37	77 9215F	LW2-G011	5		10	7	3	70.0	30.0	102.95	7	112.91	105.67	9.96	1.42	7.24	1.03	Mean	7.8	2.3	77.5	22.5	1.27	0.90
38	13 9215F	LW2-G011	6		10	9	1	90.0	10.0	100.28	9	110.66	103.39	10.38	1.15	7.27	0.81	SD	1.7	1.7	16.7	16.7	0.15	0.13
39	108 9215F	LW2-G011	7		10	8	2	80.0	20.0	100.53	8	110.01	103.22	9.48	1.19	6.79	0.85	n	8	8	8	8	8	8
40	62 9215F	LW2-G011	8	wq replicate	10	8	2	80.0	20.0	87.01	8	96.19	89.55	9.18	1.15	6.64	0.83							
9	25 9216F	LW2-G007-1	1		10	7	3	70.0	30.0	98.13	7	105.57	100.36	7.44	1.06	5.21	0.74							
10	136 9216F	LW2-G007-1	2		10	5	5	50.0	50.0	84.27	5	91.86	86.62	7.59	1.52	5.24	1.05							
11	146 9216F	LW2-G007-1	3		10	9	1	90.0	10.0	103.13	9	112.12	106.31	8.99	1.00	5.81	0.65							
12	160 9216F	LW2-G007-1	4		10	6	4	60.0	40.0	101.77	6	107.55	103.58	5.78	0.96	3.97	0.66							
13	159 9216F	LW2-G007-1	5		10	6	4	60.0	40.0	92.01	6	99.21	94.23	7.20	1.20	4.98	0.83	Mean	7.1	2.9	71.3	28.8	1.10	0.75
14	124 9216F	LW2-G007-1	6		10	8	2	80.0	20.0	112.90	8	122.32	115.70	9.42	1.18	6.62	0.83	SD	1.5	1.5	14.6	14.6	0.20	0.15
15	101 9216F	LW2-G007-1	7		10	7	3	70.0	30.0	103.76	7	110.22	105.95	6.46	0.92	4.27	0.61	n	8	8	8	8	8	8
16	41 9216F	LW2-G007-1	8	wq replicate	10	9	1	90.0	10.0	101.04	9	109.44	103.79	8.40	0.93	5.65	0.63							
65	55 9217F	LW2-G026	1		10	10	0	100.0	0.0	118.68	10	130.26	122.66	11.58	1.16	7.60	0.76							
66	50 9217F	LW2-G026	2		10	10	0	100.0	0.0	92.60	10	101.96	95.38	9.36	0.94	6.58	0.66							
67	127 9217F	LW2-G026	3		10	6	4	60.0	40.0	104.86	6	111.15	107.00	6.29	1.05	4.15	0.69							
68	135 9217F	LW2-G026	4		10	8	2	80.0	20.0	103.43	8	112.16	106.46	8.73	1.09	5.70	0.71							
69	60 9217F	LW2-G026	5		10	9	1	90.0	10.0	110.01	9	120.46	113.15	10.45	1.16	7.31	0.81	Mean	8.1	1.9	81.3	18.8	1.05	0.71
70	58 9217F	LW2-G026	6		10	8	2	80.0	20.0	94.60	8	102.87	96.97	8.27	1.03	5.90	0.74	SD	1.5	1.5	14.6	14.6	0.10	0.06
71	134 9217F	LW2-G026	7		10	7	3	70.0	30.0	87.69	7	93.76	89.52	6.07	0.87	4.24	0.61	n	8	8	8	8	8	8
72	47 9217F	LW2-G026	8	wq replicate	10	7	3	70.0	30.0	98.34	7	106.02	100.96	7.68	1.10	5.06	0.72							

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Test Number: 686-2

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	NAS BKR SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)			SURV	MORT	PSURV	PMORT	WT	AFDW
73	75 9218F	LW2-G060	1		10	9	1	90.0	10.0	89.05	9	100.73	92.88	11.68	1.30	7.85	0.87								
74	39 9218F	LW2-G060	2		10	8	2	80.0	20.0	99.84	8	108.28	102.45	8.44	1.06	5.83	0.73								
75	64 9218F	LW2-G060	3		10	9	1	90.0	10.0	103.66	9	113.76	107.11	10.10	1.12	6.65	0.74								
76	16 9218F	LW2-G060	4		10	10	0	100.0	0.0	86.23	10	98.83	91.12	12.60	1.26	7.71	0.77								
77	74 9218F	LW2-G060	5		10	7	3	70.0	30.0	104.82	7	114.75	108.14	9.93	1.42	6.61	0.94	Mean	8.8	1.3	87.5	12.5	1.20	0.80
78	67 9218F	LW2-G060	6		10	10	0	100.0	0.0	110.39	10	121.46	113.97	11.07	1.11	7.49	0.75	SD	1.0	1.0	10.4	10.4	0.15	0.10
79	163 9218F	LW2-G060	7		10	8	2	80.0	20.0	101.11	8	112.09	104.58	10.98	1.37	7.51	0.94	n	8	8	8	8	8	8
80	15 9218F	LW2-G060	8	wq replicate	10	9	1	90.0	10.0	89.03	9	98.00	91.78	8.97	1.00	6.22	0.69								
81	162 9219F	LW2-G064	1		10	8	2	80.0	20.0	107.05	8	117.09	110.50	10.04	1.26	6.59	0.82								
82	56 9219F	LW2-G064	2		10	9	1	90.0	10.0	102.24	9	111.68	105.28	9.44	1.05	6.40	0.71								
83	92 9219F	LW2-G064	3		10	8	2	80.0	20.0	92.24	8	101.61	95.15	9.37	1.17	6.46	0.81								
84	71 9219F	LW2-G064	4		10	8	2	80.0	20.0	113.87	8	123.40	117.05	9.53	1.19	6.35	0.79								
85	73 9219F	LW2-G064	5		10	8	2	80.0	20.0	105.20	8	116.71	109.04	11.51	1.44	7.67	0.96	Mean	8.4	1.6	83.8	16.3	1.19	0.79
86	83 9219F	LW2-G064	6		10	10	0	100.0	0.0	104.64	10	115.20	108.36	10.56	1.06	6.84	0.68	SD	0.7	0.7	7.4	7.4	0.13	0.09
87	90 9219F	LW2-G064	7		10	8	2	80.0	20.0	99.78	8	109.86	103.29	10.08	1.26	6.57	0.82	n	8	8	8	8	8	8
88	155 9219F	LW2-G064	8	wq replicate	10	8	2	80.0	20.0	105.52	8	114.37	108.59	8.85	1.11	5.78	0.72								
97	80 9220F	LW2-G203-1	1		10	9	1	90.0	10.0	89.57	9	97.80	91.90	8.23	0.91	5.90	0.66								
98	30 9220F	LW2-G203-1	2		10	9	1	90.0	10.0	93.22	9	103.75	97.11	10.53	1.17	6.64	0.74								
99	116 9220F	LW2-G203-1	3		10	2	8	20.0	80.0	98.12	2	100.23	98.83	2.11	1.06	1.40	0.70								
100	84 9220F	LW2-G203-1	4		10	10	0	100.0	0.0	91.42	10	103.05	94.53	11.63	1.16	8.52	0.85								
101	33 9220F	LW2-G203-1	5		10	9	1	90.0	10.0	103.06	9	112.97	106.06	9.91	1.10	6.91	0.77	Mean	8.3	1.8	82.5	17.5	1.02	0.70
102	63 9220F	LW2-G203-1	6		10	9	1	90.0	10.0	103.59	9	112.87	106.51	9.28	1.03	6.36	0.71	SD	2.6	2.6	26.0	26.0	0.12	0.09
103	81 9220F	LW2-G203-1	7		10	10	0	100.0	0.0	99.12	10	107.55	101.81	8.43	0.84	5.74	0.57	n	8	8	8	8	8	8
104	115 9220F	LW2-G203-1	8	wq replicate	10	8	2	80.0	20.0	101.62	8	108.83	103.77	7.21	0.90	5.06	0.63								
89	130 9221F	LW2-G066	1		10	10	0	100.0	0.0	96.55	10	107.40	100.56	10.85	1.09	6.84	0.68								
90	112 9221F	LW2-G066	2		10	10	0	100.0	0.0	100.34	10	109.94	103.46	9.60	0.96	6.48	0.65								
91	79 9221F	LW2-G066	3		10	9	1	90.0	10.0	79.83	9	90.98	82.97	11.15	1.24	8.01	0.89								
92	97 9221F	LW2-G066	4		10	10	0	100.0	0.0	109.70	10	121.19	113.36	11.49	1.15	7.83	0.78								
93	158 9221F	LW2-G066	5		10	9	1	90.0	10.0	89.61	9	99.89	93.00	10.28	1.14	6.89	0.77	Mean	9.0	1.0	90.0	10.0	1.11	0.75
94	61 9221F	LW2-G066	6		10	9	1	90.0	10.0	101.52	9	109.68	104.01	8.36	0.93	5.87	0.65	SD	1.3	1.3	13.1	13.1	0.12	0.08
95	32 9221F	LW2-G066	7		10	9	1	90.0	10.0	93.96	9	104.63	97.59	10.67	1.19	7.04	0.78	n	8	8	8	8	8	8
96	128 9221F	LW2-G066	8	wq replicate	10	6	4	60.0	40.0	110.97	6	118.34	113.48	7.37	1.23	4.86	0.81								
41	66 9222F	LW2-G015	1		10	9	1	90.0	10.0	104.98	9	113.93	107.41	8.95	0.99	6.52	0.72								
42	125 9222F	LW2-G015	2		10	7	3	70.0	30.0	95.59	7	103.76	98.10	8.17	1.17	5.66	0.81								
43	27 9222F	LW2-G015	3		10	10	0	100.0	0.0	97.58	10	108.23	101.30	10.65	1.07	6.93	0.69								
44	34 9222F	LW2-G015	4		10	9	1	90.0	10.0	103.89	9	113.87	107.23	9.98	1.11	6.64	0.74								
45	3 9222F	LW2-G015	5		10	9	1	90.0	10.0	92.70	9	104.21	96.79	11.51	1.28	7.42	0.82	Mean	8.9	1.1	88.8	11.3	1.10	0.74
46	51 9222F	LW2-G015	6		10	10	0	100.0	0.0	82.80	10	92.52	85.86	9.72	0.97	6.66	0.67	SD	1.0	1.0	9.9	9.9	0.10	0.06
47	109 9222F	LW2-G015	7		10	8	2	80.0	20.0	109.03	8	117.79	111.55	8.76	1.10	6.24	0.78	n	8	8	8	8	8	8
48	167 9222F	LW2-G015	8	wq replicate	10	9	1	90.0	10.0	89.62	9	99.81	93.43	10.19	1.13	6.38	0.71								
57	132 9223F	LW2-G019	1		10	10	0	100.0	0.0	99.72	10	111.46	103.10	11.74	1.17	8.36	0.84								
58	151 9223F	LW2-G019	2		10	5	5	50.0	50.0	96.01	5	102.10	97.55	6.09	1.22	4.55	0.91								
59	44 9223F	LW2-G019	3		10	8	2	80.0	20.0	91.32	8	101.51	94.42	10.19	1.27	7.09	0.89								
60	118 9223F	LW2-G019	4		10	8	2	80.0	20.0	96.58	8	107.19	100.52	10.61	1.33	6.67	0.83								
61	149 9223F	LW2-G019	5		10	9	1	90.0	10.0	97.67	9	106.97	99.94	9.30	1.03	7.03	0.78	Mean	8.5	1.5	85.0	15.0	1.15	0.83
62	26 9223F	LW2-G019	6		10	10	0	100.0	0.0	87.90	10	98.93	90.92	11.03	1.10	8.01	0.80	SD	1.6	1.6	16.0	16.0	0.11	0.05
63	68 9223F	LW2-G019	7		10	9	1	90.0	10.0	107.41	9	117.08	109.78	9.67	1.07	7.30	0.81	n	8	8	8	8	8	8
64	59 9223F	LW2-G019	8	wq replicate	10	9	1	90.0	10.0	104.01	9	113.14	106.47	9.13	1.01	6.67	0.74								
49	126 9224F	LW2-G017	1		10	5	5	50.0	50.0	98.69	5	105.65	100.95	6.96	1.39	4.70	0.94								
50	2 9224F	LW2-G017	2		10	10	0	100.0	0.0	100.33	10	113.78	104.92	13.45	1.35	8.86	0.89								
51	142 9224F	LW2-G017	3		10	7	3	70.0	30.0	102.01	7	110.04	104.61	8.03	1.15	5.43	0.78								
52	121 9224F	LW2-G017	4		10	9	1	90.0	10.0	101.78	9	108.90	103.42	7.12	0.79	5.48	0.61								
53	120 9224F	LW2-G017	5		10	3	7	30.0	70.0	89.53	3	93.04	90.70	3.51	1.17	2.34	0.78	Mean	6.5	3.5	65.0	35.0	1.16	0.79
54	45 9224F	LW2-G017	6		10	10	0	100.0	0.0	94.06	10	104.80	97.28	10.74	1.07	7.52	0.75	SD	2.9	2.9	29.3	29.3	0.18	0.10
55	110 9224F	LW2-G017	7		10	3	7	30.0	70.0	101.85	3	105.31	103.15	3.46	1.15	2.16	0.72	n	8	8	8	8	8	8
56	93 9224F	LW2-G017	8	wq replicate	10	5	5	50.0	50.0	111.26	5	117.31	113.02	6.05	1.21	4.29	0.86								
129	12 9225F	LW2-G294-1	1		10	0	10	0.0	100.0	93.91	0														
130	20 9225F	LW2-G294-1	2		10	0	10	0.0	100.0	94.59	0														
131	94 9225F	LW2-G294-1	3		10	0	10	0.0	100.0	93.42	0														
132	19 9225F	LW2-G294-1	4		10	0	10	0.0	100.0	98.05	0														
133	144 9225F	LW2-G294-1	5		10	0	10	0.0	100.0	96.87	0							Mean	0.0	10.0	0.0	100.0	0.00	0.00
134	131 9225F	LW2-G294-1	6		10	0	10	0.0	100.0	93.02	0							SD	0.0	0.0	0.0	0.0	0.00	0.00
135	72 9225F	LW2-G294-1	7		10	0	10	0.0	100.0	102.00	0							n	8	8	8	8	0	0

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Test Number: 686-2

Freshwater Sediment Test
10-Day Chironomus tentans

	NAS	CLIENT									TARE	WT	DRY	ASHED	TWT	WT	TAFDW	AFDW								
INDEX	BKR SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT		WT (mg)	COUNT	WT (mg)	DRY WT (mg)	(mg)	(mg)	(mg)	(mg)			SURV	MORT	PSURV	PMORT	WT	AFDW
136	53 9225F	LW2-G294-1	8	wq replicate	10	0	10	0.0	100.0		103.58	0														

ANC07325
BZTO104(e)007325

Test Number: 686-2

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	NAS BKR SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)			SURV	MORT	PSURV	PMORT	WT	AFDW
121	129 9226F	LW2-G270	1		10	8	2	80.0	20.0	103.92	8	109.69	105.71	5.77	0.72	3.98	0.50								
122	122 9226F	LW2-G270	2		10	4	6	40.0	60.0	89.89	4	92.27	90.55	2.38	0.59	1.72	0.43								
123	141 9226F	LW2-G270	3		10	5	5	50.0	50.0	84.98	5	88.30	86.03	3.32	0.66	2.27	0.45								
124	138 9226F	LW2-G270	4		10	6	4	60.0	40.0	100.65	6	104.47	101.76	3.82	0.64	2.71	0.45								
125	42 9226F	LW2-G270	5		10	7	3	70.0	30.0	99.69	7	104.75	100.94	5.06	0.72	3.81	0.54	Mean	6.3	3.8	62.5	37.5	0.74	0.53
126	161 9226F	LW2-G270	6		10	5	5	50.0	50.0	96.44	5	102.94	98.37	6.50	1.30	4.57	0.91	SD	1.5	1.5	14.9	14.9	0.23	0.16
127	57 9226F	LW2-G270	7		10	8	2	80.0	20.0	113.17	8	119.02	114.91	5.85	0.73	4.11	0.51	n	8	8	8	8	8	8
128	22 9226F	LW2-G270	8	wq replicate	10	7	3	70.0	30.0	102.61	7	106.71	103.81	4.10	0.59	2.90	0.41								
137	28 9227F	LW2-G311-1	1		10	2	8	20.0	80.0	99.78	2	100.05	99.86	0.27	0.13	0.19	0.09								
138	21 9227F	LW2-G311-1	2		10	1	9	10.0	90.0	106.86	1	107.09	107.07	0.23	0.23	0.02	0.02								
139	23 9227F	LW2-G311-1	3		10	0	10	0.0	100.0	98.33	0														
140	119 9227F	LW2-G311-1	4		10	2	8	20.0	80.0	91.49	2	91.98	91.60	0.49	0.25	0.38	0.19								
141	35 9227F	LW2-G311-1	5		10	2	8	20.0	80.0	97.91	2	98.41	98.05	0.50	0.25	0.36	0.18	Mean	1.4	8.6	13.8	86.3	0.19	0.11
142	113 9227F	LW2-G311-1	6		10	1	9	10.0	90.0	85.85	1	85.98	85.89	0.13	0.13	0.09	0.09	SD	1.1	1.1	10.6	10.6	0.06	0.06
143	7 9227F	LW2-G311-1	7		10	3	7	30.0	70.0	112.30	3	112.72	112.43	0.42	0.14	0.29	0.10	n	8	8	8	8	6	6
144	153 9227F	LW2-G311-1	8	wq replicate	10	0	10	0.0	100.0	105.36	0														
145	46 9228F	LW2-G324-1	1		10	7	3	70.0	30.0	98.55	7	107.14	100.88	8.59	1.23	6.26	0.89								
146	145 9228F	LW2-G324-1	2		10	3	7	30.0	70.0	105.54	3	109.71	106.37	4.17	1.39	3.34	1.11								
147	139 9228F	LW2-G324-1	3		10	8	2	80.0	20.0	84.66	8	93.96	87.12	9.30	1.16	6.84	0.85								
148	29 9228F	LW2-G324-1	4		10	10	0	100.0	0.0	94.48	10	104.63	97.66	10.15	1.02	6.97	0.70								
149	52 9228F	LW2-G324-1	5		10	8	2	80.0	20.0	88.36	8	97.78	90.75	9.42	1.18	7.03	0.88	Mean	7.3	2.8	72.5	27.5	1.23	0.93
150	96 9228F	LW2-G324-1	6		10	9	1	90.0	10.0	108.26	9	118.59	110.27	10.33	1.15	8.32	0.92	SD	2.3	2.3	22.5	22.5	0.13	0.13
151	137 9228F	LW2-G324-1	7		10	5	5	50.0	50.0	100.85	5	107.83	102.60	6.98	1.40	5.23	1.05	n	8	8	8	8	8	8
152	98 9228F	LW2-G324-1	8	wq replicate	10	8	2	80.0	20.0	102.75	8	113.53	105.51	10.78	1.35	8.02	1.00								
153	89 9229F	LW2-G334	1		10	10	0	100.0	0.0	104.05	10	113.12	106.86	9.07	0.91	6.26	0.63								
154	82 9229F	LW2-G334	2		10	10	0	100.0	0.0	100.50	10	110.68	104.13	10.18	1.02	6.55	0.66								
155	40 9229F	LW2-G334	3		10	10	0	100.0	0.0	105.28	10	115.10	108.93	9.82	0.98	6.17	0.62								
156	165 9229F	LW2-G334	4		10	9	1	90.0	10.0	96.70	9	107.97	100.63	11.27	1.25	7.34	0.82								
157	14 9229F	LW2-G334	5		10	8	2	80.0	20.0	97.48	8	105.48	100.08	8.00	1.00	5.40	0.68	Mean	9.4	0.6	93.8	6.3	0.96	0.64
158	105 9229F	LW2-G334	6		10	9	1	90.0	10.0	103.10	9	111.10	105.86	8.00	0.89	5.24	0.58	SD	0.7	0.7	7.4	7.4	0.15	0.09
159	70 9229F	LW2-G334	7		10	10	0	100.0	0.0	82.69	10	91.83	85.60	9.14	0.91	6.23	0.62	n	8	8	8	8	8	8
160	38 9229F	LW2-G334	8	wq replicate	10	9	1	90.0	10.0	94.98	9	101.65	97.12	6.67	0.74	4.53	0.50								
161	106 9230F	LW2-G345-1	1		10	9	1	90.0	10.0	85.56	9	95.07	88.89	9.51	1.06	6.18	0.69								
162	6 9230F	LW2-G345-1	2		10	7	3	70.0	30.0	99.96	7	107.03	102.17	7.07	1.01	4.86	0.69								
163	69 9230F	LW2-G345-1	3		10	8	2	80.0	20.0	83.15	8	90.40	85.66	7.25	0.91	4.74	0.59								
164	156 9230F	LW2-G345-1	4		10	8	2	80.0	20.0	99.74	8	108.22	102.65	8.48	1.06	5.57	0.70								
165	148 9230F	LW2-G345-1	5		10	9	1	90.0	10.0	107.76	9	115.28	110.31	7.52	0.84	4.97	0.55	Mean	8.3	1.8	82.5	17.5	0.96	0.64
166	31 9230F	LW2-G345-1	6		10	8	2	80.0	20.0	105.08	8	113.20	107.86	8.12	0.90	5.34	0.59	SD	0.7	0.7	7.1	7.1	0.08	0.06
167	133 9230F	LW2-G345-1	7		10	8	2	80.0	20.0	99.44	8	107.49	102.13	8.05	1.01	5.36	0.67	n	8	8	8	8	8	8
168	91 9230F	LW2-G345-1	8	wq replicate	10	9	1	90.0	10.0	104.09	9	112.48	106.96	8.39	0.93	5.52	0.61								
113	107 9231F	LW2-G221	1		10	9	1	90.0	10.0	101.96	9	112.00	104.87	10.04	1.12	7.13	0.79								
114	123 9231F	LW2-G221	2		10	7	3	70.0	30.0	97.84	7	104.69	99.83	6.85	0.98	4.86	0.69								
115	36 9231F	LW2-G221	3		10	7	3	70.0	30.0	91.54	7	96.29	92.79	4.75	0.68	3.50	0.50								
116	166 9231F	LW2-G221	4		10	8	2	80.0	20.0	89.77	8	99.27	92.49	9.50	1.19	6.78	0.85								
117	11 9231F	LW2-G221	5		10	10	0	100.0	0.0	93.07	10	102.18	95.44	9.11	0.91	6.74	0.67	Mean	8.6	1.4	86.3	13.8	1.03	0.73
118	4 9231F	LW2-G221	6		10	9	1	90.0	10.0	96.04	9	107.01	99.65	10.97	1.22	7.36	0.82	SD	1.2	1.2	11.9	11.9	0.18	0.11
119	54 9231F	LW2-G221	7		10	10	0	100.0	0.0	86.83	10	96.76	89.86	9.93	0.99	6.90	0.69	n	8	8	8	8	8	8
120	76 9231F	LW2-G221	8	wq replicate	10	9	1	90.0	10.0	101.23	9	111.43	104.24	10.20	1.13	7.19	0.80								
105	117 9232F	LW2-G220	1		10	7	3	70.0	30.0	105.66	7	111.67	107.66	6.01	0.86	4.01	0.57								
106	78 9232F	LW2-G220	2		10	7	3	70.0	30.0	102.31	7	110.85	104.49	8.54	1.22	6.36	0.91								
107	85 9232F	LW2-G220	3		10	9	1	90.0	10.0	89.89	9	98.25	92.80	8.36	0.93	5.45	0.61								
108	48 9232F	LW2-G220	4		10	9	1	90.0	10.0	94.72	9	103.69	97.31	8.97	1.00	6.38	0.71								
109	24 9232F	LW2-G220	5		10	10	0	100.0	0.0	98.25	10	108.08	101.02	9.83	0.98	7.06	0.71	Mean	8.3	1.8	82.5	17.5	0.99	0.70
110	86 9232F	LW2-G220	6		10	9	1	90.0	10.0	99.40	9	108.16	102.01	8.76	0.97	6.15	0.68	SD	1.2	1.2	11.6	11.6	0.10	0.10
111	147 9232F	LW2-G220	7		10	8	2	80.0	20.0	92.23	8	99.94	94.64	7.71	0.96	5.30	0.66	n	8	8	8	8	8	8
112	43 9232F	LW2-G220	8	wq replicate	10	7	3	70.0	30.0	100.51	7	107.54	102.33	7.03	1.00	5.21	0.74								

Beaker #9: one animal lost or damaged in transfering to weighing pan

ANC07326
BZTO104(e)007326

Test Number: 686-2

Freshwater Sediment Test
10-Day Chironomus tentans

Water Quality Data

	NAS	CLIENT			Bulk Sediment Interstitial water	
	SMPL	DESCRIP			NH3	pH
	9208F	Control			<0.5	7.2
	9213F	LW2-G009			0.5	7.0
	9214F	LW2-G010			2.5	6.7
	9215F	LW2-G011			7.9	6.8
	9216F	LW2-G007-1			6.3	6.6
	9217F	LW2-G026			4.2	6.7
	9218F	LW2-G060			1.1	7.1
	9219F	LW2-G064			0.5	7.1
	9220F	LW2-G203-1			5.1	6.7
	9221F	LW2-G066			4.2	6.8
	9222F	LW2-G015			4.3	6.9
	9223F	LW2-G019			1.1	7.8
	9224F	LW2-G017			6.2	7.0
	9225F	LW2-G294-1			7.6	6.8
	9226F	LW2-G270			12.5	6.6
	9227F	LW2-G311-1			18.2	6.8
	9228F	LW2-G324-1			0.5	7.0
	9229F	LW2-G334			3.1	7.0
	9230F	LW2-G345-1			12.4	6.5
	9231F	LW2-G221			1.9	7.0
	9232F	LW2-G220			1.6	7.2

	NAS	CLIENT			Overlying water						
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	NH3	HARD	ALK
8	9213F	LW2-G009	8	0	22.7	7.2	165	7.5	0.1	43	40
15	9218F	LW2-G060	8	0	22.9	7.0	160	7.3	0.2	51	40
22	9226F	LW2-G270	8	0	22.6	7.1	165	7.0	0.8	51	40
37	9214F	LW2-G010	8	0	22.6	7.0	160	7.1	0.5	43	40
38	9229F	LW2-G334	8	0	22.6	6.8	205	7.3	0.3	60	40
41	9216F	LW2-G007-1	8	0	22.6	6.9	160	7.2	0.5	51	40
43	9232F	LW2-G220	8	0	22.6	7.0	160	7.1	0.2	51	40
47	9217F	LW2-G026	8	0	22.5	6.8	165	7.1	0.5	51	40
53	9225F	LW2-G294-1	8	0	22.6	6.9	160	7.0	---	43	40
59	9223F	LW2-G019	8	0	22.7	6.8	165	7.5	0.2	43	40
62	9215F	LW2-G011	8	0	22.7	6.6	165	7.2	0.5	43	40
76	9231F	LW2-G221	8	0	22.6	6.7	160	7.2	0.3	51	40
91	9230F	LW2-G345-1	8	0	22.7	6.8	240	7.0	1.0	51	40
93	9224F	LW2-G017	8	0	22.7	6.9	170	7.1	0.6	43	40
98	9228F	LW2-G324-1	8	0	22.7	6.8	155	7.1	0.2	51	40
115	9220F	LW2-G203-1	8	0	22.7	6.8	165	7.1	0.5	51	50
128	9221F	LW2-G066	8	0	22.9	6.8	160	7.1	0.5	34	50
153	9227F	LW2-G311-1	8	0	22.7	6.9	160	7.1	1.3	43	60
155	9219F	LW2-G064	8	0	22.6	7.0	160	7.1	0.2	34	50
167	9222F	LW2-G015	8	0	22.8	6.8	170	7.2	0.5	51	40
168	9207F	Control	8	0	22.9	6.5	165	7.2	0.2	51	40
8	9213F	LW2-G009	8	1	22.9	7.0	165	7.3			
15	9218F	LW2-G060	8	1	22.9	7.1	160	7.2			
22	9226F	LW2-G270	8	1	22.8	7.0	165	6.9			
37	9214F	LW2-G010	8	1	22.8	6.8	160	7.0			
38	9229F	LW2-G334	8	1	22.8	6.6	185	7.1			
41	9216F	LW2-G007-1	8	1	22.8	6.8	160	7.1			
43	9232F	LW2-G220	8	1	22.8	6.8	160	7.1			
47	9217F	LW2-G026	8	1	22.8	6.8	160	7.1			

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Test Number: 686-2

Freshwater Sediment Test
10-Day Chironomus tentans

53	9225F	LW2-G294-1	8	1	22.7	6.5	160	7.1						
59	9223F	LW2-G019	8	1	22.9	6.4	170	7.3						
62	9215F	LW2-G011	8	1	22.8	6.5	165	7.2						
76	9231F	LW2-G221	8	1	22.9	6.8	160	7.1						
91	9230F	LW2-G345-1	8	1	22.9	6.8	200	7.0						
93	9224F	LW2-G017	8	1	22.9	6.8	170	7.2						
98	9228F	LW2-G324-1	8	1	22.9	6.8	160	7.2						
115	9220F	LW2-G203-1	8	1	23.1	7.0	160	7.1						
128	9221F	LW2-G066	8	1	22.9	7.0	160	7.1						
153	9227F	LW2-G311-1	8	1	22.9	7.0	165	7.1						
155	9219F	LW2-G064	8	1	23.1	7.0	160	7.1						
167	9222F	LW2-G015	8	1	23.1	7.0	165	7.2						
168	9207F	Control	8	1	23.1	6.4	165	7.3						
8	9213F	LW2-G009	8	2	23.3	7.1								
15	9218F	LW2-G060	8	2	23.4	6.9								
22	9226F	LW2-G270	8	2	23.1	6.2								
37	9214F	LW2-G010	8	2	23.0	6.2								
38	9229F	LW2-G334	8	2	23.0	6.1								
41	9216F	LW2-G007-1	8	2	23.0	6.1								
43	9232F	LW2-G220	8	2	22.9	6.4								
47	9217F	LW2-G026	8	2	23.0	6.6								
53	9225F	LW2-G294-1	8	2	22.9	6.3								
59	9223F	LW2-G019	8	2	23.1	6.4								
62	9215F	LW2-G011	8	2	22.9	6.5								
76	9231F	LW2-G221	8	2	23.1	6.6								
91	9230F	LW2-G345-1	8	2	23.1	6.7								
93	9224F	LW2-G017	8	2	23.1	6.5								
98	9228F	LW2-G324-1	8	2	23.2	6.5								
115	9220F	LW2-G203-1	8	2	23.3	6.6								
128	9221F	LW2-G066	8	2	23.1	6.6								
153	9227F	LW2-G311-1	8	2	23.1	6.6								
155	9219F	LW2-G064	8	2	23.3	6.9								
167	9222F	LW2-G015	8	2	23.4	6.7								
168	9207F	Control	8	2	23.5	6.7								
8	9213F	LW2-G009	8	3	22.7	5.1								
15	9218F	LW2-G060	8	3	22.9	5.4								
22	9226F	LW2-G270	8	3	22.7	5.2								
37	9214F	LW2-G010	8	3	22.7	5.2								
38	9229F	LW2-G334	8	3	22.6	5.2								
41	9216F	LW2-G007-1	8	3	22.6	4.6								
43	9232F	LW2-G220	8	3	22.7	4.7								
47	9217F	LW2-G026	8	3	22.6	4.8								
53	9225F	LW2-G294-1	8	3	22.6	4.8								
59	9223F	LW2-G019	8	3	22.6	4.6								
62	9215F	LW2-G011	8	3	22.7	4.8								
76	9231F	LW2-G221	8	3	22.6	5.1								
91	9230F	LW2-G345-1	8	3	22.7	5.3								
93	9224F	LW2-G017	8	3	22.6	4.9								
98	9228F	LW2-G324-1	8	3	22.6	4.7								
115	9220F	LW2-G203-1	8	3	22.8	5.0								
128	9221F	LW2-G066	8	3	22.8	5.0								
153	9227F	LW2-G311-1	8	3	22.8	5.2								
155	9219F	LW2-G064	8	3	22.6	5.4								
167	9222F	LW2-G015	8	3	22.7	5.2								
168	9207F	Control	8	3	22.8	5.6								
8	9213F	LW2-G009	8	4	22.5	6.4								
15	9218F	LW2-G060	8	4	22.7	6.5								
22	9226F	LW2-G270	8	4	22.4	6.3								
37	9214F	LW2-G010	8	4	22.4	6.1								

38	9229F	LW2-G334	8	4	22.4	6.3								
41	9216F	LW2-G007-1	8	4	22.5	5.9								
43	9232F	LW2-G220	8	4	22.4	5.8								
47	9217F	LW2-G026	8	4	22.4	6.0								
53	9225F	LW2-G294-1	8	4	22.4	6.0								
59	9223F	LW2-G019	8	4	22.5	6.0								
62	9215F	LW2-G011	8	4	22.4	5.8								
76	9231F	LW2-G221	8	4	22.5	6.1								
91	9230F	LW2-G345-1	8	4	22.5	6.3								
93	9224F	LW2-G017	8	4	22.5	6.0								
98	9228F	LW2-G324-1	8	4	22.5	5.9								
115	9220F	LW2-G203-1	8	4	22.6	6.2								
128	9221F	LW2-G066	8	4	22.4	6.2								
153	9227F	LW2-G311-1	8	4	22.4	6.3								
155	9219F	LW2-G064	8	4	22.6	6.4								
167	9222F	LW2-G015	8	4	22.6	6.4								
168	9207F	Control	8	4	22.7	6.6								
8	9213F	LW2-G009	8	5	22.4	5.8								
15	9218F	LW2-G060	8	5	22.6	5.7								
22	9226F	LW2-G270	8	5	22.6	5.7								
37	9214F	LW2-G010	8	5	22.3	5.7								
38	9229F	LW2-G334	8	5	22.4	5.8								
41	9216F	LW2-G007-1	8	5	22.4	5.1								
43	9232F	LW2-G220	8	5	22.4	5.3								
47	9217F	LW2-G026	8	5	22.3	5.7								
53	9225F	LW2-G294-1	8	5	22.3	5.2								
59	9223F	LW2-G019	8	5	22.5	5.0								
62	9215F	LW2-G011	8	5	22.3	5.3								
76	9231F	LW2-G221	8	5	22.4	5.4								
91	9230F	LW2-G345-1	8	5	22.3	5.2								
93	9224F	LW2-G017	8	5	22.4	4.9								
98	9228F	LW2-G324-1	8	5	22.4	4.9								
115	9220F	LW2-G203-1	8	5	22.5	5.1								
128	9221F	LW2-G066	8	5	22.4	5.3								
153	9227F	LW2-G311-1	8	5	22.3	5.5								
155	9219F	LW2-G064	8	5	22.4	5.6								
167	9222F	LW2-G015	8	5	22.5	4.6								
168	9207F	Control	8	5	22.5	5.1								
8	9213F	LW2-G009	8	6	22.5	5.4								
15	9218F	LW2-G060	8	6	22.6	5.0								
22	9226F	LW2-G270	8	6	22.4	5.2								
37	9214F	LW2-G010	8	6	22.3	5.2								
38	9229F	LW2-G334	8	6	22.4	5.2								
41	9216F	LW2-G007-1	8	6	22.4	4.8								
43	9232F	LW2-G220	8	6	22.4	5.0								
47	9217F	LW2-G026	8	6	22.4	5.0								
53	9225F	LW2-G294-1	8	6	22.3	4.7								
59	9223F	LW2-G019	8	6	22.4	4.8								
62	9215F	LW2-G011	8	6	22.4	4.8								
76	9231F	LW2-G221	8	6	22.3	5.0								
91	9230F	LW2-G345-1	8	6	22.4	4.8								
93	9224F	LW2-G017	8	6	22.4	5.0								
98	9228F	LW2-G324-1	8	6	22.4	5.0								
115	9220F	LW2-G203-1	8	6	22.5	5.4								
128	9221F	LW2-G066	8	6	22.3	5.4								
153	9227F	LW2-G311-1	8	6	22.4	5.5								
155	9219F	LW2-G064	8	6	22.5	5.6								
167	9222F	LW2-G015	8	6	22.5	4.8								
168	9207F	Control	8	6	22.5	5.1								

8	9213F	LW2-G009	8	7	23.0	4.7								
15	9218F	LW2-G060	8	7	23.0	4.1								
22	9226F	LW2-G270	8	7	23.0	4.0								
37	9214F	LW2-G010	8	7	22.8	4.2								
38	9229F	LW2-G334	8	7	22.8	4.6								
41	9216F	LW2-G007-1	8	7	22.9	3.9								
43	9232F	LW2-G220	8	7	22.9	4.0								
47	9217F	LW2-G026	8	7	22.8	4.3								
53	9225F	LW2-G294-1	8	7	22.8	4.2								
59	9223F	LW2-G019	8	7	22.7	4.4								
62	9215F	LW2-G011	8	7	22.9	4.2								
76	9231F	LW2-G221	8	7	22.7	4.7								
91	9230F	LW2-G345-1	8	7	22.9	4.3								
93	9224F	LW2-G017	8	7	22.8	4.5								
98	9228F	LW2-G324-1	8	7	22.8	4.4								
115	9220F	LW2-G203-1	8	7	22.9	4.6								
128	9221F	LW2-G066	8	7	22.7	4.8								
153	9227F	LW2-G311-1	8	7	22.7	4.6								
155	9219F	LW2-G064	8	7	22.7	4.5								
167	9222F	LW2-G015	8	7	22.9	4.4								
168	9207F	Control	8	7	22.9	4.6								
8	9213F	LW2-G009	8	8	22.8	4.1								
15	9218F	LW2-G060	8	8	22.9	4.0								
22	9226F	LW2-G270	8	8	22.7	3.4								
37	9214F	LW2-G010	8	8	22.7	3.8								
38	9229F	LW2-G334	8	8	22.7	3.8								
41	9216F	LW2-G007-1	8	8	22.8	4.2								
43	9232F	LW2-G220	8	8	22.7	3.2								
47	9217F	LW2-G026	8	8	22.7	3.4								
53	9225F	LW2-G294-1	8	8	22.7	3.8								
59	9223F	LW2-G019	8	8	22.7	3.8								
62	9215F	LW2-G011	8	8	22.7	3.3								
76	9231F	LW2-G221	8	8	22.7	4.1								
91	9230F	LW2-G345-1	8	8	22.7	3.3								
93	9224F	LW2-G017	8	8	22.7	3.6								
98	9228F	LW2-G324-1	8	8	22.7	3.4								
115	9220F	LW2-G203-1	8	8	22.8	3.8								
128	9221F	LW2-G066	8	8	22.7	4.2								
153	9227F	LW2-G311-1	8	8	22.6	4.6								
155	9219F	LW2-G064	8	8	22.8	4.3								
167	9222F	LW2-G015	8	8	22.8	3.8								
168	9207F	Control	8	8	22.8	3.8								
8	9213F	LW2-G009	8	9	23.2	3.8								
15	9218F	LW2-G060	8	9	23.2	3.9								
22	9226F	LW2-G270	8	9	23.2	3.6								
37	9214F	LW2-G010	8	9	23.1	3.8								
38	9229F	LW2-G334	8	9	23.1	3.9								
41	9216F	LW2-G007-1	8	9	23.1	3.9								
43	9232F	LW2-G220	8	9	23.1	4.0								
47	9217F	LW2-G026	8	9	23.1	3.8								
53	9225F	LW2-G294-1	8	9	23.1	3.4								
59	9223F	LW2-G019	8	9	23.1	3.3								
62	9215F	LW2-G011	8	9	23.1	3.0								
76	9231F	LW2-G221	8	9	23.1	3.6								
91	9230F	LW2-G345-1	8	9	23.1	3.6								
93	9224F	LW2-G017	8	9	23.1	3.7								
98	9228F	LW2-G324-1	8	9	23.1	3.5								
115	9220F	LW2-G203-1	8	9	23.1	3.7								
128	9221F	LW2-G066	8	9	23.1	3.8								

153	9227F	LW2-G311-1	8	9	23.2	3.8								
155	9219F	LW2-G064	8	9	23.1	3.9								
167	9222F	LW2-G015	8	9	23.2	4.2								
168	9207F	Control	8	9	23.2	4.0								
8	9213F	LW2-G009	8	10	23.0	4.8	205	7.0	0.1	43	50			
15	9218F	LW2-G060	8	10	23.0	4.6	175	7.0	<0.1	43	40			
22	9226F	LW2-G270	8	10	22.9	4.6	160	6.9	0.4	43	40			
37	9214F	LW2-G010	8	10	22.9	4.4	160	6.8	0.3	43	50			
38	9229F	LW2-G334	8	10	22.8	4.4	170	7.0	0.1	43	40			
41	9216F	LW2-G007-1	8	10	22.9	4.7	160	7.0	0.2	43	40			
43	9232F	LW2-G220	8	10	22.9	4.2	160	6.9	0.2	43	40			
47	9217F	LW2-G026	8	10	22.8	4.3	160	6.9	0.3	51	40			
53	9225F	LW2-G294-1	8	10	22.8	4.2	160	6.9	0.2	43	40			
59	9223F	LW2-G019	8	10	22.9	4.6	165	7.0	<0.1	43	50			
62	9215F	LW2-G011	8	10	22.8	4.3	165	7.0	0.2	43	50			
76	9231F	LW2-G221	8	10	22.8	4.8	160	6.9	<0.1	43	50			
91	9230F	LW2-G345-1	8	10	22.8	4.1	165	6.9	0.3	43	50			
93	9224F	LW2-G017	8	10	22.8	4.0	165	6.8	0.3	51	40			
98	9228F	LW2-G324-1	8	10	22.8	4.6	160	6.9	<0.1	60	40			
115	9220F	LW2-G203-1	8	10	22.9	4.3	160	6.8	0.1	43	40			
128	9221F	LW2-G066	8	10	22.8	4.4	160	6.8	0.1	43	40			
153	9227F	LW2-G311-1	8	10	22.7	4.9	160	6.9	0.4	51	50			
155	9219F	LW2-G064	8	10	22.8	5.2	160	6.9	<0.1	43	40			
167	9222F	LW2-G015	8	10	22.8	4.6	160	6.9	0.1	51	50			
168	9207F	Control	8	10	22.8	4.0	165	6.9	0.1	43	40			
				Mean	22.8	5.3	166	7.1	---	46	43		---	---
				SD	0.3	1.1	14	0.2	---	6	5		---	---
				n	231	231	63	63	42	42	42		21	21
				Min	22.3	3.0	155	6.8	<0.1	34	40		<0.5	6.5
				Max	23.5	7.2	240	7.5	1.3	60	60		18.2	7.8

Test Number: P686-3

Freshwater Sediment Test
28-day Hyalella azteca

Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or
dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

INITIAL WEIGHT

pan #	tare wt (mg)	final wt (mg)	wt count	avg. wt/ organism
1	30.139	30.911	20	0.039
2	28.372	29.065	20	0.035
3	29.059	29.775	20	0.036
4	29.090	29.784	20	0.035
5	27.970	28.729	20	0.038

INDEX	NAS BKR SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)
1	11 9208F	Control	1		10	9	1	90.0	10.0	30.527	9	33.316	2.79	0.31
2	131 9208F	Control	2		10	10	0	100.0	0.0	27.743	10	31.226	3.48	0.35
3	120 9208F	Control	3		10	10	0	100.0	0.0	29.284	10	32.428	3.14	0.31
4	60 9208F	Control	4		10	10	0	100.0	0.0	29.201	10	32.682	3.48	0.35
5	158 9208F	Control	5		10	10	0	100.0	0.0	28.380	10	31.501	3.12	0.31
6	152 9208F	Control	6		10	10	0	100.0	0.0	29.588	10	32.672	3.08	0.31
7	133 9208F	Control	7		10	9	1	90.0	10.0	29.636	9	33.553	3.92	0.44
8	14 9208F	Control	8	wq replicate	10	10	0	100.0	0.0	31.707	10	34.298	2.59	0.26
9	32 9303F	LW2-G020	1		10	10	0	100.0	0.0	29.395	10	31.895	2.50	0.25
10	9 9303F	LW2-G020	2		10	10	0	100.0	0.0	29.563	10	32.312	2.75	0.27
11	130 9303F	LW2-G020	3		10	10	0	100.0	0.0	27.715	10	30.204	2.49	0.25
12	147 9303F	LW2-G020	4		10	10	0	100.0	0.0	31.286	10	33.897	2.61	0.26
13	82 9303F	LW2-G020	5		10	10	0	100.0	0.0	29.879	10	31.842	1.96	0.20
14	164 9303F	LW2-G020	6		10	9	1	90.0	10.0	31.423	9	33.922	2.50	0.28
15	83 9303F	LW2-G020	7		10	9	1	90.0	10.0	30.642	9	33.038	2.40	0.27
16	53 9303F	LW2-G020	8	wq replicate	10	10	0	100.0	0.0	29.734	10	32.090	2.36	0.24
17	144 9304F	LW2-G024	1		10	10	0	100.0	0.0	29.914	10	32.212	2.30	0.23
18	107 9304F	LW2-G024	2		10	10	0	100.0	0.0	28.646	10	31.156	2.51	0.25
19	157 9304F	LW2-G024	3		10	10	0	100.0	0.0	28.588	10	30.621	2.03	0.20
20	36 9304F	LW2-G024	4		10	9	1	90.0	10.0	31.040	9	32.836	1.80	0.20
21	163 9304F	LW2-G024	5		10	10	0	100.0	0.0	29.497	10	31.255	1.76	0.18
22	137 9304F	LW2-G024	6		10	9	1	90.0	10.0	29.200	9	31.062	1.86	0.21
23	43 9304F	LW2-G024	7		10	9	1	90.0	10.0	26.123	9	27.131	1.01	0.11
24	30 9304F	LW2-G024	8	wq replicate	10	8	2	80.0	20.0	30.565	8	31.991	1.43	0.18
25	1 9305F	LW2-G025	1		10	9	1	90.0	10.0	29.512	9	33.478	3.97	0.44
26	99 9305F	LW2-G025	2		10	10	0	100.0	0.0	29.989	10	34.986	5.00	0.50
27	73 9305F	LW2-G025	3		10	9	1	90.0	10.0	26.948	9	31.974	5.03	0.56
28	5 9305F	LW2-G025	4		10	9	1	90.0	10.0	28.622	9	32.835	4.21	0.47
29	46 9305F	LW2-G025	5		10	10	0	100.0	0.0	27.871	10	33.127	5.26	0.53
30	138 9305F	LW2-G025	6		10	10	0	100.0	0.0	30.614	10	36.036	5.42	0.54
31	121 9305F	LW2-G025	7		10	10	0	100.0	0.0	29.770	10	37.562	7.79	0.78
32	125 9305F	LW2-G025	8	wq replicate	10	10	0	100.0	0.0	31.162	10	36.821	5.66	0.57

	SURV	MORT	PSURV	PMORT	WT
Mean	9.8	0.3	97.5	2.5	0.33
SD	0.5	0.5	4.6	4.6	0.05
n	8	8	8	8	8
Mean	9.8	0.3	97.5	2.5	0.25
SD	0.5	0.5	4.6	4.6	0.03
n	8	8	8	8	8
Mean	9.4	0.6	93.8	6.3	0.19
SD	0.7	0.7	7.4	7.4	0.04
n	8	8	8	8	8
Mean	9.6	0.4	96.3	3.8	0.55
SD	0.5	0.5	5.2	5.2	0.10
n	8	8	8	8	8

ANC07332
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Test Number: P686-3

Freshwater Sediment Test
28-day Hyalella azteca

	NAS	CLIENT								TARE	WT	DRY	TWT	WT						
INDEX	BKR SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	WT (mg)	COUNT	WT (mg)	(mg)	(mg)		SURV	MORT	PSURV	PMORT	WT
33	6 9306F	LW2-G027	1		10	10	0	100.0	0.0	32.165	10	35.618	3.45	0.35						
34	135 9306F	LW2-G027	2		10	8	2	80.0	20.0	28.704	8	31.314	2.61	0.33						
35	114 9306F	LW2-G027	3		10	10	0	100.0	0.0	26.293	10	29.492	3.20	0.32						
36	128 9306F	LW2-G027	4		10	9	1	90.0	10.0	31.974	9	34.667	2.69	0.30						
37	149 9306F	LW2-G027	5		10	10	0	100.0	0.0	29.610	10	32.418	2.81	0.28	Mean	9.6	0.5	95.0	5.0	0.31
38	160 9306F	LW2-G027	6		10	10	0	100.0	0.0	28.471	10	31.108	2.64	0.26	SD	0.9	0.8	7.6	7.6	0.03
39	127 9306F	LW2-G027	7		11	11	0	100.0	0.0	28.943	11	31.942	3.00	0.27	n	8	8	8	8	8
40	47 9306F	LW2-G027	8	wq replicate	10	9	1	90.0	10.0	30.111	9	33.139	3.03	0.34						
41	119 9307F	LW2-G033	1		10	9	1	90.0	10.0	27.719	9	30.190	2.47	0.27						
42	38 9307F	LW2-G033	2		10	10	0	100.0	0.0	31.348	10	34.068	2.72	0.27						
43	12 9307F	LW2-G033	3		10	10	0	100.0	0.0	27.501	10	30.090	2.59	0.26						
44	58 9307F	LW2-G033	4		10	9	1	90.0	10.0	28.008	9	30.627	2.62	0.29						
45	29 9307F	LW2-G033	5		10	8	2	80.0	20.0	29.977	8	31.244	1.27	0.16	Mean	9.4	0.6	93.8	6.3	0.23
46	33 9307F	LW2-G033	6		10	10	0	100.0	0.0	27.969	10	28.870	0.90	0.09	SD	0.7	0.7	7.4	7.4	0.07
47	51 9307F	LW2-G033	7		10	10	0	100.0	0.0	31.254	10	34.226	2.97	0.30	n	8	8	8	8	8
48	62 9307F	LW2-G033	8	wq replicate	10	9	1	90.0	10.0	27.874	9	29.799	1.93	0.21						
49	143 9308F	LW2-G034	1		10	9	1	90.0	10.0	31.455	9	34.865	3.41	0.38						
50	78 9308F	LW2-G034	2		11	11	0	100.0	0.0	29.661	11	32.246	2.59	0.24						
51	108 9308F	LW2-G034	3		10	10	0	100.0	0.0	31.551	10	34.496	2.95	0.29						
52	151 9308F	LW2-G034	4		10	10	0	100.0	0.0	28.478	10	30.909	2.43	0.24						
53	49 9308F	LW2-G034	5		10	10	0	100.0	0.0	29.839	10	32.344	2.51	0.25	Mean	10.0	0.1	98.8	1.3	0.27
54	159 9308F	LW2-G034	6		10	10	0	100.0	0.0	30.650	9	33.300	2.65	0.29	SD	0.5	0.4	3.5	3.5	0.06
55	75 9308F	LW2-G034	7		10	10	0	100.0	0.0	26.255	10	29.241	2.99	0.30	n	8	8	8	8	8
56	129 9308F	LW2-G034	8	wq replicate	10	10	0	100.0	0.0	30.679	10	32.351	1.67	0.17						
57	54 9309F	LW2-G035	1		10	10	0	100.0	0.0	27.258	10	29.467	2.21	0.22						
58	122 9309F	LW2-G035	2		10	8	2	80.0	20.0	29.930	8	32.463	2.53	0.32						
59	10 9309F	LW2-G035	3		10	8	2	80.0	20.0	26.833	8	29.988	3.16	0.39						
60	141 9309F	LW2-G035	4		10	10	0	100.0	0.0	29.115	10	31.717	2.60	0.26						
61	136 9309F	LW2-G035	5		10	10	0	100.0	0.0	32.269	10	36.518	4.25	0.42	Mean	9.4	0.6	93.8	6.3	0.29
62	165 9309F	LW2-G035	6		10	9	1	90.0	10.0	28.285	9	30.652	2.37	0.26	SD	0.9	0.9	9.2	9.2	0.08
63	113 9309F	LW2-G035	7		10	10	0	100.0	0.0	29.127	10	31.894	2.77	0.28	n	8	8	8	8	8
64	70 9309F	LW2-G035	8	wq replicate	10	10	0	100.0	0.0	28.408	10	30.152	1.74	0.17						
65	57 9310F	LW2-G061	1		10	10	0	100.0	0.0	29.343	10	31.783	2.44	0.24						
66	3 9310F	LW2-G061	2		10	9	1	90.0	10.0	29.700	9	31.193	1.49	0.17						
67	55 9310F	LW2-G061	3		10	10	0	100.0	0.0	25.956	10	28.331	2.38	0.24						
68	148 9310F	LW2-G061	4		10	10	0	100.0	0.0	27.538	10	29.948	2.41	0.24						
69	64 9310F	LW2-G061	5		10	10	0	100.0	0.0	30.729	10	31.830	1.10	0.11	Mean	9.8	0.3	97.5	2.5	0.21
70	8 9310F	LW2-G061	6		10	10	0	100.0	0.0	27.452	10	28.726	1.27	0.13	SD	0.5	0.5	4.6	4.6	0.07
71	94 9310F	LW2-G061	7		10	9	1	90.0	10.0	27.956	9	30.699	2.74	0.30	n	8	8	8	8	8
72	142 9310F	LW2-G061	8	wq replicate	10	10	0	100.0	0.0	30.208	10	32.926	2.72	0.27						

ANC07333
BZTO104(e)007333

Test Number: P686-3

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	NAS BKR SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
73	132 9311F	LW2-G062	1		10	10	0	100.0	0.0	27.510	10	29.831	2.32	0.23						
74	19 9311F	LW2-G062	2		10	10	0	100.0	0.0	28.834	10	31.060	2.23	0.22						
75	106 9311F	LW2-G062	3		10	9	1	90.0	10.0	29.320	9	32.714	3.39	0.38						
76	81 9311F	LW2-G062	4		10	10	0	100.0	0.0	28.984	10	31.297	2.31	0.23						
77	166 9311F	LW2-G062	5		10	10	0	100.0	0.0	27.551	10	29.456	1.91	0.19	Mean	9.8	0.3	97.5	2.5	0.24
78	150 9311F	LW2-G062	6		10	10	0	100.0	0.0	30.531	10	32.713	2.18	0.22	SD	0.5	0.5	4.6	4.6	0.06
79	124 9311F	LW2-G062	7		10	10	0	100.0	0.0	29.545	10	31.862	2.32	0.23	n	8	8	8	8	8
80	23 9311F	LW2-G062	8	wq replicate	10	9	1	90.0	10.0	30.294	9	32.531	2.24	0.25						
81	56 9312F	LW2-G067	1		10	9	1	90.0	10.0	30.908	9	33.880	2.97	0.33						
82	87 9312F	LW2-G067	2		10	10	0	100.0	0.0	29.519	10	31.304	1.79	0.18						
83	116 9312F	LW2-G067	3		10	10	0	100.0	0.0	30.087	10	32.303	2.22	0.22						
84	93 9312F	LW2-G067	4		10	10	0	100.0	0.0	29.745	10	32.063	2.32	0.23						
85	34 9312F	LW2-G067	5		10	10	0	100.0	0.0	29.636	10	32.193	2.56	0.26	Mean	9.9	0.1	98.8	1.3	0.24
86	126 9312F	LW2-G067	6		10	10	0	100.0	0.0	27.973	10	31.270	3.30	0.33	SD	0.4	0.4	3.5	3.5	0.06
87	24 9312F	LW2-G067	7		10	10	0	100.0	0.0	29.350	10	31.030	1.68	0.17	n	8	8	8	8	8
88	97 9312F	LW2-G067	8	wq replicate	10	10	0	100.0	0.0	30.526	10	32.500	1.97	0.20						
89	48 9313F	LW2-G073	1		10	10	0	100.0	0.0	30.235	10	33.787	3.55	0.36						
90	72 9313F	LW2-G073	2		10	10	0	100.0	0.0	29.227	10	32.126	2.90	0.29						
91	27 9313F	LW2-G073	3		10	10	0	100.0	0.0	29.519	10	32.229	2.71	0.27						
92	68 9313F	LW2-G073	4		10	10	0	100.0	0.0	29.167	10	32.049	2.88	0.29						
93	66 9313F	LW2-G073	5		10	8	2	80.0	20.0	28.683	8	32.172	3.49	0.44	Mean	9.1	0.9	91.3	8.8	0.34
94	146 9313F	LW2-G073	6		10	9	1	90.0	10.0	31.374	9	35.109	3.74	0.42	SD	1.0	1.0	9.9	9.9	0.06
95	162 9313F	LW2-G073	7		10	8	2	80.0	20.0	29.258	8	31.885	2.63	0.33	n	8	8	8	8	8
96	105 9313F	LW2-G073	8	wq replicate	10	8	2	80.0	20.0	30.270	8	32.832	2.56	0.32						
97	123 9314F	LW2-G074	1		10	10	0	100.0	0.0	30.610	10	33.392	2.78	0.28						
98	45 9314F	LW2-G074	2		10	9	1	90.0	10.0	29.640	9	32.512	2.87	0.32						
99	41 9314F	LW2-G074	3		10	10	0	100.0	0.0	29.369	10	31.943	2.57	0.26						
100	20 9314F	LW2-G074	4		10	9	1	90.0	10.0	28.981	9	31.965	2.98	0.33						
101	161 9314F	LW2-G074	5		10	9	1	90.0	10.0	28.664	9	30.486	1.82	0.20	Mean	9.3	0.8	92.5	7.5	0.29
102	110 9314F	LW2-G074	6		10	9	1	90.0	10.0	27.900	9	31.563	3.66	0.41	SD	0.7	0.7	7.1	7.1	0.07
103	59 9314F	LW2-G074	7		10	10	0	100.0	0.0	30.731	10	33.850	3.12	0.31	n	8	8	8	8	8
104	39 9314F	LW2-G074	8	wq replicate	10	8	2	80.0	20.0	32.746	8	34.204	1.46	0.18						
105	79 9315F	LW2-G085	1		10	8	2	80.0	20.0	29.643	8	31.433	1.79	0.22						
106	18 9315F	LW2-G085	2		10	9	1	90.0	10.0	31.532	9	33.563	2.03	0.23						
107	50 9315F	LW2-G085	3		10	7	3	70.0	30.0	27.856	7	29.178	1.32	0.19						
108	118 9315F	LW2-G085	4		10	8	2	80.0	20.0	30.957	8	33.890	2.93	0.37						
109	63 9315F	LW2-G085	5		10	6	4	60.0	40.0	30.536	6	32.831	2.30	0.38	Mean	8.0	2.0	80.0	20.0	0.28
110	42 9315F	LW2-G085	6		10	10	0	100.0	0.0	30.745	10	33.814	3.07	0.31	SD	1.2	1.2	12.0	12.0	0.08
111	95 9315F	LW2-G085	7		10	8	2	80.0	20.0	30.522	8	32.186	1.66	0.21	n	8	8	8	8	8
112	40 9315F	LW2-G085	8	wq replicate	10	8	2	80.0	20.0	31.626	8	34.173	2.55	0.32						

ANC07334
BZTO104(e)007334

Test Number: P686-3

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	NAS BKR SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)			SURV	MORT	PSURV	PMORT	WT
113	153 9316F	LW2-G092	1		10	0	10	0.0	100.0	30.656	0										
114	7 9316F	LW2-G092	2		10	0	10	0.0	100.0	30.439	0										
115	69 9316F	LW2-G092	3		10	0	10	0.0	100.0	28.856	0										
116	84 9316F	LW2-G092	4		10	0	10	0.0	100.0	27.614	0										
117	167 9316F	LW2-G092	5		10	0	10	0.0	100.0	27.794	0					Mean	0.0	10.0	0.0	100.0	
118	115 9316F	LW2-G092	6		10	0	10	0.0	100.0	29.421	0					SD	0.0	0.0	0.0	0.0	
119	90 9316F	LW2-G092	7		10	0	10	0.0	100.0	27.960	0					n	8	8	8	8	0
120	140 9316F	LW2-G092	8	wq replicate	10	0	10	0.0	100.0	27.094	0										
121	91 9317F	LW2-G089	1		10	9	1	90.0	10.0	29.451	9	30.962	1.51	0.17							
122	22 9317F	LW2-G089	2		10	10	0	100.0	0.0	28.496	10	29.457	0.96	0.10							
123	168 9317F	LW2-G089	3		10	8	2	80.0	20.0	29.257	8	30.560	1.30	0.16							
124	71 9317F	LW2-G089	4		10	10	0	100.0	0.0	30.282	10	32.746	2.46	0.25							
125	2 9317F	LW2-G089	5		10	8	2	80.0	20.0	28.979	8	31.338	2.36	0.29		Mean	9.3	0.8	92.5	7.5	0.23
126	154 9317F	LW2-G089	6		10	10	0	100.0	0.0	28.548	10	31.563	3.02	0.30		SD	0.9	0.9	8.9	8.9	0.08
127	117 9317F	LW2-G089	7		10	9	1	90.0	10.0	31.067	9	33.909	2.84	0.32		n	8	8	8	8	8
128	89 9317F	LW2-G089	8	wq replicate	10	10	0	100.0	0.0	29.220	10	31.580	2.36	0.24							
129	65 9318F	LW2-G080	1		10	9	1	90.0	10.0	30.161	9	33.446	3.29	0.37							
130	100 9318F	LW2-G080	2		10	8	2	80.0	20.0	28.984	8	31.813	2.83	0.35							
131	17 9318F	LW2-G080	3		10	10	0	100.0	0.0	29.173	10	33.102	3.93	0.39							
132	44 9318F	LW2-G080	4		10	10	0	100.0	0.0	28.800	10	32.073	3.27	0.33							
133	92 9318F	LW2-G080	5		10	9	1	90.0	10.0	29.708	9	32.690	2.98	0.33		Mean	9.5	0.5	95.0	5.0	0.32
134	25 9318F	LW2-G080	6		10	10	0	100.0	0.0	27.685	10	30.091	2.41	0.24		SD	0.8	0.8	7.6	7.6	0.05
135	26 9318F	LW2-G080	7		10	10	0	100.0	0.0	29.150	10	31.998	2.85	0.28		n	8	8	8	8	8
136	21 9318F	LW2-G080	8	wq replicate	10	10	0	100.0	0.0	28.436	10	31.458	3.02	0.30							
137	85 9319F	LW2-G079	1		10	10	0	100.0	0.0	30.050	10	32.227	2.18	0.22							
138	102 9319F	LW2-G079	2		12	12	0	100.0	0.0	30.191	12	34.008	3.82	0.32							
139	74 9319F	LW2-G079	3		10	7	3	70.0	30.0	27.393	7	29.780	2.39	0.34							
140	13 9319F	LW2-G079	4		10	9	1	90.0	10.0	27.649	9	30.141	2.49	0.28							
141	155 9319F	LW2-G079	5		10	10	0	100.0	0.0	31.573	10	33.350	1.78	0.18		Mean	9.0	1.3	87.5	12.5	0.27
142	35 9319F	LW2-G079	6		10	9	1	90.0	10.0	29.140	9	31.495	2.36	0.26		SD	1.9	1.5	14.9	14.9	0.06
143	88 9319F	LW2-G079	7		10	9	1	90.0	10.0	29.104	9	31.383	2.28	0.25		n	8	8	8	8	8
144	52 9319F	LW2-G079	8	wq replicate	10	6	4	60.0	40.0	30.033	6	32.098	2.07	0.34							
145	111 9320F	LW2-G078	1		10	8	2	80.0	20.0	29.485	8	32.370	2.89	0.36							
146	156 9320F	LW2-G078	2		10	8	2	80.0	20.0	28.820	8	31.354	2.53	0.32							
147	15 9320F	LW2-G078	3		10	9	1	90.0	10.0	29.648	9	31.780	2.13	0.24							
148	103 9320F	LW2-G078	4		10	6	4	60.0	40.0	29.289	6	31.012	1.72	0.29							
149	101 9320F	LW2-G078	5		10	9	1	90.0	10.0	26.737	9	28.897	2.16	0.24		Mean	7.9	2.1	78.8	21.3	0.28
150	28 9320F	LW2-G078	6		10	8	2	80.0	20.0	29.411	8	31.794	2.38	0.30		SD	1.0	1.0	9.9	9.9	0.05
151	109 9320F	LW2-G078	7		10	7	3	70.0	30.0	29.839	7	31.838	2.00	0.29		n	8	8	8	8	8
152	37 9320F	LW2-G078	8	wq replicate	10	8	2	80.0	20.0	31.288	8	33.128	1.84	0.23							

ANC07335
BZTO104(e)007335

Test Number: P686-3

Freshwater Sediment Test
28-day Hyalella azteca

	NAS	CLIENT								TARE	WT	DRY	TWT	WT						
INDEX	BKR SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	WT (mg)	COUNT	WT (mg)	(mg)	(mg)		SURV	MORT	PSURV	PMORT	WT
153	76 9321F	LW2-G111	1		10	9	1	90.0	10.0	30.935	9	32.995	2.06	0.23						
154	61 9321F	LW2-G111	2		10	10	0	100.0	0.0	31.041	10	33.495	2.45	0.25						
155	96 9321F	LW2-G111	3		10	9	1	90.0	10.0	29.167	9	31.615	2.45	0.27						
156	145 9321F	LW2-G111	4		10	10	0	100.0	0.0	35.262	10	37.344	2.08	0.21						
157	98 9321F	LW2-G111	5		10	10	0	100.0	0.0	27.925	10	29.682	1.76	0.18	Mean	9.5	0.5	95.0	5.0	0.24
158	31 9321F	LW2-G111	6		10	10	0	100.0	0.0	28.218	10	30.867	2.65	0.26	SD	0.8	0.8	7.6	7.6	0.03
159	16 9321F	LW2-G111	7		10	8	2	80.0	20.0	26.752	8	28.832	2.08	0.26	n	8	8	8	8	8
160	134 9321F	LW2-G111	8	wq replicate	10	10	0	100.0	0.0	28.731	10	31.375	2.64	0.26						
161	86 9322F	LW2-G083	1		10	9	1	90.0	10.0	27.496	9	29.775	2.28	0.25						
162	80 9322F	LW2-G083	2		10	8	2	80.0	20.0	28.195	8	29.610	1.42	0.18						
163	104 9322F	LW2-G083	3		10	10	0	100.0	0.0	29.242	10	31.135	1.89	0.19						
164	77 9322F	LW2-G083	4		10	9	1	90.0	10.0	26.821	9	28.459	1.64	0.18						
165	4 9322F	LW2-G083	5		10	8	2	80.0	20.0	29.820	8	31.007	1.19	0.15	Mean	9.0	1.0	90.0	10.0	0.20
166	112 9322F	LW2-G083	6		10	8	2	80.0	20.0	26.788	8	28.780	1.99	0.25	SD	0.9	0.9	9.3	9.3	0.05
167	139 9322F	LW2-G083	7		10	10	0	100.0	0.0	28.231	10	31.046	2.82	0.28	n	8	8	8	8	8
168	67 9322F	LW2-G083	8	wq replicate	10	10	0	100.0	0.0	31.301	10	32.698	1.40	0.14						
	One animal lost in beaker 159 during transfering into weighing pan.																			

ANC07336
BZTO104(e)007336

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
BULK SEDIMENT POREWATER														
	9208F	Control											---*	---*
	9303F	LW2-G020											7.9	6.4
	9304F	LW2-G024											4.3	6.4
	9305F	LW2-G025											---*	---*
	9306F	LW2-G027											1.1	6.8
	9307F	LW2-G033											4.3	6.6
	9308F	LW2-G034											2.3	6.5
	9309F	LW2-G035											4.3	6.4
	9310F	LW2-G061											5.6	6.4
	9311F	LW2-G062											1.7	6.6
	9312F	LW2-G067											4.8	6.4
	9313F	LW2-G073											---*	---*
	9314F	LW2-G074											<0.5	6.6
	9315F	LW2-G085											10.9	7.0
	9316F	LW2-G092											7.8	11.3
	9317F	LW2-G089											3.5	---*
	9318F	LW2-G080											---*	---*
	9319F	LW2-G079											0.6	6.9
	9320F	LW2-G078											1.9	6.8
	9321F	LW2-G111											4.8	7.0
	9322F	LW2-G083											4.4	6.9
							* Insufficient water for analysis							

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
OVERLYING WATER														
14	9208F	Control	8	0	23.0	7.4	200	7.3	43	40	<0.1			
21	9318F	LW2-G080	8	0	22.9	7.4	165	7.2	43	50	0.2			
23	9311F	LW2-G062	8	0	23.0	7.3	170	7.1	51	50	0.3			
30	9304F	LW2-G024	8	0	23.2	7.4	170	7.1	60	50	0.7			
37	9320F	LW2-G078	8	0	23.0	7.8	165	7.1	51	50	0.5			
39	9314F	LW2-G074	8	0	23.0	7.6	160	7.1	51	50	0.1			
40	9315F	LW2-G085	8	0	23.0	7.2	205	7.3	68	60	0.9			
47	9306F	LW2-G027	8	0	22.9	7.8	165	7.1	51	40	0.1			
52	9319F	LW2-G079	8	0	22.9	7.2	160	7.1	60	50	0.5			
53	9303F	LW2-G020	8	0	22.9	7.2	170	7.1	51	40	0.5			
62	9307F	LW2-G033	8	0	22.9	7.1	170	7.1	51	40	0.4			
67	9322F	LW2-G083	8	0	22.8	7.3	180	7.1	51	40	0.4			
70	9309F	LW2-G035	8	0	23.2	7.4	175	7.1	51	50	<0.1			
89	9317F	LW2-G089	8	0	23.0	7.2	160	7.0	43	40	<0.1			
97	9312F	LW2-G067	8	0	23.0	7.4	165	7.0	43	40	<0.1			
105	9313F	LW2-G073	8	0	23.2	7.3	160	7.1	43	40	<0.1			
125	9305F	LW2-G025	8	0	23.2	7.7	170	7.1	43	40	<0.1			
129	9308F	LW2-G034	8	0	23.0	7.2	175	7.1	51	50	<0.1			
134	9321F	LW2-G111	8	0	22.9	7.4	170	7.1	51	40	<0.1			
140	9316F	LW2-G092	8	0	23.2	7.6	215	9.9	60	60	<0.1			
142	9310F	LW2-G061	8	0	23.0	7.4	170	7.1	51	50	<0.1			
14	9208F	Control	8	1	22.8	6.8	180	7.2						
21	9318F	LW2-G080	8	1	22.7	6.7	165	7.0						
23	9311F	LW2-G062	8	1	22.7	6.2	170	7.0						
30	9304F	LW2-G024	8	1	22.9	6.4	170	7.0						
37	9320F	LW2-G078	8	1	22.7	6.6	170	7.0						
39	9314F	LW2-G074	8	1	22.8	6.6	165	7.0						
40	9315F	LW2-G085	8	1	23.0	6.5	190	7.2						
47	9306F	LW2-G027	8	1	22.8	6.7	170	7.2						
52	9319F	LW2-G079	8	1	22.7	6.4	165	7.1						
53	9303F	LW2-G020	8	1	22.7	6.7	170	7.0						
62	9307F	LW2-G033	8	1	22.7	6.4	170	7.0						
67	9322F	LW2-G083	8	1	22.7	6.6	175	7.0						
70	9309F	LW2-G035	8	1	22.9	6.5	175	7.0						
89	9317F	LW2-G089	8	1	22.9	6.6	160	6.9						
97	9312F	LW2-G067	8	1	22.7	6.4	170	7.0						
105	9313F	LW2-G073	8	1	23.0	6.5	165	7.0						
125	9305F	LW2-G025	8	1	23.0	6.7	170	7.1						
129	9308F	LW2-G034	8	1	22.9	6.7	170	7.0						
134	9321F	LW2-G111	8	1	22.9	6.5	170	7.1						
140	9316F	LW2-G092	8	1	23.0	7.1	215	9.9						
142	9310F	LW2-G061	8	1	22.7	6.6	160	7.1						

Test Number: 686-3

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
14	9208F	Control	8	2	23.2									
21	9318F	LW2-G080	8	2	23.2									
23	9311F	LW2-G062	8	2	23.2									
30	9304F	LW2-G024	8	2	23.2									
37	9320F	LW2-G078	8	2	23.2									
39	9314F	LW2-G074	8	2	23.4									
40	9315F	LW2-G085	8	2	23.4									
47	9306F	LW2-G027	8	2	23.3									
52	9319F	LW2-G079	8	2	23.3									
53	9303F	LW2-G020	8	2	23.3									
62	9307F	LW2-G033	8	2	23.2									
67	9322F	LW2-G083	8	2	23.2									
70	9309F	LW2-G035	8	2	23.2									
89	9317F	LW2-G089	8	2	23.3									
97	9312F	LW2-G067	8	2	23.3									
105	9313F	LW2-G073	8	2	23.3									
125	9305F	LW2-G025	8	2	23.5									
129	9308F	LW2-G034	8	2	23.5									
134	9321F	LW2-G111	8	2	23.5									
140	9316F	LW2-G092	8	2	23.4									
142	9310F	LW2-G061	8	2	23.3									
14	9208F	Control	8	3	22.9	7.2		7.3						
21	9318F	LW2-G080	8	3	22.9	6.8		7.0						
23	9311F	LW2-G062	8	3	22.9	6.6		7.0						
30	9304F	LW2-G024	8	3	22.9	6.8		7.0						
37	9320F	LW2-G078	8	3	22.9	7.1		7.1						
39	9314F	LW2-G074	8	3	23.0	7.2		7.1						
40	9315F	LW2-G085	8	3	23.1	6.6		7.2						
47	9306F	LW2-G027	8	3	23.0	7.2		7.2						
52	9319F	LW2-G079	8	3	22.9	7.5		7.2						
53	9303F	LW2-G020	8	3	22.9	7.2		7.1						
62	9307F	LW2-G033	8	3	22.9	7.1		7.0						
67	9322F	LW2-G083	8	3	22.9	6.8		7.0						
70	9309F	LW2-G035	8	3	23.2	6.9		7.0						
89	9317F	LW2-G089	8	3	23.1	6.8		6.9						
97	9312F	LW2-G067	8	3	22.9	6.7		6.9						
105	9313F	LW2-G073	8	3	23.2	7.2		7.0						
125	9305F	LW2-G025	8	3	23.2	7.2		7.1						
129	9308F	LW2-G034	8	3	23.0	6.9		7.1						
134	9321F	LW2-G111	8	3	23.0	6.8		7.1						
140	9316F	LW2-G092	8	3	23.2	7.3		9.3						
142	9310F	LW2-G061	8	3	22.9	6.8		7.2						

Test Number: 686-3

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
14	9208F	Control	8	4	23.0									
21	9318F	LW2-G080	8	4	23.1									
23	9311F	LW2-G062	8	4	23.0									
30	9304F	LW2-G024	8	4	23.0									
37	9320F	LW2-G078	8	4	23.1									
39	9314F	LW2-G074	8	4	23.1									
40	9315F	LW2-G085	8	4	23.2									
47	9306F	LW2-G027	8	4	23.1									
52	9319F	LW2-G079	8	4	23.1									
53	9303F	LW2-G020	8	4	23.0									
62	9307F	LW2-G033	8	4	23.1									
67	9322F	LW2-G083	8	4	23.0									
70	9309F	LW2-G035	8	4	23.3									
89	9317F	LW2-G089	8	4	23.2									
97	9312F	LW2-G067	8	4	23.0									
105	9313F	LW2-G073	8	4	23.3									
125	9305F	LW2-G025	8	4	23.3									
129	9308F	LW2-G034	8	4	23.2									
134	9321F	LW2-G111	8	4	23.2									
140	9316F	LW2-G092	8	4	23.3									
142	9310F	LW2-G061	8	4	23.0									
14	9208F	Control	8	5	23.1									
21	9318F	LW2-G080	8	5	23.1									
23	9311F	LW2-G062	8	5	23.1									
30	9304F	LW2-G024	8	5	23.2									
37	9320F	LW2-G078	8	5	23.2									
39	9314F	LW2-G074	8	5	23.2									
40	9315F	LW2-G085	8	5	23.3									
47	9306F	LW2-G027	8	5	23.2									
52	9319F	LW2-G079	8	5	23.1									
53	9303F	LW2-G020	8	5	23.1									
62	9307F	LW2-G033	8	5	23.1									
67	9322F	LW2-G083	8	5	23.1									
70	9309F	LW2-G035	8	5	23.4									
89	9317F	LW2-G089	8	5	23.2									
97	9312F	LW2-G067	8	5	23.2									
105	9313F	LW2-G073	8	5	23.4									
125	9305F	LW2-G025	8	5	23.3									
129	9308F	LW2-G034	8	5	23.2									
134	9321F	LW2-G111	8	5	23.2									
140	9316F	LW2-G092	8	5	23.3									
142	9310F	LW2-G061	8	5	23.3									

Test Number: 686-3

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
14	9208F	Control	8	6	22.6	6.8		7.0						
21	9318F	LW2-G080	8	6	22.6	6.8		7.0						
23	9311F	LW2-G062	8	6	22.5	6.8		7.0						
30	9304F	LW2-G024	8	6	22.5	6.5		6.9						
37	9320F	LW2-G078	8	6	22.6	6.8		7.0						
39	9314F	LW2-G074	8	6	22.7	7.1		7.0						
40	9315F	LW2-G085	8	6	22.8	6.1		7.0						
47	9306F	LW2-G027	8	6	22.6	7.1		7.0						
52	9319F	LW2-G079	8	6	22.6	6.9		7.0						
53	9303F	LW2-G020	8	6	22.5	6.4		6.9						
62	9307F	LW2-G033	8	6	22.5	6.4		7.0						
67	9322F	LW2-G083	8	6	22.5	6.4		6.9						
70	9309F	LW2-G035	8	6	22.9	6.2		7.0						
89	9317F	LW2-G089	8	6	22.7	6.5		6.9						
97	9312F	LW2-G067	8	6	22.5	6.4		6.9						
105	9313F	LW2-G073	8	6	22.9	7.0		6.9						
125	9305F	LW2-G025	8	6	22.8	6.7		7.0						
129	9308F	LW2-G034	8	6	22.7	6.9		6.9						
134	9321F	LW2-G111	8	6	22.7	6.4		6.9						
140	9316F	LW2-G092	8	6	22.8	7.1		9.2						
142	9310F	LW2-G061	8	6	22.5	6.2		7.0						
14	9208F	Control	8	7	23.1									
21	9318F	LW2-G080	8	7	23.1									
23	9311F	LW2-G062	8	7	23.0									
30	9304F	LW2-G024	8	7	23.3									
37	9320F	LW2-G078	8	7	23.1									
39	9314F	LW2-G074	8	7	23.1									
40	9315F	LW2-G085	8	7	23.3									
47	9306F	LW2-G027	8	7	23.3									
52	9319F	LW2-G079	8	7	23.1									
53	9303F	LW2-G020	8	7	23.0									
62	9307F	LW2-G033	8	7	23.1									
67	9322F	LW2-G083	8	7	23.0									
70	9309F	LW2-G035	8	7	23.3									
89	9317F	LW2-G089	8	7	23.2									
97	9312F	LW2-G067	8	7	23.0									
105	9313F	LW2-G073	8	7	23.3									
125	9305F	LW2-G025	8	7	23.3									
129	9308F	LW2-G034	8	7	23.1									
134	9321F	LW2-G111	8	7	23.1									
140	9316F	LW2-G092	8	7	23.2									
142	9310F	LW2-G061	8	7	23.0									

Test Number: 686-3

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
14	9208F	Control	8	8	23.0	5.0	170	7.2						
21	9318F	LW2-G080	8	8	23.0	5.4	165	7.2						
23	9311F	LW2-G062	8	8	23.0	5.2	170	6.9						
30	9304F	LW2-G024	8	8	23.2	5.0	170	7.0						
37	9320F	LW2-G078	8	8	23.1	5.4	165	6.9						
39	9314F	LW2-G074	8	8	23.1	5.6	170	6.9						
40	9315F	LW2-G085	8	8	23.2	4.8	180	7.0						
47	9306F	LW2-G027	8	8	23.1	5.6	170	7.0						
52	9319F	LW2-G079	8	8	23.0	5.4	165	6.9						
53	9303F	LW2-G020	8	8	23.0	4.8	170	6.9						
62	9307F	LW2-G033	8	8	23.0	5.0	170	6.9						
67	9322F	LW2-G083	8	8	23.0	4.8	170	6.9						
70	9309F	LW2-G035	8	8	23.3	4.8	175	7.0						
89	9317F	LW2-G089	8	8	23.2	5.2	165	6.9						
97	9312F	LW2-G067	8	8	23.0	5.0	170	6.9						
105	9313F	LW2-G073	8	8	23.3	5.6	165	6.9						
125	9305F	LW2-G025	8	8	23.3	5.6	170	7.0						
129	9308F	LW2-G034	8	8	23.2	5.2	170	6.9						
134	9321F	LW2-G111	8	8	23.2	4.8	170	6.9						
140	9316F	LW2-G092	8	8	23.2	5.8	190	9.2						
142	9310F	LW2-G061	8	8	23.0	4.8	170	7.0						
14	9208F	Control	8	9	23.1									
21	9318F	LW2-G080	8	9	23.1									
23	9311F	LW2-G062	8	9	23.0									
30	9304F	LW2-G024	8	9	23.3									
37	9320F	LW2-G078	8	9	23.1									
39	9314F	LW2-G074	8	9	23.1									
40	9315F	LW2-G085	8	9	23.3									
47	9306F	LW2-G027	8	9	23.1									
52	9319F	LW2-G079	8	9	23.1									
53	9303F	LW2-G020	8	9	23.1									
62	9307F	LW2-G033	8	9	23.1									
67	9322F	LW2-G083	8	9	23.0									
70	9309F	LW2-G035	8	9	23.4									
89	9317F	LW2-G089	8	9	23.2									
97	9312F	LW2-G067	8	9	23.0									
105	9313F	LW2-G073	8	9	23.0									
125	9305F	LW2-G025	8	9	23.2									
129	9308F	LW2-G034	8	9	23.1									
134	9321F	LW2-G111	8	9	23.1									
140	9316F	LW2-G092	8	9	23.2									
142	9310F	LW2-G061	8	9	22.9									

Test Number: 686-3

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
14	9208F	Control	8	10	22.6	5.9		7.2						
21	9318F	LW2-G080	8	10	22.7	6.0		7.0						
23	9311F	LW2-G062	8	10	22.6	5.8		7.0						
30	9304F	LW2-G024	8	10	22.8	5.8		7.0						
37	9320F	LW2-G078	8	10	22.7	6.2		7.1						
39	9314F	LW2-G074	8	10	22.8	5.4		7.0						
40	9315F	LW2-G085	8	10	22.9	5.4		7.1						
47	9306F	LW2-G027	8	10	22.7	6.0		7.1						
52	9319F	LW2-G079	8	10	22.7	6.2		7.0						
53	9303F	LW2-G020	8	10	22.6	6.0		7.0						
62	9307F	LW2-G033	8	10	22.7	6.0		7.0						
67	9322F	LW2-G083	8	10	22.6	5.8		7.1						
70	9309F	LW2-G035	8	10	22.9	5.8		7.1						
89	9317F	LW2-G089	8	10	22.7	6.1		7.1						
97	9312F	LW2-G067	8	10	22.6	6.0		7.1						
105	9313F	LW2-G073	8	10	22.8	6.0		7.1						
125	9305F	LW2-G025	8	10	22.7	6.3		7.1						
129	9308F	LW2-G034	8	10	22.7	6.2		7.0						
134	9321F	LW2-G111	8	10	22.6	6.1		7.0						
140	9316F	LW2-G092	8	10	22.7	6.2		9.2						
142	9310F	LW2-G061	8	10	22.5	6.2		7.1						
14	9208F	Control	8	11	23.1									
21	9318F	LW2-G080	8	11	23.1									
23	9311F	LW2-G062	8	11	23.0									
30	9304F	LW2-G024	8	11	23.3									
37	9320F	LW2-G078	8	11	23.1									
39	9314F	LW2-G074	8	11	23.2									
40	9315F	LW2-G085	8	11	23.3									
47	9306F	LW2-G027	8	11	23.1									
52	9319F	LW2-G079	8	11	23.1									
53	9303F	LW2-G020	8	11	23.1									
62	9307F	LW2-G033	8	11	23.1									
67	9322F	LW2-G083	8	11	23.0									
70	9309F	LW2-G035	8	11	23.4									
89	9317F	LW2-G089	8	11	23.2									
97	9312F	LW2-G067	8	11	23.0									
105	9313F	LW2-G073	8	11	23.0									
125	9305F	LW2-G025	8	11	23.2									
129	9308F	LW2-G034	8	11	23.1									
134	9321F	LW2-G111	8	11	23.1									
140	9316F	LW2-G092	8	11	23.2									
142	9310F	LW2-G061	8	11	23.0									

Test Number: 686-3

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
14	9208F	Control	8	12	23.1									
21	9318F	LW2-G080	8	12	23.1									
23	9311F	LW2-G062	8	12	23.1									
30	9304F	LW2-G024	8	12	23.3									
37	9320F	LW2-G078	8	12	23.1									
39	9314F	LW2-G074	8	12	23.2									
40	9315F	LW2-G085	8	12	23.3									
47	9306F	LW2-G027	8	12	23.1									
52	9319F	LW2-G079	8	12	23.1									
53	9303F	LW2-G020	8	12	23.1									
62	9307F	LW2-G033	8	12	23.1									
67	9322F	LW2-G083	8	12	23.1									
70	9309F	LW2-G035	8	12	23.4									
89	9317F	LW2-G089	8	12	23.2									
97	9312F	LW2-G067	8	12	23.0									
105	9313F	LW2-G073	8	12	23.3									
125	9305F	LW2-G025	8	12	23.2									
129	9308F	LW2-G034	8	12	23.1									
134	9321F	LW2-G111	8	12	23.1									
140	9316F	LW2-G092	8	12	23.2									
142	9310F	LW2-G061	8	12	23.0									
14	9208F	Control	8	13	23.0	5.7		7.3						
21	9318F	LW2-G080	8	13	23.0	6.0		7.2						
23	9311F	LW2-G062	8	13	22.9	5.9		7.1						
30	9304F	LW2-G024	8	13	23.2	5.4		7.1						
37	9320F	LW2-G078	8	13	23.0	6.0		7.1						
39	9314F	LW2-G074	8	13	23.1	6.2		7.1						
40	9315F	LW2-G085	8	13	23.3	5.2		7.1						
47	9306F	LW2-G027	8	13	23.0	6.0		7.1						
52	9319F	LW2-G079	8	13	23.0	6.0		7.1						
53	9303F	LW2-G020	8	13	23.0	5.6		7.1						
62	9307F	LW2-G033	8	13	23.0	5.6		7.1						
67	9322F	LW2-G083	8	13	23.0	5.4		7.1						
70	9309F	LW2-G035	8	13	23.2	5.6		7.1						
89	9317F	LW2-G089	8	13	23.1	5.8		7.1						
97	9312F	LW2-G067	8	13	22.9	5.6		7.1						
105	9313F	LW2-G073	8	13	23.2	6.1		7.1						
125	9305F	LW2-G025	8	13	23.2	5.5		7.1						
129	9308F	LW2-G034	8	13	23.0	5.8		7.1						
134	9321F	LW2-G111	8	13	23.0	5.6		7.1						
140	9316F	LW2-G092	8	13	23.1	6.5		8.3						
142	9310F	LW2-G061	8	13	22.9	5.7		7.3						

Test Number: 686-3

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
14	9208F	Control	8	14	23.0									
21	9318F	LW2-G080	8	14	23.1									
23	9311F	LW2-G062	8	14	23.1									
30	9304F	LW2-G024	8	14	23.1									
37	9320F	LW2-G078	8	14	23.1									
39	9314F	LW2-G074	8	14	23.2									
40	9315F	LW2-G085	8	14	23.3									
47	9306F	LW2-G027	8	14	23.2									
52	9319F	LW2-G079	8	14	23.2									
53	9303F	LW2-G020	8	14	23.2									
62	9307F	LW2-G033	8	14	23.1									
67	9322F	LW2-G083	8	14	23.1									
70	9309F	LW2-G035	8	14	23.1									
89	9317F	LW2-G089	8	14	23.2									
97	9312F	LW2-G067	8	14	23.1									
105	9313F	LW2-G073	8	14	23.3									
125	9305F	LW2-G025	8	14	23.3									
129	9308F	LW2-G034	8	14	23.3									
134	9321F	LW2-G111	8	14	23.3									
140	9316F	LW2-G092	8	14	23.2									
142	9310F	LW2-G061	8	14	23.1									
14	9208F	Control	8	15	22.5	5.6	160	7.1						
21	9318F	LW2-G080	8	15	22.5	5.9	160	6.8						
23	9311F	LW2-G062	8	15	22.5	6.0	165	6.7						
30	9304F	LW2-G024	8	15	22.7	5.5	165	6.7						
37	9320F	LW2-G078	8	15	22.5	5.9	165	6.7						
39	9314F	LW2-G074	8	15	22.6	5.9	165	6.6						
40	9315F	LW2-G085	8	15	22.5	5.0	170	6.8						
47	9306F	LW2-G027	8	15	22.6	5.7	165	6.7						
52	9319F	LW2-G079	8	15	22.5	5.9	160	6.7						
53	9303F	LW2-G020	8	15	22.5	5.4	170	6.9						
62	9307F	LW2-G033	8	15	22.5	5.9	165	6.8						
67	9322F	LW2-G083	8	15	22.6	5.5	170	6.8						
70	9309F	LW2-G035	8	15	22.9	5.4	170	6.8						
89	9317F	LW2-G089	8	15	22.7	5.9	165	6.7						
97	9312F	LW2-G067	8	15	22.6	5.6	165	6.8						
105	9313F	LW2-G073	8	15	22.8	6.1	165	6.7						
125	9305F	LW2-G025	8	15	22.8	6.0	170	6.8						
129	9308F	LW2-G034	8	15	22.7	6.0	165	6.8						
134	9321F	LW2-G111	8	15	22.6	5.4	165	6.7						
140	9316F	LW2-G092	8	15	22.8	6.3	185	8.8						
142	9310F	LW2-G061	8	15	22.5	5.3	165	6.9						

Test Number: 686-3

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
14	9208F	Control	8	16	22.4									
21	9318F	LW2-G080	8	16	22.5									
23	9311F	LW2-G062	8	16	22.4									
30	9304F	LW2-G024	8	16	22.4									
37	9320F	LW2-G078	8	16	22.5									
39	9314F	LW2-G074	8	16	22.5									
40	9315F	LW2-G085	8	16	22.6									
47	9306F	LW2-G027	8	16	22.7									
52	9319F	LW2-G079	8	16	22.5									
53	9303F	LW2-G020	8	16	22.5									
62	9307F	LW2-G033	8	16	22.4									
67	9322F	LW2-G083	8	16	22.4									
70	9309F	LW2-G035	8	16	22.7									
89	9317F	LW2-G089	8	16	22.6									
97	9312F	LW2-G067	8	16	22.5									
105	9313F	LW2-G073	8	16	22.4									
125	9305F	LW2-G025	8	16	22.6									
129	9308F	LW2-G034	8	16	22.6									
134	9321F	LW2-G111	8	16	22.5									
140	9316F	LW2-G092	8	16	22.5									
142	9310F	LW2-G061	8	16	22.4									
14	9208F	Control	8	17	22.9	5.9		7.3						
21	9318F	LW2-G080	8	17	22.9	6.3		7.0						
23	9311F	LW2-G062	8	17	22.9	6.4		7.0						
30	9304F	LW2-G024	8	17	23.1	5.8		7.0						
37	9320F	LW2-G078	8	17	23.0	6.4		7.0						
39	9314F	LW2-G074	8	17	23.0	6.2		7.0						
40	9315F	LW2-G085	8	17	23.1	5.9		7.0						
47	9306F	LW2-G027	8	17	23.0	6.3		7.0						
52	9319F	LW2-G079	8	17	23.0	6.3		7.0						
53	9303F	LW2-G020	8	17	22.9	6.2		7.1						
62	9307F	LW2-G033	8	17	23.0	6.2		7.0						
67	9322F	LW2-G083	8	17	23.0	6.1		7.0						
70	9309F	LW2-G035	8	17	23.2	6.1		7.0						
89	9317F	LW2-G089	8	17	22.9	6.4		7.0						
97	9312F	LW2-G067	8	17	22.9	6.3		7.0						
105	9313F	LW2-G073	8	17	23.1	6.7		7.0						
125	9305F	LW2-G025	8	17	23.1	6.3		7.0						
129	9308F	LW2-G034	8	17	23.0	6.4		6.9						
134	9321F	LW2-G111	8	17	23.0	6.3		6.9						
140	9316F	LW2-G092	8	17	23.2	6.6		8.7						
142	9310F	LW2-G061	8	17	22.9	5.8		7.1						

Test Number: 686-3

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
14	9208F	Control	8	18	22.9									
21	9318F	LW2-G080	8	18	23.0									
23	9311F	LW2-G062	8	18	23.2									
30	9304F	LW2-G024	8	18	23.2									
37	9320F	LW2-G078	8	18	23.0									
39	9314F	LW2-G074	8	18	23.1									
40	9315F	LW2-G085	8	18	23.2									
47	9306F	LW2-G027	8	18	23.1									
52	9319F	LW2-G079	8	18	23.0									
53	9303F	LW2-G020	8	18	23.0									
62	9307F	LW2-G033	8	18	23.0									
67	9322F	LW2-G083	8	18	23.0									
70	9309F	LW2-G035	8	18	23.3									
89	9317F	LW2-G089	8	18	23.2									
97	9312F	LW2-G067	8	18	23.0									
105	9313F	LW2-G073	8	18	23.3									
125	9305F	LW2-G025	8	18	23.3									
129	9308F	LW2-G034	8	18	23.1									
134	9321F	LW2-G111	8	18	23.1									
140	9316F	LW2-G092	8	18	23.2									
142	9310F	LW2-G061	8	18	23.0									
14	9208F	Control	8	19	23.0									
21	9318F	LW2-G080	8	19	23.0									
23	9311F	LW2-G062	8	19	23.0									
30	9304F	LW2-G024	8	19	23.1									
37	9320F	LW2-G078	8	19	23.1									
39	9314F	LW2-G074	8	19	23.1									
40	9315F	LW2-G085	8	19	23.0									
47	9306F	LW2-G027	8	19	23.0									
52	9319F	LW2-G079	8	19	23.0									
53	9303F	LW2-G020	8	19	23.0									
62	9307F	LW2-G033	8	19	23.0									
67	9322F	LW2-G083	8	19	23.0									
70	9309F	LW2-G035	8	19	23.2									
89	9317F	LW2-G089	8	19	23.1									
97	9312F	LW2-G067	8	19	23.0									
105	9313F	LW2-G073	8	19	23.2									
125	9305F	LW2-G025	8	19	23.1									
129	9308F	LW2-G034	8	19	23.1									
134	9321F	LW2-G111	8	19	23.0									
140	9316F	LW2-G092	8	19	23.1									
142	9310F	LW2-G061	8	19	23.0									

Test Number: 686-3

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
14	9208F	Control	8	20	22.9	5.4		6.9						
21	9318F	LW2-G080	8	20	22.9	5.9		6.6						
23	9311F	LW2-G062	8	20	22.9	5.8		6.5						
30	9304F	LW2-G024	8	20	23.0	5.1		6.6						
37	9320F	LW2-G078	8	20	22.9	6.0		6.6						
39	9314F	LW2-G074	8	20	23.0	6.1		6.6						
40	9315F	LW2-G085	8	20	23.0	5.2		6.6						
47	9306F	LW2-G027	8	20	22.9	5.8		6.6						
52	9319F	LW2-G079	8	20	22.9	5.6		6.5						
53	9303F	LW2-G020	8	20	22.9	5.3		6.6						
62	9307F	LW2-G033	8	20	22.9	5.8		6.6						
67	9322F	LW2-G083	8	20	22.9	5.6		6.6						
70	9309F	LW2-G035	8	20	23.1	5.5		6.6						
89	9317F	LW2-G089	8	20	23.0	5.8		6.5						
97	9312F	LW2-G067	8	20	22.8	5.8		6.5						
105	9313F	LW2-G073	8	20	23.0	6.3		6.6						
125	9305F	LW2-G025	8	20	23.0	5.8		6.6						
129	9308F	LW2-G034	8	20	22.9	5.8		6.6						
134	9321F	LW2-G111	8	20	22.9	5.4		6.5						
140	9316F	LW2-G092	8	20	22.0	6.2		8.3						
142	9310F	LW2-G061	8	20	22.8	5.2		6.7						
14	9208F	Control	8	21	23.2									
21	9318F	LW2-G080	8	21	23.2									
23	9311F	LW2-G062	8	21	23.2									
30	9304F	LW2-G024	8	21	23.4									
37	9320F	LW2-G078	8	21	23.3									
39	9314F	LW2-G074	8	21	23.3									
40	9315F	LW2-G085	8	21	23.4									
47	9306F	LW2-G027	8	21	23.3									
52	9319F	LW2-G079	8	21	23.3									
53	9303F	LW2-G020	8	21	23.3									
62	9307F	LW2-G033	8	21	23.2									
67	9322F	LW2-G083	8	21	23.2									
70	9309F	LW2-G035	8	21	23.5									
89	9317F	LW2-G089	8	21	23.4									
97	9312F	LW2-G067	8	21	23.4									
105	9313F	LW2-G073	8	21	23.4									
125	9305F	LW2-G025	8	21	23.5									
129	9308F	LW2-G034	8	21	23.4									
134	9321F	LW2-G111	8	21	23.3									
140	9316F	LW2-G092	8	21	23.4									
142	9310F	LW2-G061	8	21	23.3									

Test Number: 686-3

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
14	9208F	Control	8	22	23.2	5.6	170	6.8						
21	9318F	LW2-G080	8	22	23.2	6.1	160	6.6						
23	9311F	LW2-G062	8	22	23.2	6.2	160	6.6						
30	9304F	LW2-G024	8	22	23.4	5.1	160	6.6						
37	9320F	LW2-G078	8	22	23.2	6.1	160	6.6						
39	9314F	LW2-G074	8	22	23.3	6.4	165	6.6						
40	9315F	LW2-G085	8	22	23.4	5.6	160	6.6						
47	9306F	LW2-G027	8	22	23.3	6.1	160	6.6						
52	9319F	LW2-G079	8	22	23.3	6.2	160	6.6						
53	9303F	LW2-G020	8	22	23.3	5.5	170	6.6						
62	9307F	LW2-G033	8	22	23.3	5.9	160	6.7						
67	9322F	LW2-G083	8	22	23.3	6.1	160	6.7						
70	9309F	LW2-G035	8	22	23.5	5.6	170	6.7						
89	9317F	LW2-G089	8	22	23.4	6.0	160	6.6						
97	9312F	LW2-G067	8	22	23.3	5.9	160	6.6						
105	9313F	LW2-G073	8	22	23.5	6.4	160	6.6						
125	9305F	LW2-G025	8	22	23.5	6.2	165	6.6						
129	9308F	LW2-G034	8	22	23.3	5.8	160	6.6						
134	9321F	LW2-G111	8	22	23.3	5.6	160	6.6						
140	9316F	LW2-G092	8	22	23.5	6.3	180	8.5						
142	9310F	LW2-G061	8	22	23.3	5.3	165	6.8						
14	9208F	Control	8	23	22.9									
21	9318F	LW2-G080	8	23	22.9									
23	9311F	LW2-G062	8	23	22.8									
30	9304F	LW2-G024	8	23	23.0									
37	9320F	LW2-G078	8	23	22.9									
39	9314F	LW2-G074	8	23	23.0									
40	9315F	LW2-G085	8	23	23.2									
47	9306F	LW2-G027	8	23	23.0									
52	9319F	LW2-G079	8	23	23.0									
53	9303F	LW2-G020	8	23	22.9									
62	9307F	LW2-G033	8	23	22.9									
67	9322F	LW2-G083	8	23	22.9									
70	9309F	LW2-G035	8	23	23.3									
89	9317F	LW2-G089	8	23	23.0									
97	9312F	LW2-G067	8	23	22.9									
105	9313F	LW2-G073	8	23	23.3									
125	9305F	LW2-G025	8	23	23.3									
129	9308F	LW2-G034	8	23	23.1									
134	9321F	LW2-G111	8	23	23.0									
140	9316F	LW2-G092	8	23	23.3									
142	9310F	LW2-G061	8	23	22.9									

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Test Number: 686-3

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
14	9208F	Control	8	24	23.1	5.7		6.7						
21	9318F	LW2-G080	8	24	23.1	6.3		6.6						
23	9311F	LW2-G062	8	24	23.1	5.9		6.4						
30	9304F	LW2-G024	8	24	23.3	5.2		6.4						
37	9320F	LW2-G078	8	24	23.1	6.0		6.4						
39	9314F	LW2-G074	8	24	23.2	6.1		6.3						
40	9315F	LW2-G085	8	24	23.3	5.4		6.3						
47	9306F	LW2-G027	8	24	23.1	5.9		6.3						
52	9319F	LW2-G079	8	24	23.1	6.1		6.3						
53	9303F	LW2-G020	8	24	23.0	5.1		6.4						
62	9307F	LW2-G033	8	24	23.1	5.5		6.4						
67	9322F	LW2-G083	8	24	23.0	5.5		6.4						
70	9309F	LW2-G035	8	24	23.0	5.4		6.4						
89	9317F	LW2-G089	8	24	23.2	5.9		6.3						
97	9312F	LW2-G067	8	24	23.1	5.7		6.3						
105	9313F	LW2-G073	8	24	23.2	6.4		6.3						
125	9305F	LW2-G025	8	24	23.2	6.4		6.4						
129	9308F	LW2-G034	8	24	23.1	6.1		6.4						
134	9321F	LW2-G111	8	24	23.1	4.6		6.3						
140	9316F	LW2-G092	8	24	23.1	5.7		8.0						
142	9310F	LW2-G061	8	24	23.0	5.1		6.5						
14	9208F	Control	8	25	23.1									
21	9318F	LW2-G080	8	25	23.0									
23	9311F	LW2-G062	8	25	23.1									
30	9304F	LW2-G024	8	25	23.2									
37	9320F	LW2-G078	8	25	23.1									
39	9314F	LW2-G074	8	25	23.1									
40	9315F	LW2-G085	8	25	23.2									
47	9306F	LW2-G027	8	25	23.1									
52	9319F	LW2-G079	8	25	23.1									
53	9303F	LW2-G020	8	25	23.1									
62	9307F	LW2-G033	8	25	23.1									
67	9322F	LW2-G083	8	25	23.3									
70	9309F	LW2-G035	8	25	23.2									
89	9317F	LW2-G089	8	25	23.1									
97	9312F	LW2-G067	8	25	23.1									
105	9313F	LW2-G073	8	25	23.3									
125	9305F	LW2-G025	8	25	23.3									
129	9308F	LW2-G034	8	25	23.2									
134	9321F	LW2-G111	8	25	23.1									
140	9316F	LW2-G092	8	25	23.2									
142	9310F	LW2-G061	8	25	23.1									

Test Number: 686-3

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
14	9208F	Control	8	26	23.2									
21	9318F	LW2-G080	8	26	23.2									
23	9311F	LW2-G062	8	26	23.2									
30	9304F	LW2-G024	8	26	23.2									
37	9320F	LW2-G078	8	26	23.2									
39	9314F	LW2-G074	8	26	23.3									
40	9315F	LW2-G085	8	26	23.2									
47	9306F	LW2-G027	8	26	23.2									
52	9319F	LW2-G079	8	26	23.2									
53	9303F	LW2-G020	8	26	23.2									
62	9307F	LW2-G033	8	26	23.2									
67	9322F	LW2-G083	8	26	23.3									
70	9309F	LW2-G035	8	26	23.4									
89	9317F	LW2-G089	8	26	23.2									
97	9312F	LW2-G067	8	26	23.4									
105	9313F	LW2-G073	8	26	23.4									
125	9305F	LW2-G025	8	26	23.2									
129	9308F	LW2-G034	8	26	23.2									
134	9321F	LW2-G111	8	26	23.2									
140	9316F	LW2-G092	8	26	23.3									
142	9310F	LW2-G061	8	26	23.2									
14	9208F	Control	8	27	23.1	4.6		6.7						
21	9318F	LW2-G080	8	27	23.1	5.4		6.6						
23	9311F	LW2-G062	8	27	23.0	4.9		6.4						
30	9304F	LW2-G024	8	27	23.0	4.0		6.5						
37	9320F	LW2-G078	8	27	23.1	5.3		6.5						
39	9314F	LW2-G074	8	27	23.2	5.1		6.5						
40	9315F	LW2-G085	8	27	23.2	4.5		6.5						
47	9306F	LW2-G027	8	27	23.1	5.4		6.6						
52	9319F	LW2-G079	8	27	23.1	5.4		6.5						
53	9303F	LW2-G020	8	27	23.1	4.5		6.5						
62	9307F	LW2-G033	8	27	23.1	4.9		6.6						
67	9322F	LW2-G083	8	27	23.1	4.8		6.6						
70	9309F	LW2-G035	8	27	23.3	4.5		6.6						
89	9317F	LW2-G089	8	27	23.2	5.4		6.5						
97	9312F	LW2-G067	8	27	23.1	5.1		6.5						
105	9313F	LW2-G073	8	27	23.3	5.6		6.5						
125	9305F	LW2-G025	8	27	23.2	6.1		6.5						
129	9308F	LW2-G034	8	27	23.2	6.0		6.6						
134	9321F	LW2-G111	8	27	23.1	4.7		6.5						
140	9316F	LW2-G092	8	27	23.2	5.4		8.1						
142	9310F	LW2-G061	8	27	23.0	4.6		6.7						

Test Number: 686-3

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
14	9208F	Control	8	28	23.3	5.8	165	6.7	43	50	0.9			
21	9318F	LW2-G080	8	28	23.1	6.4	160	6.4	34	40	0.2			
23	9311F	LW2-G062	8	28	23.2	5.8	160	6.3	43	50	<0.1			
30	9304F	LW2-G024	8	28	23.2	5.4	160	6.3	43	50	0.2			
37	9320F	LW2-G078	8	28	23.1	7.0	155	6.4	43	50	<0.1			
39	9314F	LW2-G074	8	28	23.2	6.8	160	6.3	43	40	0.1			
40	9315F	LW2-G085	8	28	23.3	5.8	165	6.4	43	40	<0.1			
47	9306F	LW2-G027	8	28	23.1	6.8	160	6.4	43	40	0.1			
52	9319F	LW2-G079	8	28	23.1	7.0	155	6.4	43	40	<0.1			
53	9303F	LW2-G020	8	28	23.0	5.8	165	6.6	43	50	<0.1			
62	9307F	LW2-G033	8	28	23.0	6.4	160	6.6	43	40	<0.1			
67	9322F	LW2-G083	8	28	23.0	6.0	160	6.6	34	50	0.1			
70	9309F	LW2-G035	8	28	23.3	6.4	165	6.6	51	50	<0.1			
89	9317F	LW2-G089	8	28	23.2	6.3	155	6.3	43	40	<0.1			
97	9312F	LW2-G067	8	28	22.9	6.6	155	6.4	43	40	<0.1			
105	9313F	LW2-G073	8	28	23.2	7.1	160	6.5	43	50	<0.1			
125	9305F	LW2-G025	8	28	23.1	7.8	160	6.6	43	50	<0.1			
129	9308F	LW2-G034	8	28	23.1	7.6	160	6.6	43	40	<0.1			
134	9321F	LW2-G111	8	28	23.0	6.4	160	6.5	43	40	<0.1			
140	9316F	LW2-G092	8	28	23.1	6.8	180	8.6	51	60	<0.1			
142	9310F	LW2-G061	8	28	22.9	6.4	160	6.5	43	50	<0.1			
				Mean	23.0	6.1	168	6.9	47	46	---		---	6.9
				SD	0.2	0.7	10	0.5	7	6	---		---	1.2
				n	609	294	127	294	42	42	42		21	21
				Min	22.0	4.0	155	6.3	34	40	<0.1		<0.5	6.4
				Max	23.5	7.8	215	9.9	68	60	0.9		10.9	11.3

Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

ASHED DRY WT= weight of ashed pan + weight of ashed test organisms recovered at test termination
TAFDW=DRY WT - ASHED DRY WT= total ash-free organism weight for given replicate
AFDW=average individual ash-free biomass=TAFDW/WT COUNT

INITIAL WEIGHT

pan #	tare wt (mg)	final wt (mg)	wt count	avg. wt/ organism
1	103.88	107.64	20	0.19
2	100.15	104.18	20	0.20
3	106.54	110.60	20	0.20

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)
1	42	9208F	Control	1		10	10	0	100.0	0.0	105.26	9	118.94	108.52	13.68	1.52	10.42	1.16
2	53	9208F	Control	2		10	10	0	100.0	0.0	98.44	10	109.57	101.14	11.13	1.11	8.43	0.84
3	7	9208F	Control	3		10	7	3	70.0	30.0	104.44	7	110.87	105.83	6.43	0.92	5.04	0.72
4	48	9208F	Control	4		10	9	1	90.0	10.0	97.42	9	107.07	99.60	9.65	1.07	7.47	0.83
5	161	9208F	Control	5		10	9	1	90.0	10.0	108.16	9	121.01	110.92	12.85	1.43	10.09	1.12
6	93	9208F	Control	6		10	10	0	100.0	0.0	98.04	10	112.00	102.00	13.96	1.40	10.00	1.00
7	45	9208F	Control	7		10	5	5	50.0	50.0	117.02	5	126.92	119.66	9.90	1.98	7.26	1.45
8	41	9208F	Control	8	wq replicate	10	8	2	80.0	20.0	107.47	8	118.87	110.34	11.40	1.43	8.53	1.07
9	17	9303F	LW2-G020	1		10	8	2	80.0	20.0	99.45	8	108.48	101.99	9.03	1.13	6.49	0.81
10	106	9303F	LW2-G020	2		10	9	1	90.0	10.0	106.94	9	120.79	110.66	13.85	1.54	10.13	1.13
11	82	9303F	LW2-G020	3		10	10	0	100.0	0.0	104.69	10	120.22	110.13	15.53	1.55	10.09	1.01
12	87	9303F	LW2-G020	4		10	7	3	70.0	30.0	98.78	7	109.56	102.47	10.78	1.54	7.09	1.01
13	49	9303F	LW2-G020	5		10	10	0	100.0	0.0	97.26	10	111.45	102.43	14.19	1.42	9.02	0.90
14	76	9303F	LW2-G020	6		10	10	0	100.0	0.0	108.99	10	121.98	112.89	12.99	1.30	9.09	0.91
15	118	9303F	LW2-G020	7		10	8	2	80.0	20.0	106.65	8	119.11	109.79	12.46	1.56	9.32	1.17
16	90	9303F	LW2-G020	8	wq replicate	10	7	3	70.0	30.0	92.02	7	104.57	96.21	12.55	1.79	8.36	1.19
17	128	9304F	LW2-G024	1		10	10	0	100.0	0.0	98.31	10	113.31	102.63	15.00	1.50	10.68	1.07
18	58	9304F	LW2-G024	2		10	9	1	90.0	10.0	106.87	9	116.93	110.43	10.06	1.12	6.50	0.72
19	74	9304F	LW2-G024	3		10	6	4	60.0	40.0	99.20	6	112.63	104.24	13.43	2.24	8.39	1.40
20	88	9304F	LW2-G024	4		10	9	1	90.0	10.0	101.22	9	114.81	106.02	13.59	1.51	8.79	0.98
21	123	9304F	LW2-G024	5		10	8	2	80.0	20.0	113.79	8	128.42	118.53	14.63	1.83	9.89	1.24
22	28	9304F	LW2-G024	6		10	4	6	40.0	60.0	98.64	4	104.80	100.65	6.16	1.54	4.15	1.04
23	134	9304F	LW2-G024	7		10	10	0	100.0	0.0	104.20	10	121.89	109.43	17.69	1.77	12.46	1.25
24	122	9304F	LW2-G024	8	wq replicate	10	10	0	100.0	0.0	103.40	10	118.80	108.14	15.40	1.54	10.66	1.07
25	119	9305F	LW2-G025	1		10	7	3	70.0	30.0	101.05	7	112.98	103.28	11.93	1.70	9.70	1.39
26	51	9305F	LW2-G025	2		10	10	0	100.0	0.0	100.21	10	114.11	103.71	13.90	1.39	10.40	1.04
27	33	9305F	LW2-G025	3		10	5	5	50.0	50.0	118.85	5	125.74	119.79	6.89	1.38	5.95	1.19
28	46	9305F	LW2-G025	4		10	9	1	90.0	10.0	99.10	9	111.66	102.12	12.56	1.40	9.54	1.06
29	168	9305F	LW2-G025	5		10	9	1	90.0	10.0	106.26	9	120.70	109.24	14.44	1.60	11.46	1.27
30	65	9305F	LW2-G025	6		10	6	4	60.0	40.0	111.56	6	124.44	114.28	12.88	2.15	10.16	1.69
31	25	9305F	LW2-G025	7		10	10	0	100.0	0.0	99.15	10	111.57	101.62	12.42	1.24	9.95	0.99
32	137	9305F	LW2-G025	8	wq replicate	10	9	1	90.0	10.0	97.21	9	113.61	100.56	16.40	1.82	13.05	1.45
33	144	9306F	LW2-G027	1		10	9	1	90.0	10.0	100.70	9	116.10	104.12	15.40	1.71	11.98	1.33
34	163	9306F	LW2-G027	2		10	9	1	90.0	10.0	107.19	9	122.95	111.63	15.76	1.75	11.32	1.26
35	9	9306F	LW2-G027	3		10	7	3	70.0	30.0	107.66	7	117.16	109.93	9.50	1.36	7.23	1.03
36	127	9306F	LW2-G027	4		10	10	0	100.0	0.0	99.36	10	116.73	104.12	17.37	1.74	12.61	1.26
37	105	9306F	LW2-G027	5		10	9	1	90.0	10.0	107.01	9	122.38	111.05	15.37	1.71	11.33	1.26
38	43	9306F	LW2-G027	6		10	10	0	100.0	0.0	116.26	10	132.88	121.15	16.62	1.66	11.73	1.17
39	4	9306F	LW2-G027	7		10	6	4	60.0	40.0	104.93	6	113.74	107.19	8.81	1.47	6.55	1.09
40	157	9306F	LW2-G027	8	wq replicate	10	10	0	100.0	0.0	100.53	10	115.98	104.44	15.45	1.55	11.54	1.15

	SURV	MORT	PSURV	PMORT	WT	AFDW
Mean	8.5	1.5	85.0	15.0	1.36	1.02
SD	1.8	1.8	17.7	17.7	0.33	0.23
n	8	8	8	8	8	8
Mean	8.6	1.4	86.3	13.8	1.48	1.02
SD	1.3	1.3	13.0	13.0	0.20	0.14
n	8	8	8	8	8	8
Mean	8.3	1.8	82.5	17.5	1.63	1.09
SD	2.2	2.2	21.9	21.9	0.32	0.20
n	8	8	8	8	8	8
Mean	8.1	1.9	81.3	18.8	1.59	1.26
SD	1.9	1.9	18.9	18.9	0.30	0.24
n	8	8	8	8	8	8
Mean	8.8	1.3	87.5	12.5	1.62	1.20
SD	1.5	1.5	14.9	14.9	0.14	0.10
n	8	8	8	8	8	8

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Test Number: 686-4

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)			SURV	MORT	PSURV	PMORT	WT	AFDW
41	143	9307F	LW2-G033	1		10	10	0	100.0	0.0	109.28	10	124.52	113.83	15.24	1.52	10.69	1.07								
42	34	9307F	LW2-G033	2		10	6	4	60.0	40.0	96.37	6	105.21	99.00	8.84	1.47	6.21	1.04								
43	136	9307F	LW2-G033	3		10	8	2	80.0	20.0	107.41	8	121.41	111.42	14.00	1.75	9.99	1.25								
44	67	9307F	LW2-G033	4		10	7	3	70.0	30.0	104.72	7	117.02	108.41	12.30	1.76	8.61	1.23								
45	59	9307F	LW2-G033	5		10	7	3	70.0	30.0	97.47	7	105.72	100.48	8.25	1.18	5.24	0.75	Mean	8.1	1.9	81.3	18.8	1.48	1.00
46	56	9307F	LW2-G033	6		10	10	0	100.0	0.0	100.83	10	111.06	104.12	10.23	1.02	6.94	0.69	SD	1.5	1.5	14.6	14.6	0.26	0.20
47	71	9307F	LW2-G033	7		10	8	2	80.0	20.0	98.92	8	111.44	103.61	12.52	1.57	7.83	0.98	n	8	8	8	8	8	8
48	68	9307F	LW2-G033	8	wq replicate	10	9	1	90.0	10.0	103.96	9	118.02	108.80	14.06	1.56	9.22	1.02								
49	111	9308F	LW2-G034	1		10	8	2	80.0	20.0	100.06	8	115.03	104.35	14.97	1.87	10.68	1.34								
50	61	9308F	LW2-G034	2		10	7	3	70.0	30.0	105.64	7	119.91	109.93	14.27	2.04	9.98	1.43								
51	70	9308F	LW2-G034	3		10	9	1	90.0	10.0	111.82	9	129.41	119.00	17.59	1.95	10.41	1.16								
52	64	9308F	LW2-G034	4		10	8	2	80.0	20.0	115.09	8	130.06	118.83	14.97	1.87	11.23	1.40								
53	35	9308F	LW2-G034	5		10	7	3	70.0	30.0	101.81	7	110.19	104.00	8.38	1.20	6.19	0.88	Mean	8.4	1.6	83.8	16.3	1.73	1.20
54	150	9308F	LW2-G034	6		10	9	1	90.0	10.0	94.26	9	109.58	98.40	15.32	1.70	11.18	1.24	SD	1.1	1.1	10.6	10.6	0.27	0.18
55	85	9308F	LW2-G034	7		10	9	1	90.0	10.0	103.56	9	118.29	108.64	14.73	1.64	9.65	1.07	n	8	8	8	8	8	8
56	124	9308F	LW2-G034	8	wq replicate	10	10	0	100.0	0.0	108.92	10	124.73	113.60	15.81	1.58	11.13	1.11								
57	32	9309F	LW2-G035	1		10	8	2	80.0	20.0	103.74	8	112.22	106.29	8.48	1.06	5.93	0.74								
58	156	9309F	LW2-G035	2		10	10	0	100.0	0.0	101.76	10	119.48	107.48	17.72	1.77	12.00	1.20								
59	129	9309F	LW2-G035	3		10	10	0	100.0	0.0	108.38	10	121.62	112.26	13.24	1.32	9.36	0.94								
60	29	9309F	LW2-G035	4		10	6	4	60.0	40.0	102.00	6	109.02	103.61	7.02	1.17	5.41	0.90								
61	11	9309F	LW2-G035	5		10	9	1	90.0	10.0	97.16	9	105.95	99.74	8.79	0.98	6.21	0.69	Mean	8.9	1.1	88.8	11.3	1.38	0.97
62	135	9309F	LW2-G035	6		10	9	1	90.0	10.0	106.83	9	122.29	111.06	15.46	1.72	11.23	1.25	SD	1.4	1.4	13.6	13.6	0.31	0.21
63	139	9309F	LW2-G035	7		10	10	0	100.0	0.0	112.74	10	129.23	117.98	16.49	1.65	11.25	1.13	n	8	8	8	8	8	8
64	15	9309F	LW2-G035	8	wq replicate	10	9	1	90.0	10.0	110.81	9	122.89	114.79	12.08	1.34	8.10	0.90								
65	110	9310F	LW2-G061	1		10	9	1	90.0	10.0	105.71	9	119.25	109.18	13.54	1.50	10.07	1.12								
66	99	9310F	LW2-G061	2		10	7	3	70.0	30.0	108.27	7	121.06	112.80	12.79	1.83	8.26	1.18								
67	73	9310F	LW2-G061	3		10	9	1	90.0	10.0	113.53	9	126.02	117.84	12.49	1.39	8.18	0.91								
68	26	9310F	LW2-G061	4		10	10	0	100.0	0.0	109.27	10	122.88	112.97	13.61	1.36	9.91	0.99								
69	23	9310F	LW2-G061	5		10	8	2	80.0	20.0	102.92	8	111.72	105.40	8.80	1.10	6.32	0.79	Mean	8.8	1.3	87.5	12.5	1.45	1.00
70	98	9310F	LW2-G061	6		10	10	0	100.0	0.0	98.95	10	115.95	105.09	17.00	1.70	10.86	1.09	SD	1.3	1.3	12.8	12.8	0.23	0.13
71	54	9310F	LW2-G061	7		10	10	0	100.0	0.0	107.33	10	120.81	111.28	13.48	1.35	9.53	0.95	n	8	8	8	8	8	8
72	13	9310F	LW2-G061	8	wq replicate	10	7	3	70.0	30.0	117.12	7	126.58	119.78	9.46	1.35	6.80	0.97								
73	162	9311F	LW2-G062	1		10	7	3	70.0	30.0	108.61	7	121.42	111.30	12.81	1.83	10.12	1.45								
74	146	9311F	LW2-G062	2		10	8	2	80.0	20.0	97.74	8	107.63	99.60	9.89	1.24	8.03	1.00								
75	159	9311F	LW2-G062	3		10	9	1	90.0	10.0	100.28	9	114.16	103.82	13.88	1.54	10.34	1.15								
76	141	9311F	LW2-G062	4		10	10	0	100.0	0.0	108.61	10	120.95	111.94	12.34	1.23	9.01	0.90								
77	10	9311F	LW2-G062	5		10	7	3	70.0	30.0	100.76	7	109.07	102.32	8.31	1.19	6.75	0.96	Mean	7.8	2.3	77.5	22.5	1.40	1.06
78	12	9311F	LW2-G062	6		10	6	4	60.0	40.0	105.98	6	112.49	107.41	6.51	1.09	5.08	0.85	SD	1.5	1.5	14.9	14.9	0.27	0.19
79	16	9311F	LW2-G062	7		10	6	4	60.0	40.0	96.28	6	104.36	98.14	8.08	1.35	6.22	1.04	n	8	8	8	8	8	8
80	80	9311F	LW2-G062	8	wq replicate	10	9	1	90.0	10.0	114.54	9	129.84	119.96	15.30	1.70	9.88	1.10								
81	102	9312F	LW2-G067	1		10	10	0	100.0	0.0	107.52	10	122.98	111.89	15.46	1.55	11.09	1.11								
82	52	9312F	LW2-G067	2		10	10	0	100.0	0.0	95.09	10	107.08	99.22	11.99	1.20	7.86	0.79								
83	84	9312F	LW2-G067	3		10	10	0	100.0	0.0	105.57	10	122.45	111.27	16.88	1.69	11.18	1.12								
84	40	9312F	LW2-G067	4		10	8	2	80.0	20.0	96.66	8	109.60	100.89	12.94	1.62	8.71	1.09								
85	125	9312F	LW2-G067	5		10	10	0	100.0	0.0	109.20	10	124.90	114.44	15.70	1.57	10.46	1.05	Mean	9.0	1.0	90.0	10.0	1.54	1.07
86	167	9312F	LW2-G067	6		10	9	1	90.0	10.0	110.21	9	124.27	113.88	14.06	1.56	10.39	1.15	SD	1.4	1.4	14.1	14.1	0.17	0.13
87	1	9312F	LW2-G067	7		10	6	4	60.0	40.0	101.89	6	110.18	103.95	8.29	1.38	6.23	1.04	n	8	8	8	8	8	8
88	103	9312F	LW2-G067	8	wq replicate	10	9	1	90.0	10.0	96.98	9	112.58	101.77	15.60	1.73	10.81	1.20								
89	39	9313F	LW2-G073	1		10	6	4	60.0	40.0	111.41	6	120.68	113.85	9.27	1.55	6.83	1.14								
90	153	9313F	LW2-G073	2		11	11	0	100.0	0.0	107.89	11	123.98	112.91	16.09	1.46	11.07	1.01								
91	91	9313F	LW2-G073	3		10	9	1	90.0	10.0	108.58	9	122.35	113.32	13.77	1.53	9.03	1.00								
92	55	9313F	LW2-G073	4		10	9	1	90.0	10.0	102.26	9	113.07	105.38	10.81	1.20	7.69	0.85								
93	147	9313F	LW2-G073	5		10	9	1	90.0	10.0	98.55	7	111.99	101.84	13.44	1.92	10.15	1.45	Mean	8.5	1.6	83.8	16.3	1.54	1.10
94	5	9313F	LW2-G073	6		10	6	4	60.0	40.0	101.61	6	109.87	103.77	8.26	1.38	6.10	1.02	SD	1.7	1.5	15.1	15.1	0.22	0.19
95	132	9313F	LW2-G073	7		10	9	1	90.0	10.0	95.10	9	110.86	99.27	15.76	1.75	11.59	1.29	n	8	8	8	8	8	8
96	83	9313F	LW2-G073	8	wq replicate	10	9	1	90.0	10.0	97.12	9	111.15	101.56	14.03	1.56	9.59	1.07								

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Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)			SURV	MORT	PSURV	PMORT	WT	AFDW
97	18	9314F	LW2-G074	1		10	10	0	100.0	0.0	99.07	10	112.83	102.50	13.76	1.38	10.33	1.03								
98	69	9314F	LW2-G074	2		10	9	1	90.0	10.0	97.50	9	112.30	102.56	14.80	1.64	9.74	1.08								
99	112	9314F	LW2-G074	3		10	7	3	70.0	30.0	102.56	7	115.94	105.81	13.38	1.91	10.13	1.45								
100	97	9314F	LW2-G074	4		10	10	0	100.0	0.0	100.20	10	117.47	105.68	17.27	1.73	11.79	1.18								
101	130	9314F	LW2-G074	5		10	7	3	70.0	30.0	104.95	7	118.99	108.30	14.04	2.01	10.69	1.53		Mean	8.8	1.3	87.5	12.5	1.67	1.20
102	86	9314F	LW2-G074	6		10	10	0	100.0	0.0	98.61	10	115.39	104.50	16.78	1.68	10.89	1.09		SD	1.3	1.3	12.8	12.8	0.23	0.21
103	126	9314F	LW2-G074	7		10	9	1	90.0	10.0	101.15	9	116.15	104.39	15.00	1.67	11.76	1.31		n	8	8	8	8	8	8
104	22	9314F	LW2-G074	8	wq replicate	10	8	2	80.0	20.0	107.44	8	118.31	110.99	10.87	1.36	7.32	0.92								
137	72	9315F	LW2-G085	1		10	7	3	70.0	30.0	103.00	7	107.63	104.27	4.63	0.66	3.36	0.48								
138	133	9315F	LW2-G085	2		10	7	3	70.0	30.0	109.60	7	114.44	110.55	4.84	0.69	3.89	0.56								
139	78	9315F	LW2-G085	3		10	6	4	60.0	40.0	104.07	6	107.84	105.06	3.77	0.63	2.78	0.46								
140	81	9315F	LW2-G085	4		10	5	5	50.0	50.0	107.98	5	109.49	108.24	1.51	0.30	1.25	0.25								
141	44	9315F	LW2-G085	5		10	8	2	80.0	20.0	96.47	8	104.95	98.75	8.48	1.06	6.20	0.78		Mean	6.0	4.0	60.0	40.0	0.68	0.53
142	109	9315F	LW2-G085	6		10	7	3	70.0	30.0	98.17	7	103.77	99.06	5.60	0.80	4.71	0.67		SD	2.6	2.6	26.2	26.2	0.23	0.17
143	154	9315F	LW2-G085	7		10	8	2	80.0	20.0	111.14	8	116.13	112.14	4.99	0.62	3.99	0.50		n	8	8	8	8	7	7
144	31	9315F	LW2-G085	8	wq replicate	10	0	10	0.0	100.0	101.15	0														
153	21	9316F	LW2-G092	1		10	0	10	0.0	100.0	96.93	0														
154	8	9316F	LW2-G092	2		10	0	10	0.0	100.0	98.44	0														
155	89	9316F	LW2-G092	3		10	0	10	0.0	100.0	95.97	0														
156	47	9316F	LW2-G092	4		10	0	10	0.0	100.0	102.81	0														
157	57	9316F	LW2-G092	5		10	0	10	0.0	100.0	110.80	0								Mean	0.0	10.0	0.0	100.0	0.00	0.00
158	117	9316F	LW2-G092	6		10	0	10	0.0	100.0	91.49	0								SD	0.0	0.0	0.0	0.0	0.00	0.00
159	145	9316F	LW2-G092	7		10	0	10	0.0	100.0	97.70	0								n	8	8	8	8	0	0
160	24	9316F	LW2-G092	8	wq replicate	10	0	10	0.0	100.0	94.99	0														
145	95	9317F	LW2-G089	1		10	9	1	90.0	10.0	102.56	9	112.53	104.96	9.97	1.11	7.57	0.84								
146	79	9317F	LW2-G089	2		10	7	3	70.0	30.0	98.96	7	108.83	101.76	9.87	1.41	7.07	1.01								
147	2	9317F	LW2-G089	3		10	0	10	0.0	100.0	112.34	0														
148	3	9317F	LW2-G089	4		10	0	10	0.0	100.0	96.02	0														
149	75	9317F	LW2-G089	5		10	8	2	80.0	20.0	104.04	8	114.14	106.90	10.10	1.26	7.24	0.90		Mean	5.9	4.1	58.8	41.3	1.17	0.88
150	120	9317F	LW2-G089	6		10	8	2	80.0	20.0	99.02	8	108.19	100.64	9.17	1.15	7.55	0.94		SD	3.7	3.7	36.8	36.8	0.14	0.09
151	37	9317F	LW2-G089	7		10	8	2	80.0	20.0	100.42	8	108.47	102.57	8.05	1.01	5.90	0.74		n	8	8	8	8	6	6
152	101	9317F	LW2-G089	8	wq replicate	10	7	3	70.0	30.0	105.80	7	113.61	107.61	7.81	1.12	6.00	0.86								
121	63	9318F	LW2-G080	1		10	5	5	50.0	50.0	96.78	5	103.61	98.25	6.83	1.37	5.36	1.07								
122	165	9318F	LW2-G080	2		10	7	3	70.0	30.0	96.43	7	109.29	100.17	12.86	1.84	9.12	1.30								
123	19	9318F	LW2-G080	3		10	8	2	80.0	20.0	115.16	8	127.14	118.53	11.98	1.50	8.61	1.08								
124	131	9318F	LW2-G080	4		10	9	1	90.0	10.0	100.25	9	113.53	104.26	13.28	1.48	9.27	1.03								
125	121	9318F	LW2-G080	5		10	9	1	90.0	10.0	102.23	9	117.56	106.47	15.33	1.70	11.09	1.23		Mean	8.5	1.5	85.0	15.0	1.59	1.13
126	94	9318F	LW2-G080	6		10	10	0	100.0	0.0	96.94	9	112.81	101.84	15.87	1.76	10.97	1.22		SD	1.8	1.8	17.7	17.7	0.23	0.12
127	149	9318F	LW2-G080	7		10	10	0	100.0	0.0	106.02	10	118.31	108.80	12.29	1.23	9.51	0.95		n	8	8	8	8	8	8
128	140	9318F	LW2-G080	8	wq replicate	10	10	0	100.0	0.0	103.52	10	122.18	110.91	18.66	1.87	11.27	1.13								
113	66	9319F	LW2-G079	1		10	10	0	100.0	0.0	105.49	10	120.77	110.52	15.28	1.53	10.25	1.03								
114	62	9319F	LW2-G079	2		10	5	5	50.0	50.0	99.41	5	109.56	102.09	10.15	2.03	7.47	1.49								
115	14	9319F	LW2-G079	3		10	9	1	90.0	10.0	104.13	9	115.50	107.67	11.37	1.26	7.83	0.87								
116	6	9319F	LW2-G079	4		10	10	0	100.0	0.0	95.05	10	104.78	97.17	9.73	0.97	7.61	0.76								
117	152	9319F	LW2-G079	5		10	8	2	80.0	20.0	110.13	8	123.82	113.95	13.69	1.71	9.87	1.23		Mean	8.1	1.9	81.3	18.8	1.51	1.09
118	114	9319F	LW2-G079	6		10	7	3	70.0	30.0	103.56	7	114.49	106.22	10.93	1.56	8.27	1.18		SD	2.0	2.0	19.6	19.6	0.32	0.24
119	160	9319F	LW2-G079	7		10	10	0	100.0	0.0	97.28	10	111.08	101.70	13.80	1.38	9.38	0.94		n	8	8	8	8	8	8
120	30	9319F	LW2-G079	8	wq replicate	10	6	4	60.0	40.0	110.91	6	120.74	113.48	9.83	1.64	7.26	1.21								

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Test Number: 686-4

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)			SURV	MORT	PSURV	PMORT	WT	AFDW
105	50	9320F	LW2-G078	1		10	10	0	100.0	0.0	96.08	10	110.43	101.07	14.35	1.44	9.36	0.94								
106	113	9320F	LW2-G078	2		10	5	5	50.0	50.0	101.84	5	110.82	103.96	8.98	1.80	6.86	1.37								
107	96	9320F	LW2-G078	3		10	10	0	100.0	0.0	99.03	10	116.26	105.59	17.23	1.72	10.67	1.07								
108	104	9320F	LW2-G078	4		10	8	2	80.0	20.0	106.53	8	120.46	110.59	13.93	1.74	9.87	1.23								
109	142	9320F	LW2-G078	5		10	9	1	90.0	10.0	102.95	9	115.45	105.84	12.50	1.39	9.61	1.07	Mean	8.3	1.8	82.5	17.5	1.59	1.08
110	36	9320F	LW2-G078	6		10	7	3	70.0	30.0	111.21	7	122.77	115.85	11.56	1.65	6.92	0.99	SD	1.8	1.8	18.3	18.3	0.16	0.15
111	107	9320F	LW2-G078	7		10	7	3	70.0	30.0	112.09	7	122.45	115.18	10.36	1.48	7.27	1.04	n	8	8	8	8	8	8
112	77	9320F	LW2-G078	8	wq replicate	10	10	0	100.0	0.0	96.50	10	111.15	101.47	14.65	1.47	9.68	0.97								
161	60	9321F	LW2-G111	1		10	8	2	80.0	20.0	102.87	8	115.60	107.36	12.73	1.59	8.24	1.03								
162	100	9321F	LW2-G111	2		10	0	10	0.0	100.0	105.25	0														
163	108	9321F	LW2-G111	3		10	10	0	100.0	0.0	104.28	10	117.93	107.39	13.65	1.37	10.54	1.05								
164	166	9321F	LW2-G111	4		10	10	0	100.0	0.0	89.09	10	105.49	93.72	16.40	1.64	11.77	1.18								
165	148	9321F	LW2-G111	5		10	8	2	80.0	20.0	117.22	8	127.80	119.60	10.58	1.32	8.20	1.03	Mean	7.4	2.6	73.8	26.3	1.51	1.10
166	20	9321F	LW2-G111	6		10	9	1	90.0	10.0	108.99	8	120.25	111.66	11.26	1.41	8.59	1.07	SD	3.2	3.2	32.5	32.5	0.14	0.07
167	38	9321F	LW2-G111	7		10	6	4	60.0	40.0	113.26	6	122.88	116.33	9.62	1.60	6.55	1.09	n	8	8	8	8	7	7
168	138	9321F	LW2-G111	8	wq replicate	10	8	2	80.0	20.0	114.22	8	127.50	117.79	13.28	1.66	9.71	1.21								
129	92	9322F	LW2-G083	1		10	10	0	100.0	0.0	103.83	10	122.50	110.98	18.67	1.87	11.52	1.15								
130	115	9322F	LW2-G083	2		10	7	3	70.0	30.0	97.18	7	110.59	101.16	13.41	1.92	9.43	1.35								
131	155	9322F	LW2-G083	3		10	10	0	100.0	0.0	105.91	10	120.87	110.66	14.96	1.50	10.21	1.02								
132	27	9322F	LW2-G083	4		10	10	0	100.0	0.0	102.41	10	113.83	105.50	11.42	1.14	8.33	0.83								
133	158	9322F	LW2-G083	5		10	8	2	80.0	20.0	97.67	8	110.60	101.34	12.93	1.62	9.26	1.16	Mean	9.0	1.0	90.0	10.0	1.59	1.11
134	116	9322F	LW2-G083	6		10	9	1	90.0	10.0	89.86	9	103.93	93.87	14.07	1.56	10.06	1.12	SD	1.1	1.1	10.7	10.7	0.24	0.14
135	151	9322F	LW2-G083	7		10	9	1	90.0	10.0	114.39	9	127.50	117.65	13.11	1.46	9.85	1.09	n	8	8	8	8	8	8
136	164	9322F	LW2-G083	8	wq replicate	10	9	1	90.0	10.0	94.92	9	110.06	99.84	15.14	1.68	10.22	1.14								

One animal lost or damaged during transfer into weighing pans for beakers 20, 42, and 94. Two animals lost or damaged during transfer into weighing pan for beaker 147.

ANC07356
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Test Number: 686-4

Freshwater Sediment Test
10-Day Chironomus tentans

Water Quality Data

NAS SMPL	CLIENT DESCRIP	Bulk Sediment Interstitial water NH3	Bulk Sediment Interstitial water pH
9303F	LW2-G020	7.9	6.4
9304F	LW2-G024	4.3	6.4
9305F	LW2-G025	---	---
9306F	LW2-G027	1.1	6.8
9307F	LW2-G033	4.3	6.6
9308F	LW2-G034	2.3	6.5
9309F	LW2-G035	4.3	6.4
9310F	LW2-G061	5.6	6.4
9311F	LW2-G062	1.7	6.6
9312F	LW2-G067	4.8	6.4
9313F	LW2-G073	---	---
9314F	LW2-G074	<0.5	6.6
9315F	LW2-G085	10.9	7.0
9316F	LW2-G092	7.8	11.3
9317F	LW2-G089	3.5	---
9318F	LW2-G080	---	---
9319F	LW2-G079	0.6	6.9
9320F	LW2-G078	1.9	6.8
9321F	LW2-G111	4.8	7.0
9322F	LW2-G083	4.4	6.9

					Overlying water								
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	NH3	HARD	ALK		
13	9310F	LW2-G061	8	0	23.0	7.3	170	7.1	0.7	60	40		
15	9309F	LW2-G035	8	0	23.0	7.6	170	7.1	0.4	51	50		
22	9314F	LW2-G074	8	0	23.0	7.4	160	7.1	0.1	51	40		
24	9316F	LW2-G092	8	0	23.1	7.4	230	10.1	0.4	60	40		
30	9319F	LW2-G079	8	0	23.0	7.4	160	7.1	0.4	51	40		
31	9315F	LW2-G085	8	0	23.0	7.2	200	7.2	0.7	68	50		
41	9208F	Control	8	0	23.0	7.3	190	7.1	0.3	43	50		
68	9307F	LW2-G033	8	0	22.9	7.2	170	6.9	0.5	60	50		
77	9320F	LW2-G078	8	0	23.0	7.6	165	7.1	0.2	51	40		
80	9311F	LW2-G062	8	0	23.1	7.4	170	7.1	0.2	51	50		
83	9313F	LW2-G073	8	0	23.1	7.7	160	6.9	<0.1	43	40		
90	9303F	LW2-G020	8	0	23.0	7.4	170	7.1	0.6	51	40		
101	9317F	LW2-G089	8	0	22.9	7.2	165	7.0	0.2	43	40		
103	9312F	LW2-G067	8	0	23.0	7.3	160	7.1	0.6	34	40		
122	9304F	LW2-G024	8	0	23.0	7.4	170	7.1	0.5	51	50		
124	9308F	LW2-G034	8	0	23.1	7.4	175	7.1	0.2	51	50		
137	9305F	LW2-G025	8	0	23.0	7.7	170	7.2	0.2	51	40		
138	9321F	LW2-G111	8	0	22.9	7.5	175	7.1	0.6	43	40		
140	9318F	LW2-G080	8	0	22.9	7.2	160	7.1	0.2	43	40		
157	9306F	LW2-G027	8	0	22.9	7.3	165	7.2	<0.1	51	50		
164	9322F	LW2-G083	8	0	22.9	7.4	170	7.1	0.3	43	50		
13	9310F	LW2-G061	8	1	22.8	5.6							
15	9309F	LW2-G035	8	1	22.8	5.2							
22	9314F	LW2-G074	8	1	22.8	5.8							
24	9316F	LW2-G092	8	1	22.9	7.0							
30	9319F	LW2-G079	8	1	23.0	5.8							
31	9315F	LW2-G085	8	1	22.9	6.4							
41	9208F	Control	8	1	22.9	6.0							
68	9307F	LW2-G033	8	1	22.9	5.6							
77	9320F	LW2-G078	8	1	22.9	5.8							
80	9311F	LW2-G062	8	1	23.1	5.2							

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83	9313F	LW2-G073	8	1	23.1	5.1								
90	9303F	LW2-G020	8	1	22.9	6.1								
101	9317F	LW2-G089	8	1	22.8	5.8								
103	9312F	LW2-G067	8	1	22.7	5.8								
122	9304F	LW2-G024	8	1	22.8	5.6								
124	9308F	LW2-G034	8	1	22.8	5.7								
137	9305F	LW2-G025	8	1	22.8	5.2								
138	9321F	LW2-G111	8	1	22.8	5.6								
140	9318F	LW2-G080	8	1	22.9	5.8								
157	9306F	LW2-G027	8	1	22.9	5.8								
164	9322F	LW2-G083	8	1	22.9	5.5								
13	9310F	LW2-G061	8	2	23.1	5.2								
15	9309F	LW2-G035	8	2	23.1	5.5								
22	9314F	LW2-G074	8	2	23.1	5.3								
24	9316F	LW2-G092	8	2	23.1	6.8								
30	9319F	LW2-G079	8	2	23.2	5.6								
31	9315F	LW2-G085	8	2	23.4	5.6								
41	9208F	Control	8	2	23.3	5.4								
68	9307F	LW2-G033	8	2	23.3	5.2								
77	9320F	LW2-G078	8	2	23.4	5.5								
80	9311F	LW2-G062	8	2	23.4	5.4								
83	9313F	LW2-G073	8	2	23.4	5.4								
90	9303F	LW2-G020	8	2	23.2	5.3								
101	9317F	LW2-G089	8	2	23.2	6.2								
103	9312F	LW2-G067	8	2	23.2	5.1								
122	9304F	LW2-G024	8	2	23.2	5.4								
124	9308F	LW2-G034	8	2	23.2	5.5								
137	9305F	LW2-G025	8	2	23.2	5.6								
138	9321F	LW2-G111	8	2	23.2	5.6								
140	9318F	LW2-G080	8	2	23.2	5.5								
157	9306F	LW2-G027	8	2	23.3	5.8								
164	9322F	LW2-G083	8	2	23.3	5.7								
13	9310F	LW2-G061	8	3	23.0	5.0								
15	9309F	LW2-G035	8	3	23.2	5.2								
22	9314F	LW2-G074	8	3	23.2	5.4								
24	9316F	LW2-G092	8	3	23.1	6.5								
30	9319F	LW2-G079	8	3	23.2	5.2								
31	9315F	LW2-G085	8	3	23.1	5.5								
41	9208F	Control	8	3	23.1	5.2								
68	9307F	LW2-G033	8	3	23.1	4.6								
77	9320F	LW2-G078	8	3	23.1	4.5								
80	9311F	LW2-G062	8	3	23.3	4.8								
83	9313F	LW2-G073	8	3	23.2	5.0								
90	9303F	LW2-G020	8	3	23.0	5.0								
101	9317F	LW2-G089	8	3	23.0	4.6								
103	9312F	LW2-G067	8	3	23.0	4.8								
122	9304F	LW2-G024	8	3	23.0	4.9								
124	9308F	LW2-G034	8	3	23.0	4.8								
137	9305F	LW2-G025	8	3	23.1	5.0								
138	9321F	LW2-G111	8	3	23.0	4.4								
140	9318F	LW2-G080	8	3	23.0	5.0								
157	9306F	LW2-G027	8	3	23.1	5.2								
164	9322F	LW2-G083	8	3	23.1	5.4								
13	9310F	LW2-G061	8	4	23.1	4.2								
15	9309F	LW2-G035	8	4	23.4	5.0								
22	9314F	LW2-G074	8	4	23.1	5.2								
24	9316F	LW2-G092	8	4	23.2	6.6								
30	9319F	LW2-G079	8	4	23.4	5.6								

31	9315F	LW2-G085	8	4	23.3	5.2								
41	9208F	Control	8	4	23.2	4.6								
68	9307F	LW2-G033	8	4	23.1	4.2								
77	9320F	LW2-G078	8	4	23.1	4.1								
80	9311F	LW2-G062	8	4	23.3	4.1								
83	9313F	LW2-G073	8	4	23.3	4.6								
90	9303F	LW2-G020	8	4	23.1	4.5								
101	9317F	LW2-G089	8	4	23.0	5.1								
103	9312F	LW2-G067	8	4	22.9	4.1								
122	9304F	LW2-G024	8	4	23.0	5.1								
124	9308F	LW2-G034	8	4	23.0	4.5								
137	9305F	LW2-G025	8	4	23.1	4.1								
138	9321F	LW2-G111	8	4	23.0	4.2								
140	9318F	LW2-G080	8	4	23.1	4.6								
157	9306F	LW2-G027	8	4	23.1	5.0								
164	9322F	LW2-G083	8	4	23.1	5.2								
13	9310F	LW2-G061	8	5	23.0	4.4								
15	9309F	LW2-G035	8	5	23.4	4.8								
22	9314F	LW2-G074	8	5	23.0	5.1								
24	9316F	LW2-G092	8	5	23.1	6.4								
30	9319F	LW2-G079	8	5	23.3	5.2								
31	9315F	LW2-G085	8	5	23.1	4.8								
41	9208F	Control	8	5	23.1	5.2								
68	9307F	LW2-G033	8	5	23.0	4.3								
77	9320F	LW2-G078	8	5	22.9	4.2								
80	9311F	LW2-G062	8	5	22.9	4.6								
83	9313F	LW2-G073	8	5	22.9	4.4								
90	9303F	LW2-G020	8	5	22.8	4.8								
101	9317F	LW2-G089	8	5	22.9	5.3								
103	9312F	LW2-G067	8	5	23.0	5.0								
122	9304F	LW2-G024	8	5	23.0	5.1								
124	9308F	LW2-G034	8	5	23.0	4.4								
137	9305F	LW2-G025	8	5	23.1	4.6								
138	9321F	LW2-G111	8	5	23.0	4.5								
140	9318F	LW2-G080	8	5	23.2	4.8								
157	9306F	LW2-G027	8	5	23.1	4.9								
164	9322F	LW2-G083	8	5	23.0	4.9								
13	9310F	LW2-G061	8	6	22.5	3.8								
15	9309F	LW2-G035	8	6	22.8	4.1								
22	9314F	LW2-G074	8	6	22.5	4.0								
24	9316F	LW2-G092	8	6	22.7	5.9								
30	9319F	LW2-G079	8	6	22.9	4.4								
31	9315F	LW2-G085	8	6	22.7	5.1								
41	9208F	Control	8	6	22.7	3.9								
68	9307F	LW2-G033	8	6	22.6	3.6								
77	9320F	LW2-G078	8	6	22.6	3.8								
80	9311F	LW2-G062	8	6	22.9	3.4								
83	9313F	LW2-G073	8	6	22.8	4.2								
90	9303F	LW2-G020	8	6	22.7	4.3								
101	9317F	LW2-G089	8	6	22.6	4.7								
103	9312F	LW2-G067	8	6	22.5	3.3								
122	9304F	LW2-G024	8	6	22.6	3.6								
124	9308F	LW2-G034	8	6	22.5	3.8								
137	9305F	LW2-G025	8	6	22.6	3.3								
138	9321F	LW2-G111	8	6	22.6	3.5								
140	9318F	LW2-G080	8	6	22.7	3.8								
157	9306F	LW2-G027	8	6	22.7	4.2								
164	9322F	LW2-G083	8	6	22.7	3.9								

13	9310F	LW2-G061	8	7	22.8	3.8								
15	9309F	LW2-G035	8	7	23.0	4.1								
22	9314F	LW2-G074	8	7	22.9	3.9								
24	9316F	LW2-G092	8	7	23.0	6.2								
30	9319F	LW2-G079	8	7	23.0	4.4								
31	9315F	LW2-G085	8	7	23.0	5.0								
41	9208F	Control	8	7	23.1	4.0								
68	9307F	LW2-G033	8	7	22.9	3.2								
77	9320F	LW2-G078	8	7	22.9	4.0								
80	9311F	LW2-G062	8	7	23.0	3.4								
83	9313F	LW2-G073	8	7	23.0	3.8								
90	9303F	LW2-G020	8	7	22.9	4.2								
101	9317F	LW2-G089	8	7	22.8	4.8								
103	9312F	LW2-G067	8	7	22.8	4.4								
122	9304F	LW2-G024	8	7	22.7	4.9								
124	9308F	LW2-G034	8	7	22.8	4.0								
137	9305F	LW2-G025	8	7	22.8	4.2								
138	9321F	LW2-G111	8	7	22.8	3.6								
140	9318F	LW2-G080	8	7	22.9	3.8								
157	9306F	LW2-G027	8	7	22.9	4.6								
164	9322F	LW2-G083	8	7	22.9	4.0								
13	9310F	LW2-G061	8	8	22.9	3.2								
15	9309F	LW2-G035	8	8	23.1	2.8								
22	9314F	LW2-G074	8	8	23.1	4.6								
24	9316F	LW2-G092	8	8	23.1	3.7								
30	9319F	LW2-G079	8	8	23.2	4.3								
31	9315F	LW2-G085	8	8	23.1	4.2								
41	9208F	Control	8	8	23.1	3.4								
68	9307F	LW2-G033	8	8	23.1	3.0								
77	9320F	LW2-G078	8	8	23.1	3.8								
80	9311F	LW2-G062	8	8	23.1	3.1								
83	9313F	LW2-G073	8	8	23.2	3.6								
90	9303F	LW2-G020	8	8	23.1	2.9								
101	9317F	LW2-G089	8	8	23.0	3.2								
103	9312F	LW2-G067	8	8	22.9	3.1								
122	9304F	LW2-G024	8	8	23.0	2.9								
124	9308F	LW2-G034	8	8	23.0	3.2								
137	9305F	LW2-G025	8	8	23.0	3.2								
138	9321F	LW2-G111	8	8	23.0	2.9								
140	9318F	LW2-G080	8	8	23.0	3.0								
157	9306F	LW2-G027	8	8	23.0	3.6								
164	9322F	LW2-G083	8	8	23.0	3.2								
13	9310F	LW2-G061	8	9	23.0	4.1								
15	9309F	LW2-G035	8	9	23.1	4.4								
22	9314F	LW2-G074	8	9	23.0	4.1								
24	9316F	LW2-G092	8	9	23.0	5.2								
30	9319F	LW2-G079	8	9	23.1	5.0								
31	9315F	LW2-G085	8	9	23.1	5.2								
41	9208F	Control	8	9	23.1	4.3								
68	9307F	LW2-G033	8	9	23.0	4.2								
77	9320F	LW2-G078	8	9	22.9	4.7								
80	9311F	LW2-G062	8	9	23.1	4.7								
83	9313F	LW2-G073	8	9	23.1	5.1								
90	9303F	LW2-G020	8	9	23.0	3.4								
101	9317F	LW2-G089	8	9	23.0	3.9								
103	9312F	LW2-G067	8	9	22.9	3.7								
122	9304F	LW2-G024	8	9	23.0	3.8								
124	9308F	LW2-G034	8	9	23.0	4.2								

137	9305F	LW2-G025	8	9	23.1	4.2								
138	9321F	LW2-G111	8	9	23.1	2.9								
140	9318F	LW2-G080	8	9	23.1	4.2								
157	9306F	LW2-G027	8	9	23.1	4.6								
164	9322F	LW2-G083	8	9	23.1	4.1								
13	9310F	LW2-G061	8	10	23.0	4.3	150	6.8	0.9	43	40			
15	9309F	LW2-G035	8	10	23.2	5.9	165	6.8	0.6	43	40			
22	9314F	LW2-G074	8	10	23.1	5.8	160	6.7	0.4	43	40			
24	9316F	LW2-G092	8	10	23.1	6.4	180	8.9	0.5	60	60			
30	9319F	LW2-G079	8	10	23.3	6.2	158	6.7	0.3	43	40			
31	9315F	LW2-G085	8	10	23.2	6.0	165	6.8	0.5	43	50			
41	9208F	Control	8	10	23.2	5.8	170	6.8	0.4	43	40			
68	9307F	LW2-G033	8	10	23.1	5.4	160	6.7	0.6	43	40			
77	9320F	LW2-G078	8	10	23.0	5.7	160	6.7	0.3	43	40			
80	9311F	LW2-G062	8	10	23.2	5.2	165	6.6	0.3	43	40			
83	9313F	LW2-G073	8	10	23.1	5.8	160	6.8	0.3	43	40			
90	9303F	LW2-G020	8	10	23.1	4.6	160	6.6	0.7	43	50			
101	9317F	LW2-G089	8	10	23.0	5.4	160	6.6	0.2	43	40			
103	9312F	LW2-G067	8	10	22.9	5.1	160	6.6	0.5	43	50			
122	9304F	LW2-G024	8	10	23.1	5.2	160	6.6	0.4	43	40			
124	9308F	LW2-G034	8	10	23.0	5.2	165	6.6	0.1	43	40			
137	9305F	LW2-G025	8	10	23.1	5.2	170	6.7	0.4	51	40			
138	9321F	LW2-G111	8	10	23.1	3.8	170	6.6	0.8	43	40			
140	9318F	LW2-G080	8	10	23.2	5.1	165	6.6	0.4	43	40			
157	9306F	LW2-G027	8	10	23.2	5.8	165	6.7	0.1	51	40			
164	9322F	LW2-G083	8	10	23.1	6.0	165	6.7	0.3	60	50			
				Mean	23.0	5.0	168	7.0	---	48	44		4.4	6.9
				SD	0.2	1.1	13	0.6	---	7	5		2.7	1.2
				n	231	231	42	42	42	42	42		20	20
				Min	22.5	2.8	150	6.6	<0.1	34	40		<0.5	6.4
				Max	23.4	7.7	230	10.1	0.9	68	60		10.9	11.3

Test Number: P686-5

Freshwater Sediment Test
28-day Hyalella azteca

Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or
dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

INITIAL WEIGHT

pan #	tare wt (mg)	final wt (mg)	wt count	avg. wt/ organism
1	28.401	28.898	20	0.025
2	28.448	28.873	20	0.021
3	28.402	28.947	20	0.027
4	29.140	29.732	20	0.030
5	29.695	30.148	20	0.023

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
1	76	9323F	Control	1		10	10	0	100.0	0.0	27.850	10	30.641	2.79	0.28						
2	36	9323F	Control	2		10	10	0	100.0	0.0	28.996	10	32.335	3.34	0.33						
3	25	9323F	Control	3		10	9	1	90.0	10.0	29.727	9	32.567	2.84	0.32						
4	135	9323F	Control	4		10	9	1	90.0	10.0	30.218	9	33.671	3.45	0.38						
5	106	9323F	Control	5		10	10	0	100.0	0.0	28.081	10	30.553	2.47	0.25	Mean	9.5	0.5	95.0	5.0	0.30
6	165	9323F	Control	6		10	8	2	80.0	20.0	29.216	8	32.097	2.88	0.36	SD	0.8	0.8	7.6	7.6	0.06
7	149	9323F	Control	7		10	10	0	100.0	0.0	28.818	10	31.459	2.64	0.26	n	8	8	8	8	8
8	91	9323F	Control	8	wq replicate	10	10	0	100.0	0.0	29.688	10	31.959	2.27	0.23						
9	83	9325F	LW2-G082	1		10	8	2	80.0	20.0	29.513	8	31.936	2.42	0.30						
10	152	9325F	LW2-G082	2		10	9	1	90.0	10.0	29.699	9	32.124	2.43	0.27						
11	10	9325F	LW2-G082	3		10	10	0	100.0	0.0	28.403	10	31.718	3.32	0.33						
12	109	9325F	LW2-G082	4		10	9	1	90.0	10.0	29.035	9	32.287	3.25	0.36						
13	128	9325F	LW2-G082	5		10	9	1	90.0	10.0	30.354	9	32.868	2.51	0.28	Mean	9.4	0.6	93.8	6.3	0.31
14	55	9325F	LW2-G082	6		10	10	0	100.0	0.0	28.624	10	31.680	3.06	0.31	SD	0.7	0.7	7.4	7.4	0.03
15	104	9325F	LW2-G082	7		10	10	0	100.0	0.0	29.893	10	33.254	3.36	0.34	n	8	8	8	8	8
16	107	9325F	LW2-G082	8	wq replicate	10	10	0	100.0	0.0	28.925	10	32.212	3.29	0.33						
17	75	9326F	LW2-G088	1		10	9	1	90.0	10.0	28.926	9	30.888	1.96	0.22						
18	58	9326F	LW2-G088	2		10	10	0	100.0	0.0	30.332	10	33.368	3.04	0.30						
19	92	9326F	LW2-G088	3		10	9	1	90.0	10.0	29.769	9	32.283	2.51	0.28						
20	82	9326F	LW2-G088	4		10	10	0	100.0	0.0	28.240	10	30.156	1.92	0.19						
21	77	9326F	LW2-G088	5		10	10	0	100.0	0.0	29.042	9	31.911	2.87	0.32	Mean	9.5	0.5	95.0	5.0	0.26
22	16	9326F	LW2-G088	6		10	9	1	90.0	10.0	28.388	9	30.158	1.77	0.20	SD	0.5	0.5	5.3	5.3	0.06
23	125	9326F	LW2-G088	7		10	10	0	100.0	0.0	28.239	10	30.523	2.28	0.23	n	8	8	8	8	8
24	7	9326F	LW2-G088	8	wq replicate	10	9	1	90.0	10.0	27.767	9	30.787	3.02	0.34						
25	123	9327F	LW2-G086	1		10	8	2	80.0	20.0	29.090	8	31.885	2.80	0.35						
26	86	9327F	LW2-G086	2		10	10	0	100.0	0.0	29.170	10	32.207	3.04	0.30						
27	13	9327F	LW2-G086	3		10	10	0	100.0	0.0	29.750	10	32.151	2.40	0.24						
28	73	9327F	LW2-G086	4		10	10	0	100.0	0.0	31.323	10	34.657	3.33	0.33						
29	38	9327F	LW2-G086	5		10	9	1	90.0	10.0	33.521	9	36.333	2.81	0.31	Mean	9.6	0.4	96.3	3.8	0.30
30	45	9327F	LW2-G086	6		10	10	0	100.0	0.0	28.068	10	31.382	3.31	0.33	SD	0.7	0.7	7.4	7.4	0.06
31	34	9327F	LW2-G086	7		10	10	0	100.0	0.0	31.153	10	34.834	3.68	0.37	n	8	8	8	8	8
32	1	9327F	LW2-G086	8	wq replicate	10	10	0	100.0	0.0	30.767	10	32.666	1.90	0.19						

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Test Number: P686-5

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
33	131	9328F	LW2-G090	1		10	10	0	100.0	0.0	29.751	10	33.704	3.95	0.40						
34	142	9328F	LW2-G090	2		10	10	0	100.0	0.0	27.646	10	30.453	2.81	0.28						
35	126	9328F	LW2-G090	3		10	10	0	100.0	0.0	27.416	10	29.865	2.45	0.24						
36	30	9328F	LW2-G090	4		10	10	0	100.0	0.0	30.289	10	33.056	2.77	0.28						
37	95	9328F	LW2-G090	5		10	8	2	80.0	20.0	28.675	8	30.894	2.22	0.28	Mean	9.5	0.5	95.0	5.0	0.29
38	147	9328F	LW2-G090	6		10	10	0	100.0	0.0	29.869	10	32.427	2.56	0.26	SD	0.9	0.9	9.3	9.3	0.05
39	120	9328F	LW2-G090	7		10	10	0	100.0	0.0	27.504	10	30.696	3.19	0.32	n	8	8	8	8	8
40	68	9328F	LW2-G090	8	wq replicate	10	8	2	80.0	20.0	30.397	8	32.641	2.24	0.28						
41	9	9329F	LW2-G091	1		10	10	0	100.0	0.0	28.218	10	31.707	3.49	0.35						
42	138	9329F	LW2-G091	2		10	10	0	100.0	0.0	30.083	10	32.744	2.66	0.27						
43	31	9329F	LW2-G091	3		10	10	0	100.0	0.0	29.756	10	32.905	3.15	0.31						
44	100	9329F	LW2-G091	4		10	10	0	100.0	0.0	30.996	10	34.415	3.42	0.34						
45	79	9329F	LW2-G091	5		10	8	2	80.0	20.0	29.727	8	32.783	3.06	0.38	Mean	9.4	0.6	93.8	6.3	0.33
46	85	9329F	LW2-G091	6		10	10	0	100.0	0.0	29.358	10	32.196	2.84	0.28	SD	1.2	1.2	11.9	11.9	0.04
47	74	9329F	LW2-G091	7		10	10	0	100.0	0.0	27.444	10	30.661	3.22	0.32	n	8	8	8	8	8
48	93	9329F	LW2-G091	8	wq replicate	10	7	3	70.0	30.0	33.172	7	35.570	2.40	0.34						
49	167	9330F	LW2-G096	1		10	10	0	100.0	0.0	29.228	10	31.311	2.08	0.21						
50	166	9330F	LW2-G096	2		10	9	1	90.0	10.0	28.324	9	30.880	2.56	0.28						
51	116	9330F	LW2-G096	3		10	9	1	90.0	10.0	29.783	9	33.023	3.24	0.36						
52	97	9330F	LW2-G096	4		10	10	0	100.0	0.0	28.531	10	31.090	2.56	0.26						
53	163	9330F	LW2-G096	5		10	10	0	100.0	0.0	29.205	10	32.115	2.91	0.29	Mean	9.5	0.5	95.0	5.0	0.30
54	119	9330F	LW2-G096	6		10	10	0	100.0	0.0	28.710	10	32.000	3.29	0.33	SD	0.8	0.8	7.6	7.6	0.05
55	143	9330F	LW2-G096	7		10	8	2	80.0	20.0	28.844	8	31.479	2.64	0.33	n	8	8	8	8	8
56	29	9330F	LW2-G096	8	wq replicate	10	10	0	100.0	0.0	28.876	10	31.905	3.03	0.30						
57	59	9331F	LW2-G099	1		10	10	0	100.0	0.0	29.545	10	32.680	3.14	0.31						
58	40	9331F	LW2-G099	2		10	10	0	100.0	0.0	29.150	10	31.780	2.63	0.26						
59	160	9331F	LW2-G099	3		10	10	0	100.0	0.0	29.384	10	30.492	1.11	0.11						
60	63	9331F	LW2-G099	4		10	10	0	100.0	0.0	30.638	10	32.968	2.33	0.23						
61	26	9331F	LW2-G099	5		10	10	0	100.0	0.0	30.277	10	33.974	3.70	0.37	Mean	9.9	0.1	98.8	1.3	0.28
62	33	9331F	LW2-G099	6		10	9	1	90.0	10.0	28.794	9	31.545	2.75	0.31	SD	0.4	0.4	3.5	3.5	0.08
63	98	9331F	LW2-G099	7		10	10	0	100.0	0.0	29.950	10	32.643	2.69	0.27	n	8	8	8	8	8
64	39	9331F	LW2-G099	8	wq replicate	10	10	0	100.0	0.0	29.005	10	32.396	3.39	0.34						
65	81	9332F	LW2-G103	1		10	10	0	100.0	0.0	26.712	10	28.758	2.05	0.20						
66	158	9332F	LW2-G103	2		10	9	1	90.0	10.0	28.540	9	31.109	2.57	0.29						
67	61	9332F	LW2-G103	3		10	10	0	100.0	0.0	30.045	10	33.584	3.54	0.35						
68	70	9332F	LW2-G103	4		10	10	0	100.0	0.0	29.951	10	32.536	2.59	0.26						
69	3	9332F	LW2-G103	5		10	10	0	100.0	0.0	29.641	10	31.505	1.86	0.19	Mean	9.6	0.4	96.3	3.8	0.26
70	32	9332F	LW2-G103	6		10	9	1	90.0	10.0	28.682	9	30.914	2.23	0.25	SD	0.5	0.5	5.2	5.2	0.05
71	66	9332F	LW2-G103	7		10	9	1	90.0	10.0	28.264	9	31.099	2.84	0.32	n	8	8	8	8	8
72	145	9332F	LW2-G103	8	wq replicate	10	10	0	100.0	0.0	28.531	9	30.827	2.30	0.26						

ANC07363
BZTO104(e)007363

Test Number: P686-5

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
73	162	9333F	LW2-G106	1		10	9	1	90.0	10.0	30.809	9	33.308	2.50	0.28						
74	136	9333F	LW2-G106	2		10	10	0	100.0	0.0	28.367	10	31.446	3.08	0.31						
75	115	9333F	LW2-G106	3		10	10	0	100.0	0.0	29.542	10	32.593	3.05	0.31						
76	18	9333F	LW2-G106	4		10	10	0	100.0	0.0	34.988	10	38.393	3.41	0.34						
77	127	9333F	LW2-G106	5		13	13	0	100.0	0.0	29.487	13	32.329	2.84	0.22	Mean	9.6	0.8	92.5	7.5	0.29
78	46	9333F	LW2-G106	6		10	9	1	90.0	10.0	31.620	9	35.268	3.65	0.41	SD	1.6	0.9	8.9	8.9	0.08
79	130	9333F	LW2-G106	7		10	8	2	80.0	20.0	29.286	8	31.858	2.57	0.32	n	8	8	8	8	8
80	5	9333F	LW2-G106	8	wq replicate	10	8	2	80.0	20.0	29.871	8	30.856	0.99	0.12						
81	105	9334F	LW2-G109	1		10	10	0	100.0	0.0	29.574	10	32.637	3.06	0.31						
82	14	9334F	LW2-G109	2		10	10	0	100.0	0.0	28.427	10	31.543	3.12	0.31						
83	42	9334F	LW2-G109	3		10	10	0	100.0	0.0	30.704	10	33.248	2.54	0.25						
84	89	9334F	LW2-G109	4		11	11	0	100.0	0.0	29.351	11	31.530	2.18	0.20						
85	2	9334F	LW2-G109	5		10	9	1	90.0	10.0	27.459	9	29.210	1.75	0.19	Mean	9.9	0.3	97.5	2.5	0.26
86	48	9334F	LW2-G109	6		10	10	0	100.0	0.0	27.439	9	29.845	2.41	0.27	SD	0.6	0.5	4.6	4.6	0.04
87	114	9334F	LW2-G109	7		10	9	1	90.0	10.0	27.340	9	29.958	2.62	0.29	n	8	8	8	8	8
88	151	9334F	LW2-G109	8	wq replicate	10	10	0	100.0	0.0	31.339	10	34.034	2.70	0.27						
89	72	9335F	LW2-G112	1		10	10	0	100.0	0.0	28.196	10	30.937	2.74	0.27						
90	60	9335F	LW2-G112	2		10	10	0	100.0	0.0	28.692	10	31.006	2.31	0.23						
91	121	9335F	LW2-G112	3		10	10	0	100.0	0.0	29.863	10	33.430	3.57	0.36						
92	134	9335F	LW2-G112	4		10	8	2	80.0	20.0	27.129	8	30.028	2.90	0.36						
93	140	9335F	LW2-G112	5		10	7	3	70.0	30.0	29.615	7	32.074	2.46	0.35	Mean	9.4	0.6	93.8	6.3	0.29
94	148	9335F	LW2-G112	6		10	10	0	100.0	0.0	29.369	10	31.636	2.27	0.23	SD	1.2	1.2	11.9	11.9	0.06
95	49	9335F	LW2-G112	7		10	10	0	100.0	0.0	30.262	10	32.628	2.37	0.24	n	8	8	8	8	8
96	102	9335F	LW2-G112	8	wq replicate	10	10	0	100.0	0.0	28.844	10	31.475	2.63	0.26						
97	57	9336F	LW2-G077	1		10	9	1	90.0	10.0	32.388	9	35.323	2.94	0.33						
98	53	9336F	LW2-G077	2		10	9	1	90.0	10.0	29.474	9	31.116	1.64	0.18						
99	21	9336F	LW2-G077	3		10	10	0	100.0	0.0	28.345	10	32.422	4.08	0.41						
100	101	9336F	LW2-G077	4		10	10	0	100.0	0.0	28.264	10	31.204	2.94	0.29						
101	90	9336F	LW2-G077	5		10	9	1	90.0	10.0	30.613	9	32.283	1.67	0.19	Mean	9.6	0.4	96.3	3.8	0.26
102	69	9336F	LW2-G077	6		10	10	0	100.0	0.0	30.085	10	32.394	2.31	0.23	SD	0.5	0.5	5.2	5.2	0.08
103	129	9336F	LW2-G077	7		10	10	0	100.0	0.0	28.975	10	30.781	1.81	0.18	n	8	8	8	8	8
104	52	9336F	LW2-G077	8	wq replicate	10	10	0	100.0	0.0	30.037	10	32.425	2.39	0.24						
105	6	9337F	LW2-G105	1		10	10	0	100.0	0.0	28.704	10	33.203	4.50	0.45						
106	56	9337F	LW2-G105	2		10	10	0	100.0	0.0	29.182	10	33.558	4.38	0.44						
107	11	9337F	LW2-G105	3		10	10	0	100.0	0.0	28.317	10	31.159	2.84	0.28						
108	50	9337F	LW2-G105	4		10	9	1	90.0	10.0	29.415	9	31.701	2.29	0.25						
109	17	9337F	LW2-G105	5		10	9	1	90.0	10.0	27.918	9	31.384	3.47	0.39	Mean	9.8	0.3	97.5	2.5	0.34
110	161	9337F	LW2-G105	6		10	10	0	100.0	0.0	27.983	10	30.610	2.63	0.26	SD	0.5	0.5	4.6	4.6	0.08
111	8	9337F	LW2-G105	7		10	10	0	100.0	0.0	28.958	10	32.367	3.41	0.34	n	8	8	8	8	8
112	164	9337F	LW2-G105	8	wq replicate	10	10	0	100.0	0.0	31.522	10	34.969	3.45	0.34						

ANC07364
BZTO104(e)007364

Test Number: P686-5

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)						
																	SURV	MORT	PSURV	PMORT	WT
113	64	9338F	LW2-G117	1		10	9	1	90.0	10.0	29.037	9	31.686	2.65	0.29						
114	154	9338F	LW2-G117	2		10	10	0	100.0	0.0	30.804	10	33.258	2.45	0.25						
115	124	9338F	LW2-G117	3		10	9	1	90.0	10.0	28.632	9	31.371	2.74	0.30						
116	71	9338F	LW2-G117	4		10	8	2	80.0	20.0	28.679	8	31.622	2.94	0.37						
117	168	9338F	LW2-G117	5		10	8	2	80.0	20.0	27.776	8	29.974	2.20	0.27	Mean	8.3	1.8	82.5	17.5	0.31
118	19	9338F	LW2-G117	6		10	8	2	80.0	20.0	28.912	8	31.475	2.56	0.32	SD	1.0	1.0	10.4	10.4	0.04
119	122	9338F	LW2-G117	7		10	7	3	70.0	30.0	27.307	7	29.813	2.51	0.36	n	8	8	8	8	8
120	80	9338F	LW2-G117	8	wq replicate	10	7	3	70.0	30.0	29.026	7	31.215	2.19	0.31						
121	35	9339F	LW2-G121	1		10	8	2	80.0	20.0	30.443	8	31.438	0.99	0.12						
122	84	9339F	LW2-G121	2		10	9	1	90.0	10.0	28.252	9	30.858	2.61	0.29						
123	112	9339F	LW2-G121	3		10	10	0	100.0	0.0	28.932	10	32.675	3.74	0.37						
124	144	9339F	LW2-G121	4		10	10	0	100.0	0.0	32.157	10	34.829	2.67	0.27						
125	139	9339F	LW2-G121	5		10	10	0	100.0	0.0	27.101	10	30.007	2.91	0.29	Mean	9.5	0.5	95.0	5.0	0.28
126	37	9339F	LW2-G121	6		10	10	0	100.0	0.0	30.053	10	33.673	3.62	0.36	SD	0.8	0.8	7.6	7.6	0.08
127	24	9339F	LW2-G121	7		10	9	1	90.0	10.0	29.486	9	31.943	2.46	0.27	n	8	8	8	8	8
128	22	9339F	LW2-G121	8	wq replicate	10	10	0	100.0	0.0	30.140	10	32.853	2.71	0.27						
129	87	9341F	LW2-G122	1		10	10	0	100.0	0.0	31.292	10	33.375	2.08	0.21						
130	96	9341F	LW2-G122	2		10	10	0	100.0	0.0	31.738	10	34.426	2.69	0.27						
131	141	9341F	LW2-G122	3		10	10	0	100.0	0.0	28.640	10	31.092	2.45	0.25						
132	108	9341F	LW2-G122	4		10	10	0	100.0	0.0	27.112	10	28.381	1.27	0.13						
133	23	9341F	LW2-G122	5		10	10	0	100.0	0.0	28.988	10	30.773	1.79	0.18	Mean	10.0	0.0	100.0	0.0	0.22
134	153	9341F	LW2-G122	6		10	10	0	100.0	0.0	30.922	10	33.216	2.29	0.23	SD	0.0	0.0	0.0	0.0	0.05
135	27	9341F	LW2-G122	7		10	10	0	100.0	0.0	28.257	10	31.178	2.92	0.29	n	8	8	8	8	8
136	157	9341F	LW2-G122	8	wq replicate	10	10	0	100.0	0.0	28.555	10	30.587	2.03	0.20						
137	137	9342F	LW2-G235	1		10	10	0	100.0	0.0	29.720	10	32.866	3.15	0.31						
138	67	9342F	LW2-G235	2		10	10	0	100.0	0.0	28.734	10	30.861	2.13	0.21						
139	99	9342F	LW2-G235	3		10	10	0	100.0	0.0	29.117	10	30.962	1.85	0.18						
140	15	9342F	LW2-G235	4		10	7	3	70.0	30.0	26.601	7	28.168	1.57	0.22						
141	133	9342F	LW2-G235	5		10	10	0	100.0	0.0	28.502	10	31.115	2.61	0.26	Mean	9.5	0.5	95.0	5.0	0.27
142	20	9342F	LW2-G235	6		10	9	1	90.0	10.0	29.400	9	31.821	2.42	0.27	SD	1.1	1.1	10.7	10.7	0.06
143	111	9342F	LW2-G235	7		10	10	0	100.0	0.0	28.566	10	32.147	3.58	0.36	n	8	8	8	8	8
144	159	9342F	LW2-G235	8	wq replicate	10	10	0	100.0	0.0	28.984	9	31.907	2.92	0.32						
145	118	9343F	LW2-G164	1		11	11	0	100.0	0.0	29.817	11	33.231	3.41	0.31						
146	78	9343F	LW2-G164	2		10	10	0	100.0	0.0	28.777	10	31.246	2.47	0.25						
147	110	9343F	LW2-G164	3		10	10	0	100.0	0.0	29.188	10	32.126	2.94	0.29						
148	12	9343F	LW2-G164	4		10	10	0	100.0	0.0	29.043	10	32.311	3.27	0.33						
149	65	9343F	LW2-G164	5		10	10	0	100.0	0.0	29.366	10	32.182	2.82	0.28	Mean	9.9	0.3	97.5	2.5	0.30
150	150	9343F	LW2-G164	6		10	9	1	90.0	10.0	28.731	9	31.475	2.74	0.30	SD	0.6	0.5	4.6	4.6	0.02
151	88	9343F	LW2-G164	7		10	9	1	90.0	10.0	27.663	9	30.351	2.69	0.30	n	8	8	8	8	8
152	156	9343F	LW2-G164	8	wq replicate	10	10	0	100.0	0.0	30.505	10	33.520	3.02	0.30						

ANC07365
BZTO104(e)007365

Test Number: P686-5

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)			SURV	MORT	PSURV	PMORT	WT
153	132	9344F	LW2-G178	1		10	10	0	100.0	0.0	28.901	10	32.039	3.14	0.31							
154	4	9344F	LW2-G178	2		10	10	0	100.0	0.0	27.922	10	29.964	2.04	0.20							
155	41	9344F	LW2-G178	3		10	10	0	100.0	0.0	28.643	10	32.571	3.93	0.39							
156	155	9344F	LW2-G178	4		10	9	1	90.0	10.0	28.148	9	30.655	2.51	0.28							
157	51	9344F	LW2-G178	5		10	10	0	100.0	0.0	28.383	10	31.449	3.07	0.31		Mean	9.6	0.4	96.3	3.8	0.30
158	62	9344F	LW2-G178	6		10	9	1	90.0	10.0	28.469	9	31.434	2.97	0.33		SD	0.5	0.5	5.2	5.2	0.06
159	146	9344F	LW2-G178	7		10	9	1	90.0	10.0	29.351	9	31.513	2.16	0.24		n	8	8	8	8	8
160	28	9344F	LW2-G178	8	wq replicate	10	10	0	100.0	0.0	28.466	10	31.636	3.17	0.32							
161	54	9345F	LW2-G180	1		10	10	0	100.0	0.0	27.073	10	30.300	3.23	0.32							
162	117	9345F	LW2-G180	2		10	10	0	100.0	0.0	30.465	10	33.834	3.37	0.34							
163	103	9345F	LW2-G180	3		10	10	0	100.0	0.0	30.309	10	33.413	3.10	0.31							
164	113	9345F	LW2-G180	4		10	10	0	100.0	0.0	28.601	10	32.027	3.43	0.34							
165	43	9345F	LW2-G180	5		10	10	0	100.0	0.0	28.592	10	31.892	3.30	0.33		Mean	9.6	0.4	96.3	3.8	0.31
166	94	9345F	LW2-G180	6		10	10	0	100.0	0.0	27.560	10	29.700	2.14	0.21		SD	1.1	1.1	10.6	10.6	0.04
167	47	9345F	LW2-G180	7		10	10	0	100.0	0.0	28.223	10	31.385	3.16	0.32		n	8	8	8	8	8
168	44	9345F	LW2-G180	8	wq replicate	10	7	3	70.0	30.0	29.225	7	31.548	2.32	0.33							
Not5e: Test containers # 48, 77, 145, and 159 each lost one animal in transfer to weighing pans.																						

ANC07366
BZTO104(e)007366

Hyalella azteca 28-Day

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
BULK SEDIMENT POREWATER													
	9323F	Control										3.7	7.0
	9325F	LW2-G082										1.1	7.0
	9326F	LW2-G088										9.3	6.5
	9327F	LW2-G086										9.0	6.6
	9328F	LW2-G090										9.7	6.6
	9329F	LW2-G091										10.6	6.6
	9330F	LW2-G096										2.0	6.7
	9331F	LW2-G099										6.5	6.5
	9332F	LW2-G103										4.6	6.5
	9333F	LW2-G106										4.8	6.5
	9334F	LW2-G109										6.0	6.6
	9335F	LW2-G112										5.6	6.6
	9336F	LW2-G077										6.3	6.5
	9337F	LW2-G105										3.4	6.5
	9338F	LW2-G117										9.2	6.5
	9339F	LW2-G121										7.9	6.6
	9341F	LW2-G122										9.5	6.6
	9342F	LW2-G235										---	---
	9343F	LW2-G164										<0.5	6.8
	9344F	LW2-G178										2.5	6.7
	9345F	LW2-G180										4.3	6.8

Hyalella azteca 28-Day

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
TEST OVERLYING WATER													
1	9327F	LW2-G086	8	0	22.8	6.2	210	6.9	60	60	1.4		
5	9333F	LW2-G106	8	0	23.0	6.9	165	7.0	51	60	0.6		
7	9326F	LW2-G088	8	0	22.8	6.9	180	7.0	43	50	0.7		
22	9339F	LW2-G121	8	0	22.8	7.0	170	7.0	51	40	0.9		
28	9344F	LW2-G178	8	0	22.8	7.2	160	7.0	26	50	0.4		
29	9330F	LW2-G096	8	0	22.9	7.0	160	7.0	43	40	0.3		
39	9331F	LW2-G099	8	0	22.9	7.1	175	7.0	43	50	0.8		
44	9345F	LW2-G180	8	0	22.9	7.5	160	7.0	43	40	0.2		
52	9336F	LW2-G077	8	0	22.8	6.8	165	6.9	51	40	0.6		
68	9328F	LW2-G090	8	0	22.8	6.8	190	7.0	51	40	0.8		
80	9338F	LW2-G117	8	0	23.0	7.1	170	6.9	51	40	0.8		
91	9323F	Control	8	0	22.9	6.2	215	7.2	43	40	0.3		
93	9329F	LW2-G091	8	0	22.9	7.0	195	7.0	60	40	0.9		
102	9335F	LW2-G112	8	0	22.8	7.0	170	7.0	51	40	0.9		
107	9325F	LW2-G082	8	0	22.8	7.2	170	7.2	43	40	0.2		
145	9332F	LW2-G103	8	0	22.9	7.2	160	7.1	51	40	0.5		
151	9334F	LW2-G109	8	0	22.8	7.2	170	7.0	43	40	0.6		
156	9343F	LW2-G164	8	0	22.8	7.4	160	7.0	43	40	0.2		
157	9341F	LW2-G122	8	0	22.8	7.2	170	7.0	60	40	0.8		
159	9342F	LW2-G235	8	0	22.8	8.4	160	7.1	43	40	<0.1		
164	9337F	LW2-G105	8	0	22.9	7.0	160	6.9	43	40	0.4		
1	9327F	LW2-G086	8	1	23.2	5.2	190	7.1					
5	9333F	LW2-G106	8	1	23.2	5.2	170	7.0					
7	9326F	LW2-G088	8	1	23.1	5.6	185	7.0					
22	9339F	LW2-G121	8	1	23.1	5.4	170	7.0					
28	9344F	LW2-G178	8	1	23.1	5.4	165	7.0					
29	9330F	LW2-G096	8	1	23.2	5.2	175	7.0					
39	9331F	LW2-G099	8	1	23.2	5.0	175	6.9					
44	9345F	LW2-G180	8	1	23.2	5.2	165	7.0					
52	9336F	LW2-G077	8	1	23.1	5.2	170	6.9					
68	9328F	LW2-G090	8	1	23.1	5.2	190	7.1					
80	9338F	LW2-G117	8	1	23.3	5.4	170	6.9					
91	9323F	Control	8	1	23.1	6.0	205	7.2					
93	9329F	LW2-G091	8	1	23.1	5.4	195	7.0					
102	9335F	LW2-G112	8	1	23.1	5.4	170	7.0					
107	9325F	LW2-G082	8	1	23.1	5.8	170	7.0					
145	9332F	LW2-G103	8	1	23.2	5.6	165	6.9					
151	9334F	LW2-G109	8	1	23.1	6.0	170	6.9					
156	9343F	LW2-G164	8	1	23.1	6.2	165	7.0					
157	9341F	LW2-G122	8	1	23.1	4.6	170	6.9					
159	9342F	LW2-G235	8	1	23.1	6.6	165	7.0					
164	9337F	LW2-G105	8	1	23.2	5.6	160	6.7					

Hyalella azteca 28-Day

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
1	9327F	LW2-G086	8	2	23.0									
5	9333F	LW2-G106	8	2	23.0									
7	9326F	LW2-G088	8	2	22.9									
22	9339F	LW2-G121	8	2	22.9									
28	9344F	LW2-G178	8	2	22.9									
29	9330F	LW2-G096	8	2	23.0									
39	9331F	LW2-G099	8	2	23.0									
44	9345F	LW2-G180	8	2	23.0									
52	9336F	LW2-G077	8	2	23.0									
68	9328F	LW2-G090	8	2	23.0									
80	9338F	LW2-G117	8	2	23.1									
91	9323F	Control	8	2	23.0									
93	9329F	LW2-G091	8	2	23.0									
102	9335F	LW2-G112	8	2	23.0									
107	9325F	LW2-G082	8	2	23.0									
145	9332F	LW2-G103	8	2	23.0									
151	9334F	LW2-G109	8	2	23.0									
156	9343F	LW2-G164	8	2	22.9									
157	9341F	LW2-G122	8	2	22.9									
159	9342F	LW2-G235	8	2	22.9									
164	9337F	LW2-G105	8	2	22.9									
1	9327F	LW2-G086	8	3	22.8	6.0		7.2						
5	9333F	LW2-G106	8	3	22.8	6.3		7.1						
7	9326F	LW2-G088	8	3	22.8	6.4		7.1						
22	9339F	LW2-G121	8	3	22.8	6.4		7.0						
28	9344F	LW2-G178	8	3	22.8	6.4		7.1						
29	9330F	LW2-G096	8	3	22.8	6.4		7.0						
39	9331F	LW2-G099	8	3	22.8	6.4		6.9						
44	9345F	LW2-G180	8	3	22.8	6.5		7.1						
52	9336F	LW2-G077	8	3	22.8	6.3		7.0						
68	9328F	LW2-G090	8	3	22.8	6.4		7.2						
80	9338F	LW2-G117	8	3	22.9	6.5		7.0						
91	9323F	Control	8	3	22.8	6.4		7.2						
93	9329F	LW2-G091	8	3	22.8	6.0		7.0						
102	9335F	LW2-G112	8	3	22.8	6.0		7.0						
107	9325F	LW2-G082	8	3	22.6	6.2		7.2						
145	9332F	LW2-G103	8	3	22.6	6.4		7.2						
151	9334F	LW2-G109	8	3	22.6	6.4		7.0						
156	9343F	LW2-G164	8	3	22.6	6.4		7.1						
157	9341F	LW2-G122	8	3	22.6	6.5		7.0						
159	9342F	LW2-G235	8	3	22.6	6.9		7.2						
164	9337F	LW2-G105	8	3	22.7	6.5		7.0						

Hyalella azteca 28-Day

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
1	9327F	LW2-G086	8	4	23.1									
5	9333F	LW2-G106	8	4	23.2									
7	9326F	LW2-G088	8	4	23.0									
22	9339F	LW2-G121	8	4	23.0									
28	9344F	LW2-G178	8	4	23.0									
29	9330F	LW2-G096	8	4	23.1									
39	9331F	LW2-G099	8	4	23.1									
44	9345F	LW2-G180	8	4	23.1									
52	9336F	LW2-G077	8	4	23.1									
68	9328F	LW2-G090	8	4	23.1									
80	9338F	LW2-G117	8	4	23.3									
91	9323F	Control	8	4	23.1									
93	9329F	LW2-G091	8	4	23.0									
102	9335F	LW2-G112	8	4	23.0									
107	9325F	LW2-G082	8	4	23.0									
145	9332F	LW2-G103	8	4	23.2									
151	9334F	LW2-G109	8	4	23.0									
156	9343F	LW2-G164	8	4	23.1									
157	9341F	LW2-G122	8	4	23.1									
159	9342F	LW2-G235	8	4	23.0									
164	9337F	LW2-G105	8	4	23.1									
1	9327F	LW2-G086	8	5	23.2									
5	9333F	LW2-G106	8	5	23.2									
7	9326F	LW2-G088	8	5	23.1									
22	9339F	LW2-G121	8	5	23.1									
28	9344F	LW2-G178	8	5	23.1									
29	9330F	LW2-G096	8	5	23.2									
39	9331F	LW2-G099	8	5	23.2									
44	9345F	LW2-G180	8	5	23.2									
52	9336F	LW2-G077	8	5	23.1									
68	9328F	LW2-G090	8	5	23.1									
80	9338F	LW2-G117	8	5	23.3									
91	9323F	Control	8	5	23.1									
93	9329F	LW2-G091	8	5	23.1									
102	9335F	LW2-G112	8	5	23.1									
107	9325F	LW2-G082	8	5	23.1									
145	9332F	LW2-G103	8	5	23.2									
151	9334F	LW2-G109	8	5	23.0									
156	9343F	LW2-G164	8	5	23.1									
157	9341F	LW2-G122	8	5	23.1									
159	9342F	LW2-G235	8	5	23.0									
164	9337F	LW2-G105	8	5	23.1									

Hyalella azteca 28-Day

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
1	9327F	LW2-G086	8	6	23.1	5.7		7.2						
5	9333F	LW2-G106	8	6	23.1	5.7		7.1						
7	9326F	LW2-G088	8	6	23.0	5.9		7.1						
22	9339F	LW2-G121	8	6	23.0	5.4		7.2						
28	9344F	LW2-G178	8	6	23.0	5.6		7.1						
29	9330F	LW2-G096	8	6	23.0	5.7		7.1						
39	9331F	LW2-G099	8	6	23.0	5.6		7.1						
44	9345F	LW2-G180	8	6	23.1	6.0		7.0						
52	9336F	LW2-G077	8	6	23.0	5.4		7.0						
68	9328F	LW2-G090	8	6	23.0	5.8		7.1						
80	9338F	LW2-G117	8	6	23.2	5.7		7.0						
91	9323F	Control	8	6	23.0	5.8		7.1						
93	9329F	LW2-G091	8	6	23.0	5.4		7.1						
102	9335F	LW2-G112	8	6	22.9	5.5		7.0						
107	9325F	LW2-G082	8	6	22.9	6.1		7.1						
145	9332F	LW2-G103	8	6	23.0	5.8		7.0						
151	9334F	LW2-G109	8	6	22.9	5.7		7.0						
156	9343F	LW2-G164	8	6	22.9	6.0		7.0						
157	9341F	LW2-G122	8	6	22.9	5.3		7.0						
159	9342F	LW2-G235	8	6	22.9	6.6		7.1						
164	9337F	LW2-G105	8	6	22.9	6.0		7.1						
1	9327F	LW2-G086	8	7	23.2									
5	9333F	LW2-G106	8	7	23.2									
7	9326F	LW2-G088	8	7	23.1									
22	9339F	LW2-G121	8	7	23.1									
28	9344F	LW2-G178	8	7	23.1									
29	9330F	LW2-G096	8	7	23.1									
39	9331F	LW2-G099	8	7	23.1									
44	9345F	LW2-G180	8	7	23.1									
52	9336F	LW2-G077	8	7	23.1									
68	9328F	LW2-G090	8	7	23.1									
80	9338F	LW2-G117	8	7	23.1									
91	9323F	Control	8	7	23.2									
93	9329F	LW2-G091	8	7	23.1									
102	9335F	LW2-G112	8	7	23.1									
107	9325F	LW2-G082	8	7	23.1									
145	9332F	LW2-G103	8	7	23.1									
151	9334F	LW2-G109	8	7	23.1									
156	9343F	LW2-G164	8	7	23.1									
157	9341F	LW2-G122	8	7	23.1									
159	9342F	LW2-G235	8	7	23.0									
164	9337F	LW2-G105	8	7	23.0									

Hyalella azteca 28-Day

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
1	9327F	LW2-G086	8	8	22.4	5.3	170	6.7						
5	9333F	LW2-G106	8	8	22.6	5.6	165	6.6						
7	9326F	LW2-G088	8	8	22.4	5.8	165	6.7						
22	9339F	LW2-G121	8	8	22.3	5.8	165	6.7						
28	9344F	LW2-G178	8	8	22.3	5.8	160	6.6						
29	9330F	LW2-G096	8	8	22.4	5.9	160	6.6						
39	9331F	LW2-G099	8	8	22.4	5.8	165	6.6						
44	9345F	LW2-G180	8	8	22.4	6.1	165	6.6						
52	9336F	LW2-G077	8	8	22.4	5.9	165	6.6						
68	9328F	LW2-G090	8	8	22.4	5.8	170	6.7						
80	9338F	LW2-G117	8	8	22.6	6.1	160	6.6						
91	9323F	Control	8	8	22.5	6.0	170	6.8						
93	9329F	LW2-G091	8	8	22.4	6.1	165	6.7						
102	9335F	LW2-G112	8	8	22.4	5.8	165	6.6						
107	9325F	LW2-G082	8	8	22.4	6.1	165	6.6						
145	9332F	LW2-G103	8	8	22.4	6.0	160	6.7						
151	9334F	LW2-G109	8	8	22.4	5.7	165	6.5						
156	9343F	LW2-G164	8	8	22.4	6.2	165	6.7						
157	9341F	LW2-G122	8	8	22.4	5.5	165	6.7						
159	9342F	LW2-G235	8	8	22.4	6.7	160	6.7						
164	9337F	LW2-G105	8	8	22.5	6.0	160	6.5						
1	9327F	LW2-G086	8	9	22.6									
5	9333F	LW2-G106	8	9	22.7									
7	9326F	LW2-G088	8	9	22.5									
22	9339F	LW2-G121	8	9	22.6									
28	9344F	LW2-G178	8	9	22.6									
29	9330F	LW2-G096	8	9	22.6									
39	9331F	LW2-G099	8	9	22.7									
44	9345F	LW2-G180	8	9	22.7									
52	9336F	LW2-G077	8	9	22.6									
68	9328F	LW2-G090	8	9	22.7									
80	9338F	LW2-G117	8	9	22.9									
91	9323F	Control	8	9	22.7									
93	9329F	LW2-G091	8	9	22.7									
102	9335F	LW2-G112	8	9	22.6									
107	9325F	LW2-G082	8	9	22.6									
145	9332F	LW2-G103	8	9	22.7									
151	9334F	LW2-G109	8	9	22.6									
156	9343F	LW2-G164	8	9	22.6									
157	9341F	LW2-G122	8	9	22.6									
159	9342F	LW2-G235	8	9	22.6									
164	9337F	LW2-G105	8	9	22.7									

Hyalella azteca 28-Day

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
1	9327F	LW2-G086	8	10	23.0	5.7		6.9						
5	9333F	LW2-G106	8	10	23.1	6.1		6.9						
7	9326F	LW2-G088	8	10	22.9	6.2		6.9						
22	9339F	LW2-G121	8	10	22.9	6.3		6.9						
28	9344F	LW2-G178	8	10	22.9	6.4		7.0						
29	9330F	LW2-G096	8	10	23.0	6.2		6.9						
39	9331F	LW2-G099	8	10	23.0	6.2		6.8						
44	9345F	LW2-G180	8	10	23.0	6.6		6.9						
52	9336F	LW2-G077	8	10	23.0	6.2		6.9						
68	9328F	LW2-G090	8	10	23.0	6.2		6.9						
80	9338F	LW2-G117	8	10	23.2	6.3		6.8						
91	9323F	Control	8	10	23.0	6.7		7.0						
93	9329F	LW2-G091	8	10	23.0	6.1		6.8						
102	9335F	LW2-G112	8	10	23.0	6.2		6.9						
107	9325F	LW2-G082	8	10	23.0	6.7		7.0						
145	9332F	LW2-G103	8	10	23.0	6.4		6.9						
151	9334F	LW2-G109	8	10	23.1	6.5		6.8						
156	9343F	LW2-G164	8	10	23.0	6.6		6.9						
157	9341F	LW2-G122	8	10	23.0	5.9		6.9						
159	9342F	LW2-G235	8	10	23.0	7.2		7.0						
164	9337F	LW2-G105	8	10	23.1	6.2		6.8						
1	9327F	LW2-G086	8	11	22.9									
5	9333F	LW2-G106	8	11	23.0									
7	9326F	LW2-G088	8	11	22.8									
22	9339F	LW2-G121	8	11	22.8									
28	9344F	LW2-G178	8	11	22.8									
29	9330F	LW2-G096	8	11	22.9									
39	9331F	LW2-G099	8	11	22.9									
44	9345F	LW2-G180	8	11	22.9									
52	9336F	LW2-G077	8	11	22.8									
68	9328F	LW2-G090	8	11	22.9									
80	9338F	LW2-G117	8	11	23.0									
91	9323F	Control	8	11	22.9									
93	9329F	LW2-G091	8	11	22.9									
102	9335F	LW2-G112	8	11	22.8									
107	9325F	LW2-G082	8	11	22.9									
145	9332F	LW2-G103	8	11	23.0									
151	9334F	LW2-G109	8	11	22.8									
156	9343F	LW2-G164	8	11	22.9									
157	9341F	LW2-G122	8	11	22.9									
159	9342F	LW2-G235	8	11	22.9									
164	9337F	LW2-G105	8	11	23.0									

Hyalella azteca 28-Day

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
1	9327F	LW2-G086	8	12	23.0									
5	9333F	LW2-G106	8	12	22.9									
7	9326F	LW2-G088	8	12	23.0									
22	9339F	LW2-G121	8	12	23.0									
28	9344F	LW2-G178	8	12	23.0									
29	9330F	LW2-G096	8	12	23.0									
39	9331F	LW2-G099	8	12	23.0									
44	9345F	LW2-G180	8	12	23.0									
52	9336F	LW2-G077	8	12	23.0									
68	9328F	LW2-G090	8	12	23.0									
80	9338F	LW2-G117	8	12	23.0									
91	9323F	Control	8	12	23.0									
93	9329F	LW2-G091	8	12	23.0									
102	9335F	LW2-G112	8	12	23.0									
107	9325F	LW2-G082	8	12	23.0									
145	9332F	LW2-G103	8	12	22.9									
151	9334F	LW2-G109	8	12	22.9									
156	9343F	LW2-G164	8	12	22.9									
157	9341F	LW2-G122	8	12	22.9									
159	9342F	LW2-G235	8	12	22.9									
164	9337F	LW2-G105	8	12	22.9									
1	9327F	LW2-G086	8	13	23.0	4.5		6.6						
5	9333F	LW2-G106	8	13	23.0	4.6		6.5						
7	9326F	LW2-G088	8	13	22.9	4.9		6.5						
22	9339F	LW2-G121	8	13	22.9	5.6		6.5						
28	9344F	LW2-G178	8	13	22.9	5.4		6.5						
29	9330F	LW2-G096	8	13	22.9	5.5		6.4						
39	9331F	LW2-G099	8	13	22.9	5.8		6.4						
44	9345F	LW2-G180	8	13	22.9	6.0		6.4						
52	9336F	LW2-G077	8	13	22.9	6.2		6.5						
68	9328F	LW2-G090	8	13	22.9	5.8		6.6						
80	9338F	LW2-G117	8	13	23.1	5.8		6.5						
91	9323F	Control	8	13	22.9	6.2		6.5						
93	9329F	LW2-G091	8	13	22.9	5.8		6.5						
102	9335F	LW2-G112	8	13	22.9	5.8		6.5						
107	9325F	LW2-G082	8	13	22.9	6.1		6.5						
145	9332F	LW2-G103	8	13	22.9	5.8		6.5						
151	9334F	LW2-G109	8	13	22.8	5.7		6.4						
156	9343F	LW2-G164	8	13	22.8	6.0		6.5						
157	9341F	LW2-G122	8	13	22.8	5.5		6.5						
159	9342F	LW2-G235	8	13	22.8	6.6		6.6						
164	9337F	LW2-G105	8	13	22.8	5.8		6.5						

Hyalella azteca 28-Day

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
1	9327F	LW2-G086	8	14	23.1									
5	9333F	LW2-G106	8	14	23.1									
7	9326F	LW2-G088	8	14	23.1									
22	9339F	LW2-G121	8	14	23.1									
28	9344F	LW2-G178	8	14	23.1									
29	9330F	LW2-G096	8	14	23.1									
39	9331F	LW2-G099	8	14	23.1									
44	9345F	LW2-G180	8	14	23.1									
52	9336F	LW2-G077	8	14	23.1									
68	9328F	LW2-G090	8	14	23.1									
80	9338F	LW2-G117	8	14	23.2									
91	9323F	Control	8	14	23.1									
93	9329F	LW2-G091	8	14	23.1									
102	9335F	LW2-G112	8	14	23.1									
107	9325F	LW2-G082	8	14	23.1									
145	9332F	LW2-G103	8	14	23.2									
151	9334F	LW2-G109	8	14	23.0									
156	9343F	LW2-G164	8	14	23.1									
157	9341F	LW2-G122	8	14	23.1									
159	9342F	LW2-G235	8	14	23.1									
164	9337F	LW2-G105	8	14	23.1									
1	9327F	LW2-G086	8	15	23.0	5.1	165	6.9						
5	9333F	LW2-G106	8	15	23.1	5.8	160	6.8						
7	9326F	LW2-G088	8	15	23.0	5.8	165	6.8						
22	9339F	LW2-G121	8	15	23.0	5.6	165	6.8						
28	9344F	LW2-G178	8	15	23.0	5.7	160	6.7						
29	9330F	LW2-G096	8	15	23.0	5.9	160	6.7						
39	9331F	LW2-G099	8	15	23.0	5.9	160	6.7						
44	9345F	LW2-G180	8	15	23.1	6.1	160	6.7						
52	9336F	LW2-G077	8	15	23.1	5.5	165	6.7						
68	9328F	LW2-G090	8	15	23.1	5.5	165	6.7						
80	9338F	LW2-G117	8	15	23.2	6.0	160	6.7						
91	9323F	Control	8	15	23.1	6.4	160	6.8						
93	9329F	LW2-G091	8	15	23.1	6.1	160	6.7						
102	9335F	LW2-G112	8	15	23.0	5.7	165	6.7						
107	9325F	LW2-G082	8	15	23.0	6.2	160	6.7						
145	9332F	LW2-G103	8	15	23.1	6.1	160	6.6						
151	9334F	LW2-G109	8	15	23.0	6.0	160	6.6						
156	9343F	LW2-G164	8	15	23.1	6.3	160	6.7						
157	9341F	LW2-G122	8	15	23.0	5.8	160	6.7						
159	9342F	LW2-G235	8	15	23.0	6.8	160	6.7						
164	9337F	LW2-G105	8	15	23.1	6.0	155	6.6						

Hyalella azteca 28-Day

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
1	9327F	LW2-G086	8	16	22.9									
5	9333F	LW2-G106	8	16	23.1									
7	9326F	LW2-G088	8	16	22.7									
22	9339F	LW2-G121	8	16	22.7									
28	9344F	LW2-G178	8	16	22.7									
29	9330F	LW2-G096	8	16	22.8									
39	9331F	LW2-G099	8	16	22.8									
44	9345F	LW2-G180	8	16	22.7									
52	9336F	LW2-G077	8	16	22.7									
68	9328F	LW2-G090	8	16	22.7									
80	9338F	LW2-G117	8	16	23.0									
91	9323F	Control	8	16	22.8									
93	9329F	LW2-G091	8	16	22.8									
102	9335F	LW2-G112	8	16	22.8									
107	9325F	LW2-G082	8	16	22.7									
145	9332F	LW2-G103	8	16	22.9									
151	9334F	LW2-G109	8	16	22.7									
156	9343F	LW2-G164	8	16	22.9									
157	9341F	LW2-G122	8	16	22.8									
159	9342F	LW2-G235	8	16	22.8									
164	9337F	LW2-G105	8	16	22.9									
1	9327F	LW2-G086	8	17	23.1	6.5		4.4						
5	9333F	LW2-G106	8	17	23.1	6.4		5.1						
7	9326F	LW2-G088	8	17	23.0	6.5		4.6						
22	9339F	LW2-G121	8	17	23.0	6.5		4.5						
28	9344F	LW2-G178	8	17	23.0	6.5		5.1						
29	9330F	LW2-G096	8	17	23.0	6.4		4.4						
39	9331F	LW2-G099	8	17	23.0	6.4		4.1						
44	9345F	LW2-G180	8	17	23.1	6.4		5.0						
52	9336F	LW2-G077	8	17	23.0	6.4		4.9						
68	9328F	LW2-G090	8	17	23.0	6.5		4.6						
80	9338F	LW2-G117	8	17	23.1	6.5		5.1						
91	9323F	Control	8	17	23.0	6.5		5.0						
93	9329F	LW2-G091	8	17	23.0	6.4		4.8						
102	9335F	LW2-G112	8	17	23.0	6.4		4.7						
107	9325F	LW2-G082	8	17	23.0	6.5		5.2						
145	9332F	LW2-G103	8	17	23.0	6.4		5.1						
151	9334F	LW2-G109	8	17	22.9	6.4		5.1						
156	9343F	LW2-G164	8	17	22.9	6.5		5.4						
157	9341F	LW2-G122	8	17	22.9	6.5		5.0						
159	9342F	LW2-G235	8	17	22.9	6.5		5.8						
164	9337F	LW2-G105	8	17	22.9	6.4		5.2						

Hyalella azteca 28-Day

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
1	9327F	LW2-G086	8	18	23.4									
5	9333F	LW2-G106	8	18	23.3									
7	9326F	LW2-G088	8	18	23.2									
22	9339F	LW2-G121	8	18	23.1									
28	9344F	LW2-G178	8	18	23.1									
29	9330F	LW2-G096	8	18	23.1									
39	9331F	LW2-G099	8	18	23.1									
44	9345F	LW2-G180	8	18	23.1									
52	9336F	LW2-G077	8	18	23.1									
68	9328F	LW2-G090	8	18	23.1									
80	9338F	LW2-G117	8	18	23.2									
91	9323F	Control	8	18	23.1									
93	9329F	LW2-G091	8	18	23.1									
102	9335F	LW2-G112	8	18	23.1									
107	9325F	LW2-G082	8	18	23.0									
145	9332F	LW2-G103	8	18	23.1									
151	9334F	LW2-G109	8	18	23.0									
156	9343F	LW2-G164	8	18	23.0									
157	9341F	LW2-G122	8	18	23.0									
159	9342F	LW2-G235	8	18	23.0									
164	9337F	LW2-G105	8	18	23.1									
1	9327F	LW2-G086	8	19	23.3									
5	9333F	LW2-G106	8	19	23.3									
7	9326F	LW2-G088	8	19	23.2									
22	9339F	LW2-G121	8	19	23.2									
28	9344F	LW2-G178	8	19	23.2									
29	9330F	LW2-G096	8	19	23.2									
39	9331F	LW2-G099	8	19	23.3									
44	9345F	LW2-G180	8	19	23.3									
52	9336F	LW2-G077	8	19	23.3									
68	9328F	LW2-G090	8	19	23.2									
80	9338F	LW2-G117	8	19	23.4									
91	9323F	Control	8	19	23.3									
93	9329F	LW2-G091	8	19	23.2									
102	9335F	LW2-G112	8	19	23.2									
107	9325F	LW2-G082	8	19	23.2									
145	9332F	LW2-G103	8	19	23.2									
151	9334F	LW2-G109	8	19	23.2									
156	9343F	LW2-G164	8	19	23.2									
157	9341F	LW2-G122	8	19	23.2									
159	9342F	LW2-G235	8	19	23.2									
164	9337F	LW2-G105	8	19	23.2									

Hyalella azteca 28-Day

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
1	9327F	LW2-G086	8	20	23.2	4.6		6.8						
5	9333F	LW2-G106	8	20	23.3	4.7		6.6						
7	9326F	LW2-G088	8	20	23.1	4.9		6.8						
22	9339F	LW2-G121	8	20	23.1	4.6		6.7						
28	9344F	LW2-G178	8	20	23.1	4.8		6.6						
29	9330F	LW2-G096	8	20	23.1	5.0		6.5						
39	9331F	LW2-G099	8	20	23.1	4.6		6.4						
44	9345F	LW2-G180	8	20	23.2	5.2		6.5						
52	9336F	LW2-G077	8	20	23.1	4.6		6.5						
68	9328F	LW2-G090	8	20	23.1	4.4		6.5						
80	9338F	LW2-G117	8	20	23.3	4.8		6.5						
91	9323F	Control	8	20	23.1	5.1		6.7						
93	9329F	LW2-G091	8	20	23.1	4.9		6.6						
102	9335F	LW2-G112	8	20	23.1	4.5		6.5						
107	9325F	LW2-G082	8	20	23.1	4.9		6.5						
145	9332F	LW2-G103	8	20	23.1	5.1		6.5						
151	9334F	LW2-G109	8	20	23.0	5.1		6.5						
156	9343F	LW2-G164	8	20	23.0	5.6		6.5						
157	9341F	LW2-G122	8	20	23.0	5.0		6.5						
159	9342F	LW2-G235	8	20	23.0	5.6		6.5						
164	9337F	LW2-G105	8	20	23.0	4.8		6.5						
1	9327F	LW2-G086	8	21	23.0									
5	9333F	LW2-G106	8	21	23.0									
7	9326F	LW2-G088	8	21	22.9									
22	9339F	LW2-G121	8	21	22.9									
28	9344F	LW2-G178	8	21	22.9									
29	9330F	LW2-G096	8	21	22.9									
39	9331F	LW2-G099	8	21	22.9									
44	9345F	LW2-G180	8	21	23.0									
52	9336F	LW2-G077	8	21	23.0									
68	9328F	LW2-G090	8	21	22.9									
80	9338F	LW2-G117	8	21	23.1									
91	9323F	Control	8	21	22.9									
93	9329F	LW2-G091	8	21	22.9									
102	9335F	LW2-G112	8	21	22.9									
107	9325F	LW2-G082	8	21	22.9									
145	9332F	LW2-G103	8	21	22.9									
151	9334F	LW2-G109	8	21	22.8									
156	9343F	LW2-G164	8	21	22.8									
157	9341F	LW2-G122	8	21	22.8									
159	9342F	LW2-G235	8	21	22.8									
164	9337F	LW2-G105	8	21	22.8									

Hyalella azteca 28-Day

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
1	9327F	LW2-G086	8	22	23.2	5.0	170	6.7						
5	9333F	LW2-G106	8	22	23.2	5.8	170	6.5						
7	9326F	LW2-G088	8	22	23.0	5.2	160	6.6						
22	9339F	LW2-G121	8	22	23.0	5.0	170	6.6						
28	9344F	LW2-G178	8	22	23.0	5.2	170	6.5						
29	9330F	LW2-G096	8	22	23.0	5.4	165	6.5						
39	9331F	LW2-G099	8	22	23.1	5.1	165	6.5						
44	9345F	LW2-G180	8	22	23.1	5.9	165	6.5						
52	9336F	LW2-G077	8	22	23.0	4.9	170	6.6						
68	9328F	LW2-G090	8	22	23.1	4.9	170	6.6						
80	9338F	LW2-G117	8	22	23.3	5.2	165	6.5						
91	9323F	Control	8	22	23.1	5.0	175	6.7						
93	9329F	LW2-G091	8	22	23.0	5.1	170	6.7						
102	9335F	LW2-G112	8	22	23.0	4.8	165	6.6						
107	9325F	LW2-G082	8	22	23.0	5.4	170	6.6						
145	9332F	LW2-G103	8	22	23.1	5.4	165	6.5						
151	9334F	LW2-G109	8	22	23.0	5.2	165	6.5						
156	9343F	LW2-G164	8	22	23.0	5.8	170	6.6						
157	9341F	LW2-G122	8	22	23.0	5.2	165	6.6						
159	9342F	LW2-G235	8	22	23.0	5.8	165	6.5						
164	9337F	LW2-G105	8	22	23.1	4.9	165	6.5						
1	9327F	LW2-G086	8	23	23.1									
5	9333F	LW2-G106	8	23	23.2									
7	9326F	LW2-G088	8	23	22.9									
22	9339F	LW2-G121	8	23	22.9									
28	9344F	LW2-G178	8	23	22.9									
29	9330F	LW2-G096	8	23	23.0									
39	9331F	LW2-G099	8	23	23.0									
44	9345F	LW2-G180	8	23	23.0									
52	9336F	LW2-G077	8	23	22.9									
68	9328F	LW2-G090	8	23	23.0									
80	9338F	LW2-G117	8	23	23.0									
91	9323F	Control	8	23	23.0									
93	9329F	LW2-G091	8	23	23.0									
102	9335F	LW2-G112	8	23	22.9									
107	9325F	LW2-G082	8	23	22.9									
145	9332F	LW2-G103	8	23	23.0									
151	9334F	LW2-G109	8	23	23.0									
156	9343F	LW2-G164	8	23	22.9									
157	9341F	LW2-G122	8	23	22.9									
159	9342F	LW2-G235	8	23	22.9									
164	9337F	LW2-G105	8	23	22.9									

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Hyalella azteca 28-Day

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
1	9327F	LW2-G086	8	24	23.0	4.4		6.4						
5	9333F	LW2-G106	8	24	23.0	6.0		6.3						
7	9326F	LW2-G088	8	24	22.9	5.2		6.4						
22	9339F	LW2-G121	8	24	22.9	4.7		6.4						
28	9344F	LW2-G178	8	24	22.9	5.1		6.4						
29	9330F	LW2-G096	8	24	22.9	5.0		6.3						
39	9331F	LW2-G099	8	24	22.9	5.2		6.2						
44	9345F	LW2-G180	8	24	22.9	5.4		6.2						
52	9336F	LW2-G077	8	24	22.9	4.9		6.4						
68	9328F	LW2-G090	8	24	22.9	5.3		6.4						
80	9338F	LW2-G117	8	24	23.0	5.2		6.3						
91	9323F	Control	8	24	23.0	5.2		6.5						
93	9329F	LW2-G091	8	24	23.0	5.0		6.4						
102	9335F	LW2-G112	8	24	23.0	5.2		6.3						
107	9325F	LW2-G082	8	24	22.9	5.1		6.4						
145	9332F	LW2-G103	8	24	23.0	5.5		6.3						
151	9334F	LW2-G109	8	24	22.9	5.4		6.4						
156	9343F	LW2-G164	8	24	22.9	6.0		6.3						
157	9341F	LW2-G122	8	24	22.9	5.6		6.3						
159	9342F	LW2-G235	8	24	22.9	5.3		6.3						
164	9337F	LW2-G105	8	24	22.9	6.0		6.3						
1	9327F	LW2-G086	8	25	23.0									
5	9333F	LW2-G106	8	25	23.0									
7	9326F	LW2-G088	8	25	22.9									
22	9339F	LW2-G121	8	25	22.9									
28	9344F	LW2-G178	8	25	22.9									
29	9330F	LW2-G096	8	25	22.9									
39	9331F	LW2-G099	8	25	22.9									
44	9345F	LW2-G180	8	25	23.0									
52	9336F	LW2-G077	8	25	22.9									
68	9328F	LW2-G090	8	25	22.9									
80	9338F	LW2-G117	8	25	23.2									
91	9323F	Control	8	25	23.0									
93	9329F	LW2-G091	8	25	23.0									
102	9335F	LW2-G112	8	25	22.9									
107	9325F	LW2-G082	8	25	22.9									
145	9332F	LW2-G103	8	25	23.0									
151	9334F	LW2-G109	8	25	22.9									
156	9343F	LW2-G164	8	25	22.9									
157	9341F	LW2-G122	8	25	22.9									
159	9342F	LW2-G235	8	25	22.9									
164	9337F	LW2-G105	8	25	22.9									

Hyalella azteca 28-Day

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
1	9327F	LW2-G086	8	26	23.1									
5	9333F	LW2-G106	8	26	23.1									
7	9326F	LW2-G088	8	26	23.0									
22	9339F	LW2-G121	8	26	23.0									
28	9344F	LW2-G178	8	26	23.0									
29	9330F	LW2-G096	8	26	23.0									
39	9331F	LW2-G099	8	26	23.0									
44	9345F	LW2-G180	8	26	23.1									
52	9336F	LW2-G077	8	26	23.0									
68	9328F	LW2-G090	8	26	23.1									
80	9338F	LW2-G117	8	26	23.3									
91	9323F	Control	8	26	23.1									
93	9329F	LW2-G091	8	26	23.1									
102	9335F	LW2-G112	8	26	23.0									
107	9325F	LW2-G082	8	26	23.0									
145	9332F	LW2-G103	8	26	23.1									
151	9334F	LW2-G109	8	26	23.1									
156	9343F	LW2-G164	8	26	23.0									
157	9341F	LW2-G122	8	26	23.0									
159	9342F	LW2-G235	8	26	23.0									
164	9337F	LW2-G105	8	26	23.1									
1	9327F	LW2-G086	8	27	22.9	5.3		6.7						
5	9333F	LW2-G106	8	27	22.9	5.4		6.7						
7	9326F	LW2-G088	8	27	22.9	5.8		6.6						
22	9339F	LW2-G121	8	27	22.9	5.1		6.6						
28	9344F	LW2-G178	8	27	22.9	5.3		6.8						
29	9330F	LW2-G096	8	27	22.9	5.4		6.7						
39	9331F	LW2-G099	8	27	22.9	5.4		6.6						
44	9345F	LW2-G180	8	27	22.9	5.3		6.6						
52	9336F	LW2-G077	8	27	22.8	5.2		6.8						
68	9328F	LW2-G090	8	27	22.9	5.4		6.7						
80	9338F	LW2-G117	8	27	22.8	5.2		6.7						
91	9323F	Control	8	27	22.8	5.1		6.9						
93	9329F	LW2-G091	8	27	22.9	5.5		6.8						
102	9335F	LW2-G112	8	27	22.9	5.4		6.8						
107	9325F	LW2-G082	8	27	22.9	5.5		6.7						
145	9332F	LW2-G103	8	27	22.9	5.6		6.7						
151	9334F	LW2-G109	8	27	22.9	5.2		6.7						
156	9343F	LW2-G164	8	27	22.9	5.3		6.7						
157	9341F	LW2-G122	8	27	22.8	5.5		6.7						
159	9342F	LW2-G235	8	27	22.8	5.1		6.7						
164	9337F	LW2-G105	8	27	22.8	5.0		6.6						

Hyalella azteca 28-Day

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
1	9327F	LW2-G086	8	28	23.4	6.4	160	6.7	51	50	<0.1			
5	9333F	LW2-G106	8	28	23.4	7.8	155	6.7	43	40	<0.1			
7	9326F	LW2-G088	8	28	23.3	6.9	160	6.7	43	40	<0.1			
22	9339F	LW2-G121	8	28	23.3	6.8	160	6.7	43	40	0.3			
28	9344F	LW2-G178	8	28	23.2	7.2	160	6.7	43	40	<0.1			
29	9330F	LW2-G096	8	28	23.2	7.3	155	6.7	43	40	0.1			
39	9331F	LW2-G099	8	28	23.2	6.8	155	6.6	43	40	<0.1			
44	9345F	LW2-G180	8	28	23.1	7.5	155	6.6	43	40	<0.1			
52	9336F	LW2-G077	8	28	23.0	6.3	160	6.6	43	40	<0.1			
68	9328F	LW2-G090	8	28	23.0	6.6	160	6.6	43	40	0.1			
80	9338F	LW2-G117	8	28	23.2	7.0	155	6.6	43	40	<0.1			
91	9323F	Control	8	28	23.1	6.8	165	6.6	43	40	0.1			
93	9329F	LW2-G091	8	28	23.0	6.7	160	6.7	43	40	<0.1			
102	9335F	LW2-G112	8	28	23.0	6.6	155	6.7	43	40	<0.1			
107	9325F	LW2-G082	8	28	23.0	7.3	155	6.7	43	40	<0.1			
145	9332F	LW2-G103	8	28	23.1	7.1	155	6.6	43	40	<0.1			
151	9334F	LW2-G109	8	28	23.0	6.8	160	6.6	43	40	<0.1			
156	9343F	LW2-G164	8	28	23.0	7.4	155	6.6	34	40	<0.1			
157	9341F	LW2-G122	8	28	23.0	6.5	155	6.6	34	40	<0.1			
159	9342F	LW2-G235	8	28	23.0	7.5	155	6.6	43	40	<0.1			
164	9337F	LW2-G105	8	28	23.0	7.0	155	6.6	43	40	<0.1			
				Mean	23.0	5.9	166	6.6	45	42	---		6.1	6.6
				SD	0.2	0.7	10	0.5	6	5	---		2.9	0.2
				n	609	294	126	294	42	42	42		21	21
				Min	22.3	4.4	155	4.1	26	40	<0.1		<0.5	6.5
				Max	23.4	8.4	215	7.2	60	60	1.4		10.6	7.0

Test Number: 686-6

Freshwater Sediment Test
10-Day Chironomus tentans

Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

ASHED DRY WT= weight of ashed pan + weight of ashed test organisms recovered at test termination
TAFDW=DRY WT - ASHED DRY WT= total ash-free organism weight for given replicate
AFDW=average individual ash-free biomass=TAFDW/WT COUNT

INITIAL WEIGHT

pan #	tare wt (mg)	final wt (mg)	wt count	avg. wt/ organism
1	93.59	97.22	20	0.18
2	94.81	98.9	20	0.20
3	93.23	96.59	20	0.17

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)		SURV	MORT	PSURV	PMORT	WT	AFDW
1	120	9323F	Control	1		10	8	2	80.0	20.0	103.54	8	114.22	105.92	10.68	1.34	8.30	1.04							
2	6	9323F	Control	2		10	10	0	100.0	0.0	105.08	10	115.89	107.13	10.81	1.08	8.76	0.88							
3	61	9323F	Control	3		10	9	1	90.0	10.0	106.80	9	116.80	108.29	10.00	1.11	8.51	0.95							
4	60	9323F	Control	4		10	9	1	90.0	10.0	103.81	9	112.91	105.41	9.10	1.01	7.50	0.83							
5	51	9323F	Control	5		10	10	0	100.0	0.0	107.94	10	119.61	110.28	11.67	1.17	9.33	0.93	Mean	9.0	1.0	90.0	10.0	1.18	0.95
6	33	9323F	Control	6		10	8	2	80.0	20.0	107.34	8	118.43	109.20	11.09	1.39	9.23	1.15	SD	0.9	0.9	9.3	9.3	0.16	0.12
7	139	9323F	Control	7		10	8	2	80.0	20.0	98.42	8	109.11	100.85	10.69	1.34	8.26	1.03	n	8	8	8	8	8	8
8	48	9323F	Control	8	wq replicate	10	10	0	100.0	0.0	102.51	10	112.40	104.56	9.89	0.99	7.84	0.78							
17	59	9325F	LW2-G082	1		10	10	0	100.0	0.0	96.21	10	106.92	98.21	10.71	1.07	8.71	0.87							
18	94	9325F	LW2-G082	2		10	5	5	50.0	50.0	91.71	5	100.29	93.93	8.58	1.72	6.36	1.27							
19	102	9325F	LW2-G082	3		10	10	0	100.0	0.0	86.44	10	98.51	89.38	12.07	1.21	9.13	0.91							
20	32	9325F	LW2-G082	4		10	8	2	80.0	20.0	107.16	8	119.62	110.09	12.46	1.56	9.53	1.19							
21	15	9325F	LW2-G082	5		10	9	1	90.0	10.0	104.05	9	115.85	106.52	11.80	1.31	9.33	1.04	Mean	8.6	1.4	86.3	13.8	1.43	1.10
22	134	9325F	LW2-G082	6		10	9	1	90.0	10.0	97.78	9	110.72	100.67	12.94	1.44	10.05	1.12	SD	1.6	1.6	16.0	16.0	0.22	0.14
23	135	9325F	LW2-G082	7		10	9	1	90.0	10.0	91.20	9	105.91	94.96	14.71	1.63	10.95	1.22	n	8	8	8	8	8	8
24	20	9325F	LW2-G082	8	wq replicate	10	9	1	90.0	10.0	105.61	9	119.19	108.87	13.58	1.51	10.32	1.15							
33	81	9326F	LW2-G088	1		10	7	3	70.0	30.0	104.43	7	115.42	107.27	10.99	1.57	8.15	1.16							
34	96	9326F	LW2-G088	2		10	9	1	90.0	10.0	98.05	9	113.78	103.25	15.73	1.75	10.53	1.17							
35	31	9326F	LW2-G088	3		10	6	4	60.0	40.0	99.38	6	105.05	100.53	5.67	0.95	4.52	0.75							
36	144	9326F	LW2-G088	4		10	10	0	100.0	0.0	102.02	10	113.41	105.08	11.39	1.14	8.33	0.83							
37	38	9326F	LW2-G088	5		10	3	7	30.0	70.0	105.10	3	109.38	105.82	4.28	1.43	3.56	1.19	Mean	5.9	4.1	58.8	41.3	1.17	0.89
38	168	9326F	LW2-G088	6		10	1	9	10.0	90.0	97.08	1	97.66	97.16	0.58	0.58	0.50	0.50	SD	3.5	3.5	34.8	34.8	0.39	0.25
39	64	9326F	LW2-G088	7		10	9	1	90.0	10.0	101.72	9	111.64	103.95	9.92	1.10	7.69	0.85	n	8	8	8	8	8	8
40	36	9326F	LW2-G088	8	wq replicate	10	2	8	20.0	80.0	103.22	2	104.89	103.50	1.67	0.84	1.39	0.70							
25	91	9327F	LW2-G086	1		10	8	2	80.0	20.0	94.60	8	103.38	97.24	8.78	1.10	6.14	0.77							
26	88	9327F	LW2-G086	2		10	2	8	20.0	80.0	98.43	2	100.37	98.94	1.94	0.97	1.43	0.72							
27	5	9327F	LW2-G086	3		10	8	2	80.0	20.0	102.43	8	114.25	106.03	11.82	1.48	8.22	1.03							
28	103	9327F	LW2-G086	4		10	9	1	90.0	10.0	97.69	9	108.96	100.59	11.27	1.25	8.37	0.93							
29	14	9327F	LW2-G086	5		10	9	1	90.0	10.0	98.63	9	110.20	101.05	11.57	1.29	9.15	1.02	Mean	7.4	2.6	73.8	26.3	1.21	0.91
30	10	9327F	LW2-G086	6		10	9	1	90.0	10.0	101.13	9	111.66	103.17	10.53	1.17	8.49	0.94	SD	2.4	2.4	23.9	23.9	0.16	0.14
31	92	9327F	LW2-G086	7		10	8	2	80.0	20.0	88.82	8	97.48	91.08	8.66	1.08	6.40	0.80	n	8	8	8	8	8	8
32	17	9327F	LW2-G086	8	wq replicate	10	6	4	60.0	40.0	105.70	6	113.66	107.11	7.96	1.33	6.55	1.09							
41	44	9328F	LW2-G090	1		10	8	2	80.0	20.0	108.98	8	118.47	111.49	9.49	1.19	6.98	0.87							
42	93	9328F	LW2-G090	2		10	7	3	70.0	30.0	91.09	7	97.00	92.69	5.91	0.84	4.31	0.62							
43	107	9328F	LW2-G090	3		10	6	4	60.0	40.0	87.10	6	91.12	88.36	4.02	0.67	2.76	0.46							
44	26	9328F	LW2-G090	4		10	9	1	90.0	10.0	101.17	9	109.02	102.94	7.85	0.87	6.08	0.68							
45	116	9328F	LW2-G090	5		10	6	4	60.0	40.0	105.44	6	112.45	107.34	7.01	1.17	5.11	0.85	Mean	7.5	2.5	75.0	25.0	0.98	0.73
46	159	9328F	LW2-G090	6		10	9	1	90.0	10.0	89.68	9	93.38	90.51	3.70	0.41	2.87	0.32	SD	1.8	1.8	17.7	17.7	0.38	0.27
47	97	9328F	LW2-G090	7		10	10	0	100.0	0.0	103.99	10	120.72	109.00	16.73	1.67	11.72	1.17	n	8	8	8	8	8	8
48	148	9328F	LW2-G090	8	wq replicate	10	5	5	50.0	50.0	98.11	5	103.09	98.89	4.98	1.00	4.20	0.84							
49	150	9329F	LW2-G091	1		10	8	2	80.0	20.0	99.37	8	109.05	101.81	9.68	1.21	7.24	0.90							
50	23	9329F	LW2-G091	2		10	8	2	80.0	20.0	96.58	8	107.95	98.84	11.37	1.42	9.11	1.14							
51	37	9329F	LW2-G091	3		10	2	8	20.0	80.0	101.88	2	103.71	102.32	1.83	0.91	1.39	0.70							
52	162	9329F	LW2-G091	4		10	9	1	90.0	10.0	103.53	9	108.96	104.63	5.43	0.60	4.33	0.48							
53	131	9329F	LW2-G091	5		10	9	1	90.0	10.0	102.54	9	116.63	107.21	14.09	1.57	9.42	1.05	Mean	7.1	2.9	71.3	28.8	1.17	0.90
54	24	9329F	LW2-G091	6		10	10	0	100.0	0.0	104.26	10	116.55	106.87	12.29	1.23	9.68	0.97	SD	2.9	2.9	29.5	29.5	0.35	0.26
55	84	9329F	LW2-G091	7		10	3	7	30.0	70.0	92.46	3	97.21	93.49	4.75	1.58	3.72	1.24	n	8	8	8	8	8	8
56	9	9329F	LW2-G091	8	wq replicate	10	8	2	80.0	20.0	107.23	8	114.14	108.62	6.91	0.86	5.52	0.69							

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Test Number: 686-6

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)			SURV	MORT	PSURV	PMORT	WT	AFDW
57	155	9330F	LW2-G096	1		10	8	2	80.0	20.0	102.83	8	112.52	104.85	9.69	1.21	7.67	0.96								
58	57	9330F	LW2-G096	2		10	6	4	60.0	40.0	100.51	6	108.05	102.27	7.54	1.26	5.78	0.96								
59	154	9330F	LW2-G096	3		10	9	1	90.0	10.0	95.93	9	106.17	98.32	10.24	1.14	7.85	0.87								
60	80	9330F	LW2-G096	4		10	7	3	70.0	30.0	92.82	7	102.87	95.59	10.05	1.44	7.28	1.04								
61	53	9330F	LW2-G096	5		10	7	3	70.0	30.0	97.82	7	108.51	100.96	10.69	1.53	7.55	1.08	Mean	7.9	2.1	78.8	21.3	1.34	1.00
62	133	9330F	LW2-G096	6		10	8	2	80.0	20.0	110.41	8	122.72	113.09	12.31	1.54	9.63	1.20	SD	1.2	1.2	12.5	12.5	0.15	0.11
63	110	9330F	LW2-G096	7		10	10	0	100.0	0.0	102.04	10	115.12	106.49	13.08	1.31	8.63	0.86	n	8	8	8	8	8	8
64	72	9330F	LW2-G096	8	wq replicate	10	8	2	80.0	20.0	99.48	8	109.97	102.07	10.49	1.31	7.90	0.99								
65	79	9331F	LW2-G099	1		10	10	0	100.0	0.0	100.15	10	110.26	102.90	10.11	1.01	7.36	0.74								
66	13	9331F	LW2-G099	2		10	6	4	60.0	40.0	97.72	6	106.52	99.43	8.80	1.47	7.09	1.18								
67	12	9331F	LW2-G099	3		10	6	4	60.0	40.0	104.60	6	110.83	105.56	6.23	1.04	5.27	0.88								
68	99	9331F	LW2-G099	4		10	10	0	100.0	0.0	107.77	10	123.50	113.31	15.73	1.57	10.19	1.02								
69	140	9331F	LW2-G099	5		10	3	7	30.0	70.0	94.82	3	97.52	95.44	2.70	0.90	2.08	0.69	Mean	7.0	3.0	70.0	30.0	1.20	0.88
70	125	9331F	LW2-G099	6		10	10	0	100.0	0.0	90.33	10	101.04	93.98	10.71	1.07	7.06	0.71	SD	2.8	2.8	27.8	27.8	0.24	0.17
71	151	9331F	LW2-G099	7		10	4	6	40.0	60.0	90.73	4	96.07	92.11	5.34	1.34	3.96	0.99	n	8	8	8	8	8	8
72	123	9331F	LW2-G099	8	wq replicate	10	7	3	70.0	30.0	100.09	7	108.54	102.45	8.45	1.21	6.09	0.87								
73	117	9332F	LW2-G103	1		10	8	2	80.0	20.0	91.33	8	100.74	93.71	9.41	1.18	7.03	0.88								
74	127	9332F	LW2-G103	2		10	6	4	60.0	40.0	92.29	6	104.25	95.64	11.96	1.99	8.61	1.44								
75	45	9332F	LW2-G103	3		10	7	3	70.0	30.0	106.15	7	113.85	108.14	7.70	1.10	5.71	0.82								
76	85	9332F	LW2-G103	4		10	8	2	80.0	20.0	95.29	8	107.17	98.34	11.88	1.49	8.83	1.10								
77	145	9332F	LW2-G103	5		10	9	1	90.0	10.0	99.49	9	108.82	101.72	9.33	1.04	7.10	0.79	Mean	7.3	2.8	72.5	27.5	1.33	0.97
78	73	9332F	LW2-G103	6		10	6	4	60.0	40.0	113.94	6	120.87	116.16	6.93	1.16	4.71	0.79	SD	1.5	1.5	14.9	14.9	0.31	0.22
79	142	9332F	LW2-G103	7		10	5	5	50.0	50.0	102.36	5	109.17	104.26	6.81	1.36	4.91	0.98	n	8	8	8	8	8	8
80	11	9332F	LW2-G103	8	wq replicate	10	9	1	90.0	10.0	105.43	9	117.23	108.45	11.80	1.31	8.78	0.98								
89	115	9333F	LW2-G106	1		10	7	3	70.0	30.0	107.92	7	117.76	110.80	9.84	1.41	6.96	0.99								
90	43	9333F	LW2-G106	2		10	9	1	90.0	10.0	107.31	9	118.73	110.22	11.42	1.27	8.51	0.95								
91	47	9333F	LW2-G106	3		10	8	2	80.0	20.0	99.06	8	108.58	101.43	9.52	1.19	7.15	0.89								
92	2	9333F	LW2-G106	4		10	9	1	90.0	10.0	103.61	9	116.97	107.10	13.36	1.48	9.87	1.10								
93	146	9333F	LW2-G106	5		10	10	0	100.0	0.0	97.71	10	108.93	100.40	11.22	1.12	8.53	0.85	Mean	8.6	1.4	86.3	13.8	1.27	0.91
94	74	9333F	LW2-G106	6		10	7	3	70.0	30.0	108.32	7	117.11	111.05	8.79	1.26	6.06	0.87	SD	1.2	1.2	11.9	11.9	0.13	0.09
95	109	9333F	LW2-G106	7		10	10	0	100.0	0.0	104.98	10	118.35	110.07	13.37	1.34	8.28	0.83	n	8	8	8	8	8	8
96	27	9333F	LW2-G106	8	wq replicate	10	9	1	90.0	10.0	105.75	9	115.83	108.27	10.08	1.12	7.56	0.84								
97	108	9334F	LW2-G109	1		10	7	3	70.0	30.0	107.12	7	115.30	109.85	8.18	1.17	5.45	0.78								
98	70	9334F	LW2-G109	2		10	4	6	40.0	60.0	106.59	4	113.79	108.41	7.20	1.80	5.38	1.35								
99	167	9334F	LW2-G109	3		10	8	2	80.0	20.0	98.29	8	105.88	100.64	7.59	0.95	5.24	0.65								
100	114	9334F	LW2-G109	4		10	9	1	90.0	10.0	94.87	9	105.33	97.95	10.46	1.16	7.38	0.82								
101	141	9334F	LW2-G109	5		10	10	0	100.0	0.0	98.74	10	110.14	102.18	11.40	1.14	7.96	0.80	Mean	7.9	2.1	78.8	21.3	1.17	0.84
102	147	9334F	LW2-G109	6		10	8	2	80.0	20.0	86.72	8	95.21	88.62	8.49	1.06	6.59	0.82	SD	1.8	1.8	18.1	18.1	0.29	0.23
103	30	9334F	LW2-G109	7		10	9	1	90.0	10.0	105.40	9	116.54	108.40	11.14	1.24	8.14	0.90	n	8	8	8	8	8	8
104	158	9334F	LW2-G109	8	wq replicate	10	8	2	80.0	20.0	99.02	8	105.53	101.00	6.51	0.81	4.53	0.57								
105	28	9335F	LW2-G112	1		10	8	2	80.0	20.0	103.13	8	112.04	105.30	8.91	1.11	6.74	0.84								
106	118	9335F	LW2-G112	2		10	7	3	70.0	30.0	95.69	7	104.59	98.29	8.90	1.27	6.30	0.90								
107	89	9335F	LW2-G112	3		10	6	4	60.0	40.0	109.84	6	112.93	110.37	3.09	0.52	2.56	0.43								
108	124	9335F	LW2-G112	4		10	10	0	100.0	0.0	90.22	10	102.31	94.43	12.09	1.21	7.88	0.79								
109	112	9335F	LW2-G112	5		10	10	0	100.0	0.0	103.69	10	114.11	107.11	10.42	1.04	7.00	0.70	Mean	8.4	1.6	83.8	16.3	1.19	0.84
110	22	9335F	LW2-G112	6		10	8	2	80.0	20.0	105.59	8	117.72	108.67	12.13	1.52	9.05	1.13	SD	1.5	1.5	15.1	15.1	0.32	0.22
111	121	9335F	LW2-G112	7		10	10	0	100.0	0.0	90.91	10	103.82	95.45	12.91	1.29	8.37	0.84	n	8	8	8	8	8	8
112	66	9335F	LW2-G112	8	wq replicate	10	8	2	80.0	20.0	101.58	8	113.84	105.01	12.26	1.53	8.83	1.10								
9	19	9336F	LW2-G077	1		10	10	0	100.0	0.0	111.90	10	123.73	114.09	11.83	1.18	9.64	0.96								
10	41	9336F	LW2-G077	2		10	8	2	80.0	20.0	106.34	8	116.81	108.93	10.47	1.31	7.88	0.98								
11	77	9336F	LW2-G077	3		10	7	3	70.0	30.0	104.02	7	113.06	106.71	9.04	1.29	6.35	0.91								
12	163	9336F	LW2-G077	4		10	8	2	80.0	20.0	95.23	8	102.78	97.43	7.55	0.94	5.35	0.67								
13	50	9336F	LW2-G077	5		10	9	1	90.0	10.0	104.12	9	116.35	107.49	12.23	1.36	8.86	0.98	Mean	8.0	2.0	80.0	20.0	1.29	0.94
14	4	9336F	LW2-G077	6		10	8	2	80.0	20.0	109.84	8	122.83	113.42	12.99	1.62	9.41	1.18	SD	1.2	1.2	12.0	12.0	0.23	0.16
15	71	9336F	LW2-G077	7		10	6	4	60.0	40.0	107.15	6	113.64	108.99	6.49	1.08	4.65	0.78	n	8	8	8	8	8	8
16	105	9336F	LW2-G077	8	wq replicate	10	8	2	80.0	20.0	100.34	8	112.76	104.20	12.42	1.55	8.56	1.07								
81	16	9337F	LW2-G105	1		10	8	2	80.0	20.0	99.87	8	113.02	103.01	13.15	1.64	10.01	1.25								
82	101	9337F	LW2-G105	2		10	9	1	90.0	10.0	99.44	9	108.38	102.11	8.94	0.99	6.27	0.70								
83	65	9337F	LW2-G105	3		10	3	7	30.0	70.0	101.61	3	104.35	102.12	2.74	0.91	2.23	0.74								
84	69	9337F	LW2-G105	4		10	6	4	60.0	40.0	107.75	6	113.66	108.89	5.91	0.98	4.77	0.79								
85	104	9337F	LW2-G105	5		10	6	4	60.0	40.0	100.17	6	106.33	101.68	6.16	1.03	4.65	0.77	Mean	6.1	3.9	61.3	38.8	1.08	0.83
86	54	9337F	LW2-G105	6		10	6	4	60.0	40.0	111.47	6	118.18	112.82	6.71	1.12	5.36	0.89	SD	1.8	1.8	18.1	18.1	0.28	0.21
87	129	9337F	LW2-G105	7		10	6	4	60.0	40.0	95.22	6	102.74	97.04	7.52	1.25	5.70	0.95	n	8	8	8	8	8	8

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Test Number: 686-6

Freshwater Sediment Test
10-Day Chironomus tentans

		NAS	CLIENT								TARE	WT	DRY	ASHED	TWT	WT	TAFDW	AFDW								
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	WT (mg)	COUNT	WT (mg)	DRY WT (mg)	(mg)	(mg)	(mg)	(mg)			SURV	MORT	PSURV	PMORT	WT	AFDW
88	78	9337F	LW2-G105	8	wq replicate	10	5	5	50.0	50.0	104.43	5	107.80	105.14	3.37	0.67	2.66	0.53								

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Test Number: 686-6

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)			SURV	MORT	PSURV	PMORT	WT	AFDW
113	137	9338F	LW2-G117	1		10	0	10	0.0	100.0	92.04	0					0.00									
114	95	9338F	LW2-G117	2		10	1	9	10.0	90.0	97.86	1	98.55	98.07	0.69	0.69	0.48	0.48								
115	55	9338F	LW2-G117	3		10	5	5	50.0	50.0	96.79	5	98.02	97.04	1.23	0.25	0.98	0.20								
116	21	9338F	LW2-G117	4		10	4	6	40.0	60.0	103.89	4	105.62	104.26	1.73	0.43	1.36	0.34								
117	128	9338F	LW2-G117	5		10	6	4	60.0	40.0	97.56	6	101.61	98.33	4.05	0.67	3.28	0.55	Mean	3.6	6.4	36.3	63.8	0.56	0.43
118	149	9338F	LW2-G117	6		10	0	10	0.0	100.0	102.48	0					0.00		SD	2.9	2.9	28.8	28.8	0.35	0.26
119	34	9338F	LW2-G117	7		10	7	3	70.0	30.0	101.50	7	102.69	101.68	1.19	0.17	1.01	0.14	n	8	8	8	8	6	6
120	132	9338F	LW2-G117	8	wq replicate	10	6	4	60.0	40.0	96.65	6	103.39	98.30	6.74	1.12	5.09	0.85								
121	122	9339F	LW2-G121	1		10	9	1	90.0	10.0	96.55	9	105.98	98.75	9.43	1.05	7.23	0.80								
122	3	9339F	LW2-G121	2		10	8	2	80.0	20.0	104.51	8	118.28	108.51	13.77	1.72	9.77	1.22								
123	1	9339F	LW2-G121	3		10	9	1	90.0	10.0	105.18	9	117.72	108.98	12.54	1.39	8.74	0.97								
124	75	9339F	LW2-G121	4		10	9	1	90.0	10.0	107.01	9	118.80	111.03	11.79	1.31	7.77	0.86								
125	83	9339F	LW2-G121	5		10	9	1	90.0	10.0	99.21	9	109.30	102.22	10.09	1.12	7.08	0.79	Mean	7.5	2.5	75.0	25.0	1.28	0.93
126	52	9339F	LW2-G121	6		10	4	6	40.0	60.0	102.79	4	107.08	103.81	4.29	1.07	3.27	0.82	SD	2.2	2.2	22.0	22.0	0.26	0.18
127	18	9339F	LW2-G121	7		10	8	2	80.0	20.0	107.78	8	120.27	110.90	12.49	1.56	9.37	1.17	n	8	8	8	8	8	8
128	153	9339F	LW2-G121	8	wq replicate	10	4	6	40.0	60.0	98.39	4	102.41	99.24	4.02	1.01	3.17	0.79								
129	86	9341F	LW2-G122	1		10	6	4	60.0	40.0	105.82	6	109.12	106.60	3.30	0.55	2.52	0.42								
130	63	9341F	LW2-G122	2		10	7	3	70.0	30.0	104.69	7	112.60	106.37	7.91	1.13	6.23	0.89								
131	161	9341F	LW2-G122	3		10	8	2	80.0	20.0	96.69	8	108.42	99.53	9.73	1.22	6.89	0.86								
132	49	9341F	LW2-G122	4		10	9	1	90.0	10.0	106.54	9	117.58	109.63	11.04	1.23	7.95	0.88								
133	62	9341F	LW2-G122	5		10	10	0	100.0	0.0	105.75	10	117.84	108.81	12.09	1.21	9.03	0.90	Mean	7.1	2.9	71.3	28.8	1.14	0.86
134	136	9341F	LW2-G122	6		10	5	5	50.0	50.0	88.40	5	93.60	89.52	5.20	1.04	4.08	0.82	SD	2.4	2.4	23.6	23.6	0.33	0.28
135	39	9341F	LW2-G122	7		10	3	7	30.0	70.0	105.79	3	111.01	106.74	5.22	1.74	4.27	1.42	n	8	8	8	8	8	8
136	160	9341F	LW2-G122	8	wq replicate	10	9	1	90.0	10.0	105.56	9	114.42	107.92	8.86	0.98	6.50	0.72								
161	7	9342F	LW2-G235	1		10	8	2	80.0	20.0	107.16	8	115.69	108.00	8.53	1.07	7.69	0.96								
162	165	9342F	LW2-G235	2		10	8	2	80.0	20.0	97.39	8	104.01	98.45	6.62	0.83	5.56	0.70								
163	166	9342F	LW2-G235	3		10	10	0	100.0	0.0	96.42	10	105.14	97.54	8.72	0.87	7.60	0.76								
164	82	9342F	LW2-G235	4		10	9	1	90.0	10.0	107.04	9	115.01	108.34	7.97	0.89	6.67	0.74								
165	40	9342F	LW2-G235	5		10	3	7	30.0	70.0	101.06	3	104.72	101.29	3.66	1.22	3.43	1.14	Mean	8.4	1.6	83.8	16.3	0.97	0.84
166	42	9342F	LW2-G235	6		10	10	0	100.0	0.0	103.32	10	114.90	105.00	11.58	1.16	9.90	0.99	SD	2.3	2.3	23.3	23.3	0.16	0.17
167	106	9342F	LW2-G235	7		10	10	0	100.0	0.0	102.60	10	110.36	103.63	7.76	0.78	6.73	0.67	n	8	8	8	8	8	8
168	68	9342F	LW2-G235	8	wq replicate	10	9	1	90.0	10.0	113.55	9	122.45	115.98	8.90	0.99	6.47	0.72								
137	119	9343F	LW2-G164	1		10	7	3	70.0	30.0	89.53	7	99.40	91.92	9.87	1.41	7.48	1.07								
138	143	9343F	LW2-G164	2		10	9	1	90.0	10.0	101.47	9	112.65	104.05	11.18	1.24	8.60	0.96								
139	152	9343F	LW2-G164	3		10	7	3	70.0	30.0	95.29	7	103.10	96.37	7.81	1.12	6.73	0.96								
140	164	9343F	LW2-G164	4		10	10	0	100.0	0.0	100.69	10	113.10	104.07	12.41	1.24	9.03	0.90								
141	130	9343F	LW2-G164	5		10	10	0	100.0	0.0	101.68	10	117.82	105.87	16.14	1.61	11.95	1.20	Mean	8.8	1.3	87.5	12.5	1.34	1.02
142	156	9343F	LW2-G164	6		10	10	0	100.0	0.0	105.31	10	116.05	107.78	10.74	1.07	8.27	0.83	SD	1.5	1.5	14.9	14.9	0.25	0.18
143	25	9343F	LW2-G164	7		10	7	3	70.0	30.0	99.88	7	112.36	102.82	12.48	1.78	9.54	1.36	n	8	8	8	8	8	8
144	111	9343F	LW2-G164	8	wq replicate	10	10	0	100.0	0.0	107.89	10	120.33	111.63	12.44	1.24	8.70	0.87								
145	98	9344F	LW2-G178	1		10	8	2	80.0	20.0	100.30	8	111.56	102.93	11.26	1.41	8.63	1.08								
146	35	9344F	LW2-G178	2		10	8	2	80.0	20.0	104.02	8	115.56	106.79	11.54	1.44	8.77	1.10								
147	90	9344F	LW2-G178	3		10	8	2	80.0	20.0	103.86	8	113.73	106.19	9.87	1.23	7.54	0.94								
148	157	9344F	LW2-G178	4		10	8	2	80.0	20.0	103.81	8	111.53	105.76	7.72	0.97	5.77	0.72								
149	67	9344F	LW2-G178	5		10	7	3	70.0	30.0	101.10	7	112.47	103.82	11.37	1.62	8.65	1.24	Mean	8.1	1.9	81.3	18.8	1.33	1.01
150	138	9344F	LW2-G178	6		10	8	2	80.0	20.0	100.07	8	111.60	102.57	11.53	1.44	9.03	1.13	SD	0.8	0.8	8.3	8.3	0.23	0.19
151	76	9344F	LW2-G178	7		10	10	0	100.0	0.0	104.74	10	115.42	108.03	10.68	1.07	7.39	0.74	n	8	8	8	8	8	8
152	56	9344F	LW2-G178	8	wq replicate	10	8	2	80.0	20.0	107.04	8	119.02	110.00	11.98	1.50	9.02	1.13								
153	29	9345F	LW2-G180	1		10	7	3	70.0	30.0	104.99	7	113.74	107.36	8.75	1.25	6.38	0.91								
154	58	9345F	LW2-G180	2		10	9	1	90.0	10.0	106.82	9	117.23	109.35	10.41	1.16	7.88	0.88								
155	100	9345F	LW2-G180	3		10	10	0	100.0	0.0	90.59	10	100.45	95.34	9.86	0.99	5.11	0.51								
156	46	9345F	LW2-G180	4		10	8	2	80.0	20.0	99.84	8	109.24	101.80	9.40	1.18	7.44	0.93								
157	8	9345F	LW2-G180	5		10	8	2	80.0	20.0	104.49	8	114.21	107.04	9.72	1.22	7.17	0.90	Mean	8.3	1.8	82.5	17.5	1.18	0.87
158	87	9345F	LW2-G180	6		10	7	3	70.0	30.0	93.04	7	100.68	95.11	7.64	1.09	5.57	0.80	SD	1.0	1.0	10.4	10.4	0.24	0.23
159	113	9345F	LW2-G180	7		10	9	1	90.0	10.0	104.19	9	112.24	106.10	8.05	0.89	6.14	0.68	n	8	8	8	8	8	8
160	126	9345F	LW2-G180	8	wq replicate	10	8	2	80.0	20.0	107.03	8	120.67	110.07	13.64	1.71	10.60	1.33								

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Water Quality Data

	NAS	CLIENT										Bulk Sediment Interstitial water	
	SMPL	DESCRIP										NH3	pH
	9323F	Control										3.7	7.0
	9325F	LW2-G082										1.1	7.0
	9326F	LW2-G088										9.3	6.5
	9327F	LW2-G086										9.0	6.6
	9328F	LW2-G090										9.7	6.6
	9329F	LW2-G091										10.6	6.6
	9330F	LW2-G096										2.0	6.7
	9331F	LW2-G099										6.5	6.5
	9332F	LW2-G103										4.6	6.5
	9333F	LW2-G106										4.8	6.5
	9334F	LW2-G109										6.0	6.6
	9335F	LW2-G112										5.6	6.6
	9336F	LW2-G077										6.3	6.5
	9337F	LW2-G105										3.4	6.5
	9338F	LW2-G117										9.2	6.5
	9339F	LW2-G121										7.9	6.6
	9341F	LW2-G122										9.5	6.6
	9342F	LW2-G235										---	---
	9343F	LW2-G164										<0.5	6.8
	9344F	LW2-G178										2.5	6.7
	9345F	LW2-G180										4.3	6.8

	NAS	CLIENT			Overlying water								
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	NH3	HARD	ALK		
9	9329F	LW2-G091	8	0	23.0	7.0	205	7.1	0.8	60	60		
11	9332F	LW2-G103	8	0	22.9	7.2	165	7.1	0.6	43	40		
17	9327F	LW2-G086	8	0	22.9	7.2	190	7.0	0.7	60	60		
20	9325F	LW2-G082	8	0	23.0	7.5	170	7.1	0.2	43	40		
27	9333F	LW2-G106	8	0	22.8	7.3	165	6.9	0.7	26	40		
36	9326F	LW2-G088	8	0	22.9	7.4	180	7.0	0.6	60	50		
48	9323F	Control	8	0	22.9	7.3	205	7.1	0.3	51	40		
56	9344F	LW2-G178	8	0	22.9	7.5	160	7.0	0.3	51	40		
66	9335F	LW2-G112	8	0	22.9	7.3	165	6.9	0.6	51	40		
68	9342F	LW2-G235	8	0	22.9	8.2	155	7.0	0.1	51	50		
72	9330F	LW2-G096	8	0	22.9	7.6	155	6.9	0.3	43	40		
78	9337F	LW2-G105	8	0	22.9	7.1	155	6.7	0.4	34	40		
105	9336F	LW2-G077	8	0	23.0	7.2	165	6.9	0.7	43	50		
111	9343F	LW2-G164	8	0	23.0	7.0	160	6.9	0.2	51	40		
123	9331F	LW2-G099	8	0	22.9	7.1	170	6.8	0.7	43	50		
126	9345F	LW2-G180	8	0	23.0	7.4	155	6.9	0.1	43	30		
132	9338F	LW2-G117	8	0	23.0	6.9	170	6.7	0.8	51	40		
148	9328F	LW2-G090	8	0	22.9	6.7	190	6.9	0.8	68	60		
153	9339F	LW2-G121	8	0	22.9	6.8	185	6.8	0.8	60	60		
158	9334F	LW2-G109	8	0	22.9	6.8	170	6.9	0.6	51	40		
160	9341F	LW2-G122	8	0	22.9	7.0	170	6.9	0.9	51	60		
9	9329F	LW2-G091	8	1	23.1	4.8							
11	9332F	LW2-G103	8	1	23.1	4.4							
17	9327F	LW2-G086	8	1	23.0	4.6							
20	9325F	LW2-G082	8	1	23.1	4.8							
27	9333F	LW2-G106	8	1	23.0	5.0							
36	9326F	LW2-G088	8	1	23.1	4.6							
48	9323F	Control	8	1	23.0	5.0							
56	9344F	LW2-G178	8	1	23.0	4.8							
66	9335F	LW2-G112	8	1	23.1	4.6							
68	9342F	LW2-G235	8	1	23.0	5.2							
72	9330F	LW2-G096	8	1	23.0	4.8							
78	9337F	LW2-G105	8	1	23.0	4.9							
105	9336F	LW2-G077	8	1	23.2	5.2							
111	9343F	LW2-G164	8	1	23.2	4.4							
123	9331F	LW2-G099	8	1	23.2	4.7							
126	9345F	LW2-G180	8	1	23.2	5.1							
132	9338F	LW2-G117	8	1	23.1	5.2							
148	9328F	LW2-G090	8	1	23.1	5.6							
153	9339F	LW2-G121	8	1	23.1	5.2							
158	9334F	LW2-G109	8	1	23.0	4.8							
160	9341F	LW2-G122	8	1	23.1	5.3							
9	9329F	LW2-G091	8	2	23.1	5.6							
11	9332F	LW2-G103	8	2	23.1	5.7							
17	9327F	LW2-G086	8	2	23.0	5.5							
20	9325F	LW2-G082	8	2	23.2	5.8							
27	9333F	LW2-G106	8	2	23.1	5.9							
36	9326F	LW2-G088	8	2	23.2	5.9							
48	9323F	Control	8	2	23.0	6.2							

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56	9344F	LW2-G178	8	2	23.1	6.0								
66	9335F	LW2-G112	8	2	23.1	5.9								
68	9342F	LW2-G235	8	2	23.0	5.8								
72	9330F	LW2-G096	8	2	23.0	5.9								
78	9337F	LW2-G105	8	2	23.0	5.7								
105	9336F	LW2-G077	8	2	23.2	5.6								
111	9343F	LW2-G164	8	2	23.1	5.7								
123	9331F	LW2-G099	8	2	23.1	5.6								
126	9345F	LW2-G180	8	2	23.2	5.5								
132	9338F	LW2-G117	8	2	23.1	5.6								
148	9328F	LW2-G090	8	2	23.0	5.8								
153	9339F	LW2-G121	8	2	23.0	5.6								
158	9334F	LW2-G109	8	2	23.0	5.6								
160	9341F	LW2-G122	8	2	23.1	5.7								
9	9329F	LW2-G091	8	3	22.6	5.0								
11	9332F	LW2-G103	8	3	22.5	5.2								
17	9327F	LW2-G086	8	3	22.5	5.0								
20	9325F	LW2-G082	8	3	22.5	5.2								
27	9333F	LW2-G106	8	3	22.6	4.8								
36	9326F	LW2-G088	8	3	22.5	5.4								
48	9323F	Control	8	3	22.5	5.4								
56	9344F	LW2-G178	8	3	22.5	5.0								
66	9335F	LW2-G112	8	3	22.6	5.0								
68	9342F	LW2-G235	8	3	22.6	4.8								
72	9330F	LW2-G096	8	3	22.6	5.0								
78	9337F	LW2-G105	8	3	22.6	4.6								
105	9336F	LW2-G077	8	3	22.3	5.0								
111	9343F	LW2-G164	8	3	22.8	4.8								
123	9331F	LW2-G099	8	3	22.7	4.8								
126	9345F	LW2-G180	8	3	22.8	4.6								
132	9338F	LW2-G117	8	3	22.7	4.6								
148	9328F	LW2-G090	8	3	22.7	5.0								
153	9339F	LW2-G121	8	3	22.7	4.6								
158	9334F	LW2-G109	8	3	22.6	4.8								
160	9341F	LW2-G122	8	3	22.5	5.2								
9	9329F	LW2-G091	8	4	23.2	5.3								
11	9332F	LW2-G103	8	4	23.2	5.6								
17	9327F	LW2-G086	8	4	23.0	5.8								
20	9325F	LW2-G082	8	4	23.1	5.7								
27	9333F	LW2-G106	8	4	23.0	5.6								
36	9326F	LW2-G088	8	4	23.1	5.9								
48	9323F	Control	8	4	22.9	5.9								
56	9344F	LW2-G178	8	4	23.1	6.0								
66	9335F	LW2-G112	8	4	23.1	6.4								
68	9342F	LW2-G235	8	4	22.9	6.1								
72	9330F	LW2-G096	8	4	22.9	5.9								
78	9337F	LW2-G105	8	4	22.9	5.3								
105	9336F	LW2-G077	8	4	23.1	5.5								
111	9343F	LW2-G164	8	4	23.1	5.6								
123	9331F	LW2-G099	8	4	23.0	5.6								
126	9345F	LW2-G180	8	4	23.1	5.4								
132	9338F	LW2-G117	8	4	23.0	5.0								
148	9328F	LW2-G090	8	4	22.9	5.6								
153	9339F	LW2-G121	8	4	23.0	4.8								
158	9334F	LW2-G109	8	4	22.9	4.4								
160	9341F	LW2-G122	8	4	23.0	5.0								
9	9329F	LW2-G091	8	5	23.2	5.6								
11	9332F	LW2-G103	8	5	23.2	5.3								
17	9327F	LW2-G086	8	5	23.0	5.4								
20	9325F	LW2-G082	8	5	23.2	5.4								
27	9333F	LW2-G106	8	5	23.0	5.7								
36	9326F	LW2-G088	8	5	23.1	5.6								
48	9323F	Control	8	5	23.0	5.5								
56	9344F	LW2-G178	8	5	23.1	5.3								
66	9335F	LW2-G112	8	5	23.1	5.0								
68	9342F	LW2-G235	8	5	23.0	5.6								
72	9330F	LW2-G096	8	5	23.0	5.5								
78	9337F	LW2-G105	8	5	22.9	5.7								
105	9336F	LW2-G077	8	5	23.1	5.2								
111	9343F	LW2-G164	8	5	23.1	5.6								
123	9331F	LW2-G099	8	5	23.1	5.4								
126	9345F	LW2-G180	8	5	23.2	4.4								
132	9338F	LW2-G117	8	5	23.1	4.9								
148	9328F	LW2-G090	8	5	23.0	5.2								
153	9339F	LW2-G121	8	5	23.0	4.8								
158	9334F	LW2-G109	8	5	23.1	3.9								
160	9341F	LW2-G122	8	5	23.1	4.1								
9	9329F	LW2-G091	8	6	23.3	4.4								
11	9332F	LW2-G103	8	6	23.2	4.3								

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17	9327F	LW2-G086	8	6	23.2	3.8								
20	9325F	LW2-G082	8	6	23.2	4.0								
27	9333F	LW2-G106	8	6	23.2	4.2								
36	9326F	LW2-G088	8	6	23.0	4.4								
48	9323F	Control	8	6	23.1	4.2								
56	9344F	LW2-G178	8	6	23.1	3.7								
66	9335F	LW2-G112	8	6	23.1	3.9								
68	9342F	LW2-G235	8	6	23.0	4.0								
72	9330F	LW2-G096	8	6	23.1	3.9								
78	9337F	LW2-G105	8	6	23.0	4.5								
105	9336F	LW2-G077	8	6	23.2	3.8								
111	9343F	LW2-G164	8	6	23.2	4.2								
123	9331F	LW2-G099	8	6	23.2	3.4								
126	9345F	LW2-G180	8	6	23.2	3.1								
132	9338F	LW2-G117	8	6	23.2	3.3								
148	9328F	LW2-G090	8	6	23.1	3.4								
153	9339F	LW2-G121	8	6	23.0	3.5								
158	9334F	LW2-G109	8	6	23.1	4.0								
160	9341F	LW2-G122	8	6	23.2	3.8								
9	9329F	LW2-G091	8	7	23.2	5.6								
11	9332F	LW2-G103	8	7	23.2	5.8								
17	9327F	LW2-G086	8	7	23.2	5.8								
20	9325F	LW2-G082	8	7	23.2	5.6								
27	9333F	LW2-G106	8	7	23.2	5.6								
36	9326F	LW2-G088	8	7	23.2	6.2								
48	9323F	Control	8	7	23.3	5.4								
56	9344F	LW2-G178	8	7	23.2	5.8								
66	9335F	LW2-G112	8	7	23.2	5.9								
68	9342F	LW2-G235	8	7	23.2	6.2								
72	9330F	LW2-G096	8	7	23.3	6.3								
78	9337F	LW2-G105	8	7	23.1	6.2								
105	9336F	LW2-G077	8	7	23.2	5.2								
111	9343F	LW2-G164	8	7	23.2	6.0								
123	9331F	LW2-G099	8	7	23.2	5.2								
126	9345F	LW2-G180	8	7	23.2	5.4								
132	9338F	LW2-G117	8	7	23.2	4.7								
148	9328F	LW2-G090	8	7	23.2	4.8								
153	9339F	LW2-G121	8	7	23.1	5.0								
158	9334F	LW2-G109	8	7	23.1	5.0								
160	9341F	LW2-G122	8	7	23.2	4.6								
9	9329F	LW2-G091	8	8	22.6	3.9								
11	9332F	LW2-G103	8	8	22.6	4.2								
17	9327F	LW2-G086	8	8	22.6	3.9								
20	9325F	LW2-G082	8	8	22.5	4.2								
27	9333F	LW2-G106	8	8	22.5	4.2								
36	9326F	LW2-G088	8	8	22.6	4.6								
48	9323F	Control	8	8	22.6	4.1								
56	9344F	LW2-G178	8	8	22.6	4.2								
66	9335F	LW2-G112	8	8	22.6	3.9								
68	9342F	LW2-G235	8	8	22.6	4.7								
72	9330F	LW2-G096	8	8	22.5	3.9								
78	9337F	LW2-G105	8	8	22.4	4.0								
105	9336F	LW2-G077	8	8	22.6	4.1								
111	9343F	LW2-G164	8	8	22.6	4.5								
123	9331F	LW2-G099	8	8	22.6	2.9								
126	9345F	LW2-G180	8	8	22.6	3.0								
132	9338F	LW2-G117	8	8	22.6	3.3								
148	9328F	LW2-G090	8	8	22.6	3.2								
153	9339F	LW2-G121	8	8	22.5	3.3								
158	9334F	LW2-G109	8	8	22.5	3.6								
160	9341F	LW2-G122	8	8	22.5	3.6								
9	9329F	LW2-G091	8	9	22.4	4.8								
11	9332F	LW2-G103	8	9	22.4	5.6								
17	9327F	LW2-G086	8	9	22.4	5.2								
20	9325F	LW2-G082	8	9	22.4	5.1								
27	9333F	LW2-G106	8	9	22.6	5.2								
36	9326F	LW2-G088	8	9	22.4	6.0								
48	9323F	Control	8	9	22.3	5.2								
56	9344F	LW2-G178	8	9	22.4	5.5								
66	9335F	LW2-G112	8	9	22.4	6.0								
68	9342F	LW2-G235	8	9	22.4	6.0								
72	9330F	LW2-G096	8	9	22.3	5.6								
78	9337F	LW2-G105	8	9	22.3	5.4								
105	9336F	LW2-G077	8	9	22.6	5.4								
111	9343F	LW2-G164	8	9	22.5	5.7								
123	9331F	LW2-G099	8	9	22.5	5.0								
126	9345F	LW2-G180	8	9	22.4	4.6								
132	9338F	LW2-G117	8	9	22.5	5.0								
148	9328F	LW2-G090	8	9	22.5	5.0								

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153	9339F	LW2-G121	8	9	22.4	4.6								
158	9334F	LW2-G109	8	9	22.4	4.8								
160	9341F	LW2-G122	8	9	22.4	4.7								
9	9329F	LW2-G091	8	10	22.9	5.4	175	6.9	0.7	43	50			
11	9332F	LW2-G103	8	10	23.1	6.0	165	6.8	0.5	43	50			
17	9327F	LW2-G086	8	10	23.1	5.4	165	6.8	0.5	43	50			
20	9325F	LW2-G082	8	10	23.2	5.5	165	6.8	0.3	43	40			
27	9333F	LW2-G106	8	10	23.0	5.5	160	6.8	0.5	43	50			
36	9326F	LW2-G088	8	10	23.1	6.3	165	6.9	0.5	43	40			
48	9323F	Control	8	10	23.0	4.9	170	6.9	0.4	34	50			
56	9344F	LW2-G178	8	10	23.1	5.3	160	6.8	0.4	43	40			
66	9335F	LW2-G112	8	10	23.1	5.8	165	6.8	0.6	43	50			
68	9342F	LW2-G235	8	10	23.0	5.9	160	6.8	0.3	43	40			
72	9330F	LW2-G096	8	10	23.0	5.4	160	6.8	0.5	43	40			
78	9337F	LW2-G105	8	10	23.0	5.9	160	6.8	0.4	43	40			
105	9336F	LW2-G077	8	10	23.1	5.6	165	6.8	0.6	43	50			
111	9343F	LW2-G164	8	10	23.2	6.3	160	6.8	0.2	43	40			
123	9331F	LW2-G099	8	10	23.1	5.5	160	6.8	0.4	43	40			
126	9345F	LW2-G180	8	10	23.2	5.8	160	6.8	0.3	51	40			
132	9338F	LW2-G117	8	10	23.2	5.5	160	6.8	0.6	43	50			
148	9328F	LW2-G090	8	10	23.1	5.5	165	6.8	0.4	51	50			
153	9339F	LW2-G121	8	10	23.1	5.3	165	6.8	0.5	51	40			
158	9334F	LW2-G109	8	10	23.1	5.5	160	6.8	0.4	43	40			
160	9341F	LW2-G122	8	10	23.1	5.4	160	6.8	0.5	43	50			
				Mean	22.9	5.2	167	6.9	---	46	45		---	6.6
				SD	0.3	1.0	12	0.1	---	8	7		---	0.2
				n	231	231	42	42	42	42	42		21	21
				Min	22.3	2.9	155	6.7	<0.1	26	30		<0.5	6.5
				Max	23.3	8.2	205	7.1	0.9	68	60		10.6	7.0

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Test Number: P686-7

Freshwater Sediment Test
28-day Hyalella azteca

Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or
dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

Data Entry Verified

INITIAL WEIGHT				
	tare wt	final wt	wt	avg. wt/
pan #	(mg)	(mg)	count	organism
1	30.162	30.732	20	0.029
2	30.294	30.753	20	0.023
3	28.382	28.839	20	0.023
4	28.550	29.015	20	0.023
5	29.282	29.798	20	0.026

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)
1	11	9323F	Control	1		10	10	0	100.0	0.0	29.033	10	32.441	3.41	0.34
2	43	9323F	Control	2		10	9	1	90.0	10.0	36.058	9	39.616	3.56	0.40
3	154	9323F	Control	3		10	8	2	80.0	20.0	29.249	8	32.200	2.95	0.37
4	79	9323F	Control	4		10	7	3	70.0	30.0	31.946	7	35.023	3.08	0.44
5	65	9323F	Control	5		10	9	1	90.0	10.0	29.341	9	32.392	3.05	0.34
6	91	9323F	Control	6		10	9	1	90.0	10.0	29.370	9	33.039	3.67	0.41
7	127	9323F	Control	7		10	9	1	90.0	10.0	29.550	9	32.708	3.16	0.35
8	85	9323F	Control	8	wq replicate	10	10	0	100.0	0.0	29.893	10	32.364	2.47	0.25
9	131	9349F	LW2-G127	1		10	10	0	100.0	0.0	30.097	10	32.793	2.70	0.27
10	9	9349F	LW2-G127	2		10	10	0	100.0	0.0	30.121	10	33.145	3.02	0.30
11	113	9349F	LW2-G127	3		10	10	0	100.0	0.0	29.574	10	31.404	1.83	0.18
12	7	9349F	LW2-G127	4		10	10	0	100.0	0.0	28.863	10	31.992	3.13	0.31
13	67	9349F	LW2-G127	5		10	10	0	100.0	0.0	29.886	10	33.144	3.26	0.33
14	135	9349F	LW2-G127	6		10	10	0	100.0	0.0	29.369	10	31.866	2.50	0.25
15	116	9349F	LW2-G127	7		10	10	0	100.0	0.0	31.285	10	33.841	2.56	0.26
16	50	9349F	LW2-G127	8	wq replicate	10	9	1	90.0	10.0	31.501	8	34.319	2.82	0.35
17	102	9350F	LW2-G130	1		10	10	0	100.0	0.0	29.477	10	32.771	3.29	0.33
18	130	9350F	LW2-G130	2		10	9	1	90.0	10.0	28.308	9	31.383	3.08	0.34
19	22	9350F	LW2-G130	3		10	10	0	100.0	0.0	30.625	10	34.022	3.40	0.34
20	106	9350F	LW2-G130	4		10	10	0	100.0	0.0	29.798	10	32.977	3.18	0.32
21	69	9350F	LW2-G130	5		10	9	1	90.0	10.0	33.401	9	36.120	2.72	0.30
22	21	9350F	LW2-G130	6		10	10	0	100.0	0.0	29.082	10	33.339	4.26	0.43
23	71	9350F	LW2-G130	7		10	10	0	100.0	0.0	30.157	10	33.493	3.34	0.33
24	160	9350F	LW2-G130	8	wq replicate	10	10	0	100.0	0.0	29.209	10	32.072	2.86	0.29
25	72	9351F	LW2-G133	1		10	9	1	90.0	10.0	30.195	9	32.437	2.24	0.25
26	144	9351F	LW2-G133	2		10	9	1	90.0	10.0	32.835	9	35.268	2.43	0.27
27	89	9351F	LW2-G133	3		10	9	1	90.0	10.0	30.530	7	32.758	2.23	0.32
28	98	9351F	LW2-G133	4		10	8	2	80.0	20.0	30.403	8	33.067	2.66	0.33
29	61	9351F	LW2-G133	5		10	10	0	100.0	0.0	31.284	10	33.749	2.47	0.25
30	128	9351F	LW2-G133	6		10	10	0	100.0	0.0	29.691	10	33.133	3.44	0.34
31	6	9351F	LW2-G133	7		10	10	0	100.0	0.0	30.220	10	32.869	2.65	0.26
32	96	9351F	LW2-G133	8	wq replicate	10	9	1	90.0	10.0	28.175	9	31.243	3.07	0.34

	SURV	MORT	PSURV	PMORT	WT
Mean	8.9	1.1	88.8	11.3	0.36
SD	1.0	1.0	9.9	9.9	0.06
n	8	8	8	8	8
Mean	9.9	0.1	98.8	1.3	0.28
SD	0.4	0.4	3.5	3.5	0.05
n	8	8	8	8	8
Mean	9.8	0.3	97.5	2.5	0.33
SD	0.5	0.5	4.6	4.6	0.04
n	8	8	8	8	8
Mean	9.3	0.8	92.5	7.5	0.30
SD	0.7	0.7	7.1	7.1	0.04
n	8	8	8	8	8

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Test Number: P686-7

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
33	109	9352F	LW2-G136	1		10	7	3	70.0	30.0	28.882	7	31.499	2.62	0.37						
34	115	9352F	LW2-G136	2		10	10	0	100.0	0.0	28.382	10	31.044	2.66	0.27						
35	152	9352F	LW2-G136	3		10	9	1	90.0	10.0	28.206	9	30.871	2.67	0.30						
36	80	9352F	LW2-G136	4		10	10	0	100.0	0.0	29.134	9	31.685	2.55	0.28						
37	108	9352F	LW2-G136	5		10	5	5	50.0	50.0	32.374	5	34.619	2.25	0.45	Mean	8.8	1.3	87.5	12.5	0.32
38	153	9352F	LW2-G136	6		10	10	0	100.0	0.0	31.358	10	34.693	3.34	0.33	SD	1.8	1.8	18.3	18.3	0.07
39	3	9352F	LW2-G136	7		10	10	0	100.0	0.0	28.798	10	30.886	2.09	0.21	n	8	8	8	8	8
40	48	9352F	LW2-G136	8	wq replicate	10	9	1	90.0	10.0	28.331	9	31.405	3.07	0.34						
41	141	9353F	LW2-G139	1		10	10	0	100.0	0.0	29.047	10	32.207	3.16	0.32						
42	150	9353F	LW2-G139	2		10	9	1	90.0	10.0	29.362	9	32.239	2.88	0.32						
43	118	9353F	LW2-G139	3		10	9	1	90.0	10.0	31.415	9	34.909	3.49	0.39						
44	132	9353F	LW2-G139	4		10	10	0	100.0	0.0	30.305	10	33.635	3.33	0.33						
45	158	9353F	LW2-G139	5		10	10	0	100.0	0.0	28.107	10	31.940	3.83	0.38	Mean	9.4	0.6	93.8	6.3	0.33
46	88	9353F	LW2-G139	6		10	8	2	80.0	20.0	30.089	8	32.457	2.37	0.30	SD	0.7	0.7	7.4	7.4	0.04
47	26	9353F	LW2-G139	7		10	10	0	100.0	0.0	29.919	10	33.332	3.41	0.34	n	8	8	8	8	8
48	101	9353F	LW2-G139	8	wq replicate	10	9	1	90.0	10.0	29.726	9	32.093	2.37	0.26						
49	60	9354F	LW2-G142	1		10	10	0	100.0	0.0	29.793	10	33.641	3.85	0.38						
50	163	9354F	LW2-G142	2		10	8	2	80.0	20.0	28.306	8	31.992	3.69	0.46						
51	120	9354F	LW2-G142	3		10	9	1	90.0	10.0	30.831	9	34.612	3.78	0.42						
52	137	9354F	LW2-G142	4		10	10	0	100.0	0.0	29.431	10	33.516	4.09	0.41						
53	39	9354F	LW2-G142	5		10	8	2	80.0	20.0	28.206	8	31.616	3.41	0.43	Mean	9.4	0.6	93.8	6.3	0.40
54	33	9354F	LW2-G142	6		10	10	0	100.0	0.0	28.766	10	32.870	4.10	0.41	SD	0.9	0.9	9.2	9.2	0.04
55	8	9354F	LW2-G142	7		10	10	0	100.0	0.0	28.757	10	32.289	3.53	0.35	n	8	8	8	8	8
56	23	9354F	LW2-G142	8	wq replicate	10	10	0	100.0	0.0	30.611	10	34.044	3.43	0.34						
57	75	9355F	LW2-G147	1		10	10	0	100.0	0.0	30.152	10	33.190	3.04	0.30						
58	133	9355F	LW2-G147	2		10	10	0	100.0	0.0	30.005	10	32.864	2.86	0.29						
59	99	9355F	LW2-G147	3		10	9	1	90.0	10.0	30.192	9	33.040	2.85	0.32						
60	125	9355F	LW2-G147	4		10	8	2	80.0	20.0	29.504	8	32.562	3.06	0.38						
61	12	9355F	LW2-G147	5		10	9	1	90.0	10.0	29.580	9	33.136	3.56	0.40	Mean	9.0	1.0	90.0	10.0	0.34
62	14	9355F	LW2-G147	6		10	8	2	80.0	20.0	33.136	8	35.973	2.84	0.35	SD	0.9	0.9	9.3	9.3	0.05
63	82	9355F	LW2-G147	7		10	10	0	100.0	0.0	29.095	10	31.957	2.86	0.29	n	8	8	8	8	8
64	25	9355F	LW2-G147	8	wq replicate	10	8	2	80.0	20.0	30.064	8	33.325	3.26	0.41						
65	4	9356F	LW2-G182	1		10	7	3	70.0	30.0	28.537	7	31.148	2.61	0.37						
66	32	9356F	LW2-G182	2		10	9	1	90.0	10.0	29.417	9	33.420	4.00	0.44						
67	52	9356F	LW2-G182	3		11	11	0	100.0	0.0	31.117	11	35.336	4.22	0.38						
68	66	9356F	LW2-G182	4		10	10	0	100.0	0.0	32.483	10	35.852	3.37	0.34						
69	93	9356F	LW2-G182	5		10	10	0	100.0	0.0	29.563	10	32.924	3.36	0.34	Mean	9.4	0.8	92.5	7.5	0.35
70	1	9356F	LW2-G182	6		10	8	2	80.0	20.0	28.916	8	30.392	1.48	0.18	SD	1.3	1.2	11.6	11.6	0.08
71	162	9356F	LW2-G182	7		10	10	0	100.0	0.0	31.132	10	35.088	3.96	0.40	n	8	8	8	8	8
72	159	9356F	LW2-G182	8	wq replicate	10	10	0	100.0	0.0	28.132	10	31.776	3.64	0.36						

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Test Number: P686-7

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
73	157	9357F	LW2-G184	1		10	8	2	80.0	20.0	27.886	8	29.885	2.00	0.25						
74	30	9357F	LW2-G184	2		10	9	1	90.0	10.0	29.820	9	32.580	2.76	0.31						
75	123	9357F	LW2-G184	3		10	8	2	80.0	20.0	29.206	8	31.919	2.71	0.34						
76	68	9357F	LW2-G184	4		10	10	0	100.0	0.0	31.057	10	34.255	3.20	0.32						
77	47	9357F	LW2-G184	5		10	10	0	100.0	0.0	31.696	10	33.581	1.89	0.19	Mean	9.4	0.6	93.8	6.3	0.30
78	103	9357F	LW2-G184	6		10	10	0	100.0	0.0	27.696	10	31.460	3.76	0.38	SD	0.9	0.9	9.2	9.2	0.06
79	149	9357F	LW2-G184	7		10	10	0	100.0	0.0	29.619	10	33.083	3.46	0.35	n	8	8	8	8	8
80	122	9357F	LW2-G184	8	wq replicate	10	10	0	100.0	0.0	29.280	10	31.997	2.72	0.27						
81	38	9358F	LW2-G179	1		10	1	9	10.0	90.0	30.220	1	30.780	0.56	0.56						
82	110	9358F	LW2-G179	2		10	2	8	20.0	80.0	28.808	2	30.007	1.20	0.60						
83	57	9358F	LW2-G179	3		10	0	10	0.0	100.0	28.708	0									
84	13	9358F	LW2-G179	4		10	0	10	0.0	100.0	27.232	0									
85	105	9358F	LW2-G179	5		10	3	7	30.0	70.0	30.198	3	31.633	1.44	0.48	Mean	1.4	8.6	13.8	86.3	0.52
86	143	9358F	LW2-G179	6		10	1	9	10.0	90.0	28.219	1	28.722	0.50	0.50	SD	1.5	1.5	15.1	15.1	0.07
87	87	9358F	LW2-G179	7		10	4	6	40.0	60.0	31.464	4	33.203	1.74	0.43	n	8	8	8	8	5
88	15	9358F	LW2-G179	8	wq replicate	10	0	10	0.0	100.0	29.563	0									
89	147	9359F	LW2-G187	1		10	9	1	90.0	10.0	35.270	9	38.213	2.94	0.33						
90	112	9359F	LW2-G187	2		10	10	0	100.0	0.0	30.408	10	32.930	2.52	0.25						
91	5	9359F	LW2-G187	3		10	10	0	100.0	0.0	30.872	10	33.272	2.40	0.24						
92	155	9359F	LW2-G187	4		10	8	2	80.0	20.0	29.652	8	32.012	2.36	0.30						
93	55	9359F	LW2-G187	5		10	6	4	60.0	40.0	31.732	6	32.261	0.53	0.09	Mean	9.0	1.0	90.0	10.0	0.26
94	84	9359F	LW2-G187	6		10	9	1	90.0	10.0	30.243	9	33.020	2.78	0.31	SD	1.4	1.4	14.1	14.1	0.08
95	17	9359F	LW2-G187	7		10	10	0	100.0	0.0	32.369	10	35.148	2.78	0.28	n	8	8	8	8	8
96	100	9359F	LW2-G187	8	wq replicate	10	10	0	100.0	0.0	28.999	10	31.985	2.99	0.30						
97	16	9360F	LW2-G230	1		10	10	0	100.0	0.0	32.125	10	34.772	2.65	0.26						
98	81	9360F	LW2-G230	2		10	9	1	90.0	10.0	28.951	9	31.031	2.08	0.23						
99	63	9360F	LW2-G230	3		10	10	0	100.0	0.0	33.068	10	36.856	3.79	0.38						
100	145	9360F	LW2-G230	4		10	9	1	90.0	10.0	30.167	9	32.099	1.93	0.21						
101	167	9360F	LW2-G230	5		10	10	0	100.0	0.0	29.032	10	31.917	2.89	0.29	Mean	9.6	0.4	96.3	3.8	0.28
102	28	9360F	LW2-G230	6		10	10	0	100.0	0.0	28.984	10	31.639	2.66	0.27	SD	0.5	0.5	5.2	5.2	0.05
103	64	9360F	LW2-G230	7		10	9	1	90.0	10.0	33.203	9	36.123	2.92	0.32	n	8	8	8	8	8
104	107	9360F	LW2-G230	8	wq replicate	10	10	0	100.0	0.0	28.750	10	31.840	3.09	0.31						
105	92	9361F	LW2-G228	1		10	9	1	90.0	10.0	29.948	9	33.535	3.59	0.40						
106	36	9361F	LW2-G228	2		10	10	0	100.0	0.0	31.378	10	34.587	3.21	0.32						
107	40	9361F	LW2-G228	3		10	10	0	100.0	0.0	29.602	10	33.151	3.55	0.35						
108	2	9361F	LW2-G228	4		10	10	0	100.0	0.0	31.455	10	34.041	2.59	0.26						
109	104	9361F	LW2-G228	5		10	10	0	100.0	0.0	30.371	10	33.255	2.88	0.29	Mean	9.5	0.5	95.0	5.0	0.31
110	59	9361F	LW2-G228	6		10	10	0	100.0	0.0	30.479	10	33.482	3.00	0.30	SD	0.8	0.8	7.6	7.6	0.05
111	73	9361F	LW2-G228	7		10	9	1	90.0	10.0	28.636	8	30.434	1.80	0.22	n	8	8	8	8	8
112	56	9361F	LW2-G228	8	wq replicate	10	8	2	80.0	20.0	29.782	8	32.233	2.45	0.31						

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Test Number: P686-7

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
113	24	9362F	LW2-G227	1		10	9	1	90.0	10.0	28.711	9	32.108	3.40	0.38						
114	77	9362F	LW2-G227	2		10	10	0	100.0	0.0	26.819	10	30.341	3.52	0.35						
115	54	9362F	LW2-G227	3		10	10	0	100.0	0.0	28.744	10	32.523	3.78	0.38						
116	83	9362F	LW2-G227	4		10	9	1	90.0	10.0	30.629	9	33.463	2.83	0.31						
117	58	9362F	LW2-G227	5		10	8	2	80.0	20.0	30.521	8	33.468	2.95	0.37	Mean	9.4	0.6	93.8	6.3	0.34
118	126	9362F	LW2-G227	6		10	10	0	100.0	0.0	28.463	10	32.089	3.63	0.36	SD	0.7	0.7	7.4	7.4	0.04
119	76	9362F	LW2-G227	7		10	10	0	100.0	0.0	28.830	10	31.659	2.83	0.28	n	8	8	8	8	8
120	10	9362F	LW2-G227	8	wq replicate	10	9	1	90.0	10.0	27.538	9	30.297	2.76	0.31						
121	86	9363F	LW2-G172	1		10	8	2	80.0	20.0	25.660	8	27.888	2.23	0.28						
122	148	9363F	LW2-G172	2		10	10	0	100.0	0.0	28.497	10	31.046	2.55	0.25						
123	161	9363F	LW2-G172	3		10	10	0	100.0	0.0	28.427	10	31.091	2.66	0.27						
124	129	9363F	LW2-G172	4		10	10	0	100.0	0.0	35.924	10	38.638	2.71	0.27						
125	121	9363F	LW2-G172	5		10	9	1	90.0	10.0	28.608	9	31.275	2.67	0.30	Mean	8.8	1.3	87.5	12.5	0.31
126	97	9363F	LW2-G172	6		10	8	2	80.0	20.0	28.104	8	30.583	2.48	0.31	SD	1.4	1.4	13.9	13.9	0.06
127	34	9363F	LW2-G172	7		10	9	1	90.0	10.0	29.868	9	32.816	2.95	0.33	n	8	8	8	8	8
128	114	9363F	LW2-G172	8	wq replicate	10	6	4	60.0	40.0	28.796	6	31.439	2.64	0.44						
129	37	9364F	LW2-G176	1		10	2	8	20.0	80.0	29.936	2	31.093	1.16	0.58						
130	31	9364F	LW2-G176	2		10	6	4	60.0	40.0	29.853	6	32.194	2.34	0.39						
131	95	9364F	LW2-G176	3		10	9	1	90.0	10.0	30.284	9	32.544	2.26	0.25						
132	139	9364F	LW2-G176	4		10	7	3	70.0	30.0	28.899	7	30.356	1.46	0.21						
133	138	9364F	LW2-G176	5		10	5	5	50.0	50.0	29.954	5	30.823	0.87	0.17	Mean	5.9	4.1	58.8	41.3	0.36
134	146	9364F	LW2-G176	6		10	4	6	40.0	60.0	30.917	4	33.191	2.27	0.57	SD	2.2	2.2	21.7	21.7	0.15
135	45	9364F	LW2-G176	7		10	7	3	70.0	30.0	29.788	7	32.594	2.81	0.40	n	8	8	8	8	8
136	44	9364F	LW2-G176	8	wq replicate	10	7	3	70.0	30.0	28.838	7	31.024	2.19	0.31						
137	156	9365F	LW2-G170	1		10	10	0	100.0	0.0	30.617	10	33.187	2.57	0.26						
138	142	9365F	LW2-G170	2		10	9	1	90.0	10.0	27.057	9	29.275	2.22	0.25						
139	46	9365F	LW2-G170	3		10	7	3	70.0	30.0	28.289	7	30.048	1.76	0.25						
140	119	9365F	LW2-G170	4		10	10	0	100.0	0.0	29.768	10	32.622	2.85	0.29						
141	29	9365F	LW2-G170	5		10	10	0	100.0	0.0	32.670	10	35.354	2.68	0.27	Mean	9.1	0.9	91.3	8.8	0.28
142	166	9365F	LW2-G170	6		10	10	0	100.0	0.0	27.441	10	30.135	2.69	0.27	SD	1.4	1.4	13.6	13.6	0.04
143	51	9365F	LW2-G170	7		10	10	0	100.0	0.0	28.858	10	32.281	3.42	0.34	n	8	8	8	8	8
144	27	9365F	LW2-G170	8	wq replicate	10	7	3	70.0	30.0	29.997	7	32.419	2.42	0.35						
145	111	9366F	LW2-G240	1		10	10	0	100.0	0.0	31.473	10	34.449	2.98	0.30						
146	140	9366F	LW2-G240	2		10	10	0	100.0	0.0	29.936	10	32.422	2.49	0.25						
147	74	9366F	LW2-G240	3		10	9	1	90.0	10.0	29.849	9	33.034	3.19	0.35						
148	78	9366F	LW2-G240	4		10	10	0	100.0	0.0	30.543	10	31.941	1.40	0.14						
149	164	9366F	LW2-G240	5		10	8	2	80.0	20.0	30.467	7	32.206	1.74	0.25	Mean	9.3	0.8	92.5	7.5	0.28
150	136	9366F	LW2-G240	6		10	10	0	100.0	0.0	29.778	10	32.617	2.84	0.28	SD	0.9	0.9	8.9	8.9	0.07
151	70	9366F	LW2-G240	7		10	8	2	80.0	20.0	29.181	8	31.244	2.06	0.26	n	8	8	8	8	8
152	165	9366F	LW2-G240	8	wq replicate	10	9	1	90.0	10.0	27.932	9	31.367	3.44	0.38						

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Test Number: P686-7

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
153	20	9367F	LW2-G242	1		10	9	1	90.0	10.0	29.566	9	32.447	2.88	0.32						
154	53	9367F	LW2-G242	2		10	10	0	100.0	0.0	28.782	10	31.825	3.04	0.30						
155	35	9367F	LW2-G242	3		10	9	1	90.0	10.0	28.398	9	30.742	2.34	0.26						
156	151	9367F	LW2-G242	4		10	10	0	100.0	0.0	27.747	10	30.568	2.82	0.28						
157	90	9367F	LW2-G242	5		10	8	2	80.0	20.0	29.404	8	31.509	2.11	0.26	Mean	9.3	0.8	92.5	7.5	0.30
158	19	9367F	LW2-G242	6		10	10	0	100.0	0.0	29.712	10	32.360	2.65	0.26	SD	0.9	0.9	8.9	8.9	0.05
159	42	9367F	LW2-G242	7		10	8	2	80.0	20.0	30.142	8	33.378	3.24	0.40	n	8	8	8	8	8
160	117	9367F	LW2-G242	8	wq replicate	10	10	0	100.0	0.0	29.573	10	32.446	2.87	0.29						
161	124	9368F	LW2-G245	1		10	10	0	100.0	0.0	29.299	10	31.255	1.96	0.20						
162	49	9368F	LW2-G245	2		10	10	0	100.0	0.0	30.445	9	31.638	1.19	0.13						
163	41	9368F	LW2-G245	3		10	9	1	90.0	10.0	29.164	9	31.595	2.43	0.27						
164	18	9368F	LW2-G245	4		10	10	0	100.0	0.0	28.599	10	30.139	1.54	0.15						
165	94	9368F	LW2-G245	5		10	10	0	100.0	0.0	27.890	10	30.433	2.54	0.25	Mean	9.3	0.8	92.5	7.5	0.23
166	134	9368F	LW2-G245	6		10	10	0	100.0	0.0	30.123	10	32.544	2.42	0.24	SD	1.8	1.8	17.5	17.5	0.08
167	62	9368F	LW2-G245	7		10	5	5	50.0	50.0	29.130	5	31.009	1.88	0.38	n	8	8	8	8	8
168	168	9368F	LW2-G245	8	wq replicate	10	10	0	100.0	0.0	30.739	10	32.732	1.99	0.20						

Note: Test containers # 49, 50, 73, 80, and 164 lost one animal each in transfer to weigh pans. Container # 89 lost two animals.

ANC07395
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Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH4	pH
BULK SEDIMENT POREWATER														
	9323F	Control												
	9349F	LW2-G127											7.9	6.9
	9350F	LW2-G130											3.9	6.9
	9351F	LW2-G133											10.3	7.0
	9352F	LW2-G136											7.9	7.0
	9353F	LW2-G139											5.6	7.0
	9354F	LW2-G142											7.1	7.0
	9355F	LW2-G147											3.8	7.1
	9356F	LW2-G182											6.9	7.1
	9357F	LW2-G184											3.4	7.0
	9358F	LW2-G179											8.9	6.9
	9359F	LW2-G187											2.0	7.0
	9360F	LW2-G230											8.3	7.0
	9361F	LW2-G228											5.5	7.0
	9362F	LW2-G227											---*	---*
	9363F	LW2-G172											14.3	7.0
	9364F	LW2-G176											2.7	7.0
	9365F	LW2-G170											12.2	7.0
	9366F	LW2-G240											5.6	7.0
	9367F	LW2-G242											4.6	7.0
	9368F	LW2-G245											7.1	7.0
						* Insufficient sample for analysis								

Test Number: 686-7

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH4	pH
TEST OVERLYING WATER														
10	9362F	LW2-G227	8	0	23.1	8.1	160	6.8	43	40	0.1			
15	9358F	LW2-G179	8	0	23.1	7.4	160	6.6	43	40	0.6			
23	9354F	LW2-G142	8	0	23.1	7.2	180	6.5	43	50	0.4			
25	9355F	LW2-G147	8	0	23.1	7.5	170	6.7	43	50	0.3			
27	9365F	LW2-G170	8	0	23.0	7.6	170	6.6	51	50	0.7			
44	9364F	LW2-G176	8	0	23.1	7.6	160	6.7	51	40	0.1			
48	9352F	LW2-G136	8	0	23.0	7.3	165	6.5	43	50	0.5			
50	9349F	LW2-G127	8	0	23.2	7.5	160	6.7	51	40	0.4			
56	9361F	LW2-G228	8	0	23.2	7.1	165	6.6	43	40	0.5			
85	9323F	Control	8	0	23.2	7.5	190	6.9	43	40	0.1			
96	9351F	LW2-G133	8	0	23.0	7.1	180	6.5	51	50	0.9			
100	9359F	LW2-G187	8	0	23.1	7.1	160	6.7	51	40	0.3			
101	9353F	LW2-G139	8	0	23.0	6.8	170	6.4	43	40	0.4			
107	9360F	LW2-G230	8	0	22.9	7.3	160	6.6	43	40	0.5			
114	9363F	LW2-G172	8	0	23.0	7.4	185	6.5	60	60	0.7			
117	9367F	LW2-G242	8	0	22.9	7.5	165	6.7	43	40	0.4			
122	9357F	LW2-G184	8	0	22.9	7.7	160	6.8	43	50	0.2			
159	9356F	LW2-G182	8	0	22.9	7.5	165	6.7	43	40	0.4			
160	9350F	LW2-G130	8	0	23.0	7.4	165	6.7	51	50	0.3			
165	9366F	LW2-G240	8	0	23.0	7.2	160	6.6	43	40	0.5			
168	9368F	LW2-G245	8	0	23.0	7.4	160	6.6	43	40	0.7			
10	9362F	LW2-G227	8	1	22.9	6.6	165	6.8						
15	9358F	LW2-G179	8	1	23.0	6.2	165	6.7						
23	9354F	LW2-G142	8	1	22.7	5.7	170	6.6						
25	9355F	LW2-G147	8	1	22.9	5.9	170	6.6						
27	9365F	LW2-G170	8	1	22.7	6.0	170	6.7						
44	9364F	LW2-G176	8	1	22.8	6.0	160	6.7						
48	9352F	LW2-G136	8	1	22.7	5.8	165	6.7						
50	9349F	LW2-G127	8	1	22.9	5.9	165	6.7						
56	9361F	LW2-G228	8	1	22.8	5.9	170	6.7						
85	9323F	Control	8	1	22.9	6.1	190	6.8						
96	9351F	LW2-G133	8	1	22.7	5.9	175	6.7						
100	9359F	LW2-G187	8	1	22.8	6.0	160	6.7						
101	9353F	LW2-G139	8	1	22.7	5.8	165	6.6						
107	9360F	LW2-G230	8	1	22.6	6.1	160	6.8						
114	9363F	LW2-G172	8	1	22.7	5.7	185	6.7						
117	9367F	LW2-G242	8	1	22.7	6.2	165	6.7						
122	9357F	LW2-G184	8	1	22.7	6.1	165	6.8						
159	9356F	LW2-G182	8	1	22.7	6.4	165	6.8						
160	9350F	LW2-G130	8	1	22.8	6.2	165	6.7						
165	9366F	LW2-G240	8	1	22.9	6.2	165	6.7						
168	9368F	LW2-G245	8	1	22.9	6.3	165	6.7						

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BZTO104(e)007397

Test Number: 686-7

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH4	pH
10	9362F	LW2-G227	8	2	22.7									
15	9358F	LW2-G179	8	2	22.7									
23	9354F	LW2-G142	8	2	22.7									
25	9355F	LW2-G147	8	2	22.7									
27	9365F	LW2-G170	8	2	22.6									
44	9364F	LW2-G176	8	2	22.5									
48	9352F	LW2-G136	8	2	22.6									
50	9349F	LW2-G127	8	2	22.6									
56	9361F	LW2-G228	8	2	22.7									
85	9323F	Control	8	2	22.6									
96	9351F	LW2-G133	8	2	22.5									
100	9359F	LW2-G187	8	2	22.6									
101	9353F	LW2-G139	8	2	22.6									
107	9360F	LW2-G230	8	2	22.5									
114	9363F	LW2-G172	8	2	22.5									
117	9367F	LW2-G242	8	2	22.6									
122	9357F	LW2-G184	8	2	22.6									
159	9356F	LW2-G182	8	2	22.5									
160	9350F	LW2-G130	8	2	22.5									
165	9366F	LW2-G240	8	2	22.6									
168	9368F	LW2-G245	8	2	22.7									
10	9362F	LW2-G227	8	3	23.1	7.7		7.0						
15	9358F	LW2-G179	8	3	23.5	7.5		6.8						
23	9354F	LW2-G142	8	3	23.3	7.5		6.7						
25	9355F	LW2-G147	8	3	23.4	7.5		6.8						
27	9365F	LW2-G170	8	3	23.3	7.4		6.8						
44	9364F	LW2-G176	8	3	23.4	7.5		6.9						
48	9352F	LW2-G136	8	3	23.3	7.4		6.7						
50	9349F	LW2-G127	8	3	23.4	7.5		6.8						
56	9361F	LW2-G228	8	3	23.3	7.5		6.7						
85	9323F	Control	8	3	23.4	7.7		6.9						
96	9351F	LW2-G133	8	3	23.2	7.5		6.8						
100	9359F	LW2-G187	8	3	23.2	7.1		6.7						
101	9353F	LW2-G139	8	3	23.1	7.1		6.7						
107	9360F	LW2-G230	8	3	23.1	7.2		6.7						
114	9363F	LW2-G172	8	3	23.0	7.2		6.7						
117	9367F	LW2-G242	8	3	23.1	7.4		6.8						
122	9357F	LW2-G184	8	3	23.1	7.6		6.8						
159	9356F	LW2-G182	8	3	23.1	7.7		6.8						
160	9350F	LW2-G130	8	3	23.2	7.6		6.8						
165	9366F	LW2-G240	8	3	23.2	7.6		6.8						
168	9368F	LW2-G245	8	3	23.2	7.6		6.8						

Test Number: 686-7

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH4	pH
10	9362F	LW2-G227	8	4	23.3									
15	9358F	LW2-G179	8	4	23.4									
23	9354F	LW2-G142	8	4	23.2									
25	9355F	LW2-G147	8	4	23.4									
27	9365F	LW2-G170	8	4	23.2									
44	9364F	LW2-G176	8	4	23.3									
48	9352F	LW2-G136	8	4	23.1									
50	9349F	LW2-G127	8	4	23.4									
56	9361F	LW2-G228	8	4	23.2									
85	9323F	Control	8	4	23.3									
96	9351F	LW2-G133	8	4	23.1									
100	9359F	LW2-G187	8	4	23.1									
101	9353F	LW2-G139	8	4	23.1									
107	9360F	LW2-G230	8	4	23.0									
114	9363F	LW2-G172	8	4	23.0									
117	9367F	LW2-G242	8	4	23.1									
122	9357F	LW2-G184	8	4	23.1									
159	9356F	LW2-G182	8	4	23.1									
160	9350F	LW2-G130	8	4	23.3									
165	9366F	LW2-G240	8	4	23.3									
168	9368F	LW2-G245	8	4	23.3									
10	9362F	LW2-G227	8	5	23.2									
15	9358F	LW2-G179	8	5	23.3									
23	9354F	LW2-G142	8	5	23.2									
25	9355F	LW2-G147	8	5	23.3									
27	9365F	LW2-G170	8	5	23.3									
44	9364F	LW2-G176	8	5	23.3									
48	9352F	LW2-G136	8	5	23.3									
50	9349F	LW2-G127	8	5	23.3									
56	9361F	LW2-G228	8	5	23.3									
85	9323F	Control	8	5	23.3									
96	9351F	LW2-G133	8	5	23.1									
100	9359F	LW2-G187	8	5	23.1									
101	9353F	LW2-G139	8	5	23.1									
107	9360F	LW2-G230	8	5	23.1									
114	9363F	LW2-G172	8	5	23.1									
117	9367F	LW2-G242	8	5	23.1									
122	9357F	LW2-G184	8	5	23.1									
159	9356F	LW2-G182	8	5	23.1									
160	9350F	LW2-G130	8	5	23.1									
165	9366F	LW2-G240	8	5	23.1									
168	9368F	LW2-G245	8	5	23.2									

Test Number: 686-7

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH4	pH
10	9362F	LW2-G227	8	6	23.1	6.6		6.6						
15	9358F	LW2-G179	8	6	23.1	6.3		6.5						
23	9354F	LW2-G142	8	6	23.0	6.4		6.5						
25	9355F	LW2-G147	8	6	23.1	6.2		6.5						
27	9365F	LW2-G170	8	6	23.0	6.0		6.5						
44	9364F	LW2-G176	8	6	23.0	6.5		6.6						
48	9352F	LW2-G136	8	6	23.0	6.0		6.5						
50	9349F	LW2-G127	8	6	23.2	6.2		6.5						
56	9361F	LW2-G228	8	6	23.2	6.2		6.5						
85	9323F	Control	8	6	23.0	6.8		6.6						
96	9351F	LW2-G133	8	6	22.9	6.3		6.5						
100	9359F	LW2-G187	8	6	22.9	6.2		6.5						
101	9353F	LW2-G139	8	6	22.9	6.4		6.5						
107	9360F	LW2-G230	8	6	22.8	6.6		6.5						
114	9363F	LW2-G172	8	6	22.9	6.2		6.6						
117	9367F	LW2-G242	8	6	22.9	6.6		6.6						
122	9357F	LW2-G184	8	6	22.8	6.8		6.6						
159	9356F	LW2-G182	8	6	22.8	6.8		6.6						
160	9350F	LW2-G130	8	6	22.7	6.8		6.5						
165	9366F	LW2-G240	8	6	22.8	6.6		6.6						
168	9368F	LW2-G245	8	6	22.9	6.9		6.6						
10	9362F	LW2-G227	8	7	23.5									
15	9358F	LW2-G179	8	7	23.5									
23	9354F	LW2-G142	8	7	23.3									
25	9355F	LW2-G147	8	7	23.5									
27	9365F	LW2-G170	8	7	23.3									
44	9364F	LW2-G176	8	7	23.4									
48	9352F	LW2-G136	8	7	23.3									
50	9349F	LW2-G127	8	7	23.5									
56	9361F	LW2-G228	8	7	23.3									
85	9323F	Control	8	7	23.4									
96	9351F	LW2-G133	8	7	23.2									
100	9359F	LW2-G187	8	7	23.3									
101	9353F	LW2-G139	8	7	23.2									
107	9360F	LW2-G230	8	7	23.2									
114	9363F	LW2-G172	8	7	23.2									
117	9367F	LW2-G242	8	7	23.2									
122	9357F	LW2-G184	8	7	23.2									
159	9356F	LW2-G182	8	7	23.2									
160	9350F	LW2-G130	8	7	23.3									
165	9366F	LW2-G240	8	7	23.3									
168	9368F	LW2-G245	8	7	23.3									

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH4	pH
10	9362F	LW2-G227	8	8	23.6	6.7	160	6.7						
15	9358F	LW2-G179	8	8	23.5	6.3	160	6.7						
23	9354F	LW2-G142	8	8	23.3	6.3	165	6.6						
25	9355F	LW2-G147	8	8	23.5	6.5	165	6.6						
27	9365F	LW2-G170	8	8	23.3	6.2	160	6.6						
44	9364F	LW2-G176	8	8	23.4	6.4	160	6.6						
48	9352F	LW2-G136	8	8	23.3	6.2	160	6.6						
50	9349F	LW2-G127	8	8	23.5	6.3	160	6.6						
56	9361F	LW2-G228	8	8	23.4	6.3	160	6.6						
85	9323F	Control	8	8	23.4	6.7	170	6.7						
96	9351F	LW2-G133	8	8	23.3	6.5	165	6.6						
100	9359F	LW2-G187	8	8	23.3	6.6	160	6.7						
101	9353F	LW2-G139	8	8	23.3	6.2	160	6.6						
107	9360F	LW2-G230	8	8	23.2	6.4	160	6.6						
114	9363F	LW2-G172	8	8	23.2	6.0	170	6.8						
117	9367F	LW2-G242	8	8	23.2	6.3	160	6.7						
122	9357F	LW2-G184	8	8	23.2	6.5	160	6.6						
159	9356F	LW2-G182	8	8	23.2	6.5	160	6.6						
160	9350F	LW2-G130	8	8	23.4	6.8	160	6.7						
165	9366F	LW2-G240	8	8	23.4	6.5	160	6.7						
168	9368F	LW2-G245	8	8	23.4	6.4	160	6.7						
10	9362F	LW2-G227	8	9	23.3									
15	9358F	LW2-G179	8	9	23.3									
23	9354F	LW2-G142	8	9	23.0									
25	9355F	LW2-G147	8	9	23.2									
27	9365F	LW2-G170	8	9	23.0									
44	9364F	LW2-G176	8	9	23.1									
48	9352F	LW2-G136	8	9	22.9									
50	9349F	LW2-G127	8	9	23.2									
56	9361F	LW2-G228	8	9	23.1									
85	9323F	Control	8	9	23.2									
96	9351F	LW2-G133	8	9	23.0									
100	9359F	LW2-G187	8	9	23.0									
101	9353F	LW2-G139	8	9	23.0									
107	9360F	LW2-G230	8	9	22.9									
114	9363F	LW2-G172	8	9	22.9									
117	9367F	LW2-G242	8	9	22.9									
122	9357F	LW2-G184	8	9	22.9									
159	9356F	LW2-G182	8	9	22.9									
160	9350F	LW2-G130	8	9	23.1									
165	9366F	LW2-G240	8	9	23.2									
168	9368F	LW2-G245	8	9	23.2									

Test Number: 686-7

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH4	pH
10	9362F	LW2-G227	8	10	23.2	6.8		6.3						
15	9358F	LW2-G179	8	10	23.2	5.9		6.3						
23	9354F	LW2-G142	8	10	23.1	5.9		6.3						
25	9355F	LW2-G147	8	10	23.3	6.2		6.3						
27	9365F	LW2-G170	8	10	23.2	5.5		6.3						
44	9364F	LW2-G176	8	10	23.3	5.9		6.3						
48	9352F	LW2-G136	8	10	23.2	6.1		6.3						
50	9349F	LW2-G127	8	10	23.3	6.1		6.4						
56	9361F	LW2-G228	8	10	23.2	6.3		6.4						
85	9323F	Control	8	10	23.2	6.6		6.4						
96	9351F	LW2-G133	8	10	23.0	6.5		6.4						
100	9359F	LW2-G187	8	10	23.1	6.5		6.4						
101	9353F	LW2-G139	8	10	23.0	5.6		6.4						
107	9360F	LW2-G230	8	10	23.0	6.1		6.4						
114	9363F	LW2-G172	8	10	23.0	6.0		6.4						
117	9367F	LW2-G242	8	10	22.9	6.0		6.5						
122	9357F	LW2-G184	8	10	22.9	6.1		6.4						
159	9356F	LW2-G182	8	10	22.9	6.2		6.4						
160	9350F	LW2-G130	8	10	22.9	6.8		6.4						
165	9366F	LW2-G240	8	10	23.0	6.2		6.4						
168	9368F	LW2-G245	8	10	23.0	6.4		6.4						
10	9362F	LW2-G227	8	11	23.3									
15	9358F	LW2-G179	8	11	23.3									
23	9354F	LW2-G142	8	11	23.2									
25	9355F	LW2-G147	8	11	23.3									
27	9365F	LW2-G170	8	11	23.2									
44	9364F	LW2-G176	8	11	23.2									
48	9352F	LW2-G136	8	11	23.3									
50	9349F	LW2-G127	8	11	23.3									
56	9361F	LW2-G228	8	11	23.2									
85	9323F	Control	8	11	23.3									
96	9351F	LW2-G133	8	11	23.2									
100	9359F	LW2-G187	8	11	23.2									
101	9353F	LW2-G139	8	11	23.2									
107	9360F	LW2-G230	8	11	23.1									
114	9363F	LW2-G172	8	11	23.1									
117	9367F	LW2-G242	8	11	23.1									
122	9357F	LW2-G184	8	11	23.1									
159	9356F	LW2-G182	8	11	23.1									
160	9350F	LW2-G130	8	11	23.2									
165	9366F	LW2-G240	8	11	23.2									
168	9368F	LW2-G245	8	11	23.2									

Test Number: 686-7

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH4	pH
10	9362F	LW2-G227	8	12	23.0									
15	9358F	LW2-G179	8	12	23.1									
23	9354F	LW2-G142	8	12	23.1									
25	9355F	LW2-G147	8	12	23.2									
27	9365F	LW2-G170	8	12	23.1									
44	9364F	LW2-G176	8	12	23.1									
48	9352F	LW2-G136	8	12	23.1									
50	9349F	LW2-G127	8	12	23.2									
56	9361F	LW2-G228	8	12	23.2									
85	9323F	Control	8	12	23.2									
96	9351F	LW2-G133	8	12	23.2									
100	9359F	LW2-G187	8	12	23.2									
101	9353F	LW2-G139	8	12	23.2									
107	9360F	LW2-G230	8	12	23.2									
114	9363F	LW2-G172	8	12	23.2									
117	9367F	LW2-G242	8	12	23.2									
122	9357F	LW2-G184	8	12	23.2									
159	9356F	LW2-G182	8	12	23.1									
160	9350F	LW2-G130	8	12	23.2									
165	9366F	LW2-G240	8	12	23.3									
168	9368F	LW2-G245	8	12	23.3									
10	9362F	LW2-G227	8	13	23.3	6.1		6.5						
15	9358F	LW2-G179	8	13	23.3	5.6		6.4						
23	9354F	LW2-G142	8	13	23.1	5.5		6.4						
25	9355F	LW2-G147	8	13	23.1	5.4		6.4						
27	9365F	LW2-G170	8	13	23.3	5.4		6.5						
44	9364F	LW2-G176	8	13	23.3	5.6		6.5						
48	9352F	LW2-G136	8	13	23.2	5.4		6.4						
50	9349F	LW2-G127	8	13	23.2	5.4		6.4						
56	9361F	LW2-G228	8	13	23.3	5.5		6.5						
85	9323F	Control	8	13	23.2	5.7		6.5						
96	9351F	LW2-G133	8	13	23.1	5.1		6.6						
100	9359F	LW2-G187	8	13	23.1	5.4		6.5						
101	9353F	LW2-G139	8	13	23.0	4.8		6.4						
107	9360F	LW2-G230	8	13	23.0	5.1		6.4						
114	9363F	LW2-G172	8	13	23.0	4.2		6.4						
117	9367F	LW2-G242	8	13	23.0	4.9		6.5						
122	9357F	LW2-G184	8	13	23.0	5.2		6.4						
159	9356F	LW2-G182	8	13	23.0	5.3		6.4						
160	9350F	LW2-G130	8	13	23.1	5.6		6.4						
165	9366F	LW2-G240	8	13	23.2	5.4		6.5						
168	9368F	LW2-G245	8	13	23.2	5.7		6.4						

Test Number: 686-7

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH4	pH
10	9362F	LW2-G227	8	14	23.2									
15	9358F	LW2-G179	8	14	23.2									
23	9354F	LW2-G142	8	14	23.1									
25	9355F	LW2-G147	8	14	23.2									
27	9365F	LW2-G170	8	14	23.1									
44	9364F	LW2-G176	8	14	23.1									
48	9352F	LW2-G136	8	14	23.1									
50	9349F	LW2-G127	8	14	23.2									
56	9361F	LW2-G228	8	14	23.1									
85	9323F	Control	8	14	23.2									
96	9351F	LW2-G133	8	14	23.0									
100	9359F	LW2-G187	8	14	23.0									
101	9353F	LW2-G139	8	14	22.9									
107	9360F	LW2-G230	8	14	22.9									
114	9363F	LW2-G172	8	14	22.9									
117	9367F	LW2-G242	8	14	22.9									
122	9357F	LW2-G184	8	14	22.9									
159	9356F	LW2-G182	8	14	22.9									
160	9350F	LW2-G130	8	14	23.1									
165	9366F	LW2-G240	8	14	23.1									
168	9368F	LW2-G245	8	14	23.1									
10	9362F	LW2-G227	8	15	23.5	6.3	165	6.5						
15	9358F	LW2-G179	8	15	23.4	5.6	165	6.5						
23	9354F	LW2-G142	8	15	23.2	5.5	165	6.5						
25	9355F	LW2-G147	8	15	23.4	5.6	170	6.5						
27	9365F	LW2-G170	8	15	23.2	5.1	165	6.5						
44	9364F	LW2-G176	8	15	23.3	5.9	165	6.5						
48	9352F	LW2-G136	8	15	23.2	5.3	165	6.5						
50	9349F	LW2-G127	8	15	23.4	5.6	170	6.5						
56	9361F	LW2-G228	8	15	23.3	5.5	170	6.5						
85	9323F	Control	8	15	23.2	6.2	170	6.6						
96	9351F	LW2-G133	8	15	23.1	4.8	165	6.5						
100	9359F	LW2-G187	8	15	23.1	5.6	165	6.5						
101	9353F	LW2-G139	8	15	23.1	5.1	165	6.5						
107	9360F	LW2-G230	8	15	23.1	5.3	165	6.5						
114	9363F	LW2-G172	8	15	23.0	4.6	170	6.5						
117	9367F	LW2-G242	8	15	23.0	5.5	170	6.5						
122	9357F	LW2-G184	8	15	23.0	5.6	165	6.5						
159	9356F	LW2-G182	8	15	23.9	5.6	165	6.5						
160	9350F	LW2-G130	8	15	23.1	6.0	165	6.5						
165	9366F	LW2-G240	8	15	23.2	5.8	170	6.5						
168	9368F	LW2-G245	8	15	23.2	6.0	165	6.5						

Test Number: 686-7

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH4	pH
10	9362F	LW2-G227	8	16	23.5									
15	9358F	LW2-G179	8	16	23.5									
23	9354F	LW2-G142	8	16	23.2									
25	9355F	LW2-G147	8	16	23.2									
27	9365F	LW2-G170	8	16	23.3									
44	9364F	LW2-G176	8	16	23.2									
48	9352F	LW2-G136	8	16	23.2									
50	9349F	LW2-G127	8	16	23.1									
56	9361F	LW2-G228	8	16	23.1									
85	9323F	Control	8	16	23.2									
96	9351F	LW2-G133	8	16	23.0									
100	9359F	LW2-G187	8	16	23.1									
101	9353F	LW2-G139	8	16	23.1									
107	9360F	LW2-G230	8	16	22.9									
114	9363F	LW2-G172	8	16	22.9									
117	9367F	LW2-G242	8	16	22.9									
122	9357F	LW2-G184	8	16	22.9									
159	9356F	LW2-G182	8	16	22.9									
160	9350F	LW2-G130	8	16	23.1									
165	9366F	LW2-G240	8	16	23.1									
168	9368F	LW2-G245	8	16	23.1									
10	9362F	LW2-G227	8	17	23.3	5.3		6.5						
15	9358F	LW2-G179	8	17	23.3	5.4		6.4						
23	9354F	LW2-G142	8	17	23.3	4.6		6.3						
25	9355F	LW2-G147	8	17	23.1	4.7		6.4						
27	9365F	LW2-G170	8	17	23.1	5.2		6.5						
44	9364F	LW2-G176	8	17	23.1	5.3		6.4						
48	9352F	LW2-G136	8	17	23.1	5.0		6.3						
50	9349F	LW2-G127	8	17	23.2	5.1		6.3						
56	9361F	LW2-G228	8	17	23.3	5.5		6.4						
85	9323F	Control	8	17	23.2	5.4		6.4						
96	9351F	LW2-G133	8	17	23.1	5.8		6.5						
100	9359F	LW2-G187	8	17	23.1	5.3		6.4						
101	9353F	LW2-G139	8	17	23.0	5.2		6.4						
107	9360F	LW2-G230	8	17	23.1	5.4		6.3						
114	9363F	LW2-G172	8	17	23.0	5.6		6.3						
117	9367F	LW2-G242	8	17	23.0	5.5		6.3						
122	9357F	LW2-G184	8	17	23.0	5.4		6.4						
159	9356F	LW2-G182	8	17	23.0	4.8		6.4						
160	9350F	LW2-G130	8	17	23.0	5.2		6.4						
165	9366F	LW2-G240	8	17	23.1	5.4		6.4						
168	9368F	LW2-G245	8	17	23.2	5.3		6.5						

Test Number: 686-7

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH4	pH
10	9362F	LW2-G227	8	18	23.4									
15	9358F	LW2-G179	8	18	23.5									
23	9354F	LW2-G142	8	18	23.4									
25	9355F	LW2-G147	8	18	23.5									
27	9365F	LW2-G170	8	18	23.2									
44	9364F	LW2-G176	8	18	23.4									
48	9352F	LW2-G136	8	18	23.2									
50	9349F	LW2-G127	8	18	23.4									
56	9361F	LW2-G228	8	18	23.3									
85	9323F	Control	8	18	23.3									
96	9351F	LW2-G133	8	18	23.2									
100	9359F	LW2-G187	8	18	23.2									
101	9353F	LW2-G139	8	18	23.1									
107	9360F	LW2-G230	8	18	23.0									
114	9363F	LW2-G172	8	18	23.0									
117	9367F	LW2-G242	8	18	23.0									
122	9357F	LW2-G184	8	18	23.1									
159	9356F	LW2-G182	8	18	23.0									
160	9350F	LW2-G130	8	18	23.2									
165	9366F	LW2-G240	8	18	23.2									
168	9368F	LW2-G245	8	18	23.2									
10	9362F	LW2-G227	8	19	23.4									
15	9358F	LW2-G179	8	19	23.4									
23	9354F	LW2-G142	8	19	23.2									
25	9355F	LW2-G147	8	19	23.4									
27	9365F	LW2-G170	8	19	23.1									
44	9364F	LW2-G176	8	19	23.3									
48	9352F	LW2-G136	8	19	23.2									
50	9349F	LW2-G127	8	19	23.4									
56	9361F	LW2-G228	8	19	23.2									
85	9323F	Control	8	19	23.2									
96	9351F	LW2-G133	8	19	23.1									
100	9359F	LW2-G187	8	19	23.1									
101	9353F	LW2-G139	8	19	23.0									
107	9360F	LW2-G230	8	19	22.9									
114	9363F	LW2-G172	8	19	23.0									
117	9367F	LW2-G242	8	19	23.0									
122	9357F	LW2-G184	8	19	23.1									
159	9356F	LW2-G182	8	19	23.0									
160	9350F	LW2-G130	8	19	23.1									
165	9366F	LW2-G240	8	19	23.1									
168	9368F	LW2-G245	8	19	23.1									

Test Number: 686-7

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH4	pH
10	9362F	LW2-G227	8	20	23.1	5.9		6.6						
15	9358F	LW2-G179	8	20	23.2	5.4		6.6						
23	9354F	LW2-G142	8	20	23.2	5.7		6.6						
25	9355F	LW2-G147	8	20	23.1	5.5		6.5						
27	9365F	LW2-G170	8	20	23.2	5.2		6.6						
44	9364F	LW2-G176	8	20	23.1	5.6		6.6						
48	9352F	LW2-G136	8	20	23.1	5.1		6.6						
50	9349F	LW2-G127	8	20	23.1	5.4		6.5						
56	9361F	LW2-G228	8	20	23.2	5.2		6.6						
85	9323F	Control	8	20	23.1	5.7		6.7						
96	9351F	LW2-G133	8	20	23.0	5.4		6.7						
100	9359F	LW2-G187	8	20	23.0	5.3		6.6						
101	9353F	LW2-G139	8	20	23.0	5.1		6.6						
107	9360F	LW2-G230	8	20	22.9	5.5		6.5						
114	9363F	LW2-G172	8	20	22.9	5.6		6.5						
117	9367F	LW2-G242	8	20	22.9	5.4		6.6						
122	9357F	LW2-G184	8	20	22.9	5.3		6.6						
159	9356F	LW2-G182	8	20	22.9	5.8		6.7						
160	9350F	LW2-G130	8	20	23.0	5.8		6.6						
165	9366F	LW2-G240	8	20	23.1	5.7		6.7						
168	9368F	LW2-G245	8	20	23.1	5.6		6.7						
10	9362F	LW2-G227	8	21	23.1									
15	9358F	LW2-G179	8	21	23.1									
23	9354F	LW2-G142	8	21	23.0									
25	9355F	LW2-G147	8	21	23.1									
27	9365F	LW2-G170	8	21	23.1									
44	9364F	LW2-G176	8	21	23.1									
48	9352F	LW2-G136	8	21	23.1									
50	9349F	LW2-G127	8	21	23.2									
56	9361F	LW2-G228	8	21	23.2									
85	9323F	Control	8	21	23.1									
96	9351F	LW2-G133	8	21	23.0									
100	9359F	LW2-G187	8	21	23.0									
101	9353F	LW2-G139	8	21	23.0									
107	9360F	LW2-G230	8	21	22.9									
114	9363F	LW2-G172	8	21	22.9									
117	9367F	LW2-G242	8	21	22.9									
122	9357F	LW2-G184	8	21	22.9									
159	9356F	LW2-G182	8	21	22.9									
160	9350F	LW2-G130	8	21	23.0									
165	9366F	LW2-G240	8	21	23.1									
168	9368F	LW2-G245	8	21	23.1									

Test Number: 686-7

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH4	pH
10	9362F	LW2-G227	8	22	22.9	7.0	160	6.6						
15	9358F	LW2-G179	8	22	23.0	7.1	160	6.5						
23	9354F	LW2-G142	8	22	22.9	6.2	160	6.4						
25	9355F	LW2-G147	8	22	23.0	6.3	170	6.5						
27	9365F	LW2-G170	8	22	23.0	6.0	165	6.5						
44	9364F	LW2-G176	8	22	22.9	6.6	160	6.5						
48	9352F	LW2-G136	8	22	22.9	6.1	160	6.4						
50	9349F	LW2-G127	8	22	23.1	6.3	160	6.5						
56	9361F	LW2-G228	8	22	23.0	6.0	165	6.5						
85	9323F	Control	8	22	23.0	6.2	165	6.5						
96	9351F	LW2-G133	8	22	22.8	5.6	165	6.4						
100	9359F	LW2-G187	8	22	22.8	6.1	160	6.4						
101	9353F	LW2-G139	8	22	22.7	5.7	165	6.4						
107	9360F	LW2-G230	8	22	22.7	5.8	165	6.4						
114	9363F	LW2-G172	8	22	22.7	5.4	160	6.3						
117	9367F	LW2-G242	8	22	22.7	5.9	165	6.3						
122	9357F	LW2-G184	8	22	22.7	6.4	160	6.3						
159	9356F	LW2-G182	8	22	22.6	6.6	160	6.4						
160	9350F	LW2-G130	8	22	22.7	6.6	160	6.4						
165	9366F	LW2-G240	8	22	22.8	6.3	165	6.4						
168	9368F	LW2-G245	8	22	22.8	6.4	165	6.4						
10	9362F	LW2-G227	8	23	22.8									
15	9358F	LW2-G179	8	23	22.8									
23	9354F	LW2-G142	8	23	22.7									
25	9355F	LW2-G147	8	23	22.7									
27	9365F	LW2-G170	8	23	22.9									
44	9364F	LW2-G176	8	23	22.7									
48	9352F	LW2-G136	8	23	22.8									
50	9349F	LW2-G127	8	23	22.8									
56	9361F	LW2-G228	8	23	22.9									
85	9323F	Control	8	23	22.9									
96	9351F	LW2-G133	8	23	22.7									
100	9359F	LW2-G187	8	23	22.6									
101	9353F	LW2-G139	8	23	22.6									
107	9360F	LW2-G230	8	23	22.7									
114	9363F	LW2-G172	8	23	22.6									
117	9367F	LW2-G242	8	23	22.6									
122	9357F	LW2-G184	8	23	22.6									
159	9356F	LW2-G182	8	23	22.6									
160	9350F	LW2-G130	8	23	22.5									
165	9366F	LW2-G240	8	23	22.8									
168	9368F	LW2-G245	8	23	22.8									

Test Number: 686-7

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH4	pH
10	9362F	LW2-G227	8	24	23.2	5.8		6.5						
15	9358F	LW2-G179	8	24	23.2	5.9		6.5						
23	9354F	LW2-G142	8	24	23.1	5.9		6.4						
25	9355F	LW2-G147	8	24	22.9	6.1		6.4						
27	9365F	LW2-G170	8	24	23.1	5.7		6.5						
44	9364F	LW2-G176	8	24	23.1	6.0		6.4						
48	9352F	LW2-G136	8	24	23.1	5.6		6.4						
50	9349F	LW2-G127	8	24	23.2	5.9		6.5						
56	9361F	LW2-G228	8	24	23.1	5.8		6.4						
85	9323F	Control	8	24	23.1	6.0		6.5						
96	9351F	LW2-G133	8	24	23.0	5.4		6.5						
100	9359F	LW2-G187	8	24	23.0	5.7		6.4						
101	9353F	LW2-G139	8	24	23.0	5.6		6.4						
107	9360F	LW2-G230	8	24	23.0	5.3		6.4						
114	9363F	LW2-G172	8	24	22.9	5.3		6.3						
117	9367F	LW2-G242	8	24	23.0	5.5		6.4						
122	9357F	LW2-G184	8	24	23.0	5.6		6.5						
159	9356F	LW2-G182	8	24	23.0	5.9		6.5						
160	9350F	LW2-G130	8	24	23.1	6.0		6.5						
165	9366F	LW2-G240	8	24	23.2	5.7		6.5						
168	9368F	LW2-G245	8	24	23.2	5.8		6.5						
10	9362F	LW2-G227	8	25	23.1									
15	9358F	LW2-G179	8	25	23.1									
23	9354F	LW2-G142	8	25	23.0									
25	9355F	LW2-G147	8	25	23.0									
27	9365F	LW2-G170	8	25	23.0									
44	9364F	LW2-G176	8	25	23.0									
48	9352F	LW2-G136	8	25	23.0									
50	9349F	LW2-G127	8	25	23.0									
56	9361F	LW2-G228	8	25	23.1									
85	9323F	Control	8	25	23.1									
96	9351F	LW2-G133	8	25	22.9									
100	9359F	LW2-G187	8	25	22.9									
101	9353F	LW2-G139	8	25	22.9									
107	9360F	LW2-G230	8	25	22.9									
114	9363F	LW2-G172	8	25	22.8									
117	9367F	LW2-G242	8	25	22.8									
122	9357F	LW2-G184	8	25	22.8									
159	9356F	LW2-G182	8	25	22.8									
160	9350F	LW2-G130	8	25	22.9									
165	9366F	LW2-G240	8	25	22.9									
168	9368F	LW2-G245	8	25	23.0									

Test Number: 686-7

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH4	pH
10	9362F	LW2-G227	8	26	22.6									
15	9358F	LW2-G179	8	26	22.5									
23	9354F	LW2-G142	8	26	22.5									
25	9355F	LW2-G147	8	26	22.5									
27	9365F	LW2-G170	8	26	22.6									
44	9364F	LW2-G176	8	26	22.5									
48	9352F	LW2-G136	8	26	22.5									
50	9349F	LW2-G127	8	26	22.5									
56	9361F	LW2-G228	8	26	22.6									
85	9323F	Control	8	26	22.7									
96	9351F	LW2-G133	8	26	22.5									
100	9359F	LW2-G187	8	26	22.5									
101	9353F	LW2-G139	8	26	22.5									
107	9360F	LW2-G230	8	26	22.5									
114	9363F	LW2-G172	8	26	22.5									
117	9367F	LW2-G242	8	26	22.5									
122	9357F	LW2-G184	8	26	22.5									
159	9356F	LW2-G182	8	26	22.4									
160	9350F	LW2-G130	8	26	22.5									
165	9366F	LW2-G240	8	26	22.6									
168	9368F	LW2-G245	8	26	22.6									
10	9362F	LW2-G227	8	27	23.1	6.2		6.5						
15	9358F	LW2-G179	8	27	23.1	6.7		6.5						
23	9354F	LW2-G142	8	27	23.1	5.5		6.4						
25	9355F	LW2-G147	8	27	23.2	6.0		6.5						
27	9365F	LW2-G170	8	27	23.1	5.3		6.4						
44	9364F	LW2-G176	8	27	23.1	6.0		6.4						
48	9352F	LW2-G136	8	27	23.1	5.2		6.4						
50	9349F	LW2-G127	8	27	23.2	5.5		6.4						
56	9361F	LW2-G228	8	27	23.2	5.2		6.4						
85	9323F	Control	8	27	23.2	5.6		6.5						
96	9351F	LW2-G133	8	27	23.1	5.3		6.4						
100	9359F	LW2-G187	8	27	23.1	5.5		6.4						
101	9353F	LW2-G139	8	27	23.0	5.1		6.4						
107	9360F	LW2-G230	8	27	23.0	5.0		6.4						
114	9363F	LW2-G172	8	27	23.0	4.7		6.3						
117	9367F	LW2-G242	8	27	23.0	5.2		6.4						
122	9357F	LW2-G184	8	27	23.0	5.6		6.4						
159	9356F	LW2-G182	8	27	22.9	6.1		6.4						
160	9350F	LW2-G130	8	27	23.1	6.1		6.4						
165	9366F	LW2-G240	8	27	23.1	5.6		6.5						
168	9368F	LW2-G245	8	27	23.1	5.8		6.5						

Test Number: 686-7

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH4	pH
10	9362F	LW2-G227	8	28	23.4	7.9	180	6.4	43	40	0.2			
15	9358F	LW2-G179	8	28	23.4	8.2	170	6.5	43	40	<0.1			
23	9354F	LW2-G142	8	28	23.3	7.0	170	6.5	43	40	<0.1			
25	9355F	LW2-G147	8	28	23.3	7.8	175	6.6	43	40	0.2			
27	9365F	LW2-G170	8	28	23.3	6.6	175	6.6	43	40	<0.1			
44	9364F	LW2-G176	8	28	23.2	7.0	170	6.5	43	40	<0.1			
48	9352F	LW2-G136	8	28	23.2	6.6	170	6.5	43	40	<0.1			
50	9349F	LW2-G127	8	28	23.3	6.8	175	6.5	43	40	<0.1			
56	9361F	LW2-G228	8	28	23.2	6.8	170	6.5	43	40	<0.1			
85	9323F	Control	8	28	23.2	6.8	175	6.6	51	50	0.1			
96	9351F	LW2-G133	8	28	23.0	6.2	170	6.4	43	50	<0.1			
100	9359F	LW2-G187	8	28	23.1	6.3	170	6.4	43	40	<0.1			
101	9353F	LW2-G139	8	28	23.0	6.6	170	6.4	43	40	<0.1			
107	9360F	LW2-G230	8	28	23.0	5.9	170	6.4	43	40	<0.1			
114	9363F	LW2-G172	8	28	23.0	6.3	170	6.4	43	40	<0.1			
117	9367F	LW2-G242	8	28	23.1	6.8	175	6.5	43	40	<0.1			
122	9357F	LW2-G184	8	28	23.1	7.0	170	6.5	43	40	<0.1			
159	9356F	LW2-G182	8	28	23.1	6.9	170	6.5	43	40	<0.1			
160	9350F	LW2-G130	8	28	23.2	6.9	170	6.5	43	50	<0.1			
165	9366F	LW2-G240	8	28	23.3	6.4	175	6.5	43	50	<0.1			
168	9368F	LW2-G245	8	28	23.3	7.0	170	6.5	43	40	<0.1			
				Mean	23.1	6.1	166	6.5	45	43	0.4		6.7	7.0
				SD	0.2	0.8	6	0.1	4	5	0.2		3.2	0.1
				n	609	295	126	294	42	42	42		20	20
				Min	22.4	4.2	160	6.3	43	40	<0.1		2.0	6.9
				Max	23.9	8.2	190	7.0	60	60	0.9		14.3	7.1
	Data Entry Verified													
		9/29/2004												

Test Number: 686-8

Freshwater Sediment Test
10-Day Chironomus tentans

Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

ASHED DRY WT= weight of ashed pan + weight of ashed test organisms recovered at test termination
TAFDW=DRY WT - ASHED DRY WT= total ash-free organism weight for given replicate
AFDW=average individual ash-free biomass=TAFDW/WT COUNT

INITIAL WEIGHT

pan #	tare wt (mg)	final wt (mg)	wt count	avg. wt/ organism
1	101.08	105.46	20	0.22
2	105.05	109.61	20	0.23
3	101.54	106.12	20	0.23

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)		SURV	MORT	PSURV	PMORT	WT	AFDW
1	86	9323F	Control	1		10	10	0	100.0	0.0	98.85	10	116.91	104.06	18.06	1.81	12.85	1.29							
2	94	9323F	Control	2		10	10	0	100.0	0.0	101.90	10	117.14	106.25	15.24	1.52	10.89	1.09							
3	20	9323F	Control	3		10	7	3	70.0	30.0	102.43	7	113.69	104.61	11.26	1.61	9.08	1.30							
4	149	9323F	Control	4		10	10	0	100.0	0.0	108.80	10	122.30	112.32	13.50	1.35	9.98	1.00							
5	164	9323F	Control	5		10	8	2	80.0	20.0	98.59	8	107.62	100.72	9.03	1.13	6.90	0.86	Mean	9.0	1.0	90.0	10.0	1.44	1.08
6	80	9323F	Control	6		10	9	1	90.0	10.0	100.14	8	112.73	103.46	12.59	1.57	9.27	1.16	SD	1.1	1.1	10.7	10.7	0.23	0.17
7	38	9323F	Control	7		10	9	1	90.0	10.0	96.52	9	106.83	99.02	10.31	1.15	7.81	0.87	n	8	8	8	8	8	8
8	22	9323F	Control	8	wq replicate	10	9	1	90.0	10.0	105.44	9	117.92	108.11	12.48	1.39	9.81	1.09							
9	4	9349F	LW2-G127	1		10	8	2	80.0	20.0	94.72	8	111.84	99.30	17.12	2.14	12.54	1.57							
10	44	9349F	LW2-G127	2		10	8	2	80.0	20.0	100.01	8	114.60	104.02	14.59	1.82	10.58	1.32							
11	84	9349F	LW2-G127	3		10	8	2	80.0	20.0	101.46	8	118.43	107.86	16.97	2.12	10.57	1.32							
12	100	9349F	LW2-G127	4		10	10	0	100.0	0.0	100.20	10	119.21	107.62	19.01	1.90	11.59	1.16							
13	124	9349F	LW2-G127	5		10	7	3	70.0	30.0	94.56	7	110.11	100.23	15.55	2.22	9.88	1.41	Mean	8.3	1.8	82.5	17.5	2.01	1.34
14	23	9349F	LW2-G127	6		10	7	3	70.0	30.0	98.80	7	109.62	101.12	10.82	1.55	8.50	1.21	SD	1.2	1.2	11.6	11.6	0.24	0.13
15	137	9349F	LW2-G127	7		10	10	0	100.0	0.0	91.84	10	111.91	98.81	20.07	2.01	13.10	1.31	n	8	8	8	8	8	8
16	101	9349F	LW2-G127	8	wq replicate	10	8	2	80.0	20.0	89.63	8	107.98	96.68	18.35	2.29	11.30	1.41							
17	54	9350F	LW2-G130	1		10	10	0	100.0	0.0	104.05	10	127.05	114.30	23.00	2.30	12.75	1.28							
18	93	9350F	LW2-G130	2		10	10	0	100.0	0.0	94.81	10	115.12	103.69	20.31	2.03	11.43	1.14							
19	37	9350F	LW2-G130	3		10	8	2	80.0	20.0	107.75	8	123.61	113.64	15.86	1.98	9.97	1.25							
20	41	9350F	LW2-G130	4		10	6	4	60.0	40.0	102.23	6	115.61	106.20	13.38	2.23	9.41	1.57							
21	141	9350F	LW2-G130	5		10	10	0	100.0	0.0	90.88	10	110.93	99.43	20.05	2.01	11.50	1.15	Mean	8.8	1.3	87.5	12.5	2.14	1.29
22	109	9350F	LW2-G130	6		10	7	3	70.0	30.0	95.47	7	112.27	102.49	16.80	2.40	9.78	1.40	SD	1.6	1.6	15.8	15.8	0.16	0.17
23	114	9350F	LW2-G130	7		10	10	0	100.0	0.0	96.01	10	115.73	104.84	19.72	1.97	10.89	1.09	n	8	8	8	8	8	8
24	21	9350F	LW2-G130	8	wq replicate	10	9	1	90.0	10.0	87.83	9	107.37	94.55	19.54	2.17	12.82	1.42							
25	147	9351F	LW2-G133	1		10	10	0	100.0	0.0	101.23	10	120.98	108.19	19.75	1.98	12.79	1.28							
26	158	9351F	LW2-G133	2		10	7	3	70.0	30.0	90.81	7	103.48	94.28	12.67	1.81	9.20	1.31							
27	39	9351F	LW2-G133	3		10	7	3	70.0	30.0	97.90	7	111.72	101.51	13.82	1.97	10.21	1.46							
28	14	9351F	LW2-G133	4		10	7	3	70.0	30.0	104.11	7	116.24	106.82	12.13	1.73	9.42	1.35							
29	167	9351F	LW2-G133	5		10	6	4	60.0	40.0	99.72	6	109.08	102.23	9.36	1.56	6.85	1.14	Mean	7.4	2.6	73.8	26.3	1.93	1.35
30	155	9351F	LW2-G133	6		10	9	1	90.0	10.0	92.12	9	111.05	98.17	18.93	2.10	12.88	1.43	SD	1.9	1.9	19.2	19.2	0.22	0.13
31	142	9351F	LW2-G133	7		10	9	1	90.0	10.0	94.15	9	112.39	100.76	18.24	2.03	11.63	1.29	n	8	8	8	8	8	8
32	102	9351F	LW2-G133	8	wq replicate	10	4	6	40.0	60.0	94.29	4	103.37	97.15	9.08	2.27	6.22	1.56							
33	49	9352F	LW2-G136	1		10	8	2	80.0	20.0	98.27	8	112.49	102.22	14.22	1.78	10.27	1.28							
34	43	9352F	LW2-G136	2		10	8	2	80.0	20.0	107.52	8	119.35	110.39	11.83	1.48	8.96	1.12							
35	148	9352F	LW2-G136	3		10	8	2	80.0	20.0	100.36	8	115.69	105.62	15.33	1.92	10.07	1.26							
36	45	9352F	LW2-G136	4		10	8	2	80.0	20.0	92.05	8	108.75	97.35	16.70	2.09	11.40	1.43							
37	16	9352F	LW2-G136	5		10	9	1	90.0	10.0	102.52	9	116.88	105.41	14.36	1.60	11.47	1.27	Mean	8.6	1.4	86.3	13.8	1.74	1.23
38	62	9352F	LW2-G136	6		10	10	0	100.0	0.0	102.20	10	119.96	108.42	17.76	1.78	11.54	1.15	SD	0.9	0.9	9.2	9.2	0.19	0.10
39	119	9352F	LW2-G136	7		10	10	0	100.0	0.0	92.08	10	108.39	96.69	16.31	1.63	11.70	1.17	n	8	8	8	8	8	8
40	28	9352F	LW2-G136	8	wq replicate	10	8	2	80.0	20.0	100.33	8	113.49	104.07	13.16	1.65	9.42	1.18							
41	97	9353F	LW2-G139	1		10	10	0	100.0	0.0	99.66	10	120.30	107.03	20.64	2.06	13.27	1.33							
42	31	9353F	LW2-G139	2		10	7	3	70.0	30.0	106.29	7	122.07	109.88	15.78	2.25	12.19	1.74							
43	153	9353F	LW2-G139	3		10	9	1	90.0	10.0	91.53	9	112.50	98.09	20.97	2.33	14.41	1.60							
44	136	9353F	LW2-G139	4		10	9	1	90.0	10.0	102.29	9	119.82	107.81	17.53	1.95	12.01	1.33							
45	53	9353F	LW2-G139	5		10	9	1	90.0	10.0	98.10	9	114.57	103.80	16.47	1.83	10.77	1.20	Mean	8.8	1.3	87.5	12.5	2.10	1.44
46	78	9353F	LW2-G139	6		10	10	0	100.0	0.0	96.99	10	117.22	103.24	20.23	2.02	13.98	1.40	SD	1.0	1.0	10.4	10.4	0.20	0.19
47	135	9353F	LW2-G139	7		10	8	2	80.0	20.0	109.92	8	125.45	114.83	15.53	1.94	10.62	1.33	n	8	8	8	8	8	8
48	25	9353F	LW2-G139	8	wq replicate	10	8	2	80.0	20.0	103.00	8	122.13	109.24	19.13	2.39	12.89	1.61							

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BZTO104(e)007412

Test Number: 686-8

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)		SURV	MORT	PSURV	PMORT	WT	AFDW
49	105	9354F	LW2-G142	1		10	10	0	100.0	0.0	89.29	10	109.89	97.41	20.60	2.06	12.48	1.25							
50	157	9354F	LW2-G142	2		10	8	2	80.0	20.0	90.32	8	110.30	96.53	19.98	2.50	13.77	1.72							
51	27	9354F	LW2-G142	3		10	10	0	100.0	0.0	99.59	10	117.72	104.98	18.13	1.81	12.74	1.27							
52	154	9354F	LW2-G142	4		10	8	2	80.0	20.0	100.35	8	120.54	107.51	20.19	2.52	13.03	1.63							
53	60	9354F	LW2-G142	5		10	7	3	70.0	30.0	106.99	7	123.51	112.47	16.52	2.36	11.04	1.58	Mean	7.9	2.1	78.8	21.3	2.31	1.54
54	120	9354F	LW2-G142	6		10	6	4	60.0	40.0	98.41	6	111.30	102.79	12.89	2.15	8.51	1.42	SD	1.8	1.8	18.1	18.1	0.35	0.29
55	165	9354F	LW2-G142	7		10	9	1	90.0	10.0	93.99	9	113.19	100.94	19.20	2.13	12.25	1.36	n	8	8	8	8	8	8
56	36	9354F	LW2-G142	8	wq replicate	10	5	5	50.0	50.0	88.28	5	102.94	92.35	14.66	2.93	10.59	2.12							
57	50	9355F	LW2-G147	1		10	9	1	90.0	10.0	99.23	9	118.41	107.23	19.18	2.13	11.18	1.24							
58	19	9355F	LW2-G147	2		10	6	4	60.0	40.0	106.96	6	117.78	109.12	10.82	1.80	8.66	1.44							
59	61	9355F	LW2-G147	3		10	6	4	60.0	40.0	91.96	6	107.50	98.51	15.54	2.59	8.99	1.50							
60	76	9355F	LW2-G147	4		10	9	1	90.0	10.0	101.53	9	118.76	108.29	17.23	1.91	10.47	1.16							
61	168	9355F	LW2-G147	5		10	10	0	100.0	0.0	94.96	10	116.70	103.00	21.74	2.17	13.70	1.37	Mean	7.9	2.1	78.8	21.3	2.14	1.35
62	29	9355F	LW2-G147	6		10	7	3	70.0	30.0	98.06	7	114.95	103.88	16.89	2.41	11.07	1.58	SD	1.6	1.6	15.5	15.5	0.26	0.15
63	40	9355F	LW2-G147	7		10	9	1	90.0	10.0	105.32	9	124.27	112.15	18.95	2.11	12.12	1.35	n	8	8	8	8	8	8
64	125	9355F	LW2-G147	8	wq replicate	10	7	3	70.0	30.0	86.80	7	100.56	92.33	13.76	1.97	8.23	1.18							
65	118	9356F	LW2-G182	1		10	10	0	100.0	0.0	100.41	9	119.53	108.20	19.12	2.12	11.33	1.26							
66	160	9356F	LW2-G182	2		10	9	1	90.0	10.0	99.55	9	118.26	105.68	18.71	2.08	12.58	1.40							
67	9	9356F	LW2-G182	3		10	8	2	80.0	20.0	96.11	8	111.44	99.70	15.33	1.92	11.74	1.47							
68	123	9356F	LW2-G182	4		10	10	0	100.0	0.0	96.90	10	113.95	103.15	17.05	1.71	10.80	1.08							
69	163	9356F	LW2-G182	5		10	9	1	90.0	10.0	94.49	9	113.90	101.60	19.41	2.16	12.30	1.37	Mean	9.1	0.9	91.3	8.8	2.09	1.37
70	159	9356F	LW2-G182	6		10	9	1	90.0	10.0	100.68	8	118.12	106.08	17.44	2.18	12.04	1.51	SD	0.8	0.8	8.3	8.3	0.21	0.15
71	138	9356F	LW2-G182	7		10	10	0	100.0	0.0	93.68	10	114.83	101.54	21.15	2.12	13.29	1.33	n	8	8	8	8	8	8
72	1	9356F	LW2-G182	8	wq replicate	10	8	2	80.0	20.0	100.52	8	119.82	107.45	19.30	2.41	12.37	1.55							
73	117	9357F	LW2-G184	1		10	9	1	90.0	10.0	92.90	9	109.06	98.47	16.16	1.80	10.59	1.18							
74	96	9357F	LW2-G184	2		10	10	0	100.0	0.0	99.48	10	117.32	106.76	17.84	1.78	10.56	1.06							
75	52	9357F	LW2-G184	3		10	9	1	90.0	10.0	100.48	9	119.31	107.66	18.83	2.09	11.65	1.29							
76	10	9357F	LW2-G184	4		10	7	3	70.0	30.0	83.08	7	102.57	88.72	19.49	2.78	13.85	1.98							
77	112	9357F	LW2-G184	5		10	8	2	80.0	20.0	92.26	8	106.24	97.20	13.98	1.75	9.04	1.13	Mean	8.8	1.3	87.5	12.5	2.07	1.34
78	129	9357F	LW2-G184	6		10	9	1	90.0	10.0	100.08	9	118.83	106.82	18.75	2.08	12.01	1.33	SD	1.0	1.0	10.4	10.4	0.34	0.28
79	91	9357F	LW2-G184	7		10	8	2	80.0	20.0	103.62	8	121.65	110.27	18.03	2.25	11.38	1.42	n	8	8	8	8	8	8
80	89	9357F	LW2-G184	8	wq replicate	10	10	0	100.0	0.0	111.66	10	132.12	118.74	20.46	2.05	13.38	1.34							
81	72	9358F	LW2-G179	1		10	2	8	20.0	80.0	101.36	2	102.92	101.82	1.56	0.78	1.10	0.55							
82	48	9358F	LW2-G179	2		10	3	7	30.0	70.0	104.42	3	106.06	104.81	1.64	0.55	1.25	0.42							
83	46	9358F	LW2-G179	3		10	3	7	30.0	70.0	100.52	3	104.96	101.44	4.44	1.48	3.52	1.17							
84	47	9358F	LW2-G179	4		10	2	8	20.0	80.0	96.23	2	96.64	96.41	0.41	0.20	0.23	0.12							
85	113	9358F	LW2-G179	5		10	5	5	50.0	50.0	99.79	5	105.38	101.32	5.59	1.12	4.06	0.81	Mean	2.9	7.1	28.8	71.3	0.82	0.62
86	57	9358F	LW2-G179	6		10	2	8	20.0	80.0	101.06	2	102.38	101.44	1.32	0.66	0.94	0.47	SD	1.0	1.0	9.9	9.9	0.38	0.31
87	99	9358F	LW2-G179	7		10	3	7	30.0	70.0	105.73	3	108.48	106.24	2.75	0.92	2.24	0.75	n	8	8	8	8	8	8
88	104	9358F	LW2-G179	8	wq replicate	10	3	7	30.0	70.0	97.15	3	99.75	97.84	2.60	0.87	1.91	0.64							
89	79	9359F	LW2-G187	1		10	6	4	60.0	40.0	103.11	6	114.31	106.84	11.20	1.87	7.47	1.25							
90	134	9359F	LW2-G187	2		10	8	2	80.0	20.0	94.97	8	107.29	99.43	12.32	1.54	7.86	0.98							
91	35	9359F	LW2-G187	3		10	5	5	50.0	50.0	99.39	5	108.49	102.32	9.10	1.82	6.17	1.23							
92	68	9359F	LW2-G187	4		10	7	3	70.0	30.0	87.91	7	104.56	93.90	16.65	2.38	10.66	1.52							
93	98	9359F	LW2-G187	5		10	8	2	80.0	20.0	97.88	8	113.17	103.35	15.29	1.91	9.82	1.23	Mean	6.8	3.3	67.5	32.5	1.96	1.25
94	131	9359F	LW2-G187	6		10	8	2	80.0	20.0	93.30	8	107.21	99.18	13.91	1.74	8.03	1.00	SD	1.3	1.3	12.8	12.8	0.29	0.21
95	151	9359F	LW2-G187	7		10	7	3	70.0	30.0	98.61	7	113.31	104.77	14.70	2.10	8.54	1.22	n	8	8	8	8	8	8
96	58	9359F	LW2-G187	8	wq replicate	10	5	5	50.0	50.0	98.26	5	110.00	102.09	11.74	2.35	7.91	1.58							
97	26	9360F	LW2-G230	1		10	9	1	90.0	10.0	97.76	9	116.51	104.27	18.75	2.08	12.24	1.36							
98	3	9360F	LW2-G230	2		10	7	3	70.0	30.0	99.95	7	116.53	104.95	16.58	2.37	11.58	1.65							
99	34	9360F	LW2-G230	3		10	6	4	60.0	40.0	103.85	6	120.28	109.27	16.43	2.74	11.01	1.84							
100	56	9360F	LW2-G230	4		10	10	0	100.0	0.0	100.00	10	120.60	108.58	20.60	2.06	12.02	1.20							
101	75	9360F	LW2-G230	5		10	9	1	90.0	10.0	103.37	9	123.99	111.24	20.62	2.29	12.75	1.42	Mean	8.3	1.8	82.5	17.5	2.26	1.45
102	90	9360F	LW2-G230	6		10	7	3	70.0	30.0	118.36	7	136.47	125.70	18.11	2.59	10.77	1.54	SD	1.5	1.5	14.9	14.9	0.29	0.22
103	110	9360F	LW2-G230	7		10	10	0	100.0	0.0	100.27	10	120.63	108.65	20.36	2.04	11.98	1.20	n	8	8	8	8	8	8
104	13	9360F	LW2-G230	8	wq replicate	10	8	2	80.0	20.0	101.23	8	116.37	105.46	15.14	1.89	10.91	1.36							
105	143	9361F	LW2-G228	1		10	9	1	90.0	10.0	93.07	9	109.22	98.25	16.15	1.79	10.97	1.22							
106	152	9361F	LW2-G228	2		10	9	1	90.0	10.0	96.29	9	116.21	102.88	19.92	2.21	13.33	1.48							
107	85	9361F	LW2-G228	3		10	10	0	100.0	0.0	97.18	10	118.22	105.11	21.04	2.10	13.11	1.31							
108	146	9361F	LW2-G228	4		10	10	0	100.0	0.0	91.46	10	110.33	97.78	18.87	1.89	12.55	1.26							
109	132	9361F	LW2-G228	5		10	10	0	100.0	0.0	101.75	10	118.29	107.55	16.54	1.65	10.74	1.07	Mean	9.6	0.4	96.3	3.8	1.92	1.28
110	161	9361F	LW2-G228	6		10	10	0	100.0	0.0	101.01	10	121.14	108.25	20.13	2.01	12.89	1.29	SD	0.5	0.5	5.2	5.2	0.18	0.11
111	17	9361F	LW2-G228	7		10	9	1	90.0	10.0	97.82	9	113.79	102.12	15.97	1.77	11.67	1.30	n	8	8	8	8	8	8

ANC07413
BZTO104(e)007413

Test Number: 686-8

Freshwater Sediment Test
10-Day Chironomus tentans

		NAS	CLIENT								TARE	WT	DRY	ASHED	TWT	WT	TAFDW	AFDW								
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	WT (mg)	COUNT	WT (mg)	DRY WT (mg)	(mg)	(mg)	(mg)	(mg)			SURV	MORT	PSURV	PMORT	WT	AFDW
112	11	9361F	LW2-G228	8	wq replicate	10	10	0	100.0	0.0	102.82	10	122.18	109.00	19.36	1.94	13.18	1.32								

ANC07414
BZTO104(e)007414

Test Number: 686-8

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)			SURV	MORT	PSURV	PMORT	WT	AFDW
113	7	9362F	LW2-G227	1		10	10	0	100.0	0.0	106.30	10	122.20	110.78	15.90	1.59	11.42	1.14								
114	74	9362F	LW2-G227	2		10	7	3	70.0	30.0	104.20	7	121.87	109.79	17.67	2.52	12.08	1.73								
115	81	9362F	LW2-G227	3		10	9	1	90.0	10.0	108.46	9	124.04	114.19	15.58	1.73	9.85	1.09								
116	121	9362F	LW2-G227	4		10	9	1	90.0	10.0	100.43	9	114.44	104.59	14.01	1.56	9.85	1.09								
117	140	9362F	LW2-G227	5		10	5	5	50.0	50.0	94.12	5	107.23	97.50	13.11	2.62	9.73	1.95	Mean	8.1	1.9	81.3	18.8	1.98	1.37
118	87	9362F	LW2-G227	6		10	9	1	90.0	10.0	97.85	9	115.98	104.22	18.13	2.01	11.76	1.31	SD	1.6	1.6	16.4	16.4	0.40	0.31
119	145	9362F	LW2-G227	7		10	7	3	70.0	30.0	100.82	7	114.22	104.36	13.40	1.91	9.86	1.41	n	8	8	8	8	8	8
120	130	9362F	LW2-G227	8	wq replicate	10	9	1	90.0	10.0	99.59	9	116.52	105.10	16.93	1.88	11.42	1.27								
121	127	9363F	LW2-G172	1		10	7	3	70.0	30.0	92.14	7	101.41	94.99	9.27	1.32	6.42	0.92								
122	5	9363F	LW2-G172	2		10	8	2	80.0	20.0	101.11	8	112.91	103.98	11.80	1.48	8.93	1.12								
123	70	9363F	LW2-G172	3		10	7	3	70.0	30.0	104.85	7	120.79	110.23	15.94	2.28	10.56	1.51								
124	65	9363F	LW2-G172	4		10	9	1	90.0	10.0	97.03	9	110.75	101.51	13.72	1.52	9.24	1.03								
125	150	9363F	LW2-G172	5		10	10	0	100.0	0.0	94.51	10	108.78	99.69	14.27	1.43	9.09	0.91	Mean	8.4	1.6	83.8	16.3	1.62	1.10
126	32	9363F	LW2-G172	6		10	8	2	80.0	20.0	101.37	8	114.11	105.40	12.74	1.59	8.71	1.09	SD	1.2	1.2	11.9	11.9	0.30	0.19
127	144	9363F	LW2-G172	7		10	8	2	80.0	20.0	94.63	8	109.13	99.72	14.50	1.81	9.41	1.18	n	8	8	8	8	8	8
128	126	9363F	LW2-G172	8	wq replicate	10	10	0	100.0	0.0	98.69	10	113.62	103.04	14.93	1.49	10.58	1.06								
129	18	9364F	LW2-G176	1		10	5	5	50.0	50.0	98.94	5	100.10	99.07	1.16	0.23	1.03	0.21								
130	8	9364F	LW2-G176	2		10	3	7	30.0	70.0	99.16	3	102.46	99.65	3.30	1.10	2.81	0.94								
131	67	9364F	LW2-G176	3		10	3	7	30.0	70.0	100.15	3	105.44	101.47	5.29	1.76	3.97	1.32								
132	133	9364F	LW2-G176	4		10	7	3	70.0	30.0	96.37	7	102.41	97.75	6.04	0.86	4.66	0.67								
133	88	9364F	LW2-G176	5		10	0	10	0.0	100.0	104.75	0							Mean	3.5	6.5	35.0	65.0	0.75	0.60
134	95	9364F	LW2-G176	6		10	4	6	40.0	60.0	88.38	4	91.40	89.15	3.02	0.76	2.25	0.56	SD	2.0	2.0	20.0	20.0	0.57	0.42
135	2	9364F	LW2-G176	7		10	3	7	30.0	70.0	96.71	3	97.17	96.77	0.46	0.15	0.40	0.13	n	8	8	8	8	7	7
136	64	9364F	LW2-G176	8	wq replicate	10	3	7	30.0	70.0	87.08	3	88.25	87.21	1.17	0.39	1.04	0.35								
137	115	9365F	LW2-G170	1		10	9	1	90.0	10.0	93.67	9	109.72	98.97	16.05	1.78	10.75	1.19								
138	73	9365F	LW2-G170	2		10	9	1	90.0	10.0	102.78	9	123.31	109.65	20.53	2.28	13.66	1.52								
139	71	9365F	LW2-G170	3		10	10	0	100.0	0.0	69.91	10	117.92	104.18	48.01	4.80	13.74	1.37								
140	51	9365F	LW2-G170	4		10	10	0	100.0	0.0	98.21	10	117.81	106.64	19.60	1.96	11.17	1.12								
141	59	9365F	LW2-G170	5		10	9	1	90.0	10.0	99.58	9	117.75	105.98	18.17	2.02	11.77	1.31	Mean	9.3	0.8	92.5	7.5	2.36	1.30
142	83	9365F	LW2-G170	6		10	9	1	90.0	10.0	101.23	9	120.63	108.31	19.40	2.16	12.32	1.37	SD	0.5	0.5	4.6	4.6	1.00	0.13
143	139	9365F	LW2-G170	7		10	9	1	90.0	10.0	101.72	9	120.14	108.00	18.42	2.05	12.14	1.35	n	8	8	8	8	8	8
144	111	9365F	LW2-G170	8	wq replicate	10	9	1	90.0	10.0	100.46	9	117.04	106.66	16.58	1.84	10.38	1.15								
145	156	9366F	LW2-G240	1		10	8	2	80.0	20.0	94.30	8	114.02	100.64	19.72	2.47	13.38	1.67								
146	55	9366F	LW2-G240	2		10	8	2	80.0	20.0	103.80	8	120.04	110.02	16.24	2.03	10.02	1.25								
147	15	9366F	LW2-G240	3		10	8	2	80.0	20.0	106.90	8	125.98	112.55	19.08	2.39	13.43	1.68								
148	92	9366F	LW2-G240	4		10	9	1	90.0	10.0	93.70	9	114.13	101.67	20.43	2.27	12.46	1.38								
149	103	9366F	LW2-G240	5		10	7	3	70.0	30.0	91.70	7	109.23	98.15	17.53	2.50	11.08	1.58	Mean	8.5	1.5	85.0	15.0	2.61	1.37
150	107	9366F	LW2-G240	6		10	9	1	90.0	10.0	96.69	9	112.52	102.29	15.83	1.76	10.23	1.14	SD	0.9	0.9	9.3	9.3	1.21	0.26
151	63	9366F	LW2-G240	7		10	10	0	100.0	0.0	56.96	10	112.14	102.22	55.18	5.52	9.92	0.99	n	8	8	8	8	8	8
152	106	9366F	LW2-G240	8	wq replicate	10	9	1	90.0	10.0	95.78	9	113.00	101.81	17.22	1.91	11.19	1.24								
153	66	9367F	LW2-G242	1		10	9	1	90.0	10.0	105.67	9	124.30	113.09	18.63	2.07	11.21	1.25								
154	6	9367F	LW2-G242	2		10	10	0	100.0	0.0	103.45	10	122.78	109.76	19.33	1.93	13.02	1.30								
155	108	9367F	LW2-G242	3		10	8	2	80.0	20.0	98.11	8	113.21	103.41	15.10	1.89	9.80	1.23								
156	162	9367F	LW2-G242	4		10	5	5	50.0	50.0	95.96	5	110.22	100.26	14.26	2.85	9.96	1.99								
157	116	9367F	LW2-G242	5		10	9	1	90.0	10.0	93.26	9	109.73	99.42	16.47	1.83	10.31	1.15	Mean	8.3	1.8	82.5	17.5	2.06	1.33
158	128	9367F	LW2-G242	6		10	7	3	70.0	30.0	90.05	7	104.74	95.24	14.69	2.10	9.50	1.36	SD	1.7	1.7	16.7	16.7	0.34	0.27
159	77	9367F	LW2-G242	7		10	10	0	100.0	0.0	101.23	10	121.65	109.13	20.42	2.04	12.52	1.25	n	8	8	8	8	8	8
160	33	9367F	LW2-G242	8	wq replicate	10	8	2	80.0	20.0	94.69	8	108.64	99.36	13.95	1.74	9.28	1.16								
161	82	9368F	LW2-G245	1		10	8	2	80.0	20.0	92.26	8	108.87	98.50	16.61	2.08	10.37	1.30								
162	69	9368F	LW2-G245	2		10	7	3	70.0	30.0	87.76	7	106.36	94.85	18.60	2.66	11.51	1.64								
163	30	9368F	LW2-G245	3		10	8	2	80.0	20.0	90.41	8	106.36	95.15	15.95	1.99	11.21	1.40								
164	24	9368F	LW2-G245	4		10	9	1	90.0	10.0	104.76	9	120.94	109.46	16.18	1.80	11.48	1.28								
165	12	9368F	LW2-G245	5		10	8	2	80.0	20.0	100.74	8	117.39	105.69	16.65	2.08	11.70	1.46	Mean	8.6	1.4	86.3	13.8	2.01	1.32
166	166	9368F	LW2-G245	6		10	10	0	100.0	0.0	92.48	10	111.85	99.32	19.37	1.94	12.53	1.25	SD	1.1	1.1	10.6	10.6	0.30	0.18
167	42	9368F	LW2-G245	7		10	9	1	90.0	10.0	91.28	9	108.14	97.76	16.86	1.87	10.38	1.15	n	8	8	8	8	8	8
168	122	9368F	LW2-G245	8	wq replicate	10	10	0	100.0	0.0	91.36	10	107.98	97.24	16.62	1.66	10.74	1.07								

Beakers #80 and 159 each had one pupae which was not included in the weighing.

Pupae are not included in the sample to estimate ash-free dry wt (as per EPA/600/R-99/064, p. 59, section 12.3.8.2).

Beaker #118 one animal was lost or damaged in transfering to weighing pan.

ANC07415
BZTO104(e)007415

Water Quality Data

	NAS	CLIENT										Bulk Sediment Interstitial water	
	SMPL	DESCRIP										NH3	pH
	9349F	LW2-G127										7.9	6.9
	9350F	LW2-G130										3.9	6.9
	9351F	LW2-G133										10	7.0
	9352F	LW2-G136										7.9	7.0
	9353F	LW2-G139										5.6	7.0
	9354F	LW2-G142										7.1	7.0
	9355F	LW2-G147										3.8	7.1
	9356F	LW2-G182										6.9	7.1
	9357F	LW2-G184										3.4	7.0
	9358F	LW2-G179										8.9	6.9
	9359F	LW2-G187										2.0	7.0
	9360F	LW2-G230										8.3	7.0
	9361F	LW2-G228										5.5	7.0
	9362F	LW2-G227										---	7.0
	9363F	LW2-G172										14	7.0
	9364F	LW2-G176										2.7	7.0
	9365F	LW2-G170										12	7.0
	9366F	LW2-G240										5.6	7.0
	9367F	LW2-G242										4.6	7.0
	9368F	LW2-G245										7.1	7.0

	NAS	CLIENT			Overlying water								
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	NH3	HARD	ALK		
1	9356F	LW2-G182	8	0	23.4	7.6	170	6.6	1.0	43	50		
11	9361F	LW2-G228	8	0	23.3	6.9	200	6.6	0.5	43	40		
13	9360F	LW2-G230	8	0	23.2	6.9	170	6.5	0.6	51	50		
21	9350F	LW2-G130	8	0	23.2	7.3	170	6.7	0.2	43	40		
22	9323F	Control	8	0	23.1	7.1	200	6.9	<0.1	43	50		
25	9353F	LW2-G139	8	0	23.2	6.9	170	6.4	0.4	43	50		
28	9352F	LW2-G136	8	0	23.1	6.9	175	6.4	0.4	60	40		
33	9367F	LW2-G242	8	0	23.1	6.9	165	6.5	0.4	43	40		
36	9354F	LW2-G142	8	0	23.2	6.6	190	6.3	0.7	60	60		
58	9359F	LW2-G187	8	0	23.1	6.8	160	6.6	0.2	51	40		
64	9364F	LW2-G176	8	0	23.1	7.0	185	6.6	0.2	51	50		
89	9357F	LW2-G184	8	0	23.5	7.1	170	6.6	0.3	43	40		
101	9349F	LW2-G127	8	0	23.2	7.3	170	7.7	0.5	51	40		
102	9351F	LW2-G133	8	0	23.1	7.3	180	6.5	0.9	43	40		
104	9358F	LW2-G179	8	0	23.1	7.1	165	6.5	0.6	43	40		
106	9366F	LW2-G240	8	0	23.2	6.0	170	6.4	0.4	43	40		
111	9365F	LW2-G170	8	0	23.2	7.1	190	6.5	0.7	43	40		
122	9368F	LW2-G245	8	0	23.1	6.9	165	6.5	0.6	43	50		
125	9355F	LW2-G147	8	0	23.1	7.3	175	6.6	0.2	51	50		
126	9363F	LW2-G172	8	0	23.1	7.3	250	6.5	0.8	60	50		
130	9362F	LW2-G227	8	0	23.1	8.0	165	6.7	<0.1	43	40		
1	9356F	LW2-G182	8	1	22.2	6.2							
11	9361F	LW2-G228	8	1	22.2	5.8							
13	9360F	LW2-G230	8	1	22.2	5.8							
21	9350F	LW2-G130	8	1	22.1	5.9							
22	9323F	Control	8	1	22.1	5.6							
25	9353F	LW2-G139	8	1	22.2	5.9							
28	9352F	LW2-G136	8	1	22.2	5.9							
33	9367F	LW2-G242	8	1	22.1	5.9							
36	9354F	LW2-G142	8	1	22.1	5.2							
58	9359F	LW2-G187	8	1	22.1	5.8							
64	9364F	LW2-G176	8	1	22.1	5.9							
89	9357F	LW2-G184	8	1	22.3	5.7							
101	9349F	LW2-G127	8	1	22.2	5.6							
102	9351F	LW2-G133	8	1	22.2	6.0							
104	9358F	LW2-G179	8	1	22.2	5.5							
106	9366F	LW2-G240	8	1	22.2	5.8							
111	9365F	LW2-G170	8	1	22.2	5.7							
122	9368F	LW2-G245	8	1	22.3	5.0							
125	9355F	LW2-G147	8	1	22.4	5.4							
126	9363F	LW2-G172	8	1	22.3	5.4							
130	9362F	LW2-G227	8	1	22.3	6.0							
1	9356F	LW2-G182	8	2	22.9	5.1							
11	9361F	LW2-G228	8	2	22.8	5.4							
13	9360F	LW2-G230	8	2	22.7	5.4							
21	9350F	LW2-G130	8	2	22.7	5.5							
22	9323F	Control	8	2	22.7	6.0							
25	9353F	LW2-G139	8	2	22.6	5.0							
28	9352F	LW2-G136	8	2	22.7	5.0							

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33	9367F	LW2-G242	8	2	22.5	4.8							
36	9354F	LW2-G142	8	2	22.6	5.1							
58	9359F	LW2-G187	8	2	22.5	5.3							
64	9364F	LW2-G176	8	2	22.5	5.5							
89	9357F	LW2-G184	8	2	22.5	4.4							
101	9349F	LW2-G127	8	2	22.6	4.7							
102	9351F	LW2-G133	8	2	22.7	5.2							
104	9358F	LW2-G179	8	2	22.6	5.0							
106	9366F	LW2-G240	8	2	22.6	4.8							
111	9365F	LW2-G170	8	2	22.6	4.8							
122	9368F	LW2-G245	8	2	22.7	4.6							
125	9355F	LW2-G147	8	2	22.7	4.9							
126	9363F	LW2-G172	8	2	22.7	4.9							
130	9362F	LW2-G227	8	2	22.6	5.4							
1	9356F	LW2-G182	8	3	23.3	4.8							
11	9361F	LW2-G228	8	3	23.2	4.4							
13	9360F	LW2-G230	8	3	23.1	4.7							
21	9350F	LW2-G130	8	3	23.0	5.0							
22	9323F	Control	8	3	23.1	5.1							
25	9353F	LW2-G139	8	3	23.1	4.7							
28	9352F	LW2-G136	8	3	23.0	4.0							
33	9367F	LW2-G242	8	3	23.0	4.3							
36	9354F	LW2-G142	8	3	22.9	4.8							
58	9359F	LW2-G187	8	3	23.0	4.8							
64	9364F	LW2-G176	8	3	23.0	5.3							
89	9357F	LW2-G184	8	3	22.8	4.0							
101	9349F	LW2-G127	8	3	23.0	4.5							
102	9351F	LW2-G133	8	3	23.0	4.6							
104	9358F	LW2-G179	8	3	23.0	4.8							
106	9366F	LW2-G240	8	3	23.0	4.7							
111	9365F	LW2-G170	8	3	23.0	4.5							
122	9368F	LW2-G245	8	3	23.0	4.7							
125	9355F	LW2-G147	8	3	23.0	4.8							
126	9363F	LW2-G172	8	3	23.0	3.9							
130	9362F	LW2-G227	8	3	23.0	4.6							
1	9356F	LW2-G182	8	4	23.3	4.8							
11	9361F	LW2-G228	8	4	23.2	4.2							
13	9360F	LW2-G230	8	4	23.1	4.4							
21	9350F	LW2-G130	8	4	23.1	4.8							
22	9323F	Control	8	4	23.0	5.4							
25	9353F	LW2-G139	8	4	23.1	4.0							
28	9352F	LW2-G136	8	4	23.0	4.4							
33	9367F	LW2-G242	8	4	22.9	3.8							
36	9354F	LW2-G142	8	4	23.0	4.2							
58	9359F	LW2-G187	8	4	22.9	4.9							
64	9364F	LW2-G176	8	4	22.9	5.2							
89	9357F	LW2-G184	8	4	22.9	4.6							
101	9349F	LW2-G127	8	4	23.0	4.3							
102	9351F	LW2-G133	8	4	22.9	4.8							
104	9358F	LW2-G179	8	4	22.9	4.8							
106	9366F	LW2-G240	8	4	23.0	4.2							
111	9365F	LW2-G170	8	4	23.0	3.6							
122	9368F	LW2-G245	8	4	22.9	4.2							
125	9355F	LW2-G147	8	4	22.9	4.2							
126	9363F	LW2-G172	8	4	22.9	3.8							
130	9362F	LW2-G227	8	4	23.0	4.4							
1	9356F	LW2-G182	8	5	23.5	5.8							
11	9361F	LW2-G228	8	5	23.3	5.3							
13	9360F	LW2-G230	8	5	23.2	5.8							
21	9350F	LW2-G130	8	5	23.2	5.9							
22	9323F	Control	8	5	23.2	6.2							
25	9353F	LW2-G139	8	5	23.1	5.3							
28	9352F	LW2-G136	8	5	23.2	5.7							
33	9367F	LW2-G242	8	5	23.1	5.4							
36	9354F	LW2-G142	8	5	23.2	5.3							
58	9359F	LW2-G187	8	5	23.1	5.5							
64	9364F	LW2-G176	8	5	23.1	6.2							
89	9357F	LW2-G184	8	5	23.1	5.7							
101	9349F	LW2-G127	8	5	23.1	5.6							
102	9351F	LW2-G133	8	5	23.0	5.6							
104	9358F	LW2-G179	8	5	23.0	6.2							
106	9366F	LW2-G240	8	5	23.1	5.4							
111	9365F	LW2-G170	8	5	23.1	5.6							
122	9368F	LW2-G245	8	5	23.1	5.8							
125	9355F	LW2-G147	8	5	23.1	6.3							
126	9363F	LW2-G172	8	5	23.1	5.6							
130	9362F	LW2-G227	8	5	23.1	6.0							
1	9356F	LW2-G182	8	6	23.1	4.6							
11	9361F	LW2-G228	8	6	23.1	4.6							

13	9360F	LW2-G230	8	6	22.8	3.7							
21	9350F	LW2-G130	8	6	22.8	4.6							
22	9323F	Control	8	6	22.9	4.3							
25	9353F	LW2-G139	8	6	22.9	3.8							
28	9352F	LW2-G136	8	6	22.8	3.3							
33	9367F	LW2-G242	8	6	22.8	3.5							
36	9354F	LW2-G142	8	6	22.9	3.6							
58	9359F	LW2-G187	8	6	22.8	4.0							
64	9364F	LW2-G176	8	6	22.9	4.8							
89	9357F	LW2-G184	8	6	22.8	4.2							
101	9349F	LW2-G127	8	6	22.9	4.6							
102	9351F	LW2-G133	8	6	22.9	4.0							
104	9358F	LW2-G179	8	6	22.9	4.1							
106	9366F	LW2-G240	8	6	22.9	4.0							
111	9365F	LW2-G170	8	6	22.9	4.6							
122	9368F	LW2-G245	8	6	22.9	3.8							
125	9355F	LW2-G147	8	6	22.9	4.3							
126	9363F	LW2-G172	8	6	22.9	3.5							
130	9362F	LW2-G227	8	6	22.9	4.7							
1	9356F	LW2-G182	8	7	23.3	4.4							
11	9361F	LW2-G228	8	7	23.3	4.6							
13	9360F	LW2-G230	8	7	23.1	3.6							
21	9350F	LW2-G130	8	7	23.2	5.0							
22	9323F	Control	8	7	23.1	4.6							
25	9353F	LW2-G139	8	7	23.2	4.2							
28	9352F	LW2-G136	8	7	23.2	3.4							
33	9367F	LW2-G242	8	7	23.1	3.9							
36	9354F	LW2-G142	8	7	23.1	4.4							
58	9359F	LW2-G187	8	7	23.1	4.5							
64	9364F	LW2-G176	8	7	23.1	5.1							
89	9357F	LW2-G184	8	7	23.1	6.0							
101	9349F	LW2-G127	8	7	23.2	5.3							
102	9351F	LW2-G133	8	7	23.1	4.4							
104	9358F	LW2-G179	8	7	23.1	4.8							
106	9366F	LW2-G240	8	7	23.2	5.1							
111	9365F	LW2-G170	8	7	23.3	5.4							
122	9368F	LW2-G245	8	7	23.2	4.6							
125	9355F	LW2-G147	8	7	23.2	5.1							
126	9363F	LW2-G172	8	7	23.2	3.7							
130	9362F	LW2-G227	8	7	23.2	4.7							
1	9356F	LW2-G182	8	8	23.3	4.6	6.6						
11	9361F	LW2-G228	8	8	23.2	4.3	6.5						
13	9360F	LW2-G230	8	8	23.2	3.9	6.5						
21	9350F	LW2-G130	8	8	23.2	4.1	6.5						
22	9323F	Control	8	8	23.1	4.4	6.6						
25	9353F	LW2-G139	8	8	23.1	4.5	6.5						
28	9352F	LW2-G136	8	8	23.0	3.9	6.4						
33	9367F	LW2-G242	8	8	23.0	4.3	6.5						
36	9354F	LW2-G142	8	8	23.1	4.4	6.4						
58	9359F	LW2-G187	8	8	23.1	5.0	6.6						
64	9364F	LW2-G176	8	8	23.1	5.1	6.5						
89	9357F	LW2-G184	8	8	23.1	4.5	6.4						
101	9349F	LW2-G127	8	8	23.2	5.4	6.5						
102	9351F	LW2-G133	8	8	23.1	5.1	6.5						
104	9358F	LW2-G179	8	8	23.2	5.2	6.5						
106	9366F	LW2-G240	8	8	23.2	5.1	6.5						
111	9365F	LW2-G170	8	8	23.2	5.2	6.5						
122	9368F	LW2-G245	8	8	23.2	4.7	6.5						
125	9355F	LW2-G147	8	8	23.2	5.0	6.5						
126	9363F	LW2-G172	8	8	23.2	3.9	6.5						
130	9362F	LW2-G227	8	8	23.2	4.9	6.6						
1	9356F	LW2-G182	8	9	23.1	4.7							
11	9361F	LW2-G228	8	9	22.9	3.6							
13	9360F	LW2-G230	8	9	22.7	3.9							
21	9350F	LW2-G130	8	9	22.8	4.6							
22	9323F	Control	8	9	22.7	4.3							
25	9353F	LW2-G139	8	9	22.9	4.5							
28	9352F	LW2-G136	8	9	22.7	3.8							
33	9367F	LW2-G242	8	9	22.6	4.3							
36	9354F	LW2-G142	8	9	22.8	4.1							
58	9359F	LW2-G187	8	9	22.7	4.8							
64	9364F	LW2-G176	8	9	22.7	5.1							
89	9357F	LW2-G184	8	9	22.7	4.7							
101	9349F	LW2-G127	8	9	22.8	5.4							
102	9351F	LW2-G133	8	9	22.8	4.8							
104	9358F	LW2-G179	8	9	22.8	4.9							
106	9366F	LW2-G240	8	9	22.8	4.7							
111	9365F	LW2-G170	8	9	22.8	5.3							
122	9368F	LW2-G245	8	9	22.8	4.5							

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125	9355F	LW2-G147	8	9	22.9	5.2								
126	9363F	LW2-G172	8	9	22.8	3.8								
130	9362F	LW2-G227	8	9	22.9	5.1								
1	9356F	LW2-G182	8	10	23.5	4.9	165	6.3	0.5	43	40			
11	9361F	LW2-G228	8	10	23.3	4.4	160	6.2	0.7	51	40			
13	9360F	LW2-G230	8	10	23.3	4.1	160	6.1	0.8	51	40			
21	9350F	LW2-G130	8	10	23.3	4.9	160	6.2	0.7	43	40			
22	9323F	Control	8	10	23.2	5.2	165	6.5	0.5	43	50			
25	9353F	LW2-G139	8	10	23.3	4.7	160	6.3	0.5	43	50			
28	9352F	LW2-G136	8	10	23.3	3.8	155	6.2	0.7	34	40			
33	9367F	LW2-G242	8	10	23.1	4.1	155	6.2	0.7	43	40			
36	9354F	LW2-G142	8	10	23.2	4.6	160	6.2	0.6	34	40			
58	9359F	LW2-G187	8	10	23.1	5.3	155	6.3	0.5	43	40			
64	9364F	LW2-G176	8	10	23.1	5.6	160	6.3	0.5	43	40			
89	9357F	LW2-G184	8	10	23.2	5.1	160	6.3	0.6	51	40			
101	9349F	LW2-G127	8	10	23.2	5.1	165	6.3	0.5	43	40			
102	9351F	LW2-G133	8	10	23.2	4.9	160	6.2	0.7	51	40			
104	9358F	LW2-G179	8	10	23.2	5.4	160	6.4	0.6	43	40			
106	9366F	LW2-G240	8	10	23.2	5.0	160	6.3	0.5	43	40			
111	9365F	LW2-G170	8	10	23.2	5.5	160	6.4	0.6	43	40			
122	9368F	LW2-G245	8	10	23.2	4.5	155	6.2	0.8	43	40			
125	9355F	LW2-G147	8	10	23.2	5.1	160	6.2	0.4	43	40			
126	9363F	LW2-G172	8	10	23.2	4.3	165	6.3	0.7	43	40			
130	9362F	LW2-G227	8	10	23.2	6.0	160	6.4	0.2	34	40			
				Mean	22.9	5.0	169	6.5	---	45	43		6.7	7.0
				SD	0.3	0.9	17	0.2	---	6	5		3.1	0.1
				n	231	231	42	63	42	42	42		19	20
				Min	22.1	3.3	155	6.1	<0.1	34	40		<0.5	0.0
				Max	23.5	8.0	250	7.7	1.0	60	60		14.0	7.1

Test Number: P686-9

Freshwater Sediment Test
28-day Hyalella azteca

Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or
dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

INITIAL WEIGHT				
	tare wt	final wt	wt	avg. wt/
pan #	(mg)	(mg)	count	organism
1	29.530	30.261	20	0.037
2	28.578	29.268	20	0.035
3	30.028	30.743	20	0.036
4	32.240	32.907	20	0.033
5	28.440	29.107	20	0.033

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
1	51	9403F	Control	1		10	10	0	100.0	0.0	28.471	10	31.765	3.29	0.33						
2	75	9403F	Control	2		10	10	0	100.0	0.0	30.353	10	33.226	2.87	0.29						
3	97	9403F	Control	3		10	9	1	90.0	10.0	28.270	9	31.688	3.42	0.38						
4	130	9403F	Control	4		10	8	2	80.0	20.0	29.338	8	32.142	2.80	0.35						
5	40	9403F	Control	5		10	10	0	100.0	0.0	29.810	10	32.975	3.17	0.32	Mean	9.0	1.0	90.0	10.0	0.34
6	81	9403F	Control	6		10	9	1	90.0	10.0	28.467	9	31.094	2.63	0.29	SD	0.9	0.9	9.3	9.3	0.04
7	44	9403F	Control	7		10	8	2	80.0	20.0	27.428	8	30.753	3.33	0.42	n	8	8	8	8	8
8	91	9403F	Control	8	wq replicate	10	8	2	80.0	20.0	28.377	8	31.018	2.64	0.33						
9	19	9376F	LW2-G353-1	1		10	10	0	100.0	0.0	29.315	10	32.018	2.70	0.27						
10	71	9376F	LW2-G353-1	2		10	10	0	100.0	0.0	29.592	10	32.125	2.53	0.25						
11	45	9376F	LW2-G353-1	3		10	10	0	100.0	0.0	28.855	10	31.842	2.99	0.30						
12	35	9376F	LW2-G353-1	4		10	9	1	90.0	10.0	29.327	9	31.824	2.50	0.28						
13	110	9376F	LW2-G353-1	5		10	9	1	90.0	10.0	28.067	9	30.393	2.33	0.26	Mean	9.6	0.4	96.3	3.8	0.27
14	152	9376F	LW2-G353-1	6		10	10	0	100.0	0.0	28.727	10	31.801	3.07	0.31	SD	0.5	0.5	5.2	5.2	0.03
15	166	9376F	LW2-G353-1	7		10	9	1	90.0	10.0	28.453	9	30.827	2.37	0.26	n	8	8	8	8	8
16	30	9376F	LW2-G353-1	8	wq replicate	10	10	0	100.0	0.0	28.286	10	30.546	2.26	0.23						
17	37	9377F	LW2-G384-1	1		10	10	0	100.0	0.0	30.915	10	33.414	2.50	0.25						
18	26	9377F	LW2-G384-1	2		10	8	2	80.0	20.0	30.073	8	33.091	3.02	0.38						
19	122	9377F	LW2-G384-1	3		10	10	0	100.0	0.0	30.417	10	32.861	2.44	0.24						
20	86	9377F	LW2-G384-1	4		10	6	4	60.0	40.0	29.076	6	29.963	0.89	0.15						
21	165	9377F	LW2-G384-1	5		10	9	1	90.0	10.0	30.322	9	32.987	2.67	0.30	Mean	8.9	1.1	88.8	11.3	0.26
22	131	9377F	LW2-G384-1	6		10	10	0	100.0	0.0	28.169	10	30.203	2.03	0.20	SD	1.5	1.5	14.6	14.6	0.07
23	106	9377F	LW2-G384-1	7		10	8	2	80.0	20.0	31.924	8	34.233	2.31	0.29	n	8	8	8	8	8
24	140	9377F	LW2-G384-1	8	wq replicate	10	10	0	100.0	0.0	28.075	10	30.957	2.88	0.29						
25	57	9378F	LW2-G390	1		10	0	10	0.0	100.0	28.678	0									
26	38	9378F	LW2-G390	2		10	0	10	0.0	100.0	28.301	0									
27	11	9378F	LW2-G390	3		10	0	10	0.0	100.0	30.318	0									
28	149	9378F	LW2-G390	4		10	0	10	0.0	100.0	28.717	0									
29	155	9378F	LW2-G390	5		10	0	10	0.0	100.0	28.761	0				Mean	0.3	9.8	2.5	97.5	
30	76	9378F	LW2-G390	6		10	0	10	0.0	100.0	30.167	0				SD	0.7	0.7	7.1	7.1	
31	50	9378F	LW2-G390	7		10	2	8	20.0	80.0	29.382	2	29.873	0.49	0.25	n	8	8	8	8	
32	114	9378F	LW2-G390	8	wq replicate	10	0	10	0.0	100.0	29.930	0									

ANC07420
BZTO104(e)007420

Test Number: P686-9

Freshwater Sediment Test
28-day Hyalella azteca

		NAS	CLIENT								TARE	WT	DRY	TWT	WT							
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	WT (mg)	COUNT	WT (mg)	(mg)	(mg)			SURV	MORT	PSURV	PMORT	WT
33	33	9379F	LW2-G387	1		10	10	0	100.0	0.0	29.649	10	32.359	2.71	0.27							
34	48	9379F	LW2-G387	2		10	9	1	90.0	10.0	29.677	9	31.911	2.23	0.25							
35	137	9379F	LW2-G387	3		10	9	1	90.0	10.0	29.672	9	31.693	2.02	0.22							
36	132	9379F	LW2-G387	4		10	9	1	90.0	10.0	29.831	9	32.183	2.35	0.26							
37	41	9379F	LW2-G387	5		10	8	2	80.0	20.0	29.802	8	32.478	2.68	0.33		Mean	9.3	0.8	92.5	7.5	0.25
38	74	9379F	LW2-G387	6		10	10	0	100.0	0.0	30.827	10	33.076	2.25	0.22		SD	0.7	0.7	7.1	7.1	0.04
39	18	9379F	LW2-G387	7		10	9	1	90.0	10.0	29.146	9	31.398	2.25	0.25		n	8	8	8	8	8
40	125	9379F	LW2-G387	8	wq replicate	10	10	0	100.0	0.0	28.733	10	30.587	1.85	0.19							
41	159	9380F	LW2-G372-1	1		10	9	1	90.0	10.0	29.340	9	31.551	2.21	0.25							
42	126	9380F	LW2-G372-1	2		10	10	0	100.0	0.0	29.684	10	31.988	2.30	0.23							
43	9	9380F	LW2-G372-1	3		10	9	1	90.0	10.0	28.620	9	31.330	2.71	0.30							
44	157	9380F	LW2-G372-1	4		10	10	0	100.0	0.0	29.172	10	32.021	2.85	0.28							
45	83	9380F	LW2-G372-1	5		10	9	1	90.0	10.0	28.425	9	30.717	2.29	0.25		Mean	9.1	0.9	91.3	8.8	0.27
46	6	9380F	LW2-G372-1	6		10	8	2	80.0	20.0	29.416	8	31.321	1.91	0.24		SD	0.6	0.6	6.4	6.4	0.04
47	28	9380F	LW2-G372-1	7		10	9	1	90.0	10.0	28.402	9	31.478	3.08	0.34		n	8	8	8	8	8
48	73	9380F	LW2-G372-1	8	wq replicate	10	9	1	90.0	10.0	28.720	9	31.069	2.35	0.26							
49	168	9381F	LW2-G398	1		10	6	4	60.0	40.0	29.184	6	30.496	1.31	0.22							
50	5	9381F	LW2-G398	2		10	9	1	90.0	10.0	28.998	9	30.638	1.64	0.18							
51	70	9381F	LW2-G398	3		10	10	0	100.0	0.0	61.869	10	64.101	2.23	0.22							
52	84	9381F	LW2-G398	4		10	10	0	100.0	0.0	28.839	10	30.297	1.46	0.15							
53	90	9381F	LW2-G398	5		10	6	4	60.0	40.0	29.310	6	30.713	1.40	0.23		Mean	8.5	1.5	85.0	15.0	0.20
54	31	9381F	LW2-G398	6		10	9	1	90.0	10.0	31.786	9	33.359	1.57	0.17		SD	1.7	1.7	16.9	16.9	0.03
55	121	9381F	LW2-G398	7		10	8	2	80.0	20.0	32.902	8	34.687	1.79	0.22		n	8	8	8	8	8
56	68	9381F	LW2-G398	8	wq replicate	10	10	0	100.0	0.0	28.378	10	30.748	2.37	0.24							
57	67	9382F	LW2-G492-1	1		10	10	0	100.0	0.0	29.571	10	31.799	2.23	0.22							
58	148	9382F	LW2-G492-1	2		10	10	0	100.0	0.0	29.839	10	32.125	2.29	0.23							
59	59	9382F	LW2-G492-1	3		12	12	0	100.0	0.0	28.956	12	31.887	2.93	0.24							
60	8	9382F	LW2-G492-1	4		10	9	1	90.0	10.0	29.022	9	31.507	2.49	0.28							
61	136	9382F	LW2-G492-1	5		10	10	0	100.0	0.0	28.291	10	31.374	3.08	0.31		Mean	9.9	0.4	96.3	3.8	0.26
62	147	9382F	LW2-G492-1	6		10	9	1	90.0	10.0	28.572	9	31.149	2.58	0.29		SD	1.0	0.5	5.2	5.2	0.03
63	80	9382F	LW2-G492-1	7		10	9	1	90.0	10.0	30.812	9	33.292	2.48	0.28		n	8	8	8	8	8
64	25	9382F	LW2-G492-1	8	wq replicate	10	10	0	100.0	0.0	29.497	10	31.764	2.27	0.23							
65	60	9383F	LW2-G497	1		10	9	1	90.0	10.0	28.950	9	31.122	2.17	0.24							
66	23	9383F	LW2-G497	2		10	10	0	100.0	0.0	29.090	10	31.979	2.89	0.29							
67	107	9383F	LW2-G497	3		10	9	1	90.0	10.0	28.830	9	30.908	2.08	0.23							
68	112	9383F	LW2-G497	4		10	7	3	70.0	30.0	29.024	7	31.425	2.40	0.34							
69	12	9383F	LW2-G497	5		10	9	1	90.0	10.0	29.905	9	32.355	2.45	0.27		Mean	9.1	0.9	91.3	8.8	0.27
70	4	9383F	LW2-G497	6		10	10	0	100.0	0.0	29.833	10	32.392	2.56	0.26		SD	1.0	1.0	9.9	9.9	0.04
71	72	9383F	LW2-G497	7		10	10	0	100.0	0.0	28.997	10	32.056	3.06	0.31		n	8	8	8	8	8
72	146	9383F	LW2-G497	8	wq replicate	10	9	1	90.0	10.0	30.793	9	33.109	2.32	0.26							

ANC07421
BZTO104(e)007421

Test Number: P686-9

Freshwater Sediment Test
28-day Hyalella azteca

		NAS	CLIENT									TARE	WT	DRY	TWT	WT						
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT		WT (mg)	COUNT	WT (mg)	(mg)	(mg)			SURV	MORT	PSURV	PMORT	WT
73	98	9384F	LW2-G474	1		10	9	1	90.0	10.0		28.208	9	30.200	1.99	0.22							
74	142	9384F	LW2-G474	2		10	10	0	100.0	0.0		28.568	10	31.298	2.73	0.27							
75	109	9384F	LW2-G474	3		10	8	2	80.0	20.0		30.348	8	33.163	2.82	0.35							
76	52	9384F	LW2-G474	4		10	10	0	100.0	0.0		28.947	10	31.308	2.36	0.24							
77	49	9384F	LW2-G474	5		10	9	1	90.0	10.0		28.740	9	31.377	2.64	0.29		Mean	9.1	0.9	91.3	8.8	0.30
78	46	9384F	LW2-G474	6		10	9	1	90.0	10.0		29.828	8	32.076	2.25	0.28		SD	0.8	0.8	8.3	8.3	0.06
79	29	9384F	LW2-G474	7		10	10	0	100.0	0.0		29.562	10	33.204	3.64	0.36		n	8	8	8	8	8
80	55	9384F	LW2-G474	8	wq replicate	10	8	2	80.0	20.0		29.512	8	32.712	3.20	0.40							
81	95	9385F	LW2-G469	1		10	10	0	100.0	0.0		29.335	10	31.869	2.53	0.25							
82	118	9385F	LW2-G469	2		10	10	0	100.0	0.0		29.931	10	32.924	2.99	0.30							
83	66	9385F	LW2-G469	3		10	10	0	100.0	0.0		31.548	10	33.800	2.25	0.23							
84	21	9385F	LW2-G469	4		10	8	2	80.0	20.0		27.914	8	30.230	2.32	0.29							
85	79	9385F	LW2-G469	5		10	9	1	90.0	10.0		28.939	9	30.724	1.79	0.20		Mean	9.5	0.5	95.0	5.0	0.27
86	20	9385F	LW2-G469	6		10	10	0	100.0	0.0		29.809	10	32.287	2.48	0.25		SD	0.8	0.8	7.6	7.6	0.05
87	2	9385F	LW2-G469	7		10	10	0	100.0	0.0		29.255	10	31.863	2.61	0.26		n	8	8	8	8	8
88	102	9385F	LW2-G469	8	wq replicate	10	9	1	90.0	10.0		30.090	9	33.300	3.21	0.36							
89	3	9386F	LW2-G458	1		10	9	1	90.0	10.0		30.006	9	32.306	2.30	0.26							
90	158	9386F	LW2-G458	2		10	8	2	80.0	20.0		29.006	8	30.935	1.93	0.24							
91	154	9386F	LW2-G458	3		10	10	0	100.0	0.0		30.616	10	33.199	2.58	0.26							
92	144	9386F	LW2-G458	4		10	10	0	100.0	0.0		30.146	10	32.283	2.14	0.21							
93	129	9386F	LW2-G458	5		10	9	1	90.0	10.0		27.863	9	30.000	2.14	0.24		Mean	9.1	0.9	91.3	8.8	0.24
94	99	9386F	LW2-G458	6		10	9	1	90.0	10.0		30.799	9	32.595	1.80	0.20		SD	0.8	0.8	8.3	8.3	0.02
95	94	9386F	LW2-G458	7		10	10	0	100.0	0.0		29.460	10	32.075	2.62	0.26		n	8	8	8	8	8
96	160	9386F	LW2-G458	8	wq replicate	10	8	2	80.0	20.0		30.255	8	32.287	2.03	0.25							
97	127	9387F	LW2-G450-1	1		10	9	1	90.0	10.0		30.112	9	32.554	2.44	0.27							
98	34	9387F	LW2-G450-1	2		10	10	0	100.0	0.0		30.124	10	32.678	2.55	0.26							
99	133	9387F	LW2-G450-1	3		10	9	1	90.0	10.0		28.820	9	31.383	2.56	0.28							
100	135	9387F	LW2-G450-1	4		10	10	0	100.0	0.0		30.751	10	32.661	1.91	0.19							
101	88	9387F	LW2-G450-1	5		10	10	0	100.0	0.0		29.930	10	32.373	2.44	0.24		Mean	9.5	0.5	95.0	5.0	0.25
102	96	9387F	LW2-G450-1	6		10	9	1	90.0	10.0		29.654	9	31.454	1.80	0.20		SD	0.5	0.5	5.3	5.3	0.04
103	151	9387F	LW2-G450-1	7		10	9	1	90.0	10.0		30.380	9	32.887	2.51	0.28		n	8	8	8	8	8
104	167	9387F	LW2-G450-1	8	wq replicate	10	10	0	100.0	0.0		28.024	10	30.865	2.84	0.28							
105	128	9388F	LW2-G441	1		10	10	0	100.0	0.0		32.759	9	35.226	2.47	0.27							
106	27	9388F	LW2-G441	2		10	9	1	90.0	10.0		28.890	9	31.712	2.82	0.31							
107	82	9388F	LW2-G441	3		10	10	0	100.0	0.0		29.193	10	31.947	2.75	0.28							
108	7	9388F	LW2-G441	4		10	8	2	80.0	20.0		30.084	8	31.959	1.88	0.23							
109	93	9388F	LW2-G441	5		10	8	2	80.0	20.0		27.496	8	29.548	2.05	0.26		Mean	9.4	0.8	92.5	7.5	0.28
110	104	9388F	LW2-G441	6		10	9	1	90.0	10.0		30.190	9	32.659	2.47	0.27		SD	1.1	0.9	8.9	8.9	0.03
111	164	9388F	LW2-G441	7		10	10	0	100.0	0.0		28.004	10	31.293	3.29	0.33		n	8	8	8	8	8
112	124	9388F	LW2-G441	8	wq replicate	11	11	0	100.0	0.0		29.966	11	33.003	3.04	0.28							

ANC07422
BZTO104(e)007422

Test Number: P686-9

Freshwater Sediment Test
28-day Hyalella azteca

		NAS	CLIENT									TARE	WT	DRY	TWT	WT						
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT		WT (mg)	COUNT	WT (mg)	(mg)	(mg)		SURV	MORT	PSURV	PMORT	WT
113	150	9389F	LW2-G444	1		10	10	0	100.0	0.0		30.718	10	32.771	2.05	0.21						
114	108	9389F	LW2-G444	2		10	10	0	100.0	0.0		28.955	10	31.442	2.49	0.25						
115	101	9389F	LW2-G444	3		10	8	2	80.0	20.0		27.938	8	30.129	2.19	0.27						
116	14	9389F	LW2-G444	4		10	8	2	80.0	20.0		29.070	8	31.698	2.63	0.33						
117	22	9389F	LW2-G444	5		10	10	0	100.0	0.0		29.348	10	31.778	2.43	0.24	Mean	9.0	1.0	90.0	10.0	0.25
118	1	9389F	LW2-G444	6		10	9	1	90.0	10.0		28.744	9	30.131	1.39	0.15	SD	0.9	0.9	9.3	9.3	0.05
119	36	9389F	LW2-G444	7		10	8	2	80.0	20.0		28.953	8	31.054	2.10	0.26	n	8	8	8	8	8
120	115	9389F	LW2-G444	8	wq replicate	10	9	1	90.0	10.0		29.466	9	32.092	2.63	0.29						
121	113	9390F	LW2-G455	1		10	7	3	70.0	30.0		29.495	7	31.919	2.42	0.35						
122	56	9390F	LW2-G455	2		10	10	0	100.0	0.0		29.947	10	32.592	2.65	0.26						
123	139	9390F	LW2-G455	3		10	8	2	80.0	20.0		30.689	8	32.633	1.94	0.24						
124	32	9390F	LW2-G455	4		10	9	1	90.0	10.0		27.863	9	30.294	2.43	0.27						
125	163	9390F	LW2-G455	5		10	7	3	70.0	30.0		28.333	7	30.857	2.52	0.36	Mean	8.3	1.8	82.5	17.5	0.27
126	69	9390F	LW2-G455	6		10	8	2	80.0	20.0		29.066	8	31.533	2.47	0.31	SD	1.0	1.0	10.4	10.4	0.06
127	17	9390F	LW2-G455	7		10	9	1	90.0	10.0		28.612	9	30.656	2.04	0.23	n	8	8	8	8	8
128	24	9390F	LW2-G455	8	wq replicate	10	8	2	80.0	20.0		31.094	8	32.513	1.42	0.18						
129	39	9391F	LW2-G445	1		10	7	3	70.0	30.0		28.038	7	29.212	1.17	0.17						
130	117	9391F	LW2-G445	2		10	10	0	100.0	0.0		29.370	10	31.243	1.87	0.19						
131	153	9391F	LW2-G445	3		10	9	1	90.0	10.0		28.618	9	30.235	1.62	0.18						
132	63	9391F	LW2-G445	4		10	9	1	90.0	10.0		27.808	9	29.920	2.11	0.23						
133	85	9391F	LW2-G445	5		10	8	2	80.0	20.0		29.070	8	30.530	1.46	0.18	Mean	8.5	1.5	85.0	15.0	0.20
134	100	9391F	LW2-G445	6		10	8	2	80.0	20.0		28.651	8	30.315	1.66	0.21	SD	1.2	1.2	12.0	12.0	0.04
135	116	9391F	LW2-G445	7		10	7	3	70.0	30.0		30.944	7	32.883	1.94	0.28	n	8	8	8	8	8
136	62	9391F	LW2-G445	8	wq replicate	10	10	0	100.0	0.0		28.802	10	30.607	1.81	0.18						
137	105	9392F	LW2-G359	1		10	10	0	100.0	0.0		28.210	10	30.208	2.00	0.20						
138	42	9392F	LW2-G359	2		10	10	0	100.0	0.0		30.398	10	32.836	2.44	0.24						
139	77	9392F	LW2-G359	3		10	9	1	90.0	10.0		31.140	9	33.263	2.12	0.24						
140	123	9392F	LW2-G359	4		10	9	1	90.0	10.0		29.273	9	31.631	2.36	0.26						
141	145	9392F	LW2-G359	5		10	9	1	90.0	10.0		29.883	9	31.876	1.99	0.22	Mean	9.3	0.8	92.5	7.5	0.24
142	47	9392F	LW2-G359	6		10	10	0	100.0	0.0		29.406	9	31.233	1.83	0.20	SD	0.7	0.7	7.1	7.1	0.03
143	61	9392F	LW2-G359	7		10	9	1	90.0	10.0		28.012	9	30.087	2.08	0.23	n	8	8	8	8	8
144	134	9392F	LW2-G359	8	wq replicate	10	8	2	80.0	20.0		28.135	8	30.545	2.41	0.30						
145	10	9393F	LW2-G321	1		10	7	3	70.0	30.0		29.025	7	31.113	2.09	0.30						
146	103	9393F	LW2-G321	2		10	10	0	100.0	0.0		28.935	10	30.799	1.86	0.19						
147	58	9393F	LW2-G321	3		10	8	2	80.0	20.0		29.685	8	31.934	2.25	0.28						
148	53	9393F	LW2-G321	4		10	8	2	80.0	20.0		29.359	8	31.464	2.11	0.26						
149	156	9393F	LW2-G321	5		10	9	1	90.0	10.0		28.605	9	30.591	1.99	0.22	Mean	8.9	1.1	88.8	11.3	0.25
150	119	9393F	LW2-G321	6		10	10	0	100.0	0.0		28.750	10	31.603	2.85	0.29	SD	1.1	1.1	11.3	11.3	0.04
151	16	9393F	LW2-G321	7		10	9	1	90.0	10.0		29.445	9	31.551	2.11	0.23	n	8	8	8	8	8
152	141	9393F	LW2-G321	8	wq replicate	10	10	0	100.0	0.0		28.867	10	31.046	2.18	0.22						

ANC07423
BZTO104(e)007423

Test Number: P686-9

Freshwater Sediment Test
28-day Hyalella azteca

		NAS	CLIENT								TARE	WT	DRY	TWT	WT							
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	WT (mg)	COUNT	WT (mg)	(mg)	(mg)			SURV	MORT	PSURV	PMORT	WT
153	143	9394F	LW2-G329	1		10	10	0	100.0	0.0	29.489	10	33.295	3.81	0.38							
154	43	9394F	LW2-G329	2		10	9	1	90.0	10.0	33.349	9	36.921	3.57	0.40							
155	54	9394F	LW2-G329	3		10	10	0	100.0	0.0	30.415	10	32.727	2.31	0.23							
156	111	9394F	LW2-G329	4		10	10	0	100.0	0.0	29.097	10	32.706	3.61	0.36							
157	161	9394F	LW2-G329	5		10	10	0	100.0	0.0	31.382	10	34.906	3.52	0.35		Mean	9.9	0.1	98.8	1.3	0.33
158	162	9394F	LW2-G329	6		10	10	0	100.0	0.0	30.148	10	32.907	2.76	0.28		SD	0.4	0.4	3.5	3.5	0.06
159	92	9394F	LW2-G329	7		10	10	0	100.0	0.0	29.172	10	32.193	3.02	0.30		n	8	8	8	8	8
160	87	9394F	LW2-G329	8	wq replicate	10	10	0	100.0	0.0	28.175	10	31.370	3.20	0.32							
161	15	9395F	LW2-G197-1	1		10	10	0	100.0	0.0	29.117	10	32.976	3.86	0.39							
162	120	9395F	LW2-G197-1	2		10	9	1	90.0	10.0	28.835	9	31.977	3.14	0.35							
163	65	9395F	LW2-G197-1	3		10	8	2	80.0	20.0	29.105	8	31.823	2.72	0.34							
164	64	9395F	LW2-G197-1	4		10	9	1	90.0	10.0	29.249	9	32.470	3.22	0.36							
165	89	9395F	LW2-G197-1	5		10	8	2	80.0	20.0	30.345	8	33.207	2.86	0.36		Mean	9.1	0.9	91.3	8.8	0.35
166	78	9395F	LW2-G197-1	6		10	9	1	90.0	10.0	29.891	9	33.237	3.35	0.37		SD	0.8	0.8	8.3	8.3	0.03
167	13	9395F	LW2-G197-1	7		10	10	0	100.0	0.0	29.161	10	32.267	3.11	0.31		n	8	8	8	8	8
168	138	9395F	LW2-G197-1	8	wq replicate	10	10	0	100.0	0.0	29.405	10	32.448	3.04	0.30							
	Note: Beakers # 46, 47, 128 each lost one animal in transfer to weigh pan.																					

ANC07424
BZTO104(e)007424

Test Number: 686-9

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
BULK SEDIMENT POREWATER														
	9376F	LW2-G353-1											9.8	6.3
	9377F	LW2-G384-1											16.3	6.3
	9378F	LW2-G390											4.7	6.3
	9379F	LW2-G387											16.1	6.2
	9380F	LW2-G372-1											4.2	6.3
	9381F	LW2-G398											13.2	6.2
	9382F	LW2-G492-1											14.9	6.3
	9383F	LW2-G497											22.2	6.3
	9384F	LW2-G474											16.2	6.4
	9385F	LW2-G469											15.0	6.3
	9386F	LW2-G458											11.2	6.4
	9387F	LW2-G450-1											15.1	6.4
	9388F	LW2-G441											5.4	6.6
	9389F	LW2-G444											5.3	6.4
	9390F	LW2-G455											8.3	6.4
	9391F	LW2-G445											0.9	6.4
	9392F	LW2-G359											17.8	6.3
	9393F	LW2-G321											9.1	6.6
	9394F	LW2-G329											1.7	6.9
	9395F	LW2-G197-1											2.7	6.5
	9403F	Control											1.6	7.0

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
TEST OVERLYING WATER														
24	9390F	LW2-G455	8	0	23.1	6.2	170	6.4	34	40	0.7			
25	9382F	LW2-G492-1	8	0	23.1	6.2	180	6.3	43	50	1.0			
30	9376F	LW2-G353-1	8	0	23.3	6.1	170	6.5	43	40	0.9			
55	9384F	LW2-G474	8	0	23.4	6.0	200	6.4	43	60	1.5			
62	9391F	LW2-G445	8	0	23.4	6.2	160	6.4	43	40	0.2			
68	9381F	LW2-G398	8	0	23.1	6.1	185	6.4	60	50	0.9			
73	9380F	LW2-G372-1	8	0	23.1	6.2	160	6.4	43	40	0.5			
87	9394F	LW2-G329	8	0	23.1	6.2	180	6.5	51	40	0.1			
91	9403F	Control	8	0	23.1	6.4	305	6.7	43	50	0.1			
102	9385F	LW2-G469	8	0	23.1	6.3	200	6.4	60	60	1.2			
114	9378F	LW2-G390	8	0	23.1	6.2	165	6.5	43	40	0.5			
115	9389F	LW2-G444	8	0	23.2	6.6	170	6.5	43	40	0.7			
124	9388F	LW2-G441	8	0	23.3	6.2	170	6.5	43	40	0.5			
125	9379F	LW2-G387	8	0	23.2	6.1	195	6.5	60	60	1.0			
134	9392F	LW2-G359	8	0	23.2	6.3	460	6.4	68	40	1.2			
138	9395F	LW2-G197-1	8	0	23.1	6.4	165	6.5	43	40	0.3			
140	9377F	LW2-G384-1	8	0	23.1	6.2	175	6.4	51	40	1.6			
141	9393F	LW2-G321	8	0	23.2	6.4	180	6.5	51	50	0.6			
146	9383F	LW2-G497	8	0	23.1	6.5	175	6.4	51	50	1.3			
160	9386F	LW2-G458	8	0	23.1	6.6	190	6.4	51	50	0.9			
167	9387F	LW2-G450-1	8	0	23.3	6.4	205	6.3	51	60	1.1			
24	9390F	LW2-G455	8	1	23.1									
25	9382F	LW2-G492-1	8	1	23.2									
30	9376F	LW2-G353-1	8	1	23.2									
55	9384F	LW2-G474	8	1	23.4									
62	9391F	LW2-G445	8	1	23.1									
68	9381F	LW2-G398	8	1	23.1									
73	9380F	LW2-G372-1	8	1	23.1									
87	9394F	LW2-G329	8	1	23.0									
91	9403F	Control	8	1	23.0									
102	9385F	LW2-G469	8	1	23.0									
114	9378F	LW2-G390	8	1	23.1									
115	9389F	LW2-G444	8	1	23.3									
124	9388F	LW2-G441	8	1	23.2									
125	9379F	LW2-G387	8	1	23.3									
134	9392F	LW2-G359	8	1	23.2									
138	9395F	LW2-G197-1	8	1	23.0									
140	9377F	LW2-G384-1	8	1	23.2									
141	9393F	LW2-G321	8	1	23.0									
146	9383F	LW2-G497	8	1	23.0									
160	9386F	LW2-G458	8	1	23.3									
167	9387F	LW2-G450-1	8	1	23.1									

Test Number: 686-9

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
24	9390F	LW2-G455	8	2	23.3									
25	9382F	LW2-G492-1	8	2	23.4									
30	9376F	LW2-G353-1	8	2	23.4									
55	9384F	LW2-G474	8	2	23.4									
62	9391F	LW2-G445	8	2	23.2									
68	9381F	LW2-G398	8	2	23.2									
73	9380F	LW2-G372-1	8	2	23.2									
87	9394F	LW2-G329	8	2	23.1									
91	9403F	Control	8	2	23.1									
102	9385F	LW2-G469	8	2	23.1									
114	9378F	LW2-G390	8	2	23.2									
115	9389F	LW2-G444	8	2	23.3									
124	9388F	LW2-G441	8	2	23.2									
125	9379F	LW2-G387	8	2	23.3									
134	9392F	LW2-G359	8	2	23.2									
138	9395F	LW2-G197-1	8	2	23.1									
140	9377F	LW2-G384-1	8	2	23.2									
141	9393F	LW2-G321	8	2	23.1									
146	9383F	LW2-G497	8	2	23.1									
160	9386F	LW2-G458	8	2	23.3									
167	9387F	LW2-G450-1	8	2	23.1									
24	9390F	LW2-G455	8	3	22.9	5.8		6.5						
25	9382F	LW2-G492-1	8	3	22.9	5.5		6.4						
30	9376F	LW2-G353-1	8	3	23.0	5.7		6.4						
55	9384F	LW2-G474	8	3	23.1	6.0		6.4						
62	9391F	LW2-G445	8	3	23.0	5.9		6.5						
68	9381F	LW2-G398	8	3	23.0	5.9		6.4						
73	9380F	LW2-G372-1	8	3	23.0	6.2		6.4						
87	9394F	LW2-G329	8	3	23.0	5.8		6.5						
91	9403F	Control	8	3	22.9	5.6		6.6						
102	9385F	LW2-G469	8	3	22.9	5.5		6.5						
114	9378F	LW2-G390	8	3	22.9	5.8		6.5						
115	9389F	LW2-G444	8	3	23.0	6.2		6.4						
124	9388F	LW2-G441	8	3	23.1	5.9		6.4						
125	9379F	LW2-G387	8	3	23.0	5.6		6.5						
134	9392F	LW2-G359	8	3	23.1	5.5		6.4						
138	9395F	LW2-G197-1	8	3	23.0	5.9		6.5						
140	9377F	LW2-G384-1	8	3	22.9	5.7		6.4						
141	9393F	LW2-G321	8	3	23.0	5.9		6.5						
146	9383F	LW2-G497	8	3	23.0	6.0		6.5						
160	9386F	LW2-G458	8	3	23.0	5.7		6.4						
167	9387F	LW2-G450-1	8	3	23.1	5.8		6.4						

Test Number: 686-9

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
24	9390F	LW2-G455	8	4	22.9									
25	9382F	LW2-G492-1	8	4	23.0									
30	9376F	LW2-G353-1	8	4	23.1									
55	9384F	LW2-G474	8	4	23.1									
62	9391F	LW2-G445	8	4	23.0									
68	9381F	LW2-G398	8	4	23.0									
73	9380F	LW2-G372-1	8	4	22.9									
87	9394F	LW2-G329	8	4	22.9									
91	9403F	Control	8	4	22.9									
102	9385F	LW2-G469	8	4	22.9									
114	9378F	LW2-G390	8	4	23.0									
115	9389F	LW2-G444	8	4	23.0									
124	9388F	LW2-G441	8	4	23.0									
125	9379F	LW2-G387	8	4	23.0									
134	9392F	LW2-G359	8	4	23.0									
138	9395F	LW2-G197-1	8	4	22.9									
140	9377F	LW2-G384-1	8	4	23.0									
141	9393F	LW2-G321	8	4	23.0									
146	9383F	LW2-G497	8	4	23.1									
160	9386F	LW2-G458	8	4	23.1									
167	9387F	LW2-G450-1	8	4	22.9									
24	9390F	LW2-G455	8	5	22.9	6.2	160	6.3						
25	9382F	LW2-G492-1	8	5	22.9	6.4	165	6.2						
30	9376F	LW2-G353-1	8	5	22.9	6.4	165	6.2						
55	9384F	LW2-G474	8	5	23.0	6.3	165	6.3						
62	9391F	LW2-G445	8	5	23.1	6.4	160	6.3						
68	9381F	LW2-G398	8	5	22.8	6.5	170	6.3						
73	9380F	LW2-G372-1	8	5	22.8	6.2	160	6.3						
87	9394F	LW2-G329	8	5	22.8	6.6	165	6.4						
91	9403F	Control	8	5	22.8	6.6	185	6.5						
102	9385F	LW2-G469	8	5	22.7	5.7	165	6.4						
114	9378F	LW2-G390	8	5	22.8	6.1	165	6.4						
115	9389F	LW2-G444	8	5	23.0	6.1	165	6.3						
124	9388F	LW2-G441	8	5	23.0	5.9	165	6.3						
125	9379F	LW2-G387	8	5	22.9	6.1	175	6.3						
134	9392F	LW2-G359	8	5	22.9	6.2	225	6.4						
138	9395F	LW2-G197-1	8	5	22.8	6.0	160	6.3						
140	9377F	LW2-G384-1	8	5	22.8	6.1	165	6.3						
141	9393F	LW2-G321	8	5	22.8	6.3	170	6.4						
146	9383F	LW2-G497	8	5	22.8	6.2	170	6.4						
160	9386F	LW2-G458	8	5	22.8	5.8	170	6.4						
167	9387F	LW2-G450-1	8	5	22.9	5.8	170	6.3						

Test Number: 686-9

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
24	9390F	LW2-G455	8	6	22.7									
25	9382F	LW2-G492-1	8	6	22.6									
30	9376F	LW2-G353-1	8	6	22.7									
55	9384F	LW2-G474	8	6	22.8									
62	9391F	LW2-G445	8	6	22.9									
68	9381F	LW2-G398	8	6	22.7									
73	9380F	LW2-G372-1	8	6	22.6									
87	9394F	LW2-G329	8	6	22.7									
91	9403F	Control	8	6	22.6									
102	9385F	LW2-G469	8	6	22.6									
114	9378F	LW2-G390	8	6	22.6									
115	9389F	LW2-G444	8	6	22.6									
124	9388F	LW2-G441	8	6	22.7									
125	9379F	LW2-G387	8	6	22.7									
134	9392F	LW2-G359	8	6	22.7									
138	9395F	LW2-G197-1	8	6	22.6									
140	9377F	LW2-G384-1	8	6	22.7									
141	9393F	LW2-G321	8	6	22.8									
146	9383F	LW2-G497	8	6	22.6									
160	9386F	LW2-G458	8	6	22.9									
167	9387F	LW2-G450-1	8	6	22.7									
24	9390F	LW2-G455	8	7	23.0	6.0		6.4						
25	9382F	LW2-G492-1	8	7	23.0	6.2		6.4						
30	9376F	LW2-G353-1	8	7	23.1	6.3		6.4						
55	9384F	LW2-G474	8	7	23.1	6.0		6.4						
62	9391F	LW2-G445	8	7	23.2	6.1		6.4						
68	9381F	LW2-G398	8	7	23.0	6.4		6.4						
73	9380F	LW2-G372-1	8	7	23.0	6.0		6.5						
87	9394F	LW2-G329	8	7	22.9	5.8		6.4						
91	9403F	Control	8	7	22.9	6.1		6.5						
102	9385F	LW2-G469	8	7	22.9	6.3		6.4						
114	9378F	LW2-G390	8	7	22.9	6.2		6.4						
115	9389F	LW2-G444	8	7	23.0	6.3		6.4						
124	9388F	LW2-G441	8	7	23.1	6.1		6.4						
125	9379F	LW2-G387	8	7	23.1	6.0		6.4						
134	9392F	LW2-G359	8	7	23.1	5.9		6.4						
138	9395F	LW2-G197-1	8	7	23.0	6.2		6.4						
140	9377F	LW2-G384-1	8	7	22.9	6.2		6.3						
141	9393F	LW2-G321	8	7	23.0	6.4		6.3						
146	9383F	LW2-G497	8	7	23.0	6.1		6.4						
160	9386F	LW2-G458	8	7	23.0	6.1		6.4						
167	9387F	LW2-G450-1	8	7	23.0	6.2		6.4						

Test Number: 686-9

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
24	9390F	LW2-G455	8	8	23.1									
25	9382F	LW2-G492-1	8	8	23.1									
30	9376F	LW2-G353-1	8	8	23.1									
55	9384F	LW2-G474	8	8	23.2									
62	9391F	LW2-G445	8	8	22.9									
68	9381F	LW2-G398	8	8	22.9									
73	9380F	LW2-G372-1	8	8	23.0									
87	9394F	LW2-G329	8	8	22.9									
91	9403F	Control	8	8	22.9									
102	9385F	LW2-G469	8	8	23.0									
114	9378F	LW2-G390	8	8	23.0									
115	9389F	LW2-G444	8	8	23.0									
124	9388F	LW2-G441	8	8	23.1									
125	9379F	LW2-G387	8	8	23.0									
134	9392F	LW2-G359	8	8	23.0									
138	9395F	LW2-G197-1	8	8	23.0									
140	9377F	LW2-G384-1	8	8	22.9									
141	9393F	LW2-G321	8	8	22.9									
146	9383F	LW2-G497	8	8	22.9									
160	9386F	LW2-G458	8	8	22.9									
167	9387F	LW2-G450-1	8	8	23.0									
24	9390F	LW2-G455	8	9	22.4									
25	9382F	LW2-G492-1	8	9	22.4									
30	9376F	LW2-G353-1	8	9	22.4									
55	9384F	LW2-G474	8	9	22.5									
62	9391F	LW2-G445	8	9	22.3									
68	9381F	LW2-G398	8	9	22.3									
73	9380F	LW2-G372-1	8	9	22.3									
87	9394F	LW2-G329	8	9	22.4									
91	9403F	Control	8	9	22.4									
102	9385F	LW2-G469	8	9	22.3									
114	9378F	LW2-G390	8	9	22.4									
115	9389F	LW2-G444	8	9	22.4									
124	9388F	LW2-G441	8	9	22.4									
125	9379F	LW2-G387	8	9	22.5									
134	9392F	LW2-G359	8	9	22.4									
138	9395F	LW2-G197-1	8	9	22.4									
140	9377F	LW2-G384-1	8	9	22.4									
141	9393F	LW2-G321	8	9	22.4									
146	9383F	LW2-G497	8	9	22.4									
160	9386F	LW2-G458	8	9	22.6									
167	9387F	LW2-G450-1	8	9	22.6									

Test Number: 686-9

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
24	9390F	LW2-G455	8	10	23.0	5.8		6.3						
25	9382F	LW2-G492-1	8	10	23.1	5.9		6.4						
30	9376F	LW2-G353-1	8	10	23.1	5.9		6.4						
55	9384F	LW2-G474	8	10	23.1	5.5		6.4						
62	9391F	LW2-G445	8	10	23.0	5.7		6.4						
68	9381F	LW2-G398	8	10	23.0	5.8		6.4						
73	9380F	LW2-G372-1	8	10	23.0	5.9		6.4						
87	9394F	LW2-G329	8	10	22.9	6.2		6.5						
91	9403F	Control	8	10	22.9	6.2		6.5						
102	9385F	LW2-G469	8	10	22.9	5.2		6.5						
114	9378F	LW2-G390	8	10	23.0	5.7		6.5						
115	9389F	LW2-G444	8	10	23.1	5.9		6.5						
124	9388F	LW2-G441	8	10	23.0	5.9		6.4						
125	9379F	LW2-G387	8	10	23.0	6.0		6.5						
134	9392F	LW2-G359	8	10	23.0	5.9		6.5						
138	9395F	LW2-G197-1	8	10	23.0	5.9		6.5						
140	9377F	LW2-G384-1	8	10	23.0	5.6		6.5						
141	9393F	LW2-G321	8	10	23.0	5.9		6.4						
146	9383F	LW2-G497	8	10	23.0	5.5		6.5						
160	9386F	LW2-G458	8	10	23.1	5.6		6.5						
167	9387F	LW2-G450-1	8	10	23.0	5.1		6.5						
24	9390F	LW2-G455	8	11	23.1									
25	9382F	LW2-G492-1	8	11	23.1									
30	9376F	LW2-G353-1	8	11	23.1									
55	9384F	LW2-G474	8	11	23.3									
62	9391F	LW2-G445	8	11	23.1									
68	9381F	LW2-G398	8	11	23.1									
73	9380F	LW2-G372-1	8	11	23.0									
87	9394F	LW2-G329	8	11	23.0									
91	9403F	Control	8	11	23.0									
102	9385F	LW2-G469	8	11	22.9									
114	9378F	LW2-G390	8	11	23.0									
115	9389F	LW2-G444	8	11	23.0									
124	9388F	LW2-G441	8	11	23.1									
125	9379F	LW2-G387	8	11	23.1									
134	9392F	LW2-G359	8	11	23.1									
138	9395F	LW2-G197-1	8	11	23.2									
140	9377F	LW2-G384-1	8	11	23.0									
141	9393F	LW2-G321	8	11	23.0									
146	9383F	LW2-G497	8	11	23.0									
160	9386F	LW2-G458	8	11	23.0									
167	9387F	LW2-G450-1	8	11	23.2									

Test Number: 686-9

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
24	9390F	LW2-G455	8	12	23.1	5.1	165	6.5						
25	9382F	LW2-G492-1	8	12	23.1	4.8	175	6.5						
30	9376F	LW2-G353-1	8	12	23.2	5.2	165	6.5						
55	9384F	LW2-G474	8	12	23.3	4.6	180	6.7						
62	9391F	LW2-G445	8	12	23.1	5.4	165	6.6						
68	9381F	LW2-G398	8	12	23.1	4.8	170	6.6						
73	9380F	LW2-G372-1	8	12	23.1	5.4	170	6.7						
87	9394F	LW2-G329	8	12	23.1	5.8	170	6.7						
91	9403F	Control	8	12	23.0	5.7	175	6.7						
102	9385F	LW2-G469	8	12	23.0	4.8	175	6.8						
114	9378F	LW2-G390	8	12	23.1	5.0	165	6.7						
115	9389F	LW2-G444	8	12	23.3	5.1	170	6.7						
124	9388F	LW2-G441	8	12	23.2	5.2	170	6.7						
125	9379F	LW2-G387	8	12	23.2	5.2	170	6.6						
134	9392F	LW2-G359	8	12	23.1	5.0	190	6.7						
138	9395F	LW2-G197-1	8	12	23.1	5.1	165	6.7						
140	9377F	LW2-G384-1	8	12	23.2	5.0	165	6.6						
141	9393F	LW2-G321	8	12	23.1	5.0	165	6.6						
146	9383F	LW2-G497	8	12	23.1	5.0	170	6.6						
160	9386F	LW2-G458	8	12	23.2	4.8	180	6.6						
167	9387F	LW2-G450-1	8	12	23.3	4.6	175	6.7						
24	9390F	LW2-G455	8	13	23.0									
25	9382F	LW2-G492-1	8	13	23.0									
30	9376F	LW2-G353-1	8	13	23.0									
55	9384F	LW2-G474	8	13	23.1									
62	9391F	LW2-G445	8	13	23.0									
68	9381F	LW2-G398	8	13	23.0									
73	9380F	LW2-G372-1	8	13	23.0									
87	9394F	LW2-G329	8	13	23.0									
91	9403F	Control	8	13	23.0									
102	9385F	LW2-G469	8	13	22.9									
114	9378F	LW2-G390	8	13	23.0									
115	9389F	LW2-G444	8	13	23.0									
124	9388F	LW2-G441	8	13	23.1									
125	9379F	LW2-G387	8	13	23.1									
134	9392F	LW2-G359	8	13	23.1									
138	9395F	LW2-G197-1	8	13	23.0									
140	9377F	LW2-G384-1	8	13	23.0									
141	9393F	LW2-G321	8	13	23.0									
146	9383F	LW2-G497	8	13	23.0									
160	9386F	LW2-G458	8	13	23.0									
167	9387F	LW2-G450-1	8	13	23.1									

Test Number: 686-9

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
24	9390F	LW2-G455	8	14	23.0	6.6		6.5						
25	9382F	LW2-G492-1	8	14	23.0	6.8		6.5						
30	9376F	LW2-G353-1	8	14	23.0	6.5		6.5						
55	9384F	LW2-G474	8	14	23.1	6.7		6.6						
62	9391F	LW2-G445	8	14	23.0	6.5		6.6						
68	9381F	LW2-G398	8	14	23.0	6.9		6.6						
73	9380F	LW2-G372-1	8	14	23.0	7.0		6.5						
87	9394F	LW2-G329	8	14	22.9	6.8		6.7						
91	9403F	Control	8	14	22.9	6.7		6.7						
102	9385F	LW2-G469	8	14	22.9	6.9		6.6						
114	9378F	LW2-G390	8	14	22.9	6.5		6.5						
115	9389F	LW2-G444	8	14	23.1	6.3		6.6						
124	9388F	LW2-G441	8	14	23.1	6.4		6.6						
125	9379F	LW2-G387	8	14	23.1	6.2		6.6						
134	9392F	LW2-G359	8	14	23.0	6.6		6.6						
138	9395F	LW2-G197-1	8	14	23.0	6.8		6.6						
140	9377F	LW2-G384-1	8	14	23.1	7.0		6.6						
141	9393F	LW2-G321	8	14	23.0	6.7		6.6						
146	9383F	LW2-G497	8	14	23.0	6.5		6.6						
160	9386F	LW2-G458	8	14	23.0	6.3		6.6						
167	9387F	LW2-G450-1	8	14	23.0	6.5		6.7						
24	9390F	LW2-G455	8	15	22.9									
25	9382F	LW2-G492-1	8	15	22.9									
30	9376F	LW2-G353-1	8	15	23.0									
55	9384F	LW2-G474	8	15	23.0									
62	9391F	LW2-G445	8	15	23.0									
68	9381F	LW2-G398	8	15	23.0									
73	9380F	LW2-G372-1	8	15	23.0									
87	9394F	LW2-G329	8	15	23.0									
91	9403F	Control	8	15	23.0									
102	9385F	LW2-G469	8	15	23.1									
114	9378F	LW2-G390	8	15	23.1									
115	9389F	LW2-G444	8	15	23.1									
124	9388F	LW2-G441	8	15	23.1									
125	9379F	LW2-G387	8	15	23.2									
134	9392F	LW2-G359	8	15	23.0									
138	9395F	LW2-G197-1	8	15	23.1									
140	9377F	LW2-G384-1	8	15	23.2									
141	9393F	LW2-G321	8	15	23.1									
146	9383F	LW2-G497	8	15	23.1									
160	9386F	LW2-G458	8	15	23.1									
167	9387F	LW2-G450-1	8	15	23.0									

Test Number: 686-9

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
24	9390F	LW2-G455	8	16	22.4									
25	9382F	LW2-G492-1	8	16	22.4									
30	9376F	LW2-G353-1	8	16	22.6									
55	9384F	LW2-G474	8	16	22.7									
62	9391F	LW2-G445	8	16	22.6									
68	9381F	LW2-G398	8	16	22.5									
73	9380F	LW2-G372-1	8	16	22.5									
87	9394F	LW2-G329	8	16	22.5									
91	9403F	Control	8	16	22.3									
102	9385F	LW2-G469	8	16	22.4									
114	9378F	LW2-G390	8	16	22.3									
115	9389F	LW2-G444	8	16	22.5									
124	9388F	LW2-G441	8	16	22.7									
125	9379F	LW2-G387	8	16	22.6									
134	9392F	LW2-G359	8	16	22.7									
138	9395F	LW2-G197-1	8	16	22.5									
140	9377F	LW2-G384-1	8	16	22.4									
141	9393F	LW2-G321	8	16	22.7									
146	9383F	LW2-G497	8	16	22.5									
160	9386F	LW2-G458	8	16	22.6									
167	9387F	LW2-G450-1	8	16	22.5									
24	9390F	LW2-G455	8	17	22.5	6.6		6.6						
25	9382F	LW2-G492-1	8	17	22.7	6.4		6.6						
30	9376F	LW2-G353-1	8	17	22.7	6.4		6.6						
55	9384F	LW2-G474	8	17	22.8	5.8		6.7						
62	9391F	LW2-G445	8	17	22.6	6.7		6.6						
68	9381F	LW2-G398	8	17	22.5	6.1		6.6						
73	9380F	LW2-G372-1	8	17	22.5	6.6		6.6						
87	9394F	LW2-G329	8	17	22.4	6.7		6.6						
91	9403F	Control	8	17	22.5	6.7		6.7						
102	9385F	LW2-G469	8	17	22.5	6.3		6.7						
114	9378F	LW2-G390	8	17	22.6	6.5		6.6						
115	9389F	LW2-G444	8	17	22.7	6.6		6.6						
124	9388F	LW2-G441	8	17	22.7	6.5		6.6						
125	9379F	LW2-G387	8	17	22.5	6.1		6.6						
134	9392F	LW2-G359	8	17	22.4	6.2		6.6						
138	9395F	LW2-G197-1	8	17	22.7	6.7		6.6						
140	9377F	LW2-G384-1	8	17	22.5	6.6		6.7						
141	9393F	LW2-G321	8	17	22.5	7.0		6.6						
146	9383F	LW2-G497	8	17	22.5	6.1		6.6						
160	9386F	LW2-G458	8	17	22.8	6.5		6.7						
167	9387F	LW2-G450-1	8	17	22.5	6.0		6.7						

Test Number: 686-9

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
24	9390F	LW2-G455	8	18	23.0									
25	9382F	LW2-G492-1	8	18	23.1									
30	9376F	LW2-G353-1	8	18	23.1									
55	9384F	LW2-G474	8	18	23.2									
62	9391F	LW2-G445	8	18	23.0									
68	9381F	LW2-G398	8	18	23.0									
73	9380F	LW2-G372-1	8	18	23.0									
87	9394F	LW2-G329	8	18	23.0									
91	9403F	Control	8	18	23.0									
102	9385F	LW2-G469	8	18	23.0									
114	9378F	LW2-G390	8	18	23.1									
115	9389F	LW2-G444	8	18	23.2									
124	9388F	LW2-G441	8	18	23.1									
125	9379F	LW2-G387	8	18	23.2									
134	9392F	LW2-G359	8	18	23.1									
138	9395F	LW2-G197-1	8	18	23.1									
140	9377F	LW2-G384-1	8	18	23.1									
141	9393F	LW2-G321	8	18	23.1									
146	9383F	LW2-G497	8	18	23.0									
160	9386F	LW2-G458	8	18	23.2									
167	9387F	LW2-G450-1	8	18	23.3									
24	9390F	LW2-G455	8	19	23.0	5.8	165	6.7						
25	9382F	LW2-G492-1	8	19	23.0	5.6	170	6.7						
30	9376F	LW2-G353-1	8	19	23.1	5.7	170	6.7						
55	9384F	LW2-G474	8	19	23.2	5.0	175	6.7						
62	9391F	LW2-G445	8	19	23.2	6.0	165	6.8						
68	9381F	LW2-G398	8	19	23.0	5.3	170	6.8						
73	9380F	LW2-G372-1	8	19	23.0	5.7	170	6.8						
87	9394F	LW2-G329	8	19	23.0	5.9	170	6.8						
91	9403F	Control	8	19	23.0	6.1	175	6.8						
102	9385F	LW2-G469	8	19	23.0	5.1	175	6.8						
114	9378F	LW2-G390	8	19	22.9	5.5	165	6.8						
115	9389F	LW2-G444	8	19	23.1	5.7	170	6.8						
124	9388F	LW2-G441	8	19	23.1	5.6	170	6.8						
125	9379F	LW2-G387	8	19	23.1	4.9	165	6.8						
134	9392F	LW2-G359	8	19	23.0	5.4	170	6.9						
138	9395F	LW2-G197-1	8	19	22.9	5.9	165	6.7						
140	9377F	LW2-G384-1	8	19	23.0	5.8	170	6.8						
141	9393F	LW2-G321	8	19	23.0	6.1	165	6.8						
146	9383F	LW2-G497	8	19	23.0	5.3	170	6.8						
160	9386F	LW2-G458	8	19	23.0	5.7	170	6.8						
167	9387F	LW2-G450-1	8	19	23.2	5.3	175	6.8						

Test Number: 686-9

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
24	9390F	LW2-G455	8	20	22.7	5.8								
25	9382F	LW2-G492-1	8	20	22.8	6.0								
30	9376F	LW2-G353-1	8	20	22.9	5.4								
55	9384F	LW2-G474	8	20	22.9	6.2								
62	9391F	LW2-G445	8	20	22.7	6.0								
68	9381F	LW2-G398	8	20	22.7	5.4								
73	9380F	LW2-G372-1	8	20	22.7	5.8								
87	9394F	LW2-G329	8	20	22.7	6.0								
91	9403F	Control	8	20	22.7	5.9								
102	9385F	LW2-G469	8	20	22.7	5.4								
114	9378F	LW2-G390	8	20	22.8	5.8								
115	9389F	LW2-G444	8	20	22.9	5.7								
124	9388F	LW2-G441	8	20	22.8	5.6								
125	9379F	LW2-G387	8	20	22.9	5.9								
134	9392F	LW2-G359	8	20	22.8	5.2								
138	9395F	LW2-G197-1	8	20	22.7	5.7								
140	9377F	LW2-G384-1	8	20	22.9	5.6								
141	9393F	LW2-G321	8	20	22.9	5.2								
146	9383F	LW2-G497	8	20	22.7	5.5								
160	9386F	LW2-G458	8	20	23.0	5.8								
167	9387F	LW2-G450-1	8	20	22.8	5.9								
24	9390F	LW2-G455	8	21	22.6			6.3						
25	9382F	LW2-G492-1	8	21	22.6			6.3						
30	9376F	LW2-G353-1	8	21	22.8			6.3						
55	9384F	LW2-G474	8	21	22.9			6.4						
62	9391F	LW2-G445	8	21	23.0			6.4						
68	9381F	LW2-G398	8	21	22.9			6.4						
73	9380F	LW2-G372-1	8	21	22.8			6.4						
87	9394F	LW2-G329	8	21	22.8			6.4						
91	9403F	Control	8	21	22.7			6.5						
102	9385F	LW2-G469	8	21	22.7			6.4						
114	9378F	LW2-G390	8	21	22.7			6.4						
115	9389F	LW2-G444	8	21	22.9			6.4						
124	9388F	LW2-G441	8	21	22.9			6.4						
125	9379F	LW2-G387	8	21	22.8			6.4						
134	9392F	LW2-G359	8	21	22.9			6.4						
138	9395F	LW2-G197-1	8	21	22.8			6.4						
140	9377F	LW2-G384-1	8	21	22.8			6.4						
141	9393F	LW2-G321	8	21	22.7			6.5						
146	9383F	LW2-G497	8	21	22.7			6.4						
160	9386F	LW2-G458	8	21	22.7			6.4						
167	9387F	LW2-G450-1	8	21	22.8			6.4						

Test Number: 686-9

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
24	9390F	LW2-G455	8	22	22.4									
25	9382F	LW2-G492-1	8	22	22.5									
30	9376F	LW2-G353-1	8	22	22.5									
55	9384F	LW2-G474	8	22	22.5									
62	9391F	LW2-G445	8	22	22.4									
68	9381F	LW2-G398	8	22	22.4									
73	9380F	LW2-G372-1	8	22	22.4									
87	9394F	LW2-G329	8	22	22.4									
91	9403F	Control	8	22	22.5									
102	9385F	LW2-G469	8	22	22.4									
114	9378F	LW2-G390	8	22	22.4									
115	9389F	LW2-G444	8	22	22.6									
124	9388F	LW2-G441	8	22	22.4									
125	9379F	LW2-G387	8	22	22.5									
134	9392F	LW2-G359	8	22	22.4									
138	9395F	LW2-G197-1	8	22	22.4									
140	9377F	LW2-G384-1	8	22	22.5									
141	9393F	LW2-G321	8	22	22.4									
146	9383F	LW2-G497	8	22	22.4									
160	9386F	LW2-G458	8	22	22.7									
167	9387F	LW2-G450-1	8	22	22.4									
24	9390F	LW2-G455	8	23	22.9									
25	9382F	LW2-G492-1	8	23	23.0									
30	9376F	LW2-G353-1	8	23	23.0									
55	9384F	LW2-G474	8	23	23.2									
62	9391F	LW2-G445	8	23	22.8									
68	9381F	LW2-G398	8	23	22.8									
73	9380F	LW2-G372-1	8	23	22.7									
87	9394F	LW2-G329	8	23	22.7									
91	9403F	Control	8	23	22.7									
102	9385F	LW2-G469	8	23	22.7									
114	9378F	LW2-G390	8	23	22.8									
115	9389F	LW2-G444	8	23	23.0									
124	9388F	LW2-G441	8	23	22.7									
125	9379F	LW2-G387	8	23	22.9									
134	9392F	LW2-G359	8	23	22.8									
138	9395F	LW2-G197-1	8	23	22.7									
140	9377F	LW2-G384-1	8	23	22.9									
141	9393F	LW2-G321	8	23	22.6									
146	9383F	LW2-G497	8	23	22.6									
160	9386F	LW2-G458	8	23	22.9									
167	9387F	LW2-G450-1	8	23	22.6									

Test Number: 686-9

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
24	9390F	LW2-G455	8	24	23.0	6.0		6.4						
25	9382F	LW2-G492-1	8	24	23.1	5.4		6.4						
30	9376F	LW2-G353-1	8	24	23.2	5.7		6.4						
55	9384F	LW2-G474	8	24	23.3	5.3		6.4						
62	9391F	LW2-G445	8	24	23.1	6.0		6.5						
68	9381F	LW2-G398	8	24	23.1	5.4		6.5						
73	9380F	LW2-G372-1	8	24	23.1	5.8		6.6						
87	9394F	LW2-G329	8	24	23.0	6.1		6.6						
91	9403F	Control	8	24	23.1	6.1		6.6						
102	9385F	LW2-G469	8	24	23.0	5.4		6.5						
114	9378F	LW2-G390	8	24	23.1	5.9		6.5						
115	9389F	LW2-G444	8	24	23.2	5.9		6.5						
124	9388F	LW2-G441	8	24	23.1	5.7		6.6						
125	9379F	LW2-G387	8	24	23.0	5.2		6.6						
134	9392F	LW2-G359	8	24	23.0	5.3		6.5						
138	9395F	LW2-G197-1	8	24	23.0	6.0		6.5						
140	9377F	LW2-G384-1	8	24	23.2	5.4		6.7						
141	9393F	LW2-G321	8	24	23.2	6.2		6.6						
146	9383F	LW2-G497	8	24	23.0	5.0		6.6						
160	9386F	LW2-G458	8	24	23.2	5.9		6.5						
167	9387F	LW2-G450-1	8	24	23.0	5.6		6.5						
24	9390F	LW2-G455	8	25	22.7									
25	9382F	LW2-G492-1	8	25	22.8									
30	9376F	LW2-G353-1	8	25	22.9									
55	9384F	LW2-G474	8	25	22.9									
62	9391F	LW2-G445	8	25	22.9									
68	9381F	LW2-G398	8	25	22.8									
73	9380F	LW2-G372-1	8	25	22.7									
87	9394F	LW2-G329	8	25	22.7									
91	9403F	Control	8	25	22.7									
102	9385F	LW2-G469	8	25	22.7									
114	9378F	LW2-G390	8	25	22.7									
115	9389F	LW2-G444	8	25	22.9									
124	9388F	LW2-G441	8	25	22.8									
125	9379F	LW2-G387	8	25	22.8									
134	9392F	LW2-G359	8	25	22.8									
138	9395F	LW2-G197-1	8	25	22.8									
140	9377F	LW2-G384-1	8	25	22.8									
141	9393F	LW2-G321	8	25	22.7									
146	9383F	LW2-G497	8	25	22.7									
160	9386F	LW2-G458	8	25	22.9									
167	9387F	LW2-G450-1	8	25	22.7									

Test Number: 686-9

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
24	9390F	LW2-G455	8	26	23.2	5.5		6.6						
25	9382F	LW2-G492-1	8	26	23.2	4.9		6.4						
30	9376F	LW2-G353-1	8	26	23.3	5.4		6.4						
55	9384F	LW2-G474	8	26	23.1	5.3		6.4						
62	9391F	LW2-G445	8	26	23.3	5.7		6.4						
68	9381F	LW2-G398	8	26	23.3	5.1		6.4						
73	9380F	LW2-G372-1	8	26	23.0	5.3		6.6						
87	9394F	LW2-G329	8	26	22.9	5.7		6.5						
91	9403F	Control	8	26	23.0	5.9		6.5						
102	9385F	LW2-G469	8	26	23.0	5.0		6.5						
114	9378F	LW2-G390	8	26	23.0	5.4		6.5						
115	9389F	LW2-G444	8	26	23.1	5.5		6.5						
124	9388F	LW2-G441	8	26	23.1	5.4		6.4						
125	9379F	LW2-G387	8	26	23.1	4.9		6.5						
134	9392F	LW2-G359	8	26	23.1	4.6		6.5						
138	9395F	LW2-G197-1	8	26	22.9	5.3		6.5						
140	9377F	LW2-G384-1	8	26	23.0	5.1		6.5						
141	9393F	LW2-G321	8	26	23.1	5.9		6.5						
146	9383F	LW2-G497	8	26	23.0	4.4		6.5						
160	9386F	LW2-G458	8	26	23.0	5.3		6.5						
167	9387F	LW2-G450-1	8	26	23.1	5.4		6.4						
24	9390F	LW2-G455	8	27	22.7									
25	9382F	LW2-G492-1	8	27	22.7									
30	9376F	LW2-G353-1	8	27	22.8									
55	9384F	LW2-G474	8	27	22.8									
62	9391F	LW2-G445	8	27	22.9									
68	9381F	LW2-G398	8	27	22.8									
73	9380F	LW2-G372-1	8	27	22.7									
87	9394F	LW2-G329	8	27	22.7									
91	9403F	Control	8	27	22.6									
102	9385F	LW2-G469	8	27	22.6									
114	9378F	LW2-G390	8	27	22.6									
115	9389F	LW2-G444	8	27	22.7									
124	9388F	LW2-G441	8	27	22.8									
125	9379F	LW2-G387	8	27	22.8									
134	9392F	LW2-G359	8	27	22.8									
138	9395F	LW2-G197-1	8	27	22.7									
140	9377F	LW2-G384-1	8	27	22.6									
141	9393F	LW2-G321	8	27	22.7									
146	9383F	LW2-G497	8	27	22.6									
160	9386F	LW2-G458	8	27	22.6									
167	9387F	LW2-G450-1	8	27	22.8									

Test Number: 686-9

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
24	9390F	LW2-G455	8	28	22.9	6.9	160	6.2	43	40	0.1			
25	9382F	LW2-G492-1	8	28	23.0	6.9	160	6.2	43	40	0.1			
30	9376F	LW2-G353-1	8	28	23.1	6.9	160	6.3	43	40	0.1			
55	9384F	LW2-G474	8	28	23.2	6.9	160	6.2	43	40	0.2			
62	9391F	LW2-G445	8	28	23.1	7.3	160	6.3	43	40	0.2			
68	9381F	LW2-G398	8	28	23.0	6.6	165	6.3	43	40	0.2			
73	9380F	LW2-G372-1	8	28	23.0	6.4	165	6.4	43	50	0.2			
87	9394F	LW2-G329	8	28	22.9	7.2	165	6.4	43	40	0.1			
91	9403F	Control	8	28	23.0	6.6	170	6.4	43	50	0.1			
102	9385F	LW2-G469	8	28	23.0	6.6	160	6.4	43	40	0.1			
114	9378F	LW2-G390	8	28	23.0	7.2	160	6.3	43	40	0.1			
115	9389F	LW2-G444	8	28	23.2	7.3	165	6.4	43	40	0.1			
124	9388F	LW2-G441	8	28	23.1	6.8	170	6.4	43	50	0.1			
125	9379F	LW2-G387	8	28	23.2	6.8	165	6.4	43	40	0.2			
134	9392F	LW2-G359	8	28	23.1	6.3	170	6.4	43	50	0.3			
138	9395F	LW2-G197-1	8	28	23.0	7.1	165	6.4	43	40	0.1			
140	9377F	LW2-G384-1	8	28	23.1	7.2	165	6.4	43	40	0.1			
141	9393F	LW2-G321	8	28	23.0	7.3	165	6.4	43	40	0.1			
146	9383F	LW2-G497	8	28	23.0	6.4	165	6.4	43	40	0.1			
160	9386F	LW2-G458	8	28	23.2	7.0	165	6.3	43	40	<0.1			
167	9387F	LW2-G450-1	8	28	23.1	6.8	165	6.4	43	40	<0.1			
			Mean		22.9	6.0	174	6.5	46	44	---		10.1	6.4
			S.D.		0.2	0.6	33	0.1	6	7	---		6.3	0.2
			N		609	273	105	273	42	42	42		21	21
			Min		22.3	4.4	160	6.2	34	40	<0.1		0.9	6.2
			Max		23.4	7.3	460	6.9	68	60	1.6		22.2	7.0

Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

ASHED DRY WT= weight of ashed pan + weight of ashed test organisms recovered at test termination
TAFDW=DRY WT - ASHED DRY WT= total ash-free organism weight for given replicate
AFDW=average individual ash-free biomass=TAFDW/WT COUNT

INITIAL WEIGHT

pan #	tare wt (mg)	final wt (mg)	wt count	avg. wt/ organism
1	92.406	96.393	20	0.20
2	102.094	105.634	20	0.18
3	104.895	108.231	20	0.17

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)
1	89	9403F	Control	1		10	8	2	80.0	20.0	97.90	8	109.97	101.26	12.07	1.51	8.71	1.09
2	125	9403F	Control	2		10	8	2	80.0	20.0	91.93	8	106.67	95.36	14.74	1.84	11.31	1.41
3	38	9403F	Control	3		10	10	0	100.0	0.0	100.33	10	115.15	103.38	14.82	1.48	11.77	1.18
4	148	9403F	Control	4		11	11	0	100.0	0.0	96.72	11	116.48	102.66	19.76	1.80	13.82	1.26
5	24	9403F	Control	5		10	8	2	80.0	20.0	104.29	7	118.93	106.34	14.64	2.09	12.59	1.80
6	151	9403F	Control	6		10	9	1	90.0	10.0	85.24	9	102.31	89.88	17.07	1.90	12.43	1.38
7	4	9403F	Control	7		10	8	2	80.0	20.0	87.35	8	96.33	88.76	8.98	1.12	7.57	0.95
8	77	9403F	Control	8	wq replicate	10	8	2	80.0	20.0	91.97	8	99.19	93.14	7.22	0.90	6.05	0.76
9	136	9376F	LW2-G353-1	1		10	8	2	80.0	20.0	93.30	8	110.43	99.05	17.13	2.14	11.38	1.42
10	60	9376F	LW2-G353-1	2		10	10	0	100.0	0.0	98.93	10	112.30	102.94	13.37	1.34	9.36	0.94
11	83	9376F	LW2-G353-1	3		10	6	4	60.0	40.0	99.89	6	111.95	103.01	12.06	2.01	8.94	1.49
12	112	9376F	LW2-G353-1	4		10	10	0	100.0	0.0	95.56	10	115.07	102.82	19.51	1.95	12.25	1.23
13	122	9376F	LW2-G353-1	5		10	9	1	90.0	10.0	100.29	9	119.68	106.52	19.39	2.15	13.16	1.46
14	43	9376F	LW2-G353-1	6		10	10	0	100.0	0.0	88.66	10	104.01	93.12	15.35	1.54	10.89	1.09
15	113	9376F	LW2-G353-1	7		10	10	0	100.0	0.0	91.49	10	109.90	98.88	18.41	1.84	11.02	1.10
16	165	9376F	LW2-G353-1	8	wq replicate	10	10	0	100.0	0.0	100.43	10	118.56	107.66	18.13	1.81	10.90	1.09
17	155	9377F	LW2-G384-1	1		10	9	1	90.0	10.0	95.46	9	113.39	101.95	17.93	1.99	11.44	1.27
18	157	9377F	LW2-G384-1	2		10	3	7	30.0	70.0	97.71	3	101.81	98.76	4.10	1.37	3.05	1.02
19	70	9377F	LW2-G384-1	3		10	10	0	100.0	0.0	96.79	10	110.29	100.52	13.50	1.35	9.77	0.98
20	73	9377F	LW2-G384-1	4		10	10	0	100.0	0.0	93.80	10	106.39	96.67	12.59	1.26	9.72	0.97
21	154	9377F	LW2-G384-1	5		10	10	0	100.0	0.0	96.22	10	112.39	101.28	16.17	1.62	11.11	1.11
22	19	9377F	LW2-G384-1	6		10	9	1	90.0	10.0	95.83	9	107.90	98.17	12.07	1.34	9.73	1.08
23	15	9377F	LW2-G384-1	7		10	9	1	90.0	10.0	98.80	9	110.67	101.33	11.87	1.32	9.34	1.04
24	11	9377F	LW2-G384-1	8	wq replicate	10	6	4	60.0	40.0	91.78	6	105.26	95.93	13.48	2.25	9.33	1.56
25	26	9378F	LW2-G390	1		10	8	2	80.0	20.0	94.03	8	99.63	94.98	5.60	0.70	4.65	0.58
26	51	9378F	LW2-G390	2		10	10	0	100.0	0.0	100.54	10	109.29	102.51	8.75	0.88	6.78	0.68
27	105	9378F	LW2-G390	3		10	4	6	40.0	60.0	94.67	4	97.46	95.36	2.79	0.70	2.10	0.52
28	94	9378F	LW2-G390	4		10	7	3	70.0	30.0	94.10	7	98.70	95.28	4.60	0.66	3.42	0.49
29	108	9378F	LW2-G390	5		11	11	0	100.0	0.0	69.31	11	80.37	72.15	11.06	1.01	8.22	0.75
30	22	9378F	LW2-G390	6		10	7	3	70.0	30.0	99.60	7	111.10	106.79	11.50	1.64	4.31	0.62
31	111	9378F	LW2-G390	7		10	6	4	60.0	40.0	95.93	6	103.04	97.78	7.11	1.19	5.26	0.88
32	159	9378F	LW2-G390	8	wq replicate	10	8	2	80.0	20.0	90.41	8	97.71	92.14	7.30	0.91	5.57	0.70
33	142	9379F	LW2-G387	1		10	9	1	90.0	10.0	93.98	9	111.75	100.24	17.77	1.97	11.51	1.28
34	76	9379F	LW2-G387	2		10	10	0	100.0	0.0	90.69	10	103.45	94.39	12.76	1.28	9.06	0.91
35	27	9379F	LW2-G387	3		10	10	0	100.0	0.0	99.29	10	112.35	102.52	13.06	1.31	9.83	0.98
36	144	9379F	LW2-G387	4		10	7	3	70.0	30.0	103.78	6	118.61	108.74	14.83	2.47	9.87	1.65
37	153	9379F	LW2-G387	5		10	10	0	100.0	0.0	95.67	10	117.24	102.84	21.57	2.16	14.40	1.44
38	130	9379F	LW2-G387	6		10	8	2	80.0	20.0	88.32	8	105.41	93.35	17.09	2.14	12.06	1.51
39	92	9379F	LW2-G387	7		10	7	3	70.0	30.0	101.27	7	110.38	103.77	9.11	1.30	6.61	0.94
40	53	9379F	LW2-G387	8	wq replicate	10	7	3	70.0	30.0	100.60	7	114.33	104.58	13.73	1.96	9.75	1.39
41	49	9380F	LW2-G372-1	1		10	10	0	100.0	0.0	103.62	10	117.04	107.24	13.42	1.34	9.80	0.98
42	81	9380F	LW2-G372-1	2		10	10	0	100.0	0.0	98.92	10	114.61	104.09	15.69	1.57	10.52	1.05
43	46	9380F	LW2-G372-1	3		10	10	0	100.0	0.0	96.15	10	109.21	99.80	13.06	1.31	9.41	0.94
44	10	9380F	LW2-G372-1	4		10	10	0	100.0	0.0	84.93	10	96.98	87.89	12.05	1.21	9.09	0.91
45	34	9380F	LW2-G372-1	5		10	10	0	100.0	0.0	87.38	10	99.99	90.86	12.61	1.26	9.13	0.91
46	25	9380F	LW2-G372-1	6		10	8	2	80.0	20.0	92.61	8	108.48	96.58	15.87	1.98	11.90	1.49
47	72	9380F	LW2-G372-1	7		10	10	0	100.0	0.0	91.00	10	109.58	96.33	18.58	1.86	13.25	1.33
48	102	9380F	LW2-G372-1	8	wq replicate	10	9	1	90.0	10.0	97.19	9	110.53	100.81	13.34	1.48	9.72	1.08

	SURV	MORT	PSURV	PMORT	WT	AFDW
Mean	8.8	1.4	86.3	13.8	1.58	1.23
SD	1.2	0.9	9.2	9.2	0.41	0.32
n	8	8	8	8	8	8
Mean	9.1	0.9	91.3	8.8	1.85	1.23
SD	1.5	1.5	14.6	14.6	0.29	0.21
n	8	8	8	8	8	8
Mean	8.3	1.8	82.5	17.5	1.56	1.13
SD	2.5	2.5	24.9	24.9	0.37	0.20
n	8	8	8	8	8	8
Mean	7.6	2.5	75.0	25.0	0.96	0.65
SD	2.2	2.0	20.0	20.0	0.33	0.13
n	8	8	8	8	8	8
Mean	8.5	1.5	85.0	15.0	1.82	1.26
SD	1.4	1.4	14.1	14.1	0.46	0.28
n	8	8	8	8	8	8
Mean	9.6	0.4	96.3	3.8	1.50	1.09
SD	0.7	0.7	7.4	7.4	0.29	0.21
n	8	8	8	8	8	8

ANC07441
BZTO104(e)007441

Test Number: 686-10

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)			SURV	MORT	PSURV	PMORT	WT	AFDW
49	9	9381F	LW2-G398	1		11	11	0	100.0	0.0	96.19	11	111.79	99.41	15.60	1.42	12.38	1.13								
50	63	9381F	LW2-G398	2		10	10	0	100.0	0.0	94.00	10	107.08	97.45	13.08	1.31	9.63	0.96								
51	84	9381F	LW2-G398	3		10	10	0	100.0	0.0	95.06	10	113.84	101.66	18.78	1.88	12.18	1.22								
52	82	9381F	LW2-G398	4		10	6	4	60.0	40.0	96.17	6	109.90	100.23	13.73	2.29	9.67	1.61								
53	12	9381F	LW2-G398	5		10	7	3	70.0	30.0	94.92	7	110.31	98.65	15.39	2.20	11.66	1.67	Mean	9.3	0.9	91.3	8.8	1.92	1.34
54	126	9381F	LW2-G398	6		10	10	0	100.0	0.0	86.86	10	108.37	93.56	21.51	2.15	14.81	1.48	SD	1.8	1.6	16.4	16.4	0.37	0.24
55	164	9381F	LW2-G398	7		10	10	0	100.0	0.0	99.62	10	120.88	107.12	21.26	2.13	13.76	1.38	n	8	8	8	8	8	8
56	40	9381F	LW2-G398	8	wq replicate	10	10	0	100.0	0.0	99.56	10	119.82	106.94	20.26	2.03	12.88	1.29								
57	88	9382F	LW2-G492-1	1		10	9	1	90.0	10.0	96.40	9	108.60	100.67	12.20	1.36	7.93	0.88								
58	54	9382F	LW2-G492-1	2		10	10	0	100.0	0.0	100.46	8	113.84	105.10	13.38	1.67	8.74	1.09								
59	13	9382F	LW2-G492-1	3		10	8	2	80.0	20.0	99.18	8	114.86	103.44	15.68	1.96	11.42	1.43								
60	37	9382F	LW2-G492-1	4		10	10	0	100.0	0.0	96.46	10	116.12	103.00	19.66	1.97	13.12	1.31								
61	33	9382F	LW2-G492-1	5		10	10	0	100.0	0.0	97.22	10	112.83	102.30	15.61	1.56	10.53	1.05	Mean	9.0	1.0	90.0	10.0	1.80	1.30
62	57	9382F	LW2-G492-1	6		10	9	1	90.0	10.0	102.80	9	117.43	103.31	14.63	1.63	14.12	1.57	SD	1.1	1.1	10.7	10.7	0.33	0.27
63	18	9382F	LW2-G492-1	7		10	9	1	90.0	10.0	90.47	9	106.95	94.20	16.48	1.83	12.75	1.42	n	8	8	8	8	8	8
64	138	9382F	LW2-G492-1	8	wq replicate	10	7	3	70.0	30.0	86.12	7	103.09	91.32	16.97	2.42	11.77	1.68								
65	42	9383F	LW2-G497	1		10	9	1	90.0	10.0	97.18	9	108.35	99.98	11.17	1.24	8.37	0.93								
66	124	9383F	LW2-G497	2		10	8	2	80.0	20.0	90.22	7	106.14	95.65	15.92	2.27	10.49	1.50								
67	135	9383F	LW2-G497	3		10	9	1	90.0	10.0	87.17	8	104.44	92.95	17.27	2.16	11.49	1.44								
68	6	9383F	LW2-G497	4		10	8	2	80.0	20.0	92.21	8	103.59	95.72	11.38	1.42	7.87	0.98								
69	65	9383F	LW2-G497	5		10	8	2	80.0	20.0	89.92	8	102.73	93.77	12.81	1.60	8.96	1.12	Mean	8.8	1.3	87.5	12.5	1.76	1.20
70	100	9383F	LW2-G497	6		10	10	0	100.0	0.0	100.32	10	119.27	106.88	18.95	1.90	12.39	1.24	SD	0.9	0.9	8.9	8.9	0.36	0.20
71	31	9383F	LW2-G497	7		10	10	0	100.0	0.0	98.88	10	114.76	103.49	15.88	1.59	11.27	1.13	n	8	8	8	8	8	8
72	97	9383F	LW2-G497	8	wq replicate	10	8	2	80.0	20.0	94.69	8	109.81	99.94	15.12	1.89	9.87	1.23								
73	140	9384F	LW2-G474	1		10	9	1	90.0	10.0	97.18	9	119.74	105.33	22.56	2.51	14.41	1.60								
74	99	9384F	LW2-G474	2		10	8	2	80.0	20.0	102.30	7	115.70	106.46	13.40	1.91	9.24	1.32								
75	74	9384F	LW2-G474	3		10	9	1	90.0	10.0	97.03	9	114.78	102.61	17.75	1.97	12.17	1.35								
76	117	9384F	LW2-G474	4		10	10	0	100.0	0.0	95.57	10	114.54	101.43	18.97	1.90	13.11	1.31								
77	163	9384F	LW2-G474	5		10	9	1	90.0	10.0	92.08	9	111.47	99.84	19.39	2.15	11.63	1.29	Mean	8.9	1.1	88.8	11.3	1.97	1.31
78	95	9384F	LW2-G474	6		10	8	2	80.0	20.0	95.16	8	108.85	99.68	13.69	1.71	9.17	1.15	SD	0.8	0.8	8.3	8.3	0.32	0.17
79	30	9384F	LW2-G474	7		10	10	0	100.0	0.0	96.59	10	110.94	100.65	14.35	1.44	10.29	1.03	n	8	8	8	8	8	8
80	167	9384F	LW2-G474	8	wq replicate	10	8	2	80.0	20.0	95.65	8	112.71	101.54	17.06	2.13	11.17	1.40								
81	52	9385F	LW2-G469	1		10	9	1	90.0	10.0	100.80	8	111.88	103.85	11.08	1.39	8.03	1.00								
82	79	9385F	LW2-G469	2		10	9	1	90.0	10.0	91.86	9	104.37	95.06	12.51	1.39	9.31	1.03								
83	90	9385F	LW2-G469	3		10	6	4	60.0	40.0	98.70	6	108.46	101.85	9.76	1.63	6.61	1.10								
84	103	9385F	LW2-G469	4		10	8	2	80.0	20.0	95.02	8	107.15	98.80	12.13	1.52	8.35	1.04								
85	3	9385F	LW2-G469	5		10	9	1	90.0	10.0	93.50	9	105.08	96.75	11.58	1.29	8.33	0.93	Mean	7.9	2.1	78.8	21.3	1.61	1.15
86	104	9385F	LW2-G469	6		10	7	3	70.0	30.0	92.37	7	103.64	95.31	11.27	1.61	8.33	1.19	SD	1.4	1.4	13.6	13.6	0.34	0.22
87	141	9385F	LW2-G469	7		10	6	4	60.0	40.0	91.36	6	105.51	95.83	14.15	2.36	9.68	1.61	n	8	8	8	8	8	8
88	48	9385F	LW2-G469	8	wq replicate	10	9	1	90.0	10.0	99.10	9	114.80	103.12	15.70	1.74	11.68	1.30								
89	41	9386F	LW2-G458	1		10	10	0	100.0	0.0	99.88	10	113.21	103.41	13.33	1.33	9.80	0.98								
90	145	9386F	LW2-G458	2		10	8	2	80.0	20.0	92.59	8	112.64	99.87	20.05	2.51	12.77	1.60								
91	152	9386F	LW2-G458	3		10	9	1	90.0	10.0	96.89	8	112.10	102.57	15.21	1.90	9.53	1.19								
92	110	9386F	LW2-G458	4		10	7	3	70.0	30.0	94.86	7	111.94	100.06	17.08	2.44	11.88	1.70								
93	44	9386F	LW2-G458	5		10	10	0	100.0	0.0	92.46	10	106.74	96.08	14.28	1.43	10.66	1.07	Mean	8.9	1.1	88.8	11.3	1.85	1.27
94	137	9386F	LW2-G458	6		10	9	1	90.0	10.0	88.77	9	109.51	95.19	20.74	2.30	14.32	1.59	SD	1.0	1.0	9.9	9.9	0.52	0.31
95	61	9386F	LW2-G458	7		10	9	1	90.0	10.0	98.85	9	109.87	101.56	11.02	1.22	8.31	0.92	n	8	8	8	8	8	8
96	8	9386F	LW2-G458	8	wq replicate	10	9	1	90.0	10.0	95.07	9	109.68	99.53	14.61	1.62	10.15	1.13								
97	93	9387F	LW2-G450-1	1		10	9	1	90.0	10.0	97.29	9	109.15	100.89	11.86	1.32	8.26	0.92								
98	132	9387F	LW2-G450-1	2		10	8	2	80.0	20.0	86.53	8	103.56	91.22	17.03	2.13	12.34	1.54								
99	101	9387F	LW2-G450-1	3		10	2	8	20.0	80.0	96.25	2	99.48	97.36	3.23	1.62	2.12	1.06								
100	162	9387F	LW2-G450-1	4		10	7	3	70.0	30.0	87.80	7	104.38	93.19	16.58	2.37	11.19	1.60								
101	47	9387F	LW2-G450-1	5		10	9	1	90.0	10.0	96.04	9	107.60	98.56	11.56	1.28	9.04	1.00	Mean	7.5	2.5	75.0	25.0	1.78	1.20
102	121	9387F	LW2-G450-1	6		10	9	1	90.0	10.0	92.02	9	111.21	99.08	19.19	2.13	12.13	1.35	SD	2.6	2.6	25.6	25.6	0.42	0.26
103	80	9387F	LW2-G450-1	7		10	10	0	100.0	0.0	95.84	10	109.96	100.17	14.12	1.41	9.79	0.98	n	8	8	8	8	8	8
104	168	9387F	LW2-G450-1	8	wq replicate	10	6	4	60.0	40.0	93.38	6	105.03	97.91	11.65	1.94	7.12	1.19								
105	20	9388F	LW2-G441	1		10	8	2	80.0	20.0	91.49	8	106.72	95.50	15.23	1.90	11.22	1.40								
106	115	9388F	LW2-G441	2		10	10	0	100.0	0.0	93.76	10	116.50	102.70	22.74	2.27	13.80	1.38								
107	7	9388F	LW2-G441	3		10	10	0	100.0	0.0	99.27	10	113.63	102.52	14.36	1.44	11.11	1.11								
108	36	9388F	LW2-G441	4		10	8	2	80.0	20.0	91.06	7	105.81	96.09	14.75	2.11	9.72	1.39								
109	71	9388F	LW2-G441	5		10	7	3	70.0	30.0	98.01	6	110.76	101.21	12.75	2.13	9.55	1.59	Mean	8.8	1.3	87.5	12.5	1.86	1.30
110	56	9388F	LW2-G441	6		10	10	0	100.0	0.0	105.02	10	119.65	109.61	14.63	1.46	10.04	1.00	SD	1.4	1.4	13.9	13.9	0.37	0.23
111	45	9388F	LW2-G441	7		10	10	0	100.0	0.0	84.15	10	98.28	88.33	14.13	1.41	9.95	1.00	n	8	8	8	8	8	8

ANC07442
BZTO104(e)007442

Test Number: 686-10

Freshwater Sediment Test
10-Day Chironomus tentans

		NAS	CLIENT								TARE	WT	DRY	ASHED	TWT	WT	TAFDW	AFDW								
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	WT (mg)	COUNT	WT (mg)	DRY WT (mg)	(mg)	(mg)	(mg)	(mg)			SURV	MORT	PSURV	PMORT	WT	AFDW
112	109	9388F	LW2-G441	8	wq replicate	10	7	3	70.0	30.0	67.02	7	82.26	71.72	15.24	2.18	10.54	1.51								

ANC07443
BZTO104(e)007443

Test Number: 686-10

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)			SURV	MORT	PSURV	PMORT	WT	AFDW
113	131	9389F	LW2-G444	1		10	9	1	90.0	10.0	95.09	9	112.84	101.01	17.75	1.97	11.83	1.31								
114	156	9389F	LW2-G444	2		10	8	2	80.0	20.0	92.56	8	110.21	99.27	17.65	2.21	10.94	1.37								
115	66	9389F	LW2-G444	3		10	9	1	90.0	10.0	93.64	9	106.26	97.22	12.62	1.40	9.04	1.00								
116	75	9389F	LW2-G444	4		10	10	0	100.0	0.0	96.68	10	109.35	100.23	12.67	1.27	9.12	0.91								
117	91	9389F	LW2-G444	5		10	8	2	80.0	20.0	88.22	6	95.92	91.00	7.70	1.28	4.92	0.82	Mean	9.0	1.0	90.0	10.0	1.66	1.10
118	2	9389F	LW2-G444	6		10	10	0	100.0	0.0	90.96	10	103.98	95.11	13.02	1.30	8.87	0.89	SD	0.8	0.8	7.6	7.6	0.39	0.22
119	39	9389F	LW2-G444	7		10	9	1	90.0	10.0	96.29	9	112.24	101.74	15.95	1.77	10.50	1.17	n	8	8	8	8	8	8
120	106	9389F	LW2-G444	8	wq replicate	10	9	1	90.0	10.0	91.08	9	109.84	98.14	18.76	2.08	11.70	1.30								
121	127	9390F	LW2-G455	1		10	9	1	90.0	10.0	86.57	9	98.47	89.39	11.90	1.32	9.08	1.01								
122	146	9390F	LW2-G455	2		10	6	4	60.0	40.0	94.15	6	103.86	97.18	9.71	1.62	6.68	1.11								
123	160	9390F	LW2-G455	3		10	7	3	70.0	30.0	63.49	7	71.08	65.56	7.59	1.08	5.52	0.79								
124	35	9390F	LW2-G455	4		10	6	4	60.0	40.0	98.47	6	102.37	99.10	3.90	0.65	3.27	0.55								
125	78	9390F	LW2-G455	5		10	8	2	80.0	20.0	98.47	8	105.11	99.56	6.64	0.83	5.55	0.69	Mean	6.6	3.4	66.3	33.8	0.96	0.73
126	32	9390F	LW2-G455	6		10	9	1	90.0	10.0	95.39	9	100.50	96.18	5.11	0.57	4.32	0.48	SD	2.9	2.9	29.2	29.2	0.40	0.26
127	86	9390F	LW2-G455	7		10	0	10	0.0	100.0	93.13	0							n	8	8	8	8	7	7
128	166	9390F	LW2-G455	8	wq replicate	10	8	2	80.0	20.0	95.32	8	100.31	96.58	4.99	0.62	3.73	0.47								
129	116	9391F	LW2-G445	1		10	10	0	100.0	0.0	95.21	10	108.33	99.34	13.12	1.31	8.99	0.90								
130	28	9391F	LW2-G445	2		10	7	3	70.0	30.0	90.38	7	94.24	91.21	3.86	0.55	3.03	0.43								
131	150	9391F	LW2-G445	3		10	9	1	90.0	10.0	91.65	9	104.96	96.36	13.31	1.48	8.60	0.96								
132	118	9391F	LW2-G445	4		10	10	0	100.0	0.0	92.04	10	104.25	95.53	12.21	1.22	8.72	0.87								
133	107	9391F	LW2-G445	5		10	10	0	100.0	0.0	96.14	10	107.55	99.53	11.41	1.14	8.02	0.80	Mean	8.9	1.1	88.8	11.3	1.21	0.86
134	62	9391F	LW2-G445	6		10	8	2	80.0	20.0	96.25	8	102.09	97.47	5.84	0.73	4.62	0.58	SD	1.1	1.1	11.3	11.3	0.40	0.27
135	55	9391F	LW2-G445	7		10	8	2	80.0	20.0	95.61	8	109.47	99.33	13.86	1.73	10.14	1.27	n	8	8	8	8	8	8
136	134	9391F	LW2-G445	8	wq replicate	10	9	1	90.0	10.0	92.30	9	106.16	96.16	13.86	1.54	10.00	1.11								
137	16	9392F	LW2-G359	1		10	3	7	30.0	70.0	101.61	3	106.55	103.83	4.94	1.65	2.72	0.91								
138	120	9392F	LW2-G359	2		10	9	1	90.0	10.0	94.22	9	114.42	101.59	20.20	2.24	12.83	1.43								
139	58	9392F	LW2-G359	3		10	7	3	70.0	30.0	99.73	7	108.27	101.73	8.54	1.22	6.54	0.93								
140	149	9392F	LW2-G359	4		10	8	2	80.0	20.0	96.15	8	116.74	104.37	20.59	2.57	12.37	1.55								
141	5	9392F	LW2-G359	5		10	6	4	60.0	40.0	105.22	6	113.06	106.66	7.84	1.31	6.40	1.07	Mean	7.3	2.8	72.5	27.5	1.78	1.14
142	139	9392F	LW2-G359	6		10	9	1	90.0	10.0	90.64	9	112.61	99.76	21.97	2.44	12.85	1.43	SD	2.1	2.1	20.5	20.5	0.56	0.29
143	50	9392F	LW2-G359	7		10	9	1	90.0	10.0	86.14	9	99.33	89.77	13.19	1.47	9.56	1.06	n	8	8	8	8	8	8
144	17	9392F	LW2-G359	8	wq replicate	10	7	3	70.0	30.0	89.28	7	98.40	93.21	9.12	1.30	5.19	0.74								
145	14	9393F	LW2-G321	1		10	9	1	90.0	10.0	95.49	9	107.35	97.84	11.86	1.32	9.51	1.06								
146	21	9393F	LW2-G321	2		10	7	3	70.0	30.0	94.65	7	107.20	99.51	12.55	1.79	7.69	1.10								
147	23	9393F	LW2-G321	3		10	8	2	80.0	20.0	98.84	8	112.09	101.55	13.25	1.66	10.54	1.32								
148	1	9393F	LW2-G321	4		10	8	2	80.0	20.0	92.37	8	98.29	93.21	5.92	0.74	5.08	0.64								
149	119	9393F	LW2-G321	5		10	8	2	80.0	20.0	92.20	8	103.96	95.79	11.76	1.47	8.17	1.02	Mean	8.4	1.6	83.8	16.3	1.39	1.02
150	123	9393F	LW2-G321	6		10	10	0	100.0	0.0	85.97	10	101.96	90.71	15.99	1.60	11.25	1.13	SD	1.2	1.2	11.9	11.9	0.37	0.22
151	158	9393F	LW2-G321	7		10	7	3	70.0	30.0	89.96	7	101.18	93.13	11.22	1.60	8.05	1.15	n	8	8	8	8	8	8
152	59	9393F	LW2-G321	8	wq replicate	10	10	0	100.0	0.0	103.88	10	113.55	106.21	9.67	0.97	7.34	0.73								
153	98	9394F	LW2-G329	1		10	9	1	90.0	10.0	93.72	9	110.35	98.21	16.63	1.85	12.14	1.35								
154	161	9394F	LW2-G329	2		10	10	0	100.0	0.0	99.29	9	118.14	106.54	18.85	2.09	11.60	1.29								
155	64	9394F	LW2-G329	3		10	9	1	90.0	10.0	100.72	9	113.35	103.56	12.63	1.40	9.79	1.09								
156	96	9394F	LW2-G329	4		10	9	1	90.0	10.0	109.34	9	128.09	115.87	18.75	2.08	12.22	1.36								
157	128	9394F	LW2-G329	5		10	10	0	100.0	0.0	97.13	9	114.84	102.60	17.71	1.97	12.24	1.36	Mean	9.5	0.5	95.0	5.0	1.77	1.23
158	69	9394F	LW2-G329	6		10	10	0	100.0	0.0	96.65	10	112.02	101.38	15.37	1.54	10.64	1.06	SD	0.5	0.5	5.3	5.3	0.27	0.13
159	67	9394F	LW2-G329	7		10	10	0	100.0	0.0	95.97	10	110.92	99.93	14.95	1.50	10.99	1.10	n	8	8	8	8	8	8
160	85	9394F	LW2-G329	8	wq replicate	10	9	1	90.0	10.0	97.72	9	113.01	102.19	15.29	1.70	10.82	1.20								
161	114	9395F	LW2-G197-1	1		10	9	1	90.0	10.0	88.65	9	108.82	95.26	20.17	2.24	13.56	1.51								
162	68	9395F	LW2-G197-1	2		10	10	0	100.0	0.0	88.05	10	102.73	91.59	14.68	1.47	11.14	1.11								
163	143	9395F	LW2-G197-1	3		10	7	3	70.0	30.0	99.27	7	116.02	104.88	16.75	2.39	11.14	1.59								
164	29	9395F	LW2-G197-1	4		10	10	0	100.0	0.0	92.89	10	105.62	95.89	12.73	1.27	9.73	0.97								
165	133	9395F	LW2-G197-1	5		10	8	2	80.0	20.0	98.73	7	110.59	101.58	11.86	1.69	9.01	1.29	Mean	8.5	1.5	85.0	15.0	1.93	1.34
166	147	9395F	LW2-G197-1	6		10	7	3	70.0	30.0	93.27	6	108.76	98.42	15.49	2.58	10.34	1.72	SD	1.2	1.2	12.0	12.0	0.57	0.31
167	87	9395F	LW2-G197-1	7		10	9	1	90.0	10.0	64.47	9	75.59	67.19	11.12	1.24	8.40	0.93	n	8	8	8	8	8	8
168	129	9395F	LW2-G197-1	8	wq replicate	10	8	2	80.0	20.0	92.39	8	112.76	100.01	20.37	2.55	12.75	1.59								

Beakers #24, 36, 52, 71, 99, 124, 128, 133, 135, 144, 147, 152, and 161 each had one pupa which was not included in the weighing. Beakers #54 and #91 had two pupae which were not included in the weighing.

Pupae are not included in the sample to estimate ash-free dry weight (as per EPA/600/R-99/064, p. 59, section 12.3.8.2)

ANC07444
BZTO104(e)007444

Test Number: 686-10

Freshwater Sediment Test
10-Day Chironomus tentans

Water Quality Data

NAS SMPL	CLIENT DESCRIP	Bulk Sediment Interstitial water NH3	pH
9403F	Control	1.6	7.0
9376F	LW2-G353-1	9.8	6.3
9377F	LW2-G384-1	16.3	6.3
9378F	LW2-G390	4.7	6.3
9379F	LW2-G387	16.1	6.2
9380F	LW2-G372-1	4.2	6.3
9381F	LW2-G398	13.2	6.2
9382F	LW2-G492-1	14.9	6.3
9383F	LW2-G497	22.2	6.3
9384F	LW2-G474	16.2	6.4
9385F	LW2-G469	15.0	6.3
9386F	LW2-G458	11.2	6.4
9387F	LW2-G450-1	15.1	6.4
9388F	LW2-G441	5.4	6.6
9389F	LW2-G444	5.3	6.4
9390F	LW2-G455	8.3	6.4
9391F	LW2-G445	0.9	6.4
9392F	LW2-G359	17.8	6.3
9393F	LW2-G321	9.1	6.6
9394F	LW2-G329	1.7	6.9
9395F	LW2-G197-1	2.7	6.5

	NAS	CLIENT			Overlying water						
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	NH3	HARD	ALK
8	9386F	LW2-G458	8	0	22.9	6.2	195	6.2	1.0	68	60
11	9377F	LW2-G384-1	8	0	22.9	6.2	175	6.3	1.4	51	40
17	9392F	LW2-G359	8	0	22.8	6.4	390	6.3	0.8	60	40
40	9381F	LW2-G398	8	0	23.0	6.6	195	6.4	1.2	51	50
48	9385F	LW2-G469	8	0	23.0	6.4	200	6.3	1.4	60	50
53	9379F	LW2-G387	8	0	22.9	6.3	200	6.2	1.4	60	60
59	9393F	LW2-G321	8	0	22.9	6.6	180	6.5	0.9	51	40
77	9403F	Control	8	0	23.0	6.4	280	6.4	<0.1	43	40
85	9394F	LW2-G329	8	0	23.0	6.2	190	6.5	0.1	51	40
97	9383F	LW2-G497	8	0	23.1	6.4	190	6.2	1.9	51	60
102	9380F	LW2-G372-1	8	0	23.0	6.2	165	6.2	0.5	51	40
106	9389F	LW2-G444	8	0	23.0	6.2	160	6.2	0.7	43	40
109	9388F	LW2-G441	8	0	23.1	6.0	170	6.3	0.6	43	50
129	9395F	LW2-G197-1	8	0	23.2	6.4	160	6.3	0.3	51	40
134	9391F	LW2-G445	8	0	23.2	6.1	155	6.3	<0.1	43	40
138	9382F	LW2-G492-1	8	0	23.2	6.2	180	6.2	1.2	60	50
159	9378F	LW2-G390	8	0	23.1	6.0	160	6.3	0.6	43	40
165	9376F	LW2-G353-1	8	0	23.1	6.0	170	6.3	0.9	43	40
166	9390F	LW2-G455	8	0	23.1	6.3	160	6.3	0.7	43	40
167	9384F	LW2-G474	8	0	23.0	6.5	200	6.2	1.2	60	60
168	9387F	LW2-G450-1	8	0	23.0	6.4	170	6.2	1.5	60	60
8	9386F	LW2-G458	8	1	23.0	5.4					
11	9377F	LW2-G384-1	8	1	23.0	5.9					
17	9392F	LW2-G359	8	1	23.0	5.7					
40	9381F	LW2-G398	8	1	23.1	6.0					
48	9385F	LW2-G469	8	1	23.1	5.8					
53	9379F	LW2-G387	8	1	23.0	5.9					
59	9393F	LW2-G321	8	1	23.0	5.5					
77	9403F	Control	8	1	22.9	5.6					
85	9394F	LW2-G329	8	1	23.1	5.7					
97	9383F	LW2-G497	8	1	23.0	5.9					
102	9380F	LW2-G372-1	8	1	22.9	6.2					
106	9389F	LW2-G444	8	1	23.0	6.0					

109	9388F	LW2-G441	8	1	23.1	6.1									
129	9395F	LW2-G197-1	8	1	23.3	6.3									
134	9391F	LW2-G445	8	1	23.3	6.0									
138	9382F	LW2-G492-1	8	1	23.2	5.8									
159	9378F	LW2-G390	8	1	23.1	5.9									
165	9376F	LW2-G353-1	8	1	23.1	5.5									
166	9390F	LW2-G455	8	1	23.0	5.4									
167	9384F	LW2-G474	8	1	22.9	5.2									
168	9387F	LW2-G450-1	8	1	23.0	5.8									
8	9386F	LW2-G458	8	2	22.9	5.4									
11	9377F	LW2-G384-1	8	2	23.0	5.4									
17	9392F	LW2-G359	8	2	22.9	6.1									
40	9381F	LW2-G398	8	2	23.0	4.7									
48	9385F	LW2-G469	8	2	23.0	5.2									
53	9379F	LW2-G387	8	2	23.0	4.6									
59	9393F	LW2-G321	8	2	23.1	5.5									
77	9403F	Control	8	2	23.0	5.6									
85	9394F	LW2-G329	8	2	23.1	5.0									
97	9383F	LW2-G497	8	2	23.0	4.9									
102	9380F	LW2-G372-1	8	2	23.0	5.1									
106	9389F	LW2-G444	8	2	23.1	4.7									
109	9388F	LW2-G441	8	2	23.1	5.2									
129	9395F	LW2-G197-1	8	2	23.2	5.0									
134	9391F	LW2-G445	8	2	23.3	5.4									
138	9382F	LW2-G492-1	8	2	23.2	4.4									
159	9378F	LW2-G390	8	2	23.1	5.3									
165	9376F	LW2-G353-1	8	2	23.1	5.4									
166	9390F	LW2-G455	8	2	23.0	5.7									
167	9384F	LW2-G474	8	2	23.0	5.4									
168	9387F	LW2-G450-1	8	2	23.0	5.7									
8	9386F	LW2-G458	8	3	22.7	5.6									
11	9377F	LW2-G384-1	8	3	22.9	5.5									
17	9392F	LW2-G359	8	3	22.9	5.9									
40	9381F	LW2-G398	8	3	23.0	4.8									
48	9385F	LW2-G469	8	3	22.9	5.4									
53	9379F	LW2-G387	8	3	22.8	5.0									
59	9393F	LW2-G321	8	3	22.8	5.3									
77	9403F	Control	8	3	22.9	5.5									
85	9394F	LW2-G329	8	3	22.9	5.1									
97	9383F	LW2-G497	8	3	22.9	5.4									
102	9380F	LW2-G372-1	8	3	22.9	5.1									
106	9389F	LW2-G444	8	3	22.9	4.4									
109	9388F	LW2-G441	8	3	23.0	5.3									
129	9395F	LW2-G197-1	8	3	23.0	5.5									
134	9391F	LW2-G445	8	3	23.0	5.7									
138	9382F	LW2-G492-1	8	3	23.0	4.6									
159	9378F	LW2-G390	8	3	23.0	4.9									
165	9376F	LW2-G353-1	8	3	22.9	5.1									
166	9390F	LW2-G455	8	3	23.0	5.2									
167	9384F	LW2-G474	8	3	22.9	5.3									
168	9387F	LW2-G450-1	8	3	22.9	5.5									
8	9386F	LW2-G458	8	4	22.8	4.2									
11	9377F	LW2-G384-1	8	4	22.9	4.2									
17	9392F	LW2-G359	8	4	22.8	4.4									
40	9381F	LW2-G398	8	4	22.9	4.4									
48	9385F	LW2-G469	8	4	22.9	4.4									
53	9379F	LW2-G387	8	4	22.8	3.8									
59	9393F	LW2-G321	8	4	22.9	4.2									
77	9403F	Control	8	4	22.9	4.8									
85	9394F	LW2-G329	8	4	22.9	5.0									
97	9383F	LW2-G497	8	4	22.9	3.9									
102	9380F	LW2-G372-1	8	4	22.9	4.3									
106	9389F	LW2-G444	8	4	23.0	5.0									

109	9388F	LW2-G441	8	4	22.9	4.6									
129	9395F	LW2-G197-1	8	4	23.0	3.9									
134	9391F	LW2-G445	8	4	23.0	4.1									
138	9382F	LW2-G492-1	8	4	23.0	4.2									
159	9378F	LW2-G390	8	4	22.9	4.8									
165	9376F	LW2-G353-1	8	4	22.9	4.9									
166	9390F	LW2-G455	8	4	22.9	5.2									
167	9384F	LW2-G474	8	4	22.9	4.3									
168	9387F	LW2-G450-1	8	4	22.9	4.4									
8	9386F	LW2-G458	8	5	22.6	4.0		6.5							
11	9377F	LW2-G384-1	8	5	22.8	3.6		6.5							
17	9392F	LW2-G359	8	5	22.8	3.0		6.4							
40	9381F	LW2-G398	8	5	22.8	4.2		6.4							
48	9385F	LW2-G469	8	5	22.8	3.4		6.4							
53	9379F	LW2-G387	8	5	22.8	3.4		6.4							
59	9393F	LW2-G321	8	5	22.9	4.2		6.4							
77	9403F	Control	8	5	22.8	4.2		6.4							
85	9394F	LW2-G329	8	5	22.9	4.6		6.4							
97	9383F	LW2-G497	8	5	22.9	4.2		6.3							
102	9380F	LW2-G372-1	8	5	22.9	4.1		6.2							
106	9389F	LW2-G444	8	5	23.0	4.7		6.2							
109	9388F	LW2-G441	8	5	23.0	4.2		6.2							
129	9395F	LW2-G197-1	8	5	23.1	4.1		6.2							
134	9391F	LW2-G445	8	5	23.1	3.3		6.1							
138	9382F	LW2-G492-1	8	5	22.9	3.4		6.1							
159	9378F	LW2-G390	8	5	22.9	4.4		6.3							
165	9376F	LW2-G353-1	8	5	23.1	4.3		6.3							
166	9390F	LW2-G455	8	5	23.1	5.0		6.2							
167	9384F	LW2-G474	8	5	23.0	4.2		6.2							
168	9387F	LW2-G450-1	8	5	23.1	4.0		6.2							
8	9386F	LW2-G458	8	6	22.6	3.8									
11	9377F	LW2-G384-1	8	6	22.7	4.0									
17	9392F	LW2-G359	8	6	22.6	2.8									
40	9381F	LW2-G398	8	6	22.8	4.6									
48	9385F	LW2-G469	8	6	22.8	3.1									
53	9379F	LW2-G387	8	6	22.7	3.6									
59	9393F	LW2-G321	8	6	22.7	4.3									
77	9403F	Control	8	6	22.7	3.9									
85	9394F	LW2-G329	8	6	22.7	4.3									
97	9383F	LW2-G497	8	6	22.7	4.2									
102	9380F	LW2-G372-1	8	6	22.7	4.2									
106	9389F	LW2-G444	8	6	22.7	4.1									
109	9388F	LW2-G441	8	6	22.7	4.4									
129	9395F	LW2-G197-1	8	6	22.8	4.8									
134	9391F	LW2-G445	8	6	22.8	3.6									
138	9382F	LW2-G492-1	8	6	22.8	3.6									
159	9378F	LW2-G390	8	6	22.7	4.5									
165	9376F	LW2-G353-1	8	6	23.1	4.5									
166	9390F	LW2-G455	8	6	23.1	4.8									
167	9384F	LW2-G474	8	6	23.1	4.0									
168	9387F	LW2-G450-1	8	6	23.2	4.1									
8	9386F	LW2-G458	8	7	22.8	4.5									
11	9377F	LW2-G384-1	8	7	22.8	4.6									
17	9392F	LW2-G359	8	7	22.8	3.9									
40	9381F	LW2-G398	8	7	22.8	5.2									
48	9385F	LW2-G469	8	7	22.8	4.4									
53	9379F	LW2-G387	8	7	22.8	4.2									
59	9393F	LW2-G321	8	7	22.8	4.1									
77	9403F	Control	8	7	22.9	4.6									
85	9394F	LW2-G329	8	7	22.8	4.4									
97	9383F	LW2-G497	8	7	22.9	4.5									
102	9380F	LW2-G372-1	8	7	22.9	4.6									
106	9389F	LW2-G444	8	7	22.9	4.4									

109	9388F	LW2-G441	8	7	22.9	4.7									
129	9395F	LW2-G197-1	8	7	22.9	5.2									
134	9391F	LW2-G445	8	7	22.9	4.4									
138	9382F	LW2-G492-1	8	7	22.9	4.3									
159	9378F	LW2-G390	8	7	22.8	5.1									
165	9376F	LW2-G353-1	8	7	22.8	5.4									
166	9390F	LW2-G455	8	7	22.9	4.3									
167	9384F	LW2-G474	8	7	22.8	4.4									
168	9387F	LW2-G450-1	8	7	22.8	4.3									
8	9386F	LW2-G458	8	8	23.1	5.1									
11	9377F	LW2-G384-1	8	8	23.0	5.4									
17	9392F	LW2-G359	8	8	23.0	4.8									
40	9381F	LW2-G398	8	8	22.8	5.4									
48	9385F	LW2-G469	8	8	22.8	4.6									
53	9379F	LW2-G387	8	8	22.8	5.4									
59	9393F	LW2-G321	8	8	22.8	5.4									
77	9403F	Control	8	8	22.8	5.4									
85	9394F	LW2-G329	8	8	22.8	4.7									
97	9383F	LW2-G497	8	8	22.9	6.0									
102	9380F	LW2-G372-1	8	8	22.9	5.4									
106	9389F	LW2-G444	8	8	22.9	5.6									
109	9388F	LW2-G441	8	8	22.8	5.6									
129	9395F	LW2-G197-1	8	8	22.8	6.1									
134	9391F	LW2-G445	8	8	22.8	6.1									
138	9382F	LW2-G492-1	8	8	22.7	5.9									
159	9378F	LW2-G390	8	8	22.6	6.1									
165	9376F	LW2-G353-1	8	8	22.7	6.1									
166	9390F	LW2-G455	8	8	22.6	5.9									
167	9384F	LW2-G474	8	8	22.6	5.2									
168	9387F	LW2-G450-1	8	8	22.6	5.4									
8	9386F	LW2-G458	8	9	22.5	5.2									
11	9377F	LW2-G384-1	8	9	22.5	5.3									
17	9392F	LW2-G359	8	9	22.4	4.6									
40	9381F	LW2-G398	8	9	22.4	5.3									
48	9385F	LW2-G469	8	9	22.4	5.3									
53	9379F	LW2-G387	8	9	22.4	4.5									
59	9393F	LW2-G321	8	9	22.3	5.3									
77	9403F	Control	8	9	22.4	4.5									
85	9394F	LW2-G329	8	9	22.3	6.6									
97	9383F	LW2-G497	8	9	22.4	5.3									
102	9380F	LW2-G372-1	8	9	22.4	5.3									
106	9389F	LW2-G444	8	9	22.5	5.8									
109	9388F	LW2-G441	8	9	22.5	6.2									
129	9395F	LW2-G197-1	8	9	22.4	5.9									
134	9391F	LW2-G445	8	9	22.4	5.9									
138	9382F	LW2-G492-1	8	9	22.4	6.0									
159	9378F	LW2-G390	8	9	22.3	6.3									
165	9376F	LW2-G353-1	8	9	22.3	6.3									
166	9390F	LW2-G455	8	9	22.2	5.9									
167	9384F	LW2-G474	8	9	22.2	5.7									
168	9387F	LW2-G450-1	8	9	22.2	5.3									
8	9386F	LW2-G458	8	10	23.2	4.6	175	6.2	0.8	43	50				
11	9377F	LW2-G384-1	8	10	23.2	5.0	175	6.2	0.8	51	40				
17	9392F	LW2-G359	8	10	23.2	4.1	200	6.1	0.7	43	50				
40	9381F	LW2-G398	8	10	23.2	5.4	175	6.2	0.7	43	50				
48	9385F	LW2-G469	8	10	23.1	4.3	175	6.1	0.8	43	40				
53	9379F	LW2-G387	8	10	23.1	4.2	180	6.1	0.7	51	40				
59	9393F	LW2-G321	8	10	23.1	5.0	165	6.2	0.6	43	40				
77	9403F	Control	8	10	23.1	4.2	180	6.2	0.4	43	50				
85	9394F	LW2-G329	8	10	23.2	6.5	170	6.2	0.2	43	40				
97	9383F	LW2-G497	8	10	23.1	4.9	175	6.2	0.7	43	50				
102	9380F	LW2-G372-1	8	10	23.1	5.0	170	6.2	0.6	51	40				
106	9389F	LW2-G444	8	10	23.2	4.9	175	6.2	0.7	43	40				

109	9388F	LW2-G441	8	10	23.1	5.4	175	6.2	0.6	43	40				
129	9395F	LW2-G197-1	8	10	23.2	5.3	170	6.2	0.3	51	40				
134	9391F	LW2-G445	8	10	23.2	5.1	170	6.2	0.4	43	50				
138	9382F	LW2-G492-1	8	10	23.1	4.8	175	6.2	0.5	43	40				
159	9378F	LW2-G390	8	10	23.1	5.5	170	6.3	0.6	43	40				
165	9376F	LW2-G353-1	8	10	23.1	5.6	170	6.3	0.6	43	40				
166	9390F	LW2-G455	8	10	23.1	5.7	170	6.2	0.4	43	50				
167	9384F	LW2-G474	8	10	23.1	4.4	175	6.2	0.6	43	50				
168	9387F	LW2-G450-1	8	10	23.1	5.1	175	6.2	0.6	43	40				
				Mean	22.9	5.1	184	6.3	---	48	45		10.1	6.4	
				SD	0.2	0.8	38	0.1	---	7	7		6.3	0.2	
				n	231	231	42	63	42	42	42		21	21	
				Min	22.2	2.8	155	6.1	<0.1	43	40		0.9	6.2	
				Max	23.3	6.6	390	6.5	1.9	68	60		22.2	7.0	

Test Number: P686-11

Freshwater Sediment Test
28-day Hyalella azteca

Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or
dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

pan #	INITIAL WEIGHT tare wt (mg)	final wt (mg)	wt count	avg. wt/ organism
1	29.230	29.903	20	0.034
2	28.724	29.472	20	0.037
3	28.902	29.600	20	0.035
4	28.255	29.066	20	0.041
5	29.509	30.307	20	0.040

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
1	144	9403F	Control	1		10	9	1	90.0	10.0	29.061	9	32.132	3.07	0.34						
2	16	9403F	Control	2		10	9	1	90.0	10.0	30.403	9	33.492	3.09	0.34						
3	168	9403F	Control	3		10	9	1	90.0	10.0	32.431	9	35.265	2.83	0.31						
4	46	9403F	Control	4		10	10	0	100.0	0.0	28.826	10	32.703	3.88	0.39						
5	36	9403F	Control	5		10	9	1	90.0	10.0	30.996	9	34.715	3.72	0.41	Mean	8.9	1.1	88.8	11.3	0.36
6	117	9403F	Control	6		10	10	0	100.0	0.0	29.120	10	32.131	3.01	0.30	SD	1.2	1.2	12.5	12.5	0.05
7	166	9403F	Control	7		10	6	4	60.0	40.0	30.512	6	33.178	2.67	0.44	n	8	8	8	8	8
8	99	9403F	Control	8	wq replicate	10	9	1	90.0	10.0	30.055	9	33.187	3.13	0.35						
9	76	9413F	LW2-G232	1		10	7	3	70.0	30.0	30.161	7	32.532	2.37	0.34						
10	149	9413F	LW2-G232	2		10	9	1	90.0	10.0	29.315	9	32.064	2.75	0.31						
11	161	9413F	LW2-G232	3		10	10	0	100.0	0.0	29.126	10	32.013	2.89	0.29						
12	23	9413F	LW2-G232	4		10	10	0	100.0	0.0	29.030	10	32.097	3.07	0.31						
13	42	9413F	LW2-G232	5		10	10	0	100.0	0.0	29.280	10	32.568	3.29	0.33	Mean	9.1	0.9	91.3	8.8	0.32
14	160	9413F	LW2-G232	6		10	9	1	90.0	10.0	29.820	9	32.874	3.05	0.34	SD	1.0	1.0	9.9	9.9	0.02
15	126	9413F	LW2-G232	7		10	9	1	90.0	10.0	28.613	9	31.778	3.17	0.35	n	8	8	8	8	8
16	145	9413F	LW2-G232	8	wq replicate	10	9	1	90.0	10.0	28.932	9	31.586	2.65	0.29						
17	11	9414F	LW2-G263	1		10	10	0	100.0	0.0	27.654	10	30.011	2.36	0.24						
18	159	9414F	LW2-G263	2		10	10	0	100.0	0.0	29.199	10	31.741	2.54	0.25						
19	41	9414F	LW2-G263	3		10	8	2	80.0	20.0	28.363	8	30.563	2.20	0.28						
20	120	9414F	LW2-G263	4		10	10	0	100.0	0.0	29.327	10	31.659	2.33	0.23						
21	128	9414F	LW2-G263	5		10	10	0	100.0	0.0	28.780	10	30.946	2.17	0.22	Mean	9.5	0.5	95.0	5.0	0.26
22	49	9414F	LW2-G263	6		10	9	1	90.0	10.0	28.910	9	31.755	2.85	0.32	SD	0.8	0.8	7.6	7.6	0.03
23	80	9414F	LW2-G263	7		10	10	0	100.0	0.0	30.670	10	33.429	2.76	0.28	n	8	8	8	8	8
24	39	9414F	LW2-G263	8	wq replicate	10	9	1	90.0	10.0	28.286	9	30.763	2.48	0.28						
25	12	9415F	LW2-G269	1		10	9	1	90.0	10.0	28.397	9	30.898	2.50	0.28						
26	32	9415F	LW2-G269	2		10	8	2	80.0	20.0	31.528	8	34.403	2.88	0.36						
27	104	9415F	LW2-G269	3		10	7	3	70.0	30.0	30.478	7	32.813	2.34	0.33						
28	116	9415F	LW2-G269	4		10	10	0	100.0	0.0	28.721	10	31.265	2.54	0.25						
29	124	9415F	LW2-G269	5		10	8	2	80.0	20.0	28.518	8	30.620	2.10	0.26	Mean	8.3	1.8	82.5	17.5	0.29
30	54	9415F	LW2-G269	6		10	9	1	90.0	10.0	28.941	9	31.577	2.64	0.29	SD	1.0	1.0	10.4	10.4	0.04
31	137	9415F	LW2-G269	7		10	7	3	70.0	30.0	27.923	7	29.685	1.76	0.25	n	8	8	8	8	8
32	102	9415F	LW2-G269	8	wq replicate	10	8	2	80.0	20.0	30.150	8	32.752	2.60	0.33						

ANC07450
BZTO104(e)007450

Test Number: P686-11

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
33	10	9416F	LW2-G283	1		10	0	10	0.0	100.0	30.996	0									
34	122	9416F	LW2-G283	2		10	0	10	0.0	100.0	27.142	0									
35	29	9416F	LW2-G283	3		10	0	10	0.0	100.0	31.116	0									
36	143	9416F	LW2-G283	4		10	1	9	10.0	90.0	29.388	1	29.839	0.45	0.45						
37	90	9416F	LW2-G283	5		10	0	10	0.0	100.0	28.677	0				Mean	0.1	9.9	1.3	98.8	0.45
38	170	9416F	LW2-G283	6		10	0	10	0.0	100.0	29.656	0				SD	0.4	0.4	3.5	3.5	
39	108	9416F	LW2-G283	7		10	0	10	0.0	100.0	28.504	0				n	8	8	8	8	1
40	87	9416F	LW2-G283	8	wq replicate	10	0	10	0.0	100.0	29.938	0									
41	162	9417F	LW2-G264	1		10	6	4	60.0	40.0	27.847	6	30.051	2.20	0.37						
42	140	9417F	LW2-G264	2		10	8	2	80.0	20.0	30.167	8	32.832	2.67	0.33						
43	174	9417F	LW2-G264	3		10	10	0	100.0	0.0	27.771	10	30.685	2.91	0.29						
44	62	9417F	LW2-G264	4		10	8	2	80.0	20.0	28.952	8	31.470	2.52	0.31						
45	24	9417F	LW2-G264	5		10	6	4	60.0	40.0	30.443	6	32.618	2.18	0.36	Mean	7.9	2.1	78.8	21.3	0.30
46	14	9417F	LW2-G264	6		10	9	1	90.0	10.0	31.252	9	32.898	1.65	0.18	SD	1.5	1.5	14.6	14.6	0.06
47	156	9417F	LW2-G264	7		10	7	3	70.0	30.0	29.776	7	31.848	2.07	0.30	n	8	8	8	8	8
48	38	9417F	LW2-G264	8	wq replicate	10	9	1	90.0	10.0	27.301	9	29.676	2.38	0.26						
49	3	9418F	LW2-G278	1		10	9	1	90.0	10.0	29.009	9	31.681	2.67	0.30						
50	132	9418F	LW2-G278	2		10	10	0	100.0	0.0	27.565	10	30.708	3.14	0.31						
51	146	9418F	LW2-G278	3		10	10	0	100.0	0.0	29.629	10	32.083	2.45	0.25						
52	50	9418F	LW2-G278	4		10	10	0	100.0	0.0	30.380	10	33.523	3.14	0.31						
53	25	9418F	LW2-G278	5		10	10	0	100.0	0.0	29.028	10	31.956	2.93	0.29	Mean	9.4	0.6	93.8	6.3	0.31
54	43	9418F	LW2-G278	6		10	9	1	90.0	10.0	31.025	9	34.364	3.34	0.37	SD	1.1	1.1	10.6	10.6	0.04
55	169	9418F	LW2-G278	7		10	7	3	70.0	30.0	28.014	7	30.352	2.34	0.33	n	8	8	8	8	8
56	112	9418F	LW2-G278	8	wq replicate	10	10	0	100.0	0.0	28.421	10	31.304	2.88	0.29						
57	151	9419F	LW2-G276	1		10	10	0	100.0	0.0	30.424	10	32.132	1.71	0.17						
58	155	9419F	LW2-G276	2		10	9	1	90.0	10.0	30.239	9	32.169	1.93	0.21						
59	37	9419F	LW2-G276	3		10	10	0	100.0	0.0	31.088	10	34.000	2.91	0.29						
60	85	9419F	LW2-G276	4		10	9	1	90.0	10.0	29.126	9	32.257	3.13	0.35						
61	86	9419F	LW2-G276	5		10	9	1	90.0	10.0	30.640	9	32.295	1.66	0.18	Mean	9.3	0.8	92.5	7.5	0.24
62	9	9419F	LW2-G276	6		10	9	1	90.0	10.0	31.560	8	33.257	1.70	0.21	SD	0.5	0.5	4.6	4.6	0.06
63	81	9419F	LW2-G276	7		10	9	1	90.0	10.0	28.126	9	29.728	1.60	0.18	n	8	8	8	8	8
64	56	9419F	LW2-G276	8	wq replicate	10	9	1	90.0	10.0	29.398	9	31.935	2.54	0.28						
65	15	9420F	LW2-G284	1		10	10	0	100.0	0.0	28.686	10	30.161	1.48	0.15						
66	21	9420F	LW2-G284	2		10	7	3	70.0	30.0	28.214	7	30.727	2.51	0.36						
67	139	9420F	LW2-G284	3		10	10	0	100.0	0.0	27.995	10	30.873	2.88	0.29						
68	101	9420F	LW2-G284	4		10	7	3	70.0	30.0	28.827	7	29.879	1.05	0.15						
69	59	9420F	LW2-G284	5		10	9	1	90.0	10.0	29.439	9	32.348	2.91	0.32	Mean	8.9	1.1	88.8	11.3	0.26
70	18	9420F	LW2-G284	6		10	9	1	90.0	10.0	29.354	9	31.480	2.13	0.24	SD	1.2	1.2	12.5	12.5	0.08
71	148	9420F	LW2-G284	7		10	9	1	90.0	10.0	28.323	9	30.736	2.41	0.27	n	8	8	8	8	8
72	129	9420F	LW2-G284	8	wq replicate	10	10	0	100.0	0.0	28.273	10	31.081	2.81	0.28						

ANC07451
BZTO104(e)007451

Test Number: P686-11

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
73	78	9421F	LW2-G267	1		10	9	1	90.0	10.0	29.517	9	31.844	2.33	0.26						
74	13	9421F	LW2-G267	2		10	10	0	100.0	0.0	30.202	10	31.912	1.71	0.17						
75	172	9421F	LW2-G267	3		10	8	2	80.0	20.0	29.490	8	30.879	1.39	0.17						
76	52	9421F	LW2-G267	4		10	9	1	90.0	10.0	29.409	9	32.288	2.88	0.32						
77	94	9421F	LW2-G267	5		11	11	0	100.0	0.0	28.482	11	31.520	3.04	0.28	Mean	8.8	1.4	86.3	13.8	0.22
78	118	9421F	LW2-G267	6		10	9	1	90.0	10.0	29.102	9	31.308	2.21	0.25	SD	1.8	1.6	16.0	16.0	0.06
79	176	9421F	LW2-G267	7		10	5	5	50.0	50.0	29.906	5	30.544	0.64	0.13	n	8	8	8	8	8
80	163	9421F	LW2-G267	8	wq replicate	10	9	1	90.0	10.0	29.188	9	30.912	1.72	0.19						
81	88	9422F	LW2-G453	1		10	0	10	0.0	100.0	30.915	0									
82	5	9422F	LW2-G453	2		10	1	9	10.0	90.0	28.525	1	28.877	0.35	0.35						
83	58	9422F	LW2-G453	3		10	0	10	0.0	100.0	28.491	0									
84	97	9422F	LW2-G453	4		10	0	10	0.0	100.0	30.658	0									
85	68	9422F	LW2-G453	5		10	0	10	0.0	100.0	29.580	0				Mean	0.4	9.6	3.8	96.3	
86	121	9422F	LW2-G453	6		10	0	10	0.0	100.0	29.143	0				SD	0.5	0.5	5.2	5.2	
87	119	9422F	LW2-G453	7		10	1	9	10.0	90.0	29.231	1	29.644	0.41	0.41	n	8	8	8	8	
88	171	9422F	LW2-G453	8	wq replicate	10	1	9	10.0	90.0	27.598	1	27.791	0.19	0.19						
89	45	9423F	LW2-G456	1		10	9	1	90.0	10.0	28.359	9	30.896	2.54	0.28						
90	60	9423F	LW2-G456	2		10	9	1	90.0	10.0	28.820	9	31.351	2.53	0.28						
91	106	9423F	LW2-G456	3		10	10	0	100.0	0.0	28.876	10	30.958	2.08	0.21						
92	150	9423F	LW2-G456	4		10	9	1	90.0	10.0	27.888	9	29.840	1.95	0.22						
93	34	9423F	LW2-G456	5		10	10	0	100.0	0.0	28.940	10	31.955	3.02	0.30	Mean	9.1	0.9	91.3	8.8	0.26
94	82	9423F	LW2-G456	6		10	7	3	70.0	30.0	28.522	7	30.542	2.02	0.29	SD	1.0	1.0	9.9	9.9	0.04
95	175	9423F	LW2-G456	7		10	9	1	90.0	10.0	27.847	9	30.420	2.57	0.29	n	8	8	8	8	8
96	44	9423F	LW2-G456	8	wq replicate	10	10	0	100.0	0.0	28.895	10	31.105	2.21	0.22						
97	141	9424F	LW2-G457	1		10	8	2	80.0	20.0	29.425	8	31.349	1.92	0.24						
98	35	9424F	LW2-G457	2		10	7	3	70.0	30.0	29.774	7	31.800	2.03	0.29						
99	77	9424F	LW2-G457	3		10	7	3	70.0	30.0	28.646	7	30.766	2.12	0.30						
100	147	9424F	LW2-G457	4		10	7	3	70.0	30.0	31.146	7	33.127	1.98	0.28						
101	64	9424F	LW2-G457	5		10	10	0	100.0	0.0	28.792	10	31.114	2.32	0.23	Mean	7.8	2.3	77.5	22.5	0.28
102	51	9424F	LW2-G457	6		10	10	0	100.0	0.0	27.088	10	29.899	2.81	0.28	SD	1.7	1.7	16.7	16.7	0.03
103	61	9424F	LW2-G457	7		10	8	2	80.0	20.0	30.959	8	33.295	2.34	0.29	n	8	8	8	8	8
104	114	9424F	LW2-G457	8	wq replicate	10	5	5	50.0	50.0	28.869	5	30.411	1.54	0.31						
105	8	9425F	LW2-G461	1		10	9	1	90.0	10.0	30.623	9	32.533	1.91	0.21						
106	133	9425F	LW2-G461	2		10	9	1	90.0	10.0	28.923	9	31.509	2.59	0.29						
107	100	9425F	LW2-G461	3		10	9	1	90.0	10.0	28.107	9	30.239	2.13	0.24						
108	165	9425F	LW2-G461	4		10	8	2	80.0	20.0	27.736	8	30.145	2.41	0.30						
109	173	9425F	LW2-G461	5		10	9	1	90.0	10.0	28.234	9	30.904	2.67	0.30	Mean	8.8	1.3	87.5	12.5	0.25
110	6	9425F	LW2-G461	6		10	10	0	100.0	0.0	29.152	10	31.427	2.28	0.23	SD	0.7	0.7	7.1	7.1	0.05
111	123	9425F	LW2-G461	7		10	8	2	80.0	20.0	29.824	8	31.270	1.45	0.18	n	8	8	8	8	8
112	113	9425F	LW2-G461	8	wq replicate	10	8	2	80.0	20.0	30.909	8	33.187	2.28	0.28						

ANC07452
BZTO104(e)007452

Test Number: P686-11

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
113	96	9426F	LW2-G468	1		10	10	0	100.0	0.0	28.864	10	30.853	1.99	0.20						
114	131	9426F	LW2-G468	2		10	10	0	100.0	0.0	28.247	10	30.314	2.07	0.21						
115	30	9426F	LW2-G468	3		10	9	1	90.0	10.0	30.183	9	32.300	2.12	0.24						
116	79	9426F	LW2-G468	4		10	9	1	90.0	10.0	30.254	9	32.272	2.02	0.22						
117	167	9426F	LW2-G468	5		10	7	3	70.0	30.0	28.948	7	29.998	1.05	0.15	Mean	9.1	0.9	91.3	8.8	0.19
118	1	9426F	LW2-G468	6		10	9	1	90.0	10.0	28.456	9	29.449	0.99	0.11	SD	1.0	1.0	9.9	9.9	0.04
119	67	9426F	LW2-G468	7		10	10	0	100.0	0.0	28.840	10	30.942	2.10	0.21	n	8	8	8	8	8
120	2	9426F	LW2-G468	8	wq replicate	10	9	1	90.0	10.0	30.425	9	32.080	1.66	0.18						
121	65	9427F	LW2-G467	1		10	10	0	100.0	0.0	29.247	10	32.410	3.16	0.32						
122	152	9427F	LW2-G467	2		10	1	9	10.0	90.0	28.721	1	29.263	0.54	0.54						
123	98	9427F	LW2-G467	3		10	10	0	100.0	0.0	28.627	10	31.347	2.72	0.27						
124	153	9427F	LW2-G467	4		10	10	0	100.0	0.0	29.001	10	31.744	2.74	0.27						
125	164	9427F	LW2-G467	5		10	10	0	100.0	0.0	28.706	10	31.572	2.87	0.29	Mean	8.8	1.3	87.5	12.5	0.33
126	66	9427F	LW2-G467	6		10	9	1	90.0	10.0	29.792	9	32.998	3.21	0.36	SD	3.2	3.2	31.5	31.5	0.09
127	93	9427F	LW2-G467	7		10	10	0	100.0	0.0	29.232	10	31.946	2.71	0.27	n	8	8	8	8	8
128	127	9427F	LW2-G467	8	wq replicate	10	10	0	100.0	0.0	27.796	10	30.774	2.98	0.30						
129	20	9428F	LW2-G473	1		10	9	1	90.0	10.0	30.451	9	32.675	2.22	0.25						
130	89	9428F	LW2-G473	2		10	9	1	90.0	10.0	28.646	9	31.329	2.68	0.30						
131	84	9428F	LW2-G473	3		10	7	3	70.0	30.0	28.247	7	30.421	2.17	0.31						
132	107	9428F	LW2-G473	4		10	9	1	90.0	10.0	26.728	9	29.333	2.61	0.29						
133	31	9428F	LW2-G473	5		10	10	0	100.0	0.0	29.526	10	31.844	2.32	0.23	Mean	9.0	1.0	90.0	10.0	0.27
134	69	9428F	LW2-G473	6		10	10	0	100.0	0.0	29.436	10	32.043	2.61	0.26	SD	1.1	1.1	10.7	10.7	0.03
135	135	9428F	LW2-G473	7		10	10	0	100.0	0.0	27.409	10	29.881	2.47	0.25	n	8	8	8	8	8
136	70	9428F	LW2-G473	8	wq replicate	10	8	2	80.0	20.0	31.714	8	34.000	2.29	0.29						
137	63	9429F	LW2-G477	1		10	9	1	90.0	10.0	29.850	9	32.016	2.17	0.24						
138	138	9429F	LW2-G477	2		10	10	0	100.0	0.0	28.331	10	31.096	2.77	0.28						
139	53	9429F	LW2-G477	3		10	9	1	90.0	10.0	30.686	9	33.291	2.61	0.29						
140	103	9429F	LW2-G477	4		10	10	0	100.0	0.0	28.116	10	30.908	2.79	0.28						
141	142	9429F	LW2-G477	5		10	10	0	100.0	0.0	27.316	10	29.916	2.60	0.26	Mean	9.6	0.4	96.3	3.8	0.28
142	92	9429F	LW2-G477	6		10	9	1	90.0	10.0	29.879	9	32.827	2.95	0.33	SD	0.5	0.5	5.2	5.2	0.03
143	134	9429F	LW2-G477	7		10	10	0	100.0	0.0	29.784	10	32.645	2.86	0.29	n	8	8	8	8	8
144	125	9429F	LW2-G477	8	wq replicate	10	10	0	100.0	0.0	28.289	10	30.981	2.69	0.27						
145	110	9430F	LW2-G480	1		10	10	0	100.0	0.0	29.851	10	32.577	2.73	0.27						
146	7	9430F	LW2-G480	2		10	8	2	80.0	20.0	29.466	8	32.501	3.04	0.38						
147	72	9430F	LW2-G480	3		10	9	1	90.0	10.0	29.647	9	33.012	3.37	0.37						
148	40	9430F	LW2-G480	4		10	9	1	90.0	10.0	28.369	9	31.050	2.68	0.30						
149	83	9430F	LW2-G480	5		10	8	2	80.0	20.0	27.835	8	30.414	2.58	0.32	Mean	9.0	1.0	90.0	10.0	0.34
150	73	9430F	LW2-G480	6		10	10	0	100.0	0.0	31.468	10	34.704	3.24	0.32	SD	0.9	0.9	9.3	9.3	0.05
151	95	9430F	LW2-G480	7		10	8	2	80.0	20.0	28.826	8	32.336	3.51	0.44	n	8	8	8	8	8
152	27	9430F	LW2-G480	8	wq replicate	10	10	0	100.0	0.0	28.247	10	31.514	3.27	0.33						

ANC07453
BZTO104(e)007453

Test Number: P686-11

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)						
153	22	9431F	LW2-G454	1		10	8	2	80.0	20.0	28.602	8	30.737	2.14	0.27						
154	154	9431F	LW2-G454	2		10	10	0	100.0	0.0	26.706	10	29.898	3.19	0.32						
155	109	9431F	LW2-G454	3		10	10	0	100.0	0.0	28.028	10	30.645	2.62	0.26						
156	57	9431F	LW2-G454	4		10	8	2	80.0	20.0	28.874	8	31.252	2.38	0.30						
157	105	9431F	LW2-G454	5		10	8	2	80.0	20.0	29.293	8	31.541	2.25	0.28	Mean	9.1	0.9	91.3	8.8	0.28
158	75	9431F	LW2-G454	6		10	10	0	100.0	0.0	28.252	10	31.187	2.94	0.29	SD	1.0	1.0	9.9	9.9	0.04
159	19	9431F	LW2-G454	7		10	9	1	90.0	10.0	28.684	9	31.441	2.76	0.31	n	8	8	8	8	8
160	91	9431F	LW2-G454	8	wq replicate	10	10	0	100.0	0.0	27.510	10	29.474	1.96	0.20						
161	158	9432F	LW2-G386	1		10	10	0	100.0	0.0	28.171	10	30.048	1.88	0.19						
162	74	9432F	LW2-G386	2		10	10	0	100.0	0.0	28.528	10	30.549	2.02	0.20						
163	130	9432F	LW2-G386	3		10	9	1	90.0	10.0	27.510	9	29.584	2.07	0.23						
164	48	9432F	LW2-G386	4		10	9	1	90.0	10.0	29.272	9	31.535	2.26	0.25						
165	71	9432F	LW2-G386	5		10	10	0	100.0	0.0	27.959	10	29.430	1.47	0.15	Mean	9.8	0.3	97.5	2.5	0.22
166	111	9432F	LW2-G386	6		10	10	0	100.0	0.0	28.402	10	31.085	2.68	0.27	SD	0.5	0.5	4.6	4.6	0.05
167	47	9432F	LW2-G386	7		10	10	0	100.0	0.0	29.388	10	32.290	2.90	0.29	n	8	8	8	8	8
168	136	9432F	LW2-G386	8	wq replicate	10	10	0	100.0	0.0	28.650	10	30.106	1.46	0.15						
169	157	9433F	LW2-G339	1		10	6	4	60.0	40.0	30.351	6	32.216	1.87	0.31						
170	28	9433F	LW2-G339	2		10	9	1	90.0	10.0	27.033	9	29.864	2.83	0.31						
171	33	9433F	LW2-G339	3		10	10	0	100.0	0.0	27.249	10	29.876	2.63	0.26						
172	115	9433F	LW2-G339	4		10	10	0	100.0	0.0	29.061	9	31.352	2.29	0.25						
173	55	9433F	LW2-G339	5		10	10	0	100.0	0.0	28.393	10	31.160	2.77	0.28	Mean	9.3	0.8	92.5	7.5	0.27
174	17	9433F	LW2-G339	6		10	9	1	90.0	10.0	30.018	9	32.669	2.65	0.29	SD	1.4	1.4	13.9	13.9	0.04
175	4	9433F	LW2-G339	7		10	10	0	100.0	0.0	31.528	10	33.860	2.33	0.23	n	8	8	8	8	8
176	26	9433F	LW2-G339	8	wq replicate	10	10	0	100.0	0.0	28.878	10	30.816	1.94	0.19						
	Note: Beakers # 9 and 115 each lost 1 animal in transfer to weigh pan.																				

ANC07454
BZTO104(e)007454

Test Number: 686-11

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
BULK SEDIMENT POREWATER														
	9403F	Control											1.3	7.2
	9413F	LW2-G232											4.5	5.9
	9414F	LW2-G263											11.4	5.0
	9415F	LW2-G269											23.0	6.3
	9416F	LW2-G283											10.5	6.3
	9417F	LW2-G264											10.2	6.2
	9418F	LW2-G278											15.7	6.2
	9419F	LW2-G276											16.1	6.2
	9420F	LW2-G284											9.9	6.3
	9421F	LW2-G267											2.9	6.2
	9422F	LW2-G453											35.1	6.3
	9423F	LW2-G456											18.9	6.3
	9424F	LW2-G457											16.6	6.4
	9425F	LW2-G461											14.8	6.4
	9426F	LW2-G468											11.9	6.5
	9427F	LW2-G467											4.7	6.5
	9428F	LW2-G473											9.2	6.5
	9429F	LW2-G477											7.8	6.6
	9430F	LW2-G480											7.3	6.4
	9431F	LW2-G454											1.0	6.4
	9432F	LW2-G386											8.2	6.5
	9433F	LW2-G339											7.2	6.6

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
TEST OVERLYING WATER														
2	9426F	LW2-G468	8	0	22.8	6.6	210	6.3	51	60	1.6			
26	9433F	LW2-G339	8	0	22.8	7.2	550	6.5	60	50	0.6			
27	9430F	LW2-G480	8	0	22.8	7.1	170	6.3	34	50	0.7			
38	9417F	LW2-G264	8	0	22.7	7.1	185	6.3	51	50	1.2			
39	9414F	LW2-G263	8	0	22.7	7.0	225	6.0	68	30	1.4			
44	9423F	LW2-G456	8	0	22.8	7.2	205	6.3	60	50	2.3			
56	9419F	LW2-G276	8	0	22.8	7.2	200	6.2	60	50	2.5			
70	9428F	LW2-G473	8	0	23.0	7.3	180	6.3	60	50	1.1			
87	9416F	LW2-G283	8	0	22.8	7.2	190	6.2	60	50	1.2			
91	9431F	LW2-G454	8	0	22.8	7.0	160	6.4	43	40	0.2			
99	9403F	Control	8	0	22.8	7.1	245	6.5	51	50	0.1			
102	9415F	LW2-G269	8	0	22.9	7.3	195	6.4	51	50	2.9			
112	9418F	LW2-G278	8	0	22.8	6.8	200	6.3	77	60	2.2			
113	9425F	LW2-G461	8	0	22.8	7.0	200	6.2	60	50	1.9			
114	9424F	LW2-G457	8	0	22.8	7.3	200	6.1	60	60	2.2			
125	9429F	LW2-G477	8	0	22.9	7.2	180	6.2	51	40	1.1			
127	9427F	LW2-G467	8	0	22.8	7.2	165	6.3	51	40	0.7			
129	9420F	LW2-G284	8	0	22.9	7.4	180	6.3	60	50	1.4			
136	9432F	LW2-G386	8	0	22.9	7.2	180	6.3	51	50	1.2			
145	9413F	LW2-G232	8	0	22.8	7.0	175	6.4	51	50	0.7			
163	9421F	LW2-G267	8	0	22.8	7.1	170	6.4	51	40	0.5			
171	9422F	LW2-G453	8	0	22.9	7.3	180	6.3	60	40	3.4			
2	9426F	LW2-G468	8	1	22.9									
26	9433F	LW2-G339	8	1	22.9									
27	9430F	LW2-G480	8	1	22.9									
38	9417F	LW2-G264	8	1	22.8									
39	9414F	LW2-G263	8	1	22.8									
44	9423F	LW2-G456	8	1	22.9									
56	9419F	LW2-G276	8	1	22.9									
70	9428F	LW2-G473	8	1	22.9									
87	9416F	LW2-G283	8	1	22.8									
91	9431F	LW2-G454	8	1	22.9									
99	9403F	Control	8	1	22.9									
102	9415F	LW2-G269	8	1	22.8									
112	9418F	LW2-G278	8	1	22.8									
113	9425F	LW2-G461	8	1	22.8									
114	9424F	LW2-G457	8	1	22.8									
125	9429F	LW2-G477	8	1	22.9									
127	9427F	LW2-G467	8	1	22.9									
129	9420F	LW2-G284	8	1	22.9									
136	9432F	LW2-G386	8	1	22.9									
145	9413F	LW2-G232	8	1	22.9									
163	9421F	LW2-G267	8	1	22.9									
171	9422F	LW2-G453	8	1	22.9									

Test Number: 686-11

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
2	9426F	LW2-G468	8	2	22.2									
26	9433F	LW2-G339	8	2	22.3									
27	9430F	LW2-G480	8	2	22.2									
38	9417F	LW2-G264	8	2	22.2									
39	9414F	LW2-G263	8	2	22.2									
44	9423F	LW2-G456	8	2	22.3									
56	9419F	LW2-G276	8	2	22.3									
70	9428F	LW2-G473	8	2	22.4									
87	9416F	LW2-G283	8	2	22.4									
91	9431F	LW2-G454	8	2	22.4									
99	9403F	Control	8	2	22.4									
102	9415F	LW2-G269	8	2	22.3									
112	9418F	LW2-G278	8	2	22.3									
113	9425F	LW2-G461	8	2	22.3									
114	9424F	LW2-G457	8	2	22.3									
125	9429F	LW2-G477	8	2	22.3									
127	9427F	LW2-G467	8	2	22.3									
129	9420F	LW2-G284	8	2	22.3									
136	9432F	LW2-G386	8	2	22.3									
145	9413F	LW2-G232	8	2	22.3									
163	9421F	LW2-G267	8	2	22.2									
171	9422F	LW2-G453	8	2	22.3									
2	9426F	LW2-G468	8	3	23.0	6.2		6.3						
26	9433F	LW2-G339	8	3	23.1	6.6		6.4						
27	9430F	LW2-G480	8	3	23.1	6.5		6.4						
38	9417F	LW2-G264	8	3	23.1	6.1		6.3						
39	9414F	LW2-G263	8	3	23.1	6.4		6.2						
44	9423F	LW2-G456	8	3	23.1	6.4		6.2						
56	9419F	LW2-G276	8	3	23.1	6.5		6.3						
70	9428F	LW2-G473	8	3	23.2	6.5		6.3						
87	9416F	LW2-G283	8	3	23.1	5.9		6.3						
91	9431F	LW2-G454	8	3	23.1	6.5		6.3						
99	9403F	Control	8	3	23.2	6.5		6.5						
102	9415F	LW2-G269	8	3	23.1	6.1		6.3						
112	9418F	LW2-G278	8	3	23.1	6.1		6.3						
113	9425F	LW2-G461	8	3	23.1	6.1		6.3						
114	9424F	LW2-G457	8	3	23.2	6.0		6.3						
125	9429F	LW2-G477	8	3	23.2	6.2		6.3						
127	9427F	LW2-G467	8	3	23.1	6.3		6.3						
129	9420F	LW2-G284	8	3	23.1	6.3		6.3						
136	9432F	LW2-G386	8	3	23.1	6.4		6.3						
145	9413F	LW2-G232	8	3	23.1	6.5		6.4						
163	9421F	LW2-G267	8	3	23.1	6.4		6.3						
171	9422F	LW2-G453	8	3	23.2	5.9		6.4						

ANC07457
BZTO104(e)007457

Test Number: 686-11

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
2	9426F	LW2-G468	8	4	23.1									
26	9433F	LW2-G339	8	4	23.0									
27	9430F	LW2-G480	8	4	23.0									
38	9417F	LW2-G264	8	4	23.0									
39	9414F	LW2-G263	8	4	22.9									
44	9423F	LW2-G456	8	4	23.0									
56	9419F	LW2-G276	8	4	23.0									
70	9428F	LW2-G473	8	4	23.2									
87	9416F	LW2-G283	8	4	23.0									
91	9431F	LW2-G454	8	4	23.0									
99	9403F	Control	8	4	23.1									
102	9415F	LW2-G269	8	4	23.0									
112	9418F	LW2-G278	8	4	23.0									
113	9425F	LW2-G461	8	4	23.0									
114	9424F	LW2-G457	8	4	23.0									
125	9429F	LW2-G477	8	4	23.1									
127	9427F	LW2-G467	8	4	23.0									
129	9420F	LW2-G284	8	4	23.0									
136	9432F	LW2-G386	8	4	23.0									
145	9413F	LW2-G232	8	4	23.1									
163	9421F	LW2-G267	8	4	23.0									
171	9422F	LW2-G453	8	4	23.0									
2	9426F	LW2-G468	8	5	23.0	5.6	170	6.2						
26	9433F	LW2-G339	8	5	23.0	6.2	245	6.4						
27	9430F	LW2-G480	8	5	22.9	6.4	165	6.3						
38	9417F	LW2-G264	8	5	22.9	6.4	170	6.3						
39	9414F	LW2-G263	8	5	23.0	6.2	180	6.2						
44	9423F	LW2-G456	8	5	23.0	6.3	175	6.2						
56	9419F	LW2-G276	8	5	23.1	5.8	175	6.3						
70	9428F	LW2-G473	8	5	23.2	6.1	170	6.3						
87	9416F	LW2-G283	8	5	23.0	6.4	170	6.3						
91	9431F	LW2-G454	8	5	23.0	6.0	165	6.2						
99	9403F	Control	8	5	23.1	6.2	185	6.4						
102	9415F	LW2-G269	8	5	23.0	6.3	175	6.3						
112	9418F	LW2-G278	8	5	23.0	6.2	175	6.2						
113	9425F	LW2-G461	8	5	23.0	6.0	175	6.2						
114	9424F	LW2-G457	8	5	23.0	6.0	170	6.2						
125	9429F	LW2-G477	8	5	23.1	6.0	165	6.2						
127	9427F	LW2-G467	8	5	23.1	5.8	165	6.2						
129	9420F	LW2-G284	8	5	23.0	5.8	170	6.2						
136	9432F	LW2-G386	8	5	23.0	6.0	170	6.3						
145	9413F	LW2-G232	8	5	23.0	6.2	165	6.3						
163	9421F	LW2-G267	8	5	23.0	6.2	170	6.4						
171	9422F	LW2-G453	8	5	23.1	5.2	175	6.4						

Test Number: 686-11

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
2	9426F	LW2-G468	8	6	22.9									
26	9433F	LW2-G339	8	6	22.9									
27	9430F	LW2-G480	8	6	22.9									
38	9417F	LW2-G264	8	6	22.9									
39	9414F	LW2-G263	8	6	22.9									
44	9423F	LW2-G456	8	6	22.9									
56	9419F	LW2-G276	8	6	23.0									
70	9428F	LW2-G473	8	6	23.0									
87	9416F	LW2-G283	8	6	22.9									
91	9431F	LW2-G454	8	6	22.9									
99	9403F	Control	8	6	22.9									
102	9415F	LW2-G269	8	6	22.9									
112	9418F	LW2-G278	8	6	22.9									
113	9425F	LW2-G461	8	6	22.9									
114	9424F	LW2-G457	8	6	22.9									
125	9429F	LW2-G477	8	6	23.0									
127	9427F	LW2-G467	8	6	22.9									
129	9420F	LW2-G284	8	6	22.9									
136	9432F	LW2-G386	8	6	23.0									
145	9413F	LW2-G232	8	6	23.0									
163	9421F	LW2-G267	8	6	22.9									
171	9422F	LW2-G453	8	6	22.9									
2	9426F	LW2-G468	8	7	22.9	6.8		6.7						
26	9433F	LW2-G339	8	7	22.9	7.2		6.7						
27	9430F	LW2-G480	8	7	22.9	6.6		6.5						
38	9417F	LW2-G264	8	7	22.9	6.4		6.5						
39	9414F	LW2-G263	8	7	22.9	6.8		6.4						
44	9423F	LW2-G456	8	7	22.9	6.6		6.5						
56	9419F	LW2-G276	8	7	22.9	6.9		6.5						
70	9428F	LW2-G473	8	7	23.0	6.6		6.6						
87	9416F	LW2-G283	8	7	22.9	6.6		6.5						
91	9431F	LW2-G454	8	7	22.9	6.6		6.6						
99	9403F	Control	8	7	22.9	7.0		6.6						
102	9415F	LW2-G269	8	7	22.9	6.6		6.6						
112	9418F	LW2-G278	8	7	22.9	6.2		6.5						
113	9425F	LW2-G461	8	7	22.9	6.4		6.5						
114	9424F	LW2-G457	8	7	22.9	6.6		6.6						
125	9429F	LW2-G477	8	7	23.0	6.5		6.5						
127	9427F	LW2-G467	8	7	22.9	6.4		6.6						
129	9420F	LW2-G284	8	7	22.9	6.0		6.5						
136	9432F	LW2-G386	8	7	22.9	6.2		6.5						
145	9413F	LW2-G232	8	7	22.9	6.1		6.5						
163	9421F	LW2-G267	8	7	22.9	6.4		6.7						
171	9422F	LW2-G453	8	7	22.9	6.2		6.5						

Test Number: 686-11

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
2	9426F	LW2-G468	8	8	22.9									
26	9433F	LW2-G339	8	8	22.9									
27	9430F	LW2-G480	8	8	22.8									
38	9417F	LW2-G264	8	8	22.8									
39	9414F	LW2-G263	8	8	22.8									
44	9423F	LW2-G456	8	8	22.8									
56	9419F	LW2-G276	8	8	22.9									
70	9428F	LW2-G473	8	8	22.9									
87	9416F	LW2-G283	8	8	22.8									
91	9431F	LW2-G454	8	8	22.8									
99	9403F	Control	8	8	22.7									
102	9415F	LW2-G269	8	8	22.7									
112	9418F	LW2-G278	8	8	22.8									
113	9425F	LW2-G461	8	8	22.8									
114	9424F	LW2-G457	8	8	22.8									
125	9429F	LW2-G477	8	8	22.8									
127	9427F	LW2-G467	8	8	22.8									
129	9420F	LW2-G284	8	8	22.8									
136	9432F	LW2-G386	8	8	22.9									
145	9413F	LW2-G232	8	8	22.8									
163	9421F	LW2-G267	8	8	22.9									
171	9422F	LW2-G453	8	8	22.9									
2	9426F	LW2-G468	8	9	22.4									
26	9433F	LW2-G339	8	9	22.4									
27	9430F	LW2-G480	8	9	22.4									
38	9417F	LW2-G264	8	9	22.4									
39	9414F	LW2-G263	8	9	22.4									
44	9423F	LW2-G456	8	9	22.3									
56	9419F	LW2-G276	8	9	22.3									
70	9428F	LW2-G473	8	9	22.3									
87	9416F	LW2-G283	8	9	22.3									
91	9431F	LW2-G454	8	9	22.3									
99	9403F	Control	8	9	22.3									
102	9415F	LW2-G269	8	9	22.4									
112	9418F	LW2-G278	8	9	22.3									
113	9425F	LW2-G461	8	9	22.2									
114	9424F	LW2-G457	8	9	22.3									
125	9429F	LW2-G477	8	9	22.3									
127	9427F	LW2-G467	8	9	22.4									
129	9420F	LW2-G284	8	9	22.2									
136	9432F	LW2-G386	8	9	22.3									
145	9413F	LW2-G232	8	9	22.2									
163	9421F	LW2-G267	8	9	22.3									
171	9422F	LW2-G453	8	9	22.3									

Test Number: 686-11

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
2	9426F	LW2-G468	8	10	22.4	7.1		6.6						
26	9433F	LW2-G339	8	10	22.4	7.6		6.8						
27	9430F	LW2-G480	8	10	22.3	7.5		6.6						
38	9417F	LW2-G264	8	10	22.3	7.0		6.6						
39	9414F	LW2-G263	8	10	22.3	7.7		6.6						
44	9423F	LW2-G456	8	10	22.3	7.1		6.7						
56	9419F	LW2-G276	8	10	22.3	7.1		6.6						
70	9428F	LW2-G473	8	10	22.4	7.2		6.6						
87	9416F	LW2-G283	8	10	22.4	5.8		6.5						
91	9431F	LW2-G454	8	10	22.4	7.0		6.6						
99	9403F	Control	8	10	22.4	7.2		6.9						
102	9415F	LW2-G269	8	10	22.3	6.8		6.6						
112	9418F	LW2-G278	8	10	22.3	7.1		6.6						
113	9425F	LW2-G461	8	10	22.3	7.1		6.6						
114	9424F	LW2-G457	8	10	22.3	7.0		6.6						
125	9429F	LW2-G477	8	10	22.3	7.2		6.6						
127	9427F	LW2-G467	8	10	22.3	7.1		6.6						
129	9420F	LW2-G284	8	10	22.3	7.0		6.6						
136	9432F	LW2-G386	8	10	22.3	7.0		6.6						
145	9413F	LW2-G232	8	10	22.3	7.5		6.6						
163	9421F	LW2-G267	8	10	22.3	7.6		6.6						
171	9422F	LW2-G453	8	10	22.4	6.7		6.6						
2	9426F	LW2-G468	8	11	22.8									
26	9433F	LW2-G339	8	11	22.8									
27	9430F	LW2-G480	8	11	22.7									
38	9417F	LW2-G264	8	11	22.7									
39	9414F	LW2-G263	8	11	22.7									
44	9423F	LW2-G456	8	11	22.8									
56	9419F	LW2-G276	8	11	22.8									
70	9428F	LW2-G473	8	11	22.8									
87	9416F	LW2-G283	8	11	22.8									
91	9431F	LW2-G454	8	11	22.8									
99	9403F	Control	8	11	22.8									
102	9415F	LW2-G269	8	11	22.7									
112	9418F	LW2-G278	8	11	22.8									
113	9425F	LW2-G461	8	11	22.8									
114	9424F	LW2-G457	8	11	22.8									
125	9429F	LW2-G477	8	11	22.8									
127	9427F	LW2-G467	8	11	22.8									
129	9420F	LW2-G284	8	11	22.8									
136	9432F	LW2-G386	8	11	22.8									
145	9413F	LW2-G232	8	11	22.8									
163	9421F	LW2-G267	8	11	22.8									
171	9422F	LW2-G453	8	11	22.9									

Test Number: 686-11

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
2	9426F	LW2-G468	8	12	23.0	5.4	170	7.0						
26	9433F	LW2-G339	8	12	22.9	6.0	185	6.9						
27	9430F	LW2-G480	8	12	22.8	5.8	165	6.8						
38	9417F	LW2-G264	8	12	22.8	5.8	165	6.7						
39	9414F	LW2-G263	8	12	22.8	6.0	175	6.7						
44	9423F	LW2-G456	8	12	22.8	6.1	170	6.7						
56	9419F	LW2-G276	8	12	22.9	6.1	170	6.7						
70	9428F	LW2-G473	8	12	22.9	6.1	170	6.7						
87	9416F	LW2-G283	8	12	22.9	5.9	170	6.7						
91	9431F	LW2-G454	8	12	22.9	5.9	170	6.7						
99	9403F	Control	8	12	22.9	6.0	185	7.0						
102	9415F	LW2-G269	8	12	22.9	6.0	175	6.8						
112	9418F	LW2-G278	8	12	22.8	5.7	170	6.8						
113	9425F	LW2-G461	8	12	22.9	5.6	170	6.8						
114	9424F	LW2-G457	8	12	22.9	5.8	170	6.8						
125	9429F	LW2-G477	8	12	22.9	6.0	170	6.8						
127	9427F	LW2-G467	8	12	22.9	6.1	170	6.8						
129	9420F	LW2-G284	8	12	22.9	5.8	170	6.8						
136	9432F	LW2-G386	8	12	22.9	5.8	170	6.8						
145	9413F	LW2-G232	8	12	22.9	6.1	165	6.8						
163	9421F	LW2-G267	8	12	22.9	6.1	170	6.7						
171	9422F	LW2-G453	8	12	22.9	5.1	165	6.7						
2	9426F	LW2-G468	8	13	22.7									
26	9433F	LW2-G339	8	13	22.7									
27	9430F	LW2-G480	8	13	22.6									
38	9417F	LW2-G264	8	13	22.5									
39	9414F	LW2-G263	8	13	22.5									
44	9423F	LW2-G456	8	13	22.6									
56	9419F	LW2-G276	8	13	22.6									
70	9428F	LW2-G473	8	13	22.7									
87	9416F	LW2-G283	8	13	22.6									
91	9431F	LW2-G454	8	13	22.7									
99	9403F	Control	8	13	22.7									
102	9415F	LW2-G269	8	13	22.6									
112	9418F	LW2-G278	8	13	22.6									
113	9425F	LW2-G461	8	13	22.6									
114	9424F	LW2-G457	8	13	22.6									
125	9429F	LW2-G477	8	13	22.7									
127	9427F	LW2-G467	8	13	22.6									
129	9420F	LW2-G284	8	13	22.7									
136	9432F	LW2-G386	8	13	22.6									
145	9413F	LW2-G232	8	13	22.7									
163	9421F	LW2-G267	8	13	22.7									
171	9422F	LW2-G453	8	13	22.8									

ANC07462
BZTO104(e)007462

Test Number: 686-11

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
2	9426F	LW2-G468	8	14	22.8	5.1		6.3						
26	9433F	LW2-G339	8	14	22.7	5.9		6.4						
27	9430F	LW2-G480	8	14	22.7	6.1		6.4						
38	9417F	LW2-G264	8	14	22.6	5.8		6.3						
39	9414F	LW2-G263	8	14	22.6	5.9		6.2						
44	9423F	LW2-G456	8	14	22.6	6.2		6.2						
56	9419F	LW2-G276	8	14	22.6	6.0		6.3						
70	9428F	LW2-G473	8	14	22.6	5.8		6.2						
87	9416F	LW2-G283	8	14	22.6	5.3		6.2						
91	9431F	LW2-G454	8	14	22.6	5.9		6.3						
99	9403F	Control	8	14	22.7	5.6		6.5						
102	9415F	LW2-G269	8	14	22.7	5.4		6.4						
112	9418F	LW2-G278	8	14	22.7	5.3		6.4						
113	9425F	LW2-G461	8	14	22.6	5.8		6.4						
114	9424F	LW2-G457	8	14	22.6	5.6		6.4						
125	9429F	LW2-G477	8	14	22.7	5.7		6.3						
127	9427F	LW2-G467	8	14	22.7	5.6		6.3						
129	9420F	LW2-G284	8	14	22.6	5.8		6.3						
136	9432F	LW2-G386	8	14	22.6	6.0		6.4						
145	9413F	LW2-G232	8	14	22.6	5.8		6.3						
163	9421F	LW2-G267	8	14	22.7	6.2		6.3						
171	9422F	LW2-G453	8	14	22.7	5.3		6.3						
2	9426F	LW2-G468	8	15	23.0									
26	9433F	LW2-G339	8	15	23.0									
27	9430F	LW2-G480	8	15	23.0									
38	9417F	LW2-G264	8	15	22.9									
39	9414F	LW2-G263	8	15	22.9									
44	9423F	LW2-G456	8	15	22.8									
56	9419F	LW2-G276	8	15	22.6									
70	9428F	LW2-G473	8	15	22.6									
87	9416F	LW2-G283	8	15	22.9									
91	9431F	LW2-G454	8	15	22.9									
99	9403F	Control	8	15	23.0									
102	9415F	LW2-G269	8	15	23.0									
112	9418F	LW2-G278	8	15	23.0									
113	9425F	LW2-G461	8	15	23.0									
114	9424F	LW2-G457	8	15	23.0									
125	9429F	LW2-G477	8	15	23.0									
127	9427F	LW2-G467	8	15	23.0									
129	9420F	LW2-G284	8	15	23.0									
136	9432F	LW2-G386	8	15	23.0									
145	9413F	LW2-G232	8	15	23.0									
163	9421F	LW2-G267	8	15	23.0									
171	9422F	LW2-G453	8	15	22.7									

ANC07463
BZTO104(e)007463

Test Number: 686-11

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
2	9426F	LW2-G468	8	16	22.7									
26	9433F	LW2-G339	8	16	22.6									
27	9430F	LW2-G480	8	16	22.6									
38	9417F	LW2-G264	8	16	22.6									
39	9414F	LW2-G263	8	16	22.5									
44	9423F	LW2-G456	8	16	22.5									
56	9419F	LW2-G276	8	16	22.6							S		
70	9428F	LW2-G473	8	16	22.7									
87	9416F	LW2-G283	8	16	22.7									
91	9431F	LW2-G454	8	16	22.7									
99	9403F	Control	8	16	22.7									
102	9415F	LW2-G269	8	16	22.7									
112	9418F	LW2-G278	8	16	22.6									
113	9425F	LW2-G461	8	16	22.6									
114	9424F	LW2-G457	8	16	22.6									
125	9429F	LW2-G477	8	16	22.7									
127	9427F	LW2-G467	8	16	22.6									
129	9420F	LW2-G284	8	16	22.6									
136	9432F	LW2-G386	8	16	22.6									
145	9413F	LW2-G232	8	16	22.7									
163	9421F	LW2-G267	8	16	22.7									
171	9422F	LW2-G453	8	16	22.7									
2	9426F	LW2-G468	8	17	23.0	6.2		6.6						
26	9433F	LW2-G339	8	17	23.0	6.2		6.6						
27	9430F	LW2-G480	8	17	22.9	6.1		6.5						
38	9417F	LW2-G264	8	17	22.9	6.0		6.5						
39	9414F	LW2-G263	8	17	22.9	6.0		6.4						
44	9423F	LW2-G456	8	17	22.9	6.0		6.4						
56	9419F	LW2-G276	8	17	23.0	6.0		6.5						
70	9428F	LW2-G473	8	17	23.1	5.9		6.5						
87	9416F	LW2-G283	8	17	22.9	5.9		6.4						
91	9431F	LW2-G454	8	17	23.0	6.2		6.5						
99	9403F	Control	8	17	23.0	5.9		6.5						
102	9415F	LW2-G269	8	17	23.0	5.7		6.5						
112	9418F	LW2-G278	8	17	22.9	5.7		6.5						
113	9425F	LW2-G461	8	17	22.9	5.4		6.5						
114	9424F	LW2-G457	8	17	22.9	5.8		6.5						
125	9429F	LW2-G477	8	17	23.0	5.8		6.5						
127	9427F	LW2-G467	8	17	22.9	6.0		6.5						
129	9420F	LW2-G284	8	17	23.0	5.9		6.5						
136	9432F	LW2-G386	8	17	22.9	6.1		6.5						
145	9413F	LW2-G232	8	17	23.0	6.1		6.5						
163	9421F	LW2-G267	8	17	23.0	6.2		6.5						
171	9422F	LW2-G453	8	17	23.0	5.9		6.5						

Test Number: 686-11

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
2	9426F	LW2-G468	8	18	22.8									
26	9433F	LW2-G339	8	18	22.7									
27	9430F	LW2-G480	8	18	22.7									
38	9417F	LW2-G264	8	18	22.6									
39	9414F	LW2-G263	8	18	22.6									
44	9423F	LW2-G456	8	18	22.7									
56	9419F	LW2-G276	8	18	22.7									
70	9428F	LW2-G473	8	18	22.7									
87	9416F	LW2-G283	8	18	22.7									
91	9431F	LW2-G454	8	18	22.7									
99	9403F	Control	8	18	22.7									
102	9415F	LW2-G269	8	18	22.7									
112	9418F	LW2-G278	8	18	22.7									
113	9425F	LW2-G461	8	18	22.6									
114	9424F	LW2-G457	8	18	22.6									
125	9429F	LW2-G477	8	18	22.7									
127	9427F	LW2-G467	8	18	22.7									
129	9420F	LW2-G284	8	18	22.7									
136	9432F	LW2-G386	8	18	22.7									
145	9413F	LW2-G232	8	18	22.7									
163	9421F	LW2-G267	8	18	22.7									
171	9422F	LW2-G453	8	18	22.7									
2	9426F	LW2-G468	8	19	23.1	5.4		6.6						
26	9433F	LW2-G339	8	19	23.1	6.2		6.5						
27	9430F	LW2-G480	8	19	23.1	5.8		6.4						
38	9417F	LW2-G264	8	19	23.1	5.9		6.5						
39	9414F	LW2-G263	8	19	23.1	5.9		6.4						
44	9423F	LW2-G456	8	19	23.1	5.7		6.4						
56	9419F	LW2-G276	8	19	23.1	5.8		6.4						
70	9428F	LW2-G473	8	19	23.2	5.9		6.5						
87	9416F	LW2-G283	8	19	23.1	5.3		6.5						
91	9431F	LW2-G454	8	19	23.1	5.8		6.5						
99	9403F	Control	8	19	23.1	5.6		6.5						
102	9415F	LW2-G269	8	19	23.1	5.5		6.5						
112	9418F	LW2-G278	8	19	23.1	5.5		6.6						
113	9425F	LW2-G461	8	19	23.1	5.4		6.6						
114	9424F	LW2-G457	8	19	23.1	5.3		6.5						
125	9429F	LW2-G477	8	19	23.1	5.4		6.6						
127	9427F	LW2-G467	8	19	23.1	5.8		6.5						
129	9420F	LW2-G284	8	19	23.1	5.6		6.5						
136	9432F	LW2-G386	8	19	23.1	6.1		6.5						
145	9413F	LW2-G232	8	19	23.1	6.9		6.6						
163	9421F	LW2-G267	8	19	23.2	6.4		6.5						
171	9422F	LW2-G453	8	19	23.2	5.3		6.6						

Test Number: 686-11

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
2	9426F	LW2-G468	8	20	22.5									
26	9433F	LW2-G339	8	20	22.5									
27	9430F	LW2-G480	8	20	22.5									
38	9417F	LW2-G264	8	20	22.4									
39	9414F	LW2-G263	8	20	22.5									
44	9423F	LW2-G456	8	20	22.5									
56	9419F	LW2-G276	8	20	22.5									
70	9428F	LW2-G473	8	20	22.6									
87	9416F	LW2-G283	8	20	22.5									
91	9431F	LW2-G454	8	20	22.6									
99	9403F	Control	8	20	22.6									
102	9415F	LW2-G269	8	20	22.6									
112	9418F	LW2-G278	8	20	22.5									
113	9425F	LW2-G461	8	20	22.5									
114	9424F	LW2-G457	8	20	22.5									
125	9429F	LW2-G477	8	20	22.6									
127	9427F	LW2-G467	8	20	22.4									
129	9420F	LW2-G284	8	20	22.5									
136	9432F	LW2-G386	8	20	22.5									
145	9413F	LW2-G232	8	20	22.5									
163	9421F	LW2-G267	8	20	22.5									
171	9422F	LW2-G453	8	20	22.5									
2	9426F	LW2-G468	8	21	23.0	5.0		6.2						
26	9433F	LW2-G339	8	21	22.9	5.7		6.2						
27	9430F	LW2-G480	8	21	22.9	5.3		6.2						
38	9417F	LW2-G264	8	21	22.9	5.0		6.2						
39	9414F	LW2-G263	8	21	22.9	5.2		6.2						
44	9423F	LW2-G456	8	21	22.9	5.4		6.2						
56	9419F	LW2-G276	8	21	22.9	4.9		6.2						
70	9428F	LW2-G473	8	21	22.9	5.2		6.2						
87	9416F	LW2-G283	8	21	22.9	5.2		6.2						
91	9431F	LW2-G454	8	21	22.9	5.3		6.3						
99	9403F	Control	8	21	22.9	5.0		6.3						
102	9415F	LW2-G269	8	21	22.9	4.8		6.3						
112	9418F	LW2-G278	8	21	22.9	4.6		6.3						
113	9425F	LW2-G461	8	21	22.9	4.6		6.3						
114	9424F	LW2-G457	8	21	22.9	4.8		6.3						
125	9429F	LW2-G477	8	21	22.9	4.7		6.3						
127	9427F	LW2-G467	8	21	22.9	5.1		6.3						
129	9420F	LW2-G284	8	21	22.9	5.0		6.3						
136	9432F	LW2-G386	8	21	22.9	5.1		6.2						
145	9413F	LW2-G232	8	21	22.9	5.4		6.2						
163	9421F	LW2-G267	8	21	22.9	5.6		6.3						
171	9422F	LW2-G453	8	21	22.9	4.8		6.2						

ANC07466
BZTO104(e)007466

Test Number: 686-11

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
2	9426F	LW2-G468	8	22	22.4									
26	9433F	LW2-G339	8	22	22.3									
27	9430F	LW2-G480	8	22	22.2									
38	9417F	LW2-G264	8	22	22.2									
39	9414F	LW2-G263	8	22	22.3									
44	9423F	LW2-G456	8	22	22.3									
56	9419F	LW2-G276	8	22	22.3									
70	9428F	LW2-G473	8	22	22.4									
87	9416F	LW2-G283	8	22	22.4									
91	9431F	LW2-G454	8	22	22.5									
99	9403F	Control	8	22	22.4									
102	9415F	LW2-G269	8	22	22.3									
112	9418F	LW2-G278	8	22	22.3									
113	9425F	LW2-G461	8	22	22.3									
114	9424F	LW2-G457	8	22	22.3									
125	9429F	LW2-G477	8	22	22.2									
127	9427F	LW2-G467	8	22	22.2									
129	9420F	LW2-G284	8	22	22.3									
136	9432F	LW2-G386	8	22	22.2									
145	9413F	LW2-G232	8	22	22.2									
163	9421F	LW2-G267	8	22	22.2									
171	9422F	LW2-G453	8	22	22.3									
2	9426F	LW2-G468	8	23	23.1									
26	9433F	LW2-G339	8	23	23.1									
27	9430F	LW2-G480	8	23	23.0									
38	9417F	LW2-G264	8	23	23.0									
39	9414F	LW2-G263	8	23	23.0									
44	9423F	LW2-G456	8	23	23.1									
56	9419F	LW2-G276	8	23	23.1									
70	9428F	LW2-G473	8	23	23.3									
87	9416F	LW2-G283	8	23	23.1									
91	9431F	LW2-G454	8	23	23.1									
99	9403F	Control	8	23	23.2									
102	9415F	LW2-G269	8	23	23.0									
112	9418F	LW2-G278	8	23	23.0									
113	9425F	LW2-G461	8	23	23.1									
114	9424F	LW2-G457	8	23	23.1									
125	9429F	LW2-G477	8	23	23.1									
127	9427F	LW2-G467	8	23	23.0									
129	9420F	LW2-G284	8	23	23.1									
136	9432F	LW2-G386	8	23	22.9									
145	9413F	LW2-G232	8	23	23.0									
163	9421F	LW2-G267	8	23	23.0									
171	9422F	LW2-G453	8	23	22.9									

Test Number: 686-11

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
2	9426F	LW2-G468	8	24	22.7	4.7		6.2						
26	9433F	LW2-G339	8	24	22.7	5.9		6.3						
27	9430F	LW2-G480	8	24	22.7	5.8		6.3						
38	9417F	LW2-G264	8	24	22.7	5.4		6.3						
39	9414F	LW2-G263	8	24	22.6	5.5		6.3						
44	9423F	LW2-G456	8	24	22.7	5.7		6.2						
56	9419F	LW2-G276	8	24	22.7	5.6		6.2						
70	9428F	LW2-G473	8	24	22.7	5.1		6.2						
87	9416F	LW2-G283	8	24	22.6	5.2		6.3						
91	9431F	LW2-G454	8	24	22.7	5.2		6.4						
99	9403F	Control	8	24	22.8	5.4		6.4						
102	9415F	LW2-G269	8	24	22.7	5.2		6.3						
112	9418F	LW2-G278	8	24	22.7	5.1		6.4						
113	9425F	LW2-G461	8	24	22.7	5.4		6.3						
114	9424F	LW2-G457	8	24	22.8	5.5		6.3						
125	9429F	LW2-G477	8	24	22.7	6.1		6.4						
127	9427F	LW2-G467	8	24	22.7	6.5		6.4						
129	9420F	LW2-G284	8	24	22.7	6.5		6.5						
136	9432F	LW2-G386	8	24	22.7	5.5		6.4						
145	9413F	LW2-G232	8	24	22.7	5.5		6.4						
163	9421F	LW2-G267	8	24	22.7	5.8		6.4						
171	9422F	LW2-G453	8	24	22.7	4.9		6.4						
2	9426F	LW2-G468	8	25	22.9									
26	9433F	LW2-G339	8	25	22.9									
27	9430F	LW2-G480	8	25	22.9									
38	9417F	LW2-G264	8	25	22.8									
39	9414F	LW2-G263	8	25	22.8									
44	9423F	LW2-G456	8	25	22.8									
56	9419F	LW2-G276	8	25	22.8									
70	9428F	LW2-G473	8	25	22.9									
87	9416F	LW2-G283	8	25	22.9									
91	9431F	LW2-G454	8	25	22.8									
99	9403F	Control	8	25	22.9									
102	9415F	LW2-G269	8	25	22.9									
112	9418F	LW2-G278	8	25	22.8									
113	9425F	LW2-G461	8	25	22.8									
114	9424F	LW2-G457	8	25	22.8									
125	9429F	LW2-G477	8	25	22.9									
127	9427F	LW2-G467	8	25	22.9									
129	9420F	LW2-G284	8	25	22.9									
136	9432F	LW2-G386	8	25	22.9									
145	9413F	LW2-G232	8	25	22.8									
163	9421F	LW2-G267	8	25	22.9									
171	9422F	LW2-G453	8	25	22.9									

ANC07468
BZTO104(e)007468

Test Number: 686-11

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
2	9426F	LW2-G468	8	26	23.0	4.8	160	6.1						
26	9433F	LW2-G339	8	26	23.0	5.9	165	6.2						
27	9430F	LW2-G480	8	26	22.9	5.5	160	6.2						
38	9417F	LW2-G264	8	26	22.9	5.4	160	6.2						
39	9414F	LW2-G263	8	26	22.9	5.4	160	6.2						
44	9423F	LW2-G456	8	26	23.0	5.5	160	6.2						
56	9419F	LW2-G276	8	26	23.0	5.3	165	6.3						
70	9428F	LW2-G473	8	26	23.1	5.1	165	6.3						
87	9416F	LW2-G283	8	26	23.0	5.1	160	6.2						
91	9431F	LW2-G454	8	26	23.0	5.5	160	6.3						
99	9403F	Control	8	26	23.0	5.1	165	6.3						
102	9415F	LW2-G269	8	26	23.0	5.0	160	6.3						
112	9418F	LW2-G278	8	26	22.9	4.9	160	6.2						
113	9425F	LW2-G461	8	26	22.9	4.9	160	6.2						
114	9424F	LW2-G457	8	26	23.0	5.0	165	6.3						
125	9429F	LW2-G477	8	26	22.9	5.4	165	6.3						
127	9427F	LW2-G467	8	26	22.9	5.4	160	6.3						
129	9420F	LW2-G284	8	26	22.9	5.4	160	6.3						
136	9432F	LW2-G386	8	26	23.0	5.1	160	6.3						
145	9413F	LW2-G232	8	26	23.0	5.4	165	6.3						
163	9421F	LW2-G267	8	26	23.0	5.7	160	6.3						
171	9422F	LW2-G453	8	26	23.1	5.0	165	6.3						
2	9426F	LW2-G468	8	27	23.0									
26	9433F	LW2-G339	8	27	23.0									
27	9430F	LW2-G480	8	27	23.0									
38	9417F	LW2-G264	8	27	22.9									
39	9414F	LW2-G263	8	27	22.9									
44	9423F	LW2-G456	8	27	23.0									
56	9419F	LW2-G276	8	27	22.9									
70	9428F	LW2-G473	8	27	23.1									
87	9416F	LW2-G283	8	27	23.0									
91	9431F	LW2-G454	8	27	22.9									
99	9403F	Control	8	27	23.0									
102	9415F	LW2-G269	8	27	23.0									
112	9418F	LW2-G278	8	27	22.9									
113	9425F	LW2-G461	8	27	22.9									
114	9424F	LW2-G457	8	27	22.9									
125	9429F	LW2-G477	8	27	22.9									
127	9427F	LW2-G467	8	27	23.0									
129	9420F	LW2-G284	8	27	23.0									
136	9432F	LW2-G386	8	27	23.0									
145	9413F	LW2-G232	8	27	23.0									
163	9421F	LW2-G267	8	27	23.0									
171	9422F	LW2-G453	8	27	23.0									

ANC07469
BZTO104(e)007469

Test Number: 686-11

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
2	9426F	LW2-G468	8	28	23.1	6.0	160	6.3	43	40	0.3			
26	9433F	LW2-G339	8	28	23.0	7.2	165	6.5	43	40	<0.1			
27	9430F	LW2-G480	8	28	22.9	7.4	160	6.4	43	40	0.1			
38	9417F	LW2-G264	8	28	22.9	6.9	160	6.3	43	40	<0.1			
39	9414F	LW2-G263	8	28	23.0	6.9	165	6.2	43	40	0.1			
44	9423F	LW2-G456	8	28	22.9	7.1	160	6.3	43	40	0.1			
56	9419F	LW2-G276	8	28	23.0	7.1	165	6.4	43	40	0.2			
70	9428F	LW2-G473	8	28	23.2	6.9	165	6.4	34	40	<0.1			
87	9416F	LW2-G283	8	28	23.0	7.1	165	6.4	43	40	<0.1			
91	9431F	LW2-G454	8	28	23.1	7.4	165	6.4	34	40	<0.1			
99	9403F	Control	8	28	23.0	6.9	165	6.4	34	40	<0.1			
102	9415F	LW2-G269	8	28	23.0	6.7	165	6.3	34	40	0.1			
112	9418F	LW2-G278	8	28	23.0	7.1	165	6.4	43	40	<0.1			
113	9425F	LW2-G461	8	28	22.9	6.9	160	6.3	43	40	<0.1			
114	9424F	LW2-G457	8	28	22.9	6.9	165	6.3	51	40	0.1			
125	9429F	LW2-G477	8	28	23.1	7.1	165	6.4	34	40	0.1			
127	9427F	LW2-G467	8	28	23.0	7.3	165	6.4	43	40	0.2			
129	9420F	LW2-G284	8	28	23.0	7.3	160	6.4	43	40	0.2			
136	9432F	LW2-G386	8	28	23.0	6.8	165	6.5	43	40	<0.1			
145	9413F	LW2-G232	8	28	23.0	7.3	165	6.5	51	40	0.1			
163	9421F	LW2-G267	8	28	23.0	7.4	165	6.5	43	40	0.1			
171	9422F	LW2-G453	8	28	23.3	5.9	160	6.4	43	40	0.7			
				Mean	22.8	6.1	176	6.4	49	44	---		11.3	6.3
				SD	0.3	0.7	39	0.2	10	7	---		7.8	0.4
				n	638	286	110	286	44	44	44		22	22
				Min	22.2	4.6	160	6.0	34	30	<0.1		1.0	5.0
				Max	23.3	7.7	550	7.0	77	60	3.4		35.1	7.2
	Data Entry Verified													

ANC07470
BZTO104(e)007470

Test Number: 686-12

Freshwater Sediment Test
10-Day Chironomus tentans

Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

ASHED DRY WT= weight of ashed pan + weight of ashed test organisms recovered at test termination
TAFDW=DRY WT - ASHED DRY WT= total ash-free organism weight for given replicate
AFDW=average individual ash-free biomass=TAFDW/WT COUNT

INITIAL WEIGHT

pan #	tare wt (mg)	final wt (mg)	wt count	avg. wt/ organism
1	92.03	95.45	20	0.17
2	85.21	88.51	20	0.17
3	91.95	94.95	20	0.15

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)		SURV	MORT	PSURV	PMORT	WT
1	63	9403F	Control	1		10	10	0	100.0	0.0	91.17	10	99.65	92.67	8.48	0.85	6.98	0.70						
2	120	9403F	Control	2		10	10	0	100.0	0.0	91.15	10	101.30	93.66	10.15	1.02	7.64	0.76						
3	130	9403F	Control	3		10	9	1	90.0	10.0	96.45	9	107.22	99.17	10.77	1.20	8.05	0.89						
4	162	9403F	Control	4		10	8	2	80.0	20.0	87.08	8	100.33	91.00	13.25	1.66	9.33	1.17						
5	100	9403F	Control	5		10	10	0	100.0	0.0	93.94	10	103.86	96.19	9.92	0.99	7.67	0.77	Mean	9.1	0.9	91.3	8.8	1.19
6	149	9403F	Control	6		10	8	2	80.0	20.0	96.14	8	106.22	98.91	10.08	1.26	7.31	0.91	SD	0.8	0.8	8.3	8.3	0.26
7	33	9403F	Control	7		10	9	1	90.0	10.0	102.67	9	113.12	104.83	10.45	1.16	8.29	0.92	n	8	8	8	8	8
8	166	9403F	Control	8	wq replicate	10	9	1	90.0	10.0	97.60	9	110.31	101.36	12.71	1.41	8.95	0.99						
9	56	9413F	LW2-G232	1		11	11	0	100.0	0.0	90.11	11	109.71	96.50	19.60	1.78	13.21	1.20						
10	24	9413F	LW2-G232	2		10	8	2	80.0	20.0	98.38	8	110.44	101.28	12.06	1.51	9.16	1.15						
11	38	9413F	LW2-G232	3		10	9	1	90.0	10.0	94.03	9	110.46	98.77	16.43	1.83	11.69	1.30						
12	176	9413F	LW2-G232	4		10	9	1	90.0	10.0	103.58	9	121.65	111.05	18.07	2.01	10.60	1.18						
13	41	9413F	LW2-G232	5		10	9	1	90.0	10.0	98.15	9	116.31	104.51	18.16	2.02	11.80	1.31	Mean	9.4	0.8	92.5	7.5	1.77
14	145	9413F	LW2-G232	6		10	9	1	90.0	10.0	92.74	9	109.96	99.90	17.22	1.91	10.06	1.12	SD	0.9	0.7	7.1	7.1	0.21
15	104	9413F	LW2-G232	7		10	10	0	100.0	0.0	92.41	10	108.71	97.70	16.30	1.63	11.01	1.10	n	8	8	8	8	8
16	54	9413F	LW2-G232	8	wq replicate	10	10	0	100.0	0.0	89.17	10	103.98	93.54	14.81	1.48	10.44	1.04						
17	161	9414F	LW2-G263	1		10	8	2	80.0	20.0	106.46	8	121.35	112.41	14.89	1.86	8.94	1.12						
18	43	9414F	LW2-G263	2		10	7	3	70.0	30.0	100.91	7	110.47	103.61	9.56	1.37	6.86	0.98						
19	85	9414F	LW2-G263	3		10	9	1	90.0	10.0	92.96	9	104.52	97.14	11.56	1.28	7.38	0.82						
20	175	9414F	LW2-G263	4		10	9	1	90.0	10.0	102.00	9	117.18	108.40	15.18	1.69	8.78	0.98						
21	167	9414F	LW2-G263	5		10	9	1	90.0	10.0	95.62	9	107.59	99.80	11.97	1.33	7.79	0.87	Mean	8.3	1.8	82.5	17.5	1.43
22	127	9414F	LW2-G263	6		10	9	1	90.0	10.0	96.78	9	108.89	101.13	12.11	1.35	7.76	0.86	SD	0.9	0.9	8.9	8.9	0.22
23	87	9414F	LW2-G263	7		10	7	3	70.0	30.0	96.49	7	105.06	98.81	8.57	1.22	6.25	0.89	n	8	8	8	8	8
24	89	9414F	LW2-G263	8	wq replicate	10	8	2	80.0	20.0	88.05	8	99.00	91.60	10.95	1.37	7.40	0.93						
25	142	9415F	LW2-G269	1		10	7	3	70.0	30.0	86.05	7	91.16	87.72	5.11	0.73	3.44	0.49						
26	173	9415F	LW2-G269	2		10	10	0	100.0	0.0	96.87	10	104.31	99.37	7.44	0.74	4.94	0.49						
27	136	9415F	LW2-G269	3		10	8	2	80.0	20.0	96.96	8	104.57	99.53	7.61	0.95	5.04	0.63						
28	121	9415F	LW2-G269	4		10	4	6	40.0	60.0	95.36	4	98.19	96.28	2.83	0.71	1.91	0.48						
29	72	9415F	LW2-G269	5		10	4	6	40.0	60.0	90.74	4	92.10	90.92	1.36	0.34	1.18	0.29	Mean	6.9	3.1	68.8	31.3	0.66
30	93	9415F	LW2-G269	6		10	8	2	80.0	20.0	96.81	8	101.82	97.79	5.01	0.63	4.03	0.50	SD	2.1	2.1	21.0	21.0	0.18
31	55	9415F	LW2-G269	7		10	8	2	80.0	20.0	93.07	8	97.20	94.03	4.13	0.52	3.17	0.40	n	8	8	8	8	8
32	11	9415F	LW2-G269	8	wq replicate	10	6	4	60.0	40.0	95.14	6	99.35	96.27	4.21	0.70	3.08	0.51						
33	94	9416F	LW2-G283	1		10	0	10	0.0	100.0	91.48	0												
34	66	9416F	LW2-G283	2		10	3	7	30.0	70.0	99.70	3	101.37	100.05	1.67	0.56	1.32	0.44						
35	31	9416F	LW2-G283	3		10	0	10	0.0	100.0	100.46	0												
36	50	9416F	LW2-G283	4		10	0	10	0.0	100.0	100.26	0												
37	74	9416F	LW2-G283	5		10	0	10	0.0	100.0	86.20	0							Mean	0.4	9.6	3.8	96.3	0.56
38	158	9416F	LW2-G283	6		10	0	10	0.0	100.0	97.44	0							SD	1.1	1.1	10.6	10.6	
39	151	9416F	LW2-G283	7		10	0	10	0.0	100.0	96.75	0							n	8	8	8	8	1
40	51	9416F	LW2-G283	8	wq replicate	10	0	10	0.0	100.0	96.54	0												

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Test Number: 686-12

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)		SURV	MORT	PSURV	PMORT	WT
41	174	9417F	LW2-G264	1		10	7	3	70.0	30.0	93.02	7	98.51	94.82	5.49	0.78	3.69	0.53						
42	57	9417F	LW2-G264	2		10	6	4	60.0	40.0	96.98	6	99.59	97.35	2.61	0.44	2.24	0.37						
43	169	9417F	LW2-G264	3		10	2	8	20.0	80.0														
44	114	9417F	LW2-G264	4		10	1	9	10.0	90.0	98.81	1	99.51	99.00	0.70	0.70	0.51	0.51						
45	34	9417F	LW2-G264	5		10	5	5	50.0	50.0	94.94	5	97.75	95.43	2.81	0.56	2.32	0.46	Mean	4.9	5.1	48.8	51.3	0.66
46	76	9417F	LW2-G264	6		10	4	6	40.0	60.0	90.59	4	94.60	91.49	4.01	1.00	3.11	0.78	SD	2.6	2.6	25.9	25.9	0.19
47	52	9417F	LW2-G264	7		10	9	1	90.0	10.0	94.86	9	99.42	95.57	4.56	0.51	3.85	0.43	n	8	8	8	8	7
48	10	9417F	LW2-G264	8	wq replicate	10	5	5	50.0	50.0	93.92	5	97.12	94.60	3.20	0.64	2.52	0.50						
49	143	9418F	LW2-G278	1		10	3	7	30.0	70.0	86.73	3	88.01	86.97	1.28	0.43	1.04	0.35						
50	35	9418F	LW2-G278	2		10	8	2	80.0	20.0	99.47	8	106.60	101.27	7.13	0.89	5.33	0.67						
51	14	9418F	LW2-G278	3		10	8	2	80.0	20.0	103.52	8	111.19	104.73	7.67	0.96	6.46	0.81						
52	81	9418F	LW2-G278	4		10	10	0	100.0	0.0	92.83	10	104.05	96.03	11.22	1.12	8.02	0.80						
53	144	9418F	LW2-G278	5		10	4	6	40.0	60.0	96.95	4	101.65	98.48	4.70	1.18	3.17	0.79	Mean	6.3	3.8	62.5	37.5	0.97
54	160	9418F	LW2-G278	6		10	7	3	70.0	30.0	93.11	7	101.92	96.06	8.81	1.26	5.86	0.84	SD	2.6	2.6	26.0	26.0	0.30
55	163	9418F	LW2-G278	7		10	3	7	30.0	70.0	91.25	3	95.00	92.29	3.75	1.25	2.71	0.90	n	8	8	8	8	8
56	84	9418F	LW2-G278	8	wq replicate	10	7	3	70.0	30.0	91.94	7	96.72	92.85	4.78	0.68	3.87	0.55						
57	48	9419F	LW2-G276	1		10	7	3	70.0	30.0	91.88	7	100.57	94.05	8.69	1.24	6.52	0.93						
58	140	9419F	LW2-G276	2		10	9	1	90.0	10.0	94.08	9	105.37	98.09	11.29	1.25	7.28	0.81						
59	17	9419F	LW2-G276	3		10	6	4	60.0	40.0	90.80	6	95.06	91.51	4.26	0.71	3.55	0.59						
60	73	9419F	LW2-G276	4		10	7	3	70.0	30.0	95.01	7	103.68	97.77	8.67	1.24	5.91	0.84						
61	25	9419F	LW2-G276	5		10	4	6	40.0	60.0	89.29	4	96.51	91.16	7.22	1.81	5.35	1.34	Mean	7.5	2.5	75.0	25.0	1.26
62	20	9419F	LW2-G276	6		10	10	0	100.0	0.0	103.02	10	111.86	105.01	8.84	0.88	6.85	0.68	SD	2.1	2.1	20.7	20.7	0.34
63	122	9419F	LW2-G276	7		10	7	3	70.0	30.0	98.59	7	108.65	102.18	10.06	1.44	6.47	0.92	n	8	8	8	8	8
64	126	9419F	LW2-G276	8	wq replicate	10	10	0	100.0	0.0	88.92	10	103.91	94.64	14.99	1.50	9.27	0.93						
65	44	9420F	LW2-G284	1		10	8	2	80.0	20.0	95.57	8	104.23	97.76	8.66	1.08	6.47	0.81						
66	147	9420F	LW2-G284	2		10	10	0	100.0	0.0	88.79	10	100.91	93.17	12.12	1.21	7.74	0.77						
67	59	9420F	LW2-G284	3		10	9	1	90.0	10.0	100.62	9	109.44	102.28	8.82	0.98	7.16	0.80						
68	101	9420F	LW2-G284	4		10	10	0	100.0	0.0	92.40	10	106.15	97.47	13.75	1.38	8.68	0.87						
69	135	9420F	LW2-G284	5		11	11	0	100.0	0.0	87.29	11	103.33	92.92	16.04	1.46	10.41	0.95	Mean	9.3	0.9	91.3	8.8	1.25
70	29	9420F	LW2-G284	6		10	9	1	90.0	10.0	95.22	9	102.98	97.04	7.76	0.86	5.94	0.66	SD	1.3	1.1	11.3	11.3	0.26
71	139	9420F	LW2-G284	7		10	7	3	70.0	30.0	93.94	7	105.24	97.87	11.30	1.61	7.37	1.05	n	8	8	8	8	8
72	46	9420F	LW2-G284	8	wq replicate	10	10	0	100.0	0.0	91.19	10	105.04	95.74	13.85	1.39	9.30	0.93						
73	172	9421F	LW2-G267	1		10	9	1	90.0	10.0	98.05	9	115.69	105.82	17.64	1.96	9.87	1.10						
74	5	9421F	LW2-G267	2		10	10	0	100.0	0.0	96.43	10	97.51	96.73	1.08	0.11	0.78	0.08						
75	58	9421F	LW2-G267	3		10	10	0	100.0	0.0	89.97	10	105.05	95.33	15.08	1.51	9.72	0.97						
76	39	9421F	LW2-G267	4		10	9	1	90.0	10.0	85.92	9	102.59	91.32	16.67	1.85	11.27	1.25						
77	92	9421F	LW2-G267	5		10	10	0	100.0	0.0	93.86	10	109.10	98.89	15.24	1.52	10.21	1.02	Mean	9.4	0.6	93.8	6.3	1.55
78	152	9421F	LW2-G267	6		10	9	1	90.0	10.0	90.06	9	106.93	96.72	16.87	1.87	10.21	1.13	SD	0.5	0.5	5.2	5.2	0.61
79	170	9421F	LW2-G267	7		10	9	1	90.0	10.0	94.59	9	112.28	102.02	17.69	1.97	10.26	1.14	n	8	8	8	8	8
80	88	9421F	LW2-G267	8	wq replicate	10	9	1	90.0	10.0	96.23	9	110.65	101.00	14.42	1.60	9.65	1.07						
81	36	9422F	LW2-G453	1		10	0	10	0.0	100.0	104.27	0												
82	137	9422F	LW2-G453	2		10	0	10	0.0	100.0	94.20	0												
83	15	9422F	LW2-G453	3		10	0	10	0.0	100.0	95.83	0												
84	21	9422F	LW2-G453	4		10	0	10	0.0	100.0	106.95	0												
85	112	9422F	LW2-G453	5		10	0	10	0.0	100.0	94.30	0							Mean	0.5	9.5	5.0	95.0	0.21
86	115	9422F	LW2-G453	6		10	1	9	10.0	90.0	98.47	1	98.56	98.51	0.09	0.09	0.05	0.05	SD	0.8	0.8	7.6	7.6	0.17
87	141	9422F	LW2-G453	7		10	2	8	20.0	80.0	92.09	2	92.90	92.37	0.81	0.41	0.53	0.27	n	8	8	8	8	3
88	61	9422F	LW2-G453	8	wq replicate	10	1	9	10.0	90.0	91.44	1	91.58	91.46	0.14	0.14	0.12	0.12						
89	80	9423F	LW2-G456	1		10	10	0	100.0	0.0	98.92	10	111.41	102.47	12.49	1.25	8.94	0.89						
90	125	9423F	LW2-G456	2		10	9	1	90.0	10.0	93.83	9	106.62	98.52	12.79	1.42	8.10	0.90						
91	40	9423F	LW2-G456	3		10	9	1	90.0	10.0	83.00	9	99.13	88.66	16.13	1.79	10.47	1.16						
92	116	9423F	LW2-G456	4		10	10	0	100.0	0.0	95.00	10	109.91	100.70	14.91	1.49	9.21	0.92						
93	26	9423F	LW2-G456	5		10	10	0	100.0	0.0	96.90	10	108.76	99.76	11.86	1.19	9.00	0.90	Mean	9.4	0.6	93.8	6.3	1.36
94	159	9423F	LW2-G456	6		10	9	1	90.0	10.0	97.64	9	108.62	101.44	10.98	1.22	7.18	0.80	SD	0.7	0.7	7.4	7.4	0.21
95	23	9423F	LW2-G456	7		10	8	2	80.0	20.0	99.34	8	108.52	101.53	9.18	1.15	6.99	0.87	n	8	8	8	8	8

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Test Number: 686-12

Freshwater Sediment Test
10-Day Chironomus tentans

		NAS	CLIENT								TARE	WT	DRY	ASHED	TWT	WT	TAFDW	AFDW							
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	WT (mg)	COUNT	WT (mg)	DRY WT (mg)	(mg)	(mg)	(mg)	(mg)			SURV	MORT	PSURV	PMORT	WT
96	157	9423F	LW2-G456	8	wq replicate	10	10	0	100.0	0.0	92.21	10	105.65	97.10	13.44	1.34	8.55	0.86							

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Test Number: 686-12

Freshwater Sediment Test
10-Day Chironomus tentans

		NAS	CLIENT								TARE	WT	DRY	ASHED	TWT	WT	TAFDW	AFDW						
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	WT (mg)	COUNT	WT (mg)	DRY WT (mg)	(mg)	(mg)	(mg)	(mg)		SURV	MORT	PSURV	PMORT	WT
97	75	9424F	LW2-G457	1		10	9	1	90.0	10.0	89.50	9	100.51	92.81	11.01	1.22	7.70	0.86						
98	96	9424F	LW2-G457	2		10	10	0	100.0	0.0	102.15	10	115.06	106.41	12.91	1.29	8.65	0.87						
99	65	9424F	LW2-G457	3		10	8	2	80.0	20.0	96.66	8	107.03	99.17	10.37	1.30	7.86	0.98						
100	60	9424F	LW2-G457	4		10	9	1	90.0	10.0	91.76	9	102.85	94.92	11.09	1.23	7.93	0.88						
101	9	9424F	LW2-G457	5		10	10	0	100.0	0.0	106.14	10	130.15	111.81	24.01	2.40	16.34	1.83	Mean	8.9	1.1	88.8	11.3	1.34
102	105	9424F	LW2-G457	6		10	9	1	90.0	10.0	99.10	9	110.17	102.22	11.07	1.23	7.95	0.88	SD	1.0	1.0	9.9	9.9	0.44
103	168	9424F	LW2-G457	7		10	7	3	70.0	30.0	98.96	7	106.58	101.67	7.62	1.09	4.91	0.70	n	8	8	8	8	8
104	68	9424F	LW2-G457	8	wq replicate	10	9	1	90.0	10.0	92.27	9	101.17	94.39	8.90	0.99	6.78	0.75						
105	4	9425F	LW2-G461	1		10	9	1	90.0	10.0	103.20	9	115.77	106.36	12.57	1.40	9.41	1.05						
106	78	9425F	LW2-G461	2		10	9	1	90.0	10.0	92.11	9	105.10	95.93	12.99	1.44	9.17	1.02						
107	30	9425F	LW2-G461	3		10	10	0	100.0	0.0	88.89	10	104.42	93.51	15.53	1.55	10.91	1.09						
108	42	9425F	LW2-G461	4		10	9	1	90.0	10.0	93.15	9	105.82	96.50	12.67	1.41	9.32	1.04						
109	108	9425F	LW2-G461	5		10	6	4	60.0	40.0	90.78	6	103.06	94.74	12.28	2.05	8.32	1.39	Mean	8.8	1.3	87.5	12.5	1.60
110	1	9425F	LW2-G461	6		10	9	1	90.0	10.0	101.70	9	114.49	106.34	12.79	1.42	8.15	0.91	SD	1.2	1.2	11.6	11.6	0.24
111	129	9425F	LW2-G461	7		10	9	1	90.0	10.0	93.78	9	108.81	98.64	15.03	1.67	10.17	1.13	n	8	8	8	8	8
112	165	9425F	LW2-G461	8	wq replicate	10	9	1	90.0	10.0	92.48	9	109.37	99.01	16.89	1.88	10.36	1.15						
113	111	9426F	LW2-G468	1		10	8	2	80.0	20.0	93.94	8	108.11	98.82	14.17	1.77	9.29	1.16						
114	133	9426F	LW2-G468	2		10	8	2	80.0	20.0	97.55	8	110.25	102.27	12.70	1.59	7.98	1.00						
115	67	9426F	LW2-G468	3		10	8	2	80.0	20.0	90.09	8	101.44	93.77	11.35	1.42	7.67	0.96						
116	99	9426F	LW2-G468	4		10	9	1	90.0	10.0	90.50	9	100.67	93.28	10.17	1.13	7.39	0.82						
117	131	9426F	LW2-G468	5		10	9	1	90.0	10.0	87.66	9	105.70	95.37	18.04	2.00	10.33	1.15	Mean	8.0	2.0	80.0	20.0	1.66
118	164	9426F	LW2-G468	6		10	5	5	50.0	50.0	100.12	5	111.88	104.44	11.76	2.35	7.44	1.49	SD	1.3	1.3	13.1	13.1	0.38
119	154	9426F	LW2-G468	7		10	9	1	90.0	10.0	88.03	9	102.23	93.16	14.20	1.58	9.07	1.01	n	8	8	8	8	8
120	77	9426F	LW2-G468	8	wq replicate	10	8	2	80.0	20.0	103.35	8	115.04	106.72	11.69	1.46	8.32	1.04						
121	6	9427F	LW2-G467	1		10	9	1	90.0	10.0	100.20	9	114.54	103.60	14.34	1.59	10.94	1.22						
122	62	9427F	LW2-G467	2		10	7	3	70.0	30.0	97.51	7	110.40	100.62	12.89	1.84	9.78	1.40						
123	156	9427F	LW2-G467	3		10	10	0	100.0	0.0	90.43	10	105.03	94.96	14.60	1.46	10.07	1.01						
124	71	9427F	LW2-G467	4		10	9	1	90.0	10.0	88.96	9	103.81	93.64	14.85	1.65	10.17	1.13						
125	69	9427F	LW2-G467	5		10	10	0	100.0	0.0	92.56	10	106.95	96.25	14.39	1.44	10.70	1.07	Mean	8.9	1.1	88.8	11.3	1.72
126	91	9427F	LW2-G467	6		10	10	0	100.0	0.0	88.19	10	105.60	93.51	17.41	1.74	12.09	1.21	SD	1.1	1.1	11.3	11.3	0.23
127	128	9427F	LW2-G467	7		10	8	2	80.0	20.0	101.59	8	118.58	106.38	16.99	2.12	12.20	1.53	n	8	8	8	8	8
128	150	9427F	LW2-G467	8	wq replicate	10	8	2	80.0	20.0	89.69	8	104.76	93.92	15.07	1.88	10.84	1.36						
129	110	9428F	LW2-G473	1		10	8	2	80.0	20.0	94.88	8	109.34	99.60	14.46	1.81	9.74	1.22						
130	109	9428F	LW2-G473	2		10	10	0	100.0	0.0	97.46	10	113.18	102.64	15.72	1.57	10.54	1.05						
131	2	9428F	LW2-G473	3		10	9	1	90.0	10.0	85.75	9	98.32	89.42	12.57	1.40	8.90	0.99						
132	8	9428F	LW2-G473	4		10	10	0	100.0	0.0	97.46	10	113.86	102.53	16.40	1.64	11.33	1.13						
133	98	9428F	LW2-G473	5		10	9	1	90.0	10.0	87.67	9	100.56	91.36	12.91	1.43	9.22	1.02	Mean	9.3	0.8	92.5	7.5	1.60
134	148	9428F	LW2-G473	6		10	10	0	100.0	0.0	94.93	10	110.80	100.83	15.87	1.59	9.97	1.00	SD	0.9	0.9	8.9	8.9	0.24
135	28	9428F	LW2-G473	7		10	10	0	100.0	0.0	101.43	10	114.67	105.26	13.24	1.32	9.41	0.94	n	8	8	8	8	8
136	45	9428F	LW2-G473	8	wq replicate	10	8	2	80.0	20.0	91.86	8	108.31	97.54	16.45	2.06	10.77	1.35						
137	47	9429F	LW2-G477	1		10	8	2	80.0	20.0	99.43	8	112.98	103.69	13.55	1.69	9.29	1.16						
138	102	9429F	LW2-G477	2		10	10	0	100.0	0.0	96.06	10	110.51	100.65	14.45	1.45	9.86	0.99						
139	32	9429F	LW2-G477	3		10	8	2	80.0	20.0	100.58	8	113.69	104.37	13.11	1.64	9.32	1.17						
140	79	9429F	LW2-G477	4		10	6	4	60.0	40.0	96.22	6	105.81	98.38	9.59	1.60	7.43	1.24						
141	86	9429F	LW2-G477	5		10	9	1	90.0	10.0	97.18	9	109.98	100.97	12.80	1.42	9.01	1.00	Mean	8.6	1.4	86.3	13.8	1.59
142	107	9429F	LW2-G477	6		10	9	1	90.0	10.0	97.35	9	113.19	102.81	15.84	1.76	10.38	1.15	SD	1.3	1.3	13.0	13.0	0.11
143	124	9429F	LW2-G477	7		10	10	0	100.0	0.0	94.59	10	110.43	100.42	15.84	1.58	10.01	1.00	n	8	8	8	8	8
144	118	9429F	LW2-G477	8	wq replicate	10	9	1	90.0	10.0	92.69	9	106.83	97.65	14.14	1.57	9.18	1.02						
145	37	9430F	LW2-G480	1		10	8	2	80.0	20.0	93.44	8	100.82	94.78	7.38	0.92	6.04	0.75						
146	19	9430F	LW2-G480	2		10	10	0	100.0	0.0	96.99	10	104.35	98.16	7.36	0.74	6.19	0.62						
147	171	9430F	LW2-G480	3		10	9	1	90.0	10.0	93.42	9	105.99	97.76	12.57	1.40	8.23	0.91						
148	113	9430F	LW2-G480	4		10	10	0	100.0	0.0	91.22	10	102.24	94.86	11.02	1.10	7.38	0.74						
149	103	9430F	LW2-G480	5		10	9	1	90.0	10.0	106.60	7	115.92	109.61	9.32	1.33	6.31	0.90	Mean	9.0	1.0	90.0	10.0	1.16
150	12	9430F	LW2-G480	6		10	10	0	100.0	0.0	90.29	10	98.96	91.51	8.67	0.87	7.45	0.74	SD	1.1	1.1	10.7	10.7	0.29
151	90	9430F	LW2-G480	7		10	7	3	70.0	30.0	97.25	7	107.39	99.86	10.14	1.45	7.53	1.08	n	8	8	8	8	8

ANC07474
BZTO104(e)007474

Test Number: 686-12

Freshwater Sediment Test
10-Day Chironomus tentans

		NAS	CLIENT									TARE	WT	DRY	ASHED	TWT	WT	TAFDW	AFDW						
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT		WT (mg)	COUNT	WT (mg)	DRY WT (mg)	(mg)	(mg)	(mg)	(mg)			SURV	MORT	PSURV	PMORT	WT
152	64	9430F	LW2-G480	8	wq replicate	10	9	1	90.0	10.0		91.12	9	104.44	94.35	13.32	1.48	10.09	1.12							

ANC07475
BZTO104(e)007475

Test Number: 686-12

Freshwater Sediment Test
10-Day Chironomus tentans

		NAS	CLIENT								TARE	WT	DRY	ASHED	TWT	WT	TAFDW	AFDW							
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	WT (mg)	COUNT	WT (mg)	DRY WT (mg)	(mg)	(mg)	(mg)	(mg)			SURV	MORT	PSURV	PMORT	WT
153	155	9431F	LW2-G454	1		10	10	0	100.0	0.0	91.42	10	107.71	98.15	16.29	1.63	9.56	0.96							
154	153	9431F	LW2-G454	2		10	9	1	90.0	10.0	94.62	9	110.97	100.31	16.35	1.82	10.66	1.18							
155	83	9431F	LW2-G454	3		10	8	2	80.0	20.0	90.22	8	103.09	94.79	12.87	1.61	8.30	1.04							
156	49	9431F	LW2-G454	4		10	9	1	90.0	10.0	94.66	9	109.67	98.75	15.01	1.67	10.92	1.21							
157	53	9431F	LW2-G454	5		10	8	2	80.0	20.0	96.44	8	108.54	100.05	12.10	1.51	8.49	1.06	Mean	8.8	1.3	87.5	12.5	1.66	
158	82	9431F	LW2-G454	6		10	9	1	90.0	10.0	87.38	9	100.27	91.06	12.89	1.43	9.21	1.02	SD	0.7	0.7	7.1	7.1	0.16	
159	138	9431F	LW2-G454	7		10	9	1	90.0	10.0	95.48	9	112.81	101.75	17.33	1.93	11.06	1.23	n	8	8	8	8	8	
160	22	9431F	LW2-G454	8	wq replicate	10	8	2	80.0	20.0	97.49	8	110.76	101.40	13.27	1.66	9.36	1.17							
161	70	9432F	LW2-G386	1		10	9	1	90.0	10.0	94.76	9	108.68	99.00	13.92	1.55	9.68	1.08							
162	3	9432F	LW2-G386	2		10	9	1	90.0	10.0	104.98	9	118.73	109.05	13.75	1.53	9.68	1.08							
163	16	9432F	LW2-G386	3		10	8	2	80.0	20.0	91.22	8	105.44	94.26	14.22	1.78	11.18	1.40							
164	117	9432F	LW2-G386	4		12	12	0	100.0	0.0	91.03	12	109.99	98.42	18.96	1.58	11.57	0.96							
165	134	9432F	LW2-G386	5		10	10	0	100.0	0.0	85.50	10	101.90	92.09	16.40	1.64	9.81	0.98	Mean	9.6	0.6	93.8	6.3	1.61	
166	106	9432F	LW2-G386	6		10	9	1	90.0	10.0	97.74	9	113.63	103.23	15.89	1.77	10.40	1.16	SD	1.2	0.7	7.4	7.4	0.12	
167	7	9432F	LW2-G386	7		10	10	0	100.0	0.0	105.44	10	121.22	110.19	15.78	1.58	11.03	1.10	n	8	8	8	8	8	
168	95	9432F	LW2-G386	8	wq replicate	10	10	0	100.0	0.0	83.20	10	97.48	89.02	14.28	1.43	8.46	0.85							
169	119	9433F	LW2-G339	1		10	8	2	80.0	20.0	95.19	8	103.68	98.00	8.49	1.06	5.68	0.71							
170	132	9433F	LW2-G339	2		10	6	4	60.0	40.0	88.91	6	95.10	90.89	6.19	1.03	4.21	0.70							
171	27	9433F	LW2-G339	3		10	8	2	80.0	20.0	96.08	8	102.55	97.43	6.47	0.81	5.12	0.64							
172	13	9433F	LW2-G339	4		10	7	3	70.0	30.0	96.46	7	103.32	97.86	6.86	0.98	5.46	0.78							
173	146	9433F	LW2-G339	5		10	9	1	90.0	10.0	96.50	9	110.38	102.14	13.88	1.54	8.24	0.92	Mean	7.8	10.0	77.5	22.5	0.98	
174	18	9433F	LW2-G339	6		10	6	4	60.0	40.0	94.09	6	98.21	94.73	4.12	0.69	3.48	0.58	SD	1.3	0.0	12.8	12.8	0.27	
175	97	9433F	LW2-G339	7		10	9	1	90.0	10.0	97.51	9	103.80	98.66	6.29	0.70	5.14	0.57	n	8	8	8	8	8	
176	123	9433F	LW2-G339	8	wq replicate	10	9	1	90.0	10.0	94.52	9	103.76	97.77	9.24	1.03	5.99	0.67							

Note: Bkr # 103 lost 2 animals in transfer to weigh pans.

Note: Bkr #169 weight data was eliminated from data set due to illegible tare weight and possible negative weight calculation.

ANC07476
BZTO104(e)007476

Test Number: 686-12

Freshwater Sediment Test
10-Day Chironomus tentans

AFDW
0.89
0.15
8
1.17
0.09
8
0.93
0.09
8
0.48
0.10
8
0.44
1

ANC07477
BZTO104(e)007477

Test Number: 686-12

Freshwater Sediment Test
10-Day Chironomus tentans

AFDW
0.51
0.13
7
0.71
0.18
8
0.88
0.22
8
0.85
0.12
8
0.97
0.37
8
0.15
0.11
3
0.91
0.11
8

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ANC07478
BZTO104(e)007478

Test Number: 686-12

Freshwater Sediment Test
10-Day Chironomus tentans

AFDW

ANC07479
BZTO104(e)007479

Test Number: 686-12

Freshwater Sediment Test
10-Day Chironomus tentans

AFDW
0.97
0.36
8
1.10
0.14
8
1.08
0.20
8
1.24
0.18
8
1.09
0.14
8
1.09
0.10
8
0.86
0.18
8

ANC07480
BZTO104(e)007480

Test Number: 686-12

Freshwater Sediment Test
10-Day Chironomus tentans

AFDW

ANC07481
BZTO104(e)007481

Test Number: 686-12

Freshwater Sediment Test
10-Day Chironomus tentans

AFDW
1.11
0.10
8
1.07
0.16
8
0.70
0.11
8

ANC07482
BZTO104(e)007482

Water Quality Data

													Bulk Sediment	
	NAS	CLIENT											Interstitial water	
	SMPL	DESCRIP											NH3	pH
	9413F	LW2-G232											4.5	5.9
	9414F	LW2-G263											11.4	5.0
	9415F	LW2-G269											23.0	6.3
	9416F	LW2-G283											10.5	6.3
	9417F	LW2-G264											10.2	6.2
	9418F	LW2-G278											15.7	6.2
	9419F	LW2-G276											16.1	6.2
	9420F	LW2-G284											9.9	6.3
	9421F	LW2-G267											2.9	6.2
	9422F	LW2-G453											35.1	6.3
	9423F	LW2-G456											18.9	6.3
	9424F	LW2-G457											16.6	6.4
	9425F	LW2-G461											14.8	6.4
	9426F	LW2-G468											11.9	6.5
	9427F	LW2-G467											4.7	6.5
	9428F	LW2-G473											9.2	6.5
	9429F	LW2-G477											7.8	6.6
	9430F	LW2-G480											7.3	6.4
	9431F	LW2-G454											1.0	6.4
	9432F	LW2-G386											8.2	6.5
	9433F	LW2-G339											7.2	6.6
	9403F	Control											1.3	7.2

	NAS	CLIENT			Overlying water						
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	NH3	HARD	ALK
10	9417F	LW2-G264	8	0	22.9	7.2	185	6.3	2.6	60	50
11	9415F	LW2-G269	8	0	22.9	6.6	195	6.3	2.6	68	50
22	9431F	LW2-G454	8	0	22.9	7.1	160	6.5	0.2	43	40
45	9428F	LW2-G473	8	0	22.9	7.4	180	6.4	1.1	60	50
46	9420F	LW2-G284	8	0	22.9	7.3	180	6.4	1.3	51	50
51	9416F	LW2-G283	8	0	22.9	7.0	175	6.4	0.9	51	40
54	9413F	LW2-G232	8	0	22.9	7.2	185	6.3	0.6	51	40
61	9442F	LW2-G453	8	0	22.8	7.3	180	6.4	2.8	43	40
64	9430F	LW2-G480	8	0	22.8	7.1	165	6.5	0.7	51	40
68	9424F	LW2-G457	8	0	22.8	7.1	200	6.3	1.6	60	50
77	9426F	LW2-G468	8	0	22.8	7.4	195	6.3	1.4	60	60
84	9418F	LW2-G278	8	0	22.8	7.2	200	6.3	1.6	60	50
88	9421F	LW2-G267	8	0	22.8	7.5	170	6.4	0.4	43	40
89	9414F	LW2-G263	8	0	22.8	7.3	205	6.2	0.9	60	30
95	9432F	LW2-G386	8	0	22.8	7.1	180	6.3	0.9	51	50
118	9429F	LW2-G477	8	0	22.8	7.0	185	6.3	1.0	60	40
123	9433F	LW2-G339	8	0	22.8	7.2	480	6.4	0.5	60	50
126	9419F	LW2-G276	8	0	22.9	7.2	220	6.4	2.1	60	50
150	9427F	LW2-G467	8	0	22.9	7.1	170	6.5	0.7	51	50
157	9423F	LW2-G456	8	0	22.9	7.3	210	6.3	2.0	60	60
165	9425F	LW2-G461	8	0	22.8	7.4	200	6.3	1.9	60	50
166	9403F	Control	8	0	22.9	7.6	330	6.6	0.3	68	50
10	9417F	LW2-G264	8	1	22.8	6.3					
11	9415F	LW2-G269	8	1	22.9	6.4					
22	9431F	LW2-G454	8	1	22.8	6.8					
45	9428F	LW2-G473	8	1	22.8	6.8					
46	9420F	LW2-G284	8	1	22.8	6.7					
51	9416F	LW2-G283	8	1	22.8	7.0					
54	9413F	LW2-G232	8	1	22.8	6.5					
61	9442F	LW2-G453	8	1	22.8	6.8					
64	9430F	LW2-G480	8	1	22.8	7.0					
68	9424F	LW2-G457	8	1	22.8	6.4					
77	9426F	LW2-G468	8	1	22.8	6.6					
84	9418F	LW2-G278	8	1	22.8	6.9					
88	9421F	LW2-G267	8	1	22.8	7.3					
89	9414F	LW2-G263	8	1	22.8	7.4					
95	9432F	LW2-G386	8	1	22.9	6.8					
118	9429F	LW2-G477	8	1	22.9	5.9					
123	9433F	LW2-G339	8	1	22.9	6.3					
126	9419F	LW2-G276	8	1	22.9	6.1					
150	9427F	LW2-G467	8	1	22.9	6.1					
157	9423F	LW2-G456	8	1	22.9	6.3					
165	9425F	LW2-G461	8	1	22.9	6.3					
166	9403F	Control	8	1	22.9	6.4					
10	9417F	LW2-G264	8	2	22.3	6.7					
11	9415F	LW2-G269	8	2	22.4	6.8					
22	9431F	LW2-G454	8	2	22.3	6.8					
45	9428F	LW2-G473	8	2	22.4	6.5					

ANC07483
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46	9420F	LW2-G284	8	2	22.4	6.8								
51	9416F	LW2-G283	8	2	22.4	6.9								
54	9413F	LW2-G232	8	2	22.3	6.8								
61	9442F	LW2-G453	8	2	22.4	6.8								
64	9430F	LW2-G480	8	2	22.3	7.1								
68	9424F	LW2-G457	8	2	22.4	6.3								
77	9426F	LW2-G468	8	2	22.3	6.3								
84	9418F	LW2-G278	8	2	22.3	6.7								
88	9421F	LW2-G267	8	2	22.4	7.3								
89	9414F	LW2-G263	8	2	22.4	7.4								
95	9432F	LW2-G386	8	2	22.4	6.7								
118	9429F	LW2-G477	8	2	22.4	6.2								
123	9433F	LW2-G339	8	2	22.5	6.5								
126	9419F	LW2-G276	8	2	22.5	6.6								
150	9427F	LW2-G467	8	2	22.4	6.5								
157	9423F	LW2-G456	8	2	22.5	6.5								
165	9425F	LW2-G461	8	2	22.4	5.9								
166	9403F	Control	8	2	22.4	6.4								
10	9417F	LW2-G264	8	3	23.1	5.6		6.3						
11	9415F	LW2-G269	8	3	23.1	5.0		6.3						
22	9431F	LW2-G454	8	3	23.1	5.6		6.3						
45	9428F	LW2-G473	8	3	23.1	4.7		6.3						
46	9420F	LW2-G284	8	3	23.1	5.2		6.3						
51	9416F	LW2-G283	8	3	23.1	5.4		6.3						
54	9413F	LW2-G232	8	3	23.1	5.0		6.3						
61	9442F	LW2-G453	8	3	23.1	5.4		6.3						
64	9430F	LW2-G480	8	3	23.0	5.4		6.3						
68	9424F	LW2-G457	8	3	23.0	5.3		6.4						
77	9426F	LW2-G468	8	3	23.0	5.2		6.3						
84	9418F	LW2-G278	8	3	23.0	5.3		6.3						
88	9421F	LW2-G267	8	3	23.0	5.3		6.3						
89	9414F	LW2-G263	8	3	23.0	6.1		6.3						
95	9432F	LW2-G386	8	3	23.1	6.2		6.4						
118	9429F	LW2-G477	8	3	23.0	5.1		6.4						
123	9433F	LW2-G339	8	3	23.0	5.5		6.5						
126	9419F	LW2-G276	8	3	23.1	4.8		6.3						
150	9427F	LW2-G467	8	3	23.0	4.6		6.3						
157	9423F	LW2-G456	8	3	23.0	5.0		6.4						
165	9425F	LW2-G461	8	3	23.0	4.4		6.3						
166	9403F	Control	8	3	23.0	4.8		6.4						
10	9417F	LW2-G264	8	4	22.8	5.1								
11	9415F	LW2-G269	8	4	22.8	5.1								
22	9431F	LW2-G454	8	4	22.8	4.9								
45	9428F	LW2-G473	8	4	22.7	5.2								
46	9420F	LW2-G284	8	4	22.8	5.2								
51	9416F	LW2-G283	8	4	22.9	5.0								
54	9413F	LW2-G232	8	4	22.9	4.6								
61	9442F	LW2-G453	8	4	22.9	4.9								
64	9430F	LW2-G480	8	4	22.8	4.5								
68	9424F	LW2-G457	8	4	22.8	4.5								
77	9426F	LW2-G468	8	4	22.8	4.6								
84	9418F	LW2-G278	8	4	22.8	4.6								
88	9421F	LW2-G267	8	4	22.8	5.1								
89	9414F	LW2-G263	8	4	22.8	5.7								
95	9432F	LW2-G386	8	4	22.9	5.8								
118	9429F	LW2-G477	8	4	22.8	4.1								
123	9433F	LW2-G339	8	4	22.7	4.9								
126	9419F	LW2-G276	8	4	22.7	4.6								
150	9427F	LW2-G467	8	4	22.8	4.5								
157	9423F	LW2-G456	8	4	22.8	4.2								
165	9425F	LW2-G461	8	4	22.7	3.8								
166	9403F	Control	8	4	22.8	4.1								
10	9417F	LW2-G264	8	5	23.1	4.2								
11	9415F	LW2-G269	8	5	23.1	4.2								
22	9431F	LW2-G454	8	5	23.2	4.0								
45	9428F	LW2-G473	8	5	23.0	4.4								
46	9420F	LW2-G284	8	5	23.0	4.0								
51	9416F	LW2-G283	8	5	23.0	4.4								
54	9413F	LW2-G232	8	5	23.1	3.9								
61	9442F	LW2-G453	8	5	23.0	4.3								
64	9430F	LW2-G480	8	5	23.0	4.2								
68	9424F	LW2-G457	8	5	22.9	4.2								
77	9426F	LW2-G468	8	5	22.9	4.6								
84	9418F	LW2-G278	8	5	22.9	4.0								
88	9421F	LW2-G267	8	5	23.0	4.6								
89	9414F	LW2-G263	8	5	23.0	5.2								
95	9432F	LW2-G386	8	5	23.0	4.9								
118	9429F	LW2-G477	8	5	23.1	3.4								
123	9433F	LW2-G339	8	5	23.0	4.1								

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126	9419F	LW2-G276	8	5	23.0	4.6								
150	9427F	LW2-G467	8	5	23.1	4.3								
157	9423F	LW2-G456	8	5	23.1	4.0								
165	9425F	LW2-G461	8	5	23.0	3.0								
166	9403F	Control	8	5	23.0	4.2								
10	9417F	LW2-G264	8	6	22.9	5.6								
11	9415F	LW2-G269	8	6	23.0	5.8								
22	9431F	LW2-G454	8	6	23.0	5.8								
45	9428F	LW2-G473	8	6	23.0	5.2								
46	9420F	LW2-G284	8	6	23.0	5.7								
51	9416F	LW2-G283	8	6	23.0	5.8								
54	9413F	LW2-G232	8	6	22.9	5.0								
61	9442F	LW2-G453	8	6	23.0	5.2								
64	9430F	LW2-G480	8	6	22.9	5.6								
68	9424F	LW2-G457	8	6	22.9	5.5								
77	9426F	LW2-G468	8	6	22.9	5.4								
84	9418F	LW2-G278	8	6	22.9	5.2								
88	9421F	LW2-G267	8	6	22.9	5.5								
89	9414F	LW2-G263	8	6	22.9	5.9								
95	9432F	LW2-G386	8	6	23.0	5.8								
118	9429F	LW2-G477	8	6	22.9	4.8								
123	9433F	LW2-G339	8	6	22.9	5.2								
126	9419F	LW2-G276	8	6	23.0	5.3								
150	9427F	LW2-G467	8	6	23.0	4.8								
157	9423F	LW2-G456	8	6	22.9	4.6								
165	9425F	LW2-G461	8	6	23.0	4.7								
166	9403F	Control	8	6	23.0	4.5								
10	9417F	LW2-G264	8	7	22.9	4.6		6.6						
11	9415F	LW2-G269	8	7	22.9	5.0		6.6						
22	9431F	LW2-G454	8	7	22.9	5.6		6.5						
45	9428F	LW2-G473	8	7	22.9	5.3		6.5						
46	9420F	LW2-G284	8	7	23.0	5.6		6.4						
51	9416F	LW2-G283	8	7	23.0	5.2		6.5						
54	9413F	LW2-G232	8	7	22.9	4.8		6.5						
61	9442F	LW2-G453	8	7	23.0	4.9		6.4						
64	9430F	LW2-G480	8	7	22.9	5.1		6.5						
68	9424F	LW2-G457	8	7	22.9	5.5		6.5						
77	9426F	LW2-G468	8	7	22.9	5.3		6.5						
84	9418F	LW2-G278	8	7	22.9	5.1		6.6						
88	9421F	LW2-G267	8	7	22.9	4.7		6.5						
89	9414F	LW2-G263	8	7	22.9	5.3		6.5						
95	9432F	LW2-G386	8	7	23.0	5.3		6.4						
118	9429F	LW2-G477	8	7	22.9	4.8		6.5						
123	9433F	LW2-G339	8	7	22.9	4.9		6.5						
126	9419F	LW2-G276	8	7	23.0	5.2		6.5						
150	9427F	LW2-G467	8	7	23.0	5.0		6.5						
157	9423F	LW2-G456	8	7	23.0	5.1		6.5						
165	9425F	LW2-G461	8	7	22.9	5.0		6.5						
166	9403F	Control	8	7	23.0	4.4		6.6						
10	9417F	LW2-G264	8	8	22.8	4.9								
11	9415F	LW2-G269	8	8	22.8	5.4								
22	9431F	LW2-G454	8	8	22.8	5.6								
45	9428F	LW2-G473	8	8	22.8	5.2								
46	9420F	LW2-G284	8	8	22.9	5.3								
51	9416F	LW2-G283	8	8	22.9	5.5								
54	9413F	LW2-G232	8	8	22.8	5.1								
61	9442F	LW2-G453	8	8	22.9	5.3								
64	9430F	LW2-G480	8	8	22.8	5.2								
68	9424F	LW2-G457	8	8	22.8	5.4								
77	9426F	LW2-G468	8	8	22.8	5.2								
84	9418F	LW2-G278	8	8	22.8	5.3								
88	9421F	LW2-G267	8	8	22.8	5.0								
89	9414F	LW2-G263	8	8	22.8	5.6								
95	9432F	LW2-G386	8	8	22.8	5.1								
118	9429F	LW2-G477	8	8	22.8	5.7								
123	9433F	LW2-G339	8	8	22.8	5.4								
126	9419F	LW2-G276	8	8	22.9	5.6								
150	9427F	LW2-G467	8	8	22.8	5.0								
157	9423F	LW2-G456	8	8	22.8	5.5								
165	9425F	LW2-G461	8	8	22.9	5.3								
166	9403F	Control	8	8	22.8	4.8								
10	9417F	LW2-G264	8	9	22.3	5.5								
11	9415F	LW2-G269	8	9	22.3	5.7								
22	9431F	LW2-G454	8	9	22.2	5.8								
45	9428F	LW2-G473	8	9	22.2	5.3								
46	9420F	LW2-G284	8	9	22.2	5.7								
51	9416F	LW2-G283	8	9	22.2	5.4								
54	9413F	LW2-G232	8	9	22.2	5.5								
61	9442F	LW2-G453	8	9	22.2	5.0								

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64	9430F	LW2-G480	8	9	22.2	5.1								
68	9424F	LW2-G457	8	9	22.2	5.3								
77	9426F	LW2-G468	8	9	22.2	5.4								
84	9418F	LW2-G278	8	9	22.2	5.5								
88	9421F	LW2-G267	8	9	22.2	5.2								
89	9414F	LW2-G263	8	9	22.1	5.4								
95	9432F	LW2-G386	8	9	22.3	5.2								
118	9429F	LW2-G477	8	9	22.1	5.6								
123	9433F	LW2-G339	8	9	22.1	5.8								
126	9419F	LW2-G276	8	9	22.3	5.9								
150	9427F	LW2-G467	8	9	22.2	5.1								
157	9423F	LW2-G456	8	9	22.1	5.4								
165	9425F	LW2-G461	8	9	22.1	5.6								
166	9403F	Control	8	9	22.1	5.0								
10	9417F	LW2-G264	8	10	22.4	6.2	170	6.6	0.8	43	40			
11	9415F	LW2-G269	8	10	22.4	6.3	170	6.5	1.2	43	40			
22	9431F	LW2-G454	8	10	22.4	6.5	165	6.7	0.5	43	40			
45	9428F	LW2-G473	8	10	22.4	6.3	165	6.6	0.8	43	40			
46	9420F	LW2-G284	8	10	22.4	6.2	170	6.6	0.7	43	40			
51	9416F	LW2-G283	8	10	22.5	6.1	170	6.5	0.8	43	40			
54	9413F	LW2-G232	8	10	22.4	5.7	165	6.5	0.7	43	40			
61	9442F	LW2-G453	8	10	22.4	6.2	170	6.6	1.3	43	40			
64	9430F	LW2-G480	8	10	22.4	6.4	165	6.6	0.7	43	40			
68	9424F	LW2-G457	8	10	22.3	6.4	165	6.6	0.8	43	40			
77	9426F	LW2-G468	8	10	22.4	6.6	165	6.6	0.7	43	40			
84	9418F	LW2-G278	8	10	22.4	6.8	165	6.6	0.7	43	40			
88	9421F	LW2-G267	8	10	22.4	6.7	165	6.6	0.4	43	40			
89	9414F	LW2-G263	8	10	22.4	6.3	170	6.6	0.7	43	40			
95	9432F	LW2-G386	8	10	22.4	6.4	165	6.6	0.6	43	40			
118	9429F	LW2-G477	8	10	22.4	5.9	165	6.6	0.5	43	40			
123	9433F	LW2-G339	8	10	22.3	6.1	180	6.6	0.5	43	40			
126	9419F	LW2-G276	8	10	22.4	6.6	165	6.6	0.8	43	40			
150	9427F	LW2-G467	8	10	22.4	6.1	165	6.6	0.5	43	40			
157	9423F	LW2-G456	8	10	22.4	6.3	165	6.6	0.8	43	40			
165	9425F	LW2-G461	8	10	22.4	5.9	165	6.5	0.9	51	40			
166	9403F	Control	8	10	22.4	5.6	175	6.6	0.6	43	50			
				Mean	22.7	5.6	187	6.4	---	50	44		11.3	6.3
				SD	0.3	0.9	53	0.1	---	8	6		7.8	0.4
				n	242	242	44	88	44	44	44		22	22
				Min	22.1	3.0	160	6.2	0.2	43	30		1.0	5.0
				Max	23.2	7.6	480	6.7	2.8	68	60		35.1	7.2

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Test Number: P686-13

Freshwater Sediment Test
28-day Hyalella azteca

Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or
dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

INITIAL WEIGHT

pan #	tare wt (mg)	final wt (mg)	wt count	avg. wt/ organism
1	30.857	31.489	20	0.032
2	27.722	28.368	20	0.032
3	28.424	29.053	20	0.031
4	28.685	29.279	20	0.030
5	29.117	29.808	20	0.035

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
1	120	9454F	Control	1		10	10	0	100.0	0.0	27.379	10	30.860	3.48	0.35						
2	137	9454F	Control	2		10	9	1	90.0	10.0	27.889	9	31.014	3.13	0.35						
3	98	9454F	Control	3		10	10	0	100.0	0.0	29.033	10	32.195	3.16	0.32						
4	10	9454F	Control	4		10	10	0	100.0	0.0	27.479	10	30.512	3.03	0.30						
5	45	9454F	Control	5		10	10	0	100.0	0.0	29.697	10	32.557	2.86	0.29	Mean	9.6	0.4	96.3	3.8	0.32
6	126	9454F	Control	6		10	9	1	90.0	10.0	27.740	9	30.422	2.68	0.30	SD	0.5	0.5	5.2	5.2	0.03
7	143	9454F	Control	7		10	10	0	100.0	0.0	29.150	10	32.589	3.44	0.34	n	8	8	8	8	8
8	154	9454F	Control	8	wq replicate	10	9	1	90.0	10.0	27.525	9	30.737	3.21	0.36						
9	146	9435F	LW2-G207	1		10	9	1	90.0	10.0	28.789	9	31.743	2.95	0.33						
10	9	9435F	LW2-G207	2		10	8	2	80.0	20.0	29.996	8	32.580	2.58	0.32						
11	3	9435F	LW2-G207	3		10	9	1	90.0	10.0	27.066	9	29.237	2.17	0.24						
12	86	9435F	LW2-G207	4		10	7	3	70.0	30.0	29.593	7	31.797	2.20	0.31						
13	72	9435F	LW2-G207	5		10	10	0	100.0	0.0	26.988	10	29.947	2.96	0.30	Mean	8.9	1.1	88.8	11.3	0.29
14	80	9435F	LW2-G207	6		10	10	0	100.0	0.0	28.513	10	31.014	2.50	0.25	SD	1.1	1.1	11.3	11.3	0.04
15	32	9435F	LW2-G207	7		10	10	0	100.0	0.0	29.162	10	31.705	2.54	0.25	n	8	8	8	8	8
16	101	9435F	LW2-G207	8	wq replicate	10	8	2	80.0	20.0	27.291	8	30.036	2.75	0.34						
17	40	9436F	LW2-G209	1		10	10	0	100.0	0.0	25.078	10	28.586	3.51	0.35						
18	119	9436F	LW2-G209	2		10	9	1	90.0	10.0	32.179	9	35.734	3.56	0.40						
19	130	9436F	LW2-G209	3		10	9	1	90.0	10.0	28.880	9	32.624	3.74	0.42						
20	160	9436F	LW2-G209	4		10	10	0	100.0	0.0	29.953	10	34.906	4.95	0.50						
21	62	9436F	LW2-G209	5		10	10	0	100.0	0.0	31.529	10	35.098	3.57	0.36	Mean	9.6	0.4	96.3	3.8	0.39
22	136	9436F	LW2-G209	6		10	10	0	100.0	0.0	29.287	10	33.558	4.27	0.43	SD	0.5	0.5	5.2	5.2	0.06
23	35	9436F	LW2-G209	7		10	9	1	90.0	10.0	29.185	9	32.447	3.26	0.36	n	8	8	8	8	8
24	49	9436F	LW2-G209	8	wq replicate	10	10	0	100.0	0.0	26.834	10	29.844	3.01	0.30						
25	141	9437F	LW2-G198	1		10	9	1	90.0	10.0	28.640	9	31.711	3.07	0.34						
26	16	9437F	LW2-G198	2		10	10	0	100.0	0.0	30.111	10	32.616	2.51	0.25						
27	71	9437F	LW2-G198	3		10	10	0	100.0	0.0	30.409	10	33.159	2.75	0.28						
28	64	9437F	LW2-G198	4		10	10	0	100.0	0.0	29.543	10	31.938	2.40	0.24						
29	78	9437F	LW2-G198	5		10	9	1	90.0	10.0	29.918	6	31.750	1.83	0.31	Mean	9.8	0.3	97.5	2.5	0.29
30	53	9437F	LW2-G198	6		10	10	0	100.0	0.0	28.406	10	31.858	3.45	0.35	SD	0.5	0.5	4.6	4.6	0.04
31	23	9437F	LW2-G198	7		10	10	0	100.0	0.0	27.710	10	30.397	2.69	0.27	n	8	8	8	8	8
32	68	9437F	LW2-G198	8	wq replicate	10	10	0	100.0	0.0	28.822	10	31.386	2.56	0.26						

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Test Number: P686-13

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
33	66	9438F	LW2-G199	1		10	10	0	100.0	0.0	30.005	10	32.822	2.82	0.28						
34	12	9438F	LW2-G199	2		10	7	3	70.0	30.0	29.175	7	31.070	1.90	0.27						
35	89	9438F	LW2-G199	3		10	9	1	90.0	10.0	26.948	9	29.671	2.72	0.30						
36	51	9438F	LW2-G199	4		10	9	1	90.0	10.0	31.619	9	34.393	2.77	0.31						
37	153	9438F	LW2-G199	5		10	9	1	90.0	10.0	27.042	9	29.956	2.91	0.32	Mean	8.9	1.1	88.8	11.3	0.29
38	48	9438F	LW2-G199	6		10	10	0	100.0	0.0	25.836	10	28.641	2.81	0.28	SD	1.0	1.0	9.9	9.9	0.02
39	95	9438F	LW2-G199	7		10	9	1	90.0	10.0	30.510	9	33.259	2.75	0.31	n	8	8	8	8	8
40	79	9438F	LW2-G199	8	wq replicate	10	8	2	80.0	20.0	28.712	8	30.850	2.14	0.27						
41	148	9439F	LW2-G204	1		10	10	0	100.0	0.0	28.958	10	31.285	2.33	0.23						
42	20	9439F	LW2-G204	2		10	10	0	100.0	0.0	25.969	10	28.666	2.70	0.27						
43	88	9439F	LW2-G204	3		10	10	0	100.0	0.0	28.314	10	30.430	2.12	0.21						
44	114	9439F	LW2-G204	4		10	10	0	100.0	0.0	27.801	10	30.529	2.73	0.27						
45	85	9439F	LW2-G204	5		10	10	0	100.0	0.0	28.468	10	30.638	2.17	0.22	Mean	9.8	0.3	97.5	2.5	0.24
46	14	9439F	LW2-G204	6		10	10	0	100.0	0.0	27.742	10	29.566	1.82	0.18	SD	0.5	0.5	4.6	4.6	0.04
47	60	9439F	LW2-G204	7		10	9	1	90.0	10.0	27.268	9	29.602	2.33	0.26	n	8	8	8	8	8
48	33	9439F	LW2-G204	8	wq replicate	10	9	1	90.0	10.0	28.128	9	30.770	2.64	0.29						
49	149	9440F	LW2-G202	1		10	9	1	90.0	10.0	30.071	9	32.694	2.62	0.29						
50	94	9440F	LW2-G202	2		10	9	1	90.0	10.0	27.492	9	29.757	2.27	0.25						
51	108	9440F	LW2-G202	3		13	13	0	100.0	0.0	28.153	13	31.765	3.61	0.28						
52	46	9440F	LW2-G202	4		10	10	0	100.0	0.0	27.454	10	30.296	2.84	0.28						
53	157	9440F	LW2-G202	5		10	10	0	100.0	0.0	28.100	10	31.314	3.21	0.32	Mean	10.0	0.4	96.3	3.8	0.29
54	92	9440F	LW2-G202	6		10	9	1	90.0	10.0	29.276	9	32.004	2.73	0.30	SD	1.3	0.5	5.2	5.2	0.03
55	44	9440F	LW2-G202	7		10	10	0	100.0	0.0	27.901	10	30.453	2.55	0.26	n	8	8	8	8	8
56	150	9440F	LW2-G202	8	wq replicate	10	10	0	100.0	0.0	28.443	10	31.574	3.13	0.31						
57	133	9441F	LW2-G231	1		10	10	0	100.0	0.0	27.768	10	31.031	3.26	0.33						
58	112	9441F	LW2-G231	2		10	8	2	80.0	20.0	29.969	8	32.873	2.90	0.36						
59	131	9441F	LW2-G231	3		10	9	1	90.0	10.0	28.782	9	31.976	3.19	0.35						
60	38	9441F	LW2-G231	4		10	10	0	100.0	0.0	26.344	10	28.612	2.27	0.23						
61	124	9441F	LW2-G231	5		10	8	2	80.0	20.0	31.020	8	33.302	2.28	0.29	Mean	9.3	0.8	92.5	7.5	0.30
62	28	9441F	LW2-G231	6		10	10	0	100.0	0.0	29.530	10	31.942	2.41	0.24	SD	0.9	0.9	8.9	8.9	0.05
63	39	9441F	LW2-G231	7		10	9	1	90.0	10.0	29.648	9	32.332	2.68	0.30	n	8	8	8	8	8
64	156	9441F	LW2-G231	8	wq replicate	10	10	0	100.0	0.0	26.402	10	29.312	2.91	0.29						
65	30	9442F	LW2-G234	1		10	10	0	100.0	0.0	27.859	10	30.743	2.88	0.29						
66	132	9442F	LW2-G234	2		10	10	0	100.0	0.0	29.896	10	33.404	3.51	0.35						
67	135	9442F	LW2-G234	3		10	9	1	90.0	10.0	29.850	9	32.933	3.08	0.34						
68	155	9442F	LW2-G234	4		10	10	0	100.0	0.0	28.412	10	31.424	3.01	0.30						
69	111	9442F	LW2-G234	5		10	9	1	90.0	10.0	29.402	9	32.427	3.03	0.34	Mean	9.1	0.9	91.3	8.8	0.31
70	142	9442F	LW2-G234	6		10	9	1	90.0	10.0	28.057	9	30.600	2.54	0.28	SD	1.0	1.0	9.9	9.9	0.04
71	25	9442F	LW2-G234	7		10	9	1	90.0	10.0	29.203	9	31.245	2.04	0.23	n	8	8	8	8	8
72	18	9442F	LW2-G234	8	wq replicate	10	7	3	70.0	30.0	29.594	7	31.961	2.37	0.34						

ANC07488
BZTO104(e)007488

Test Number: P686-13

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
73	96	9443F	LW2-G155	1		10	10	0	100.0	0.0	27.852	10	30.266	2.41	0.24						
74	56	9443F	LW2-G155	2		10	9	1	90.0	10.0	29.696	9	31.829	2.13	0.24						
75	129	9443F	LW2-G155	3		10	8	2	80.0	20.0	28.608	8	30.244	1.64	0.20						
76	41	9443F	LW2-G155	4		10	10	0	100.0	0.0	27.564	10	29.426	1.86	0.19						
77	159	9443F	LW2-G155	5		10	10	0	100.0	0.0	28.859	10	30.690	1.83	0.18	Mean	9.6	0.4	96.3	3.8	0.22
78	59	9443F	LW2-G155	6		10	10	0	100.0	0.0	30.749	10	32.917	2.17	0.22	SD	0.7	0.7	7.4	7.4	0.02
79	5	9443F	LW2-G155	7		10	10	0	100.0	0.0	29.550	10	31.767	2.22	0.22	n	8	8	8	8	8
80	138	9443F	LW2-G155	8	wq replicate	10	10	0	100.0	0.0	29.024	10	31.391	2.37	0.24						
81	4	9444F	LW2-G166	1		10	10	0	100.0	0.0	27.770	10	30.146	2.38	0.24						
82	100	9444F	LW2-G166	2		10	9	1	90.0	10.0	26.154	9	28.927	2.77	0.31						
83	13	9444F	LW2-G166	3		10	8	2	80.0	20.0	28.630	8	31.222	2.59	0.32						
84	17	9444F	LW2-G166	4		10	9	1	90.0	10.0	28.530	9	31.100	2.57	0.29						
85	103	9444F	LW2-G166	5		10	7	3	70.0	30.0	29.066	7	31.521	2.46	0.35	Mean	8.5	1.5	85.0	15.0	0.30
86	128	9444F	LW2-G166	6		10	9	1	90.0	10.0	27.541	9	29.920	2.38	0.26	SD	1.1	1.1	10.7	10.7	0.04
87	37	9444F	LW2-G166	7		10	9	1	90.0	10.0	28.734	9	31.486	2.75	0.31	n	8	8	8	8	8
88	1	9444F	LW2-G166	8	wq replicate	10	7	3	70.0	30.0	29.163	7	31.536	2.37	0.34						
89	104	9445F	LW2-G163	1		10	9	1	90.0	10.0	29.613	9	32.362	2.75	0.31						
90	118	9445F	LW2-G163	2		10	8	2	80.0	20.0	30.850	8	33.872	3.02	0.38						
91	27	9445F	LW2-G163	3		10	9	1	90.0	10.0	28.524	9	31.551	3.03	0.34						
92	122	9445F	LW2-G163	4		10	10	0	100.0	0.0	28.024	10	30.776	2.75	0.28						
93	11	9445F	LW2-G163	5		10	10	0	100.0	0.0	29.350	10	32.188	2.84	0.28	Mean	9.5	0.5	95.0	5.0	0.32
94	73	9445F	LW2-G163	6		10	10	0	100.0	0.0	28.667	10	32.355	3.69	0.37	SD	0.8	0.8	7.6	7.6	0.04
95	31	9445F	LW2-G163	7		10	10	0	100.0	0.0	27.055	10	30.028	2.97	0.30	n	8	8	8	8	8
96	61	9445F	LW2-G163	8	wq replicate	10	10	0	100.0	0.0	30.339	10	33.682	3.34	0.33						
97	144	9446F	LW2-G161	1		10	7	3	70.0	30.0	29.882	7	31.710	1.83	0.26						
98	69	9446F	LW2-G161	2		10	6	4	60.0	40.0	28.094	6	29.934	1.84	0.31						
99	139	9446F	LW2-G161	3		10	7	3	70.0	30.0	26.626	7	28.479	1.85	0.26						
100	57	9446F	LW2-G161	4		10	6	4	60.0	40.0	27.615	6	29.617	2.00	0.33						
101	134	9446F	LW2-G161	5		10	6	4	60.0	40.0	28.259	6	29.876	1.62	0.27	Mean	6.8	3.3	67.5	32.5	0.27
102	75	9446F	LW2-G161	6		10	7	3	70.0	30.0	28.234	7	30.260	2.03	0.29	SD	1.0	1.0	10.4	10.4	0.05
103	43	9446F	LW2-G161	7		10	9	1	90.0	10.0	27.787	9	29.299	1.51	0.17	n	8	8	8	8	8
104	8	9446F	LW2-G161	8	wq replicate	10	6	4	60.0	40.0	28.763	6	30.478	1.72	0.29						
105	140	9447F	LW2-G160	1		10	9	1	90.0	10.0	28.407	9	31.026	2.62	0.29						
106	24	9447F	LW2-G160	2		10	7	3	70.0	30.0	28.583	7	30.629	2.05	0.29						
107	36	9447F	LW2-G160	3		10	9	1	90.0	10.0	28.676	9	31.357	2.68	0.30						
108	107	9447F	LW2-G160	4		10	7	3	70.0	30.0	28.091	7	30.260	2.17	0.31						
109	145	9447F	LW2-G160	5		10	8	2	80.0	20.0	28.542	8	30.909	2.37	0.30	Mean	7.9	2.1	78.8	21.3	0.29
110	15	9447F	LW2-G160	6		10	9	1	90.0	10.0	26.927	9	29.555	2.63	0.29	SD	1.1	1.1	11.3	11.3	0.02
111	106	9447F	LW2-G160	7		10	8	2	80.0	20.0	29.038	8	31.330	2.29	0.29	n	8	8	8	8	8
112	22	9447F	LW2-G160	8	wq replicate	10	6	4	60.0	40.0	28.884	6	30.355	1.47	0.25						

ANC07489
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Test Number: P686-13

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
113	74	9448F	LW2-G157	1		10	8	2	80.0	20.0	28.424	8	30.409	1.99	0.25						
114	91	9448F	LW2-G157	2		10	4	6	40.0	60.0	28.737	4	29.885	1.15	0.29						
115	81	9448F	LW2-G157	3		10	7	3	70.0	30.0	27.150	7	29.230	2.08	0.30						
116	7	9448F	LW2-G157	4		10	6	4	60.0	40.0	28.125	6	29.686	1.56	0.26						
117	123	9448F	LW2-G157	5		10	3	7	30.0	70.0	28.657	3	29.699	1.04	0.35	Mean	4.9	5.1	48.8	51.3	0.29
118	65	9448F	LW2-G157	6		10	4	6	40.0	60.0	24.624	4	25.574	0.95	0.24	SD	2.0	2.0	20.3	20.3	0.04
119	117	9448F	LW2-G157	7		10	5	5	50.0	50.0	27.616	5	29.323	1.71	0.34	n	8	8	8	8	8
120	19	9448F	LW2-G157	8	wq replicate	10	2	8	20.0	80.0	29.636	2	30.230	0.59	0.30						
121	83	9449F	LW2-G038	1		10	10	0	100.0	0.0	27.984	10	31.099	3.12	0.31						
122	125	9449F	LW2-G038	2		10	10	0	100.0	0.0	28.890	10	32.800	3.91	0.39						
123	109	9449F	LW2-G038	3		10	10	0	100.0	0.0	29.060	10	32.661	3.60	0.36						
124	70	9449F	LW2-G038	4		10	10	0	100.0	0.0	28.919	10	31.380	2.46	0.25						
125	110	9449F	LW2-G038	5		10	10	0	100.0	0.0	27.770	10	30.952	3.18	0.32	Mean	9.9	0.1	98.8	1.3	0.33
126	21	9449F	LW2-G038	6		10	10	0	100.0	0.0	27.698	10	31.314	3.62	0.36	SD	0.4	0.4	3.5	3.5	0.05
127	34	9449F	LW2-G038	7		10	9	1	90.0	10.0	29.199	9	31.756	2.56	0.28	n	8	8	8	8	8
128	63	9449F	LW2-G038	8	wq replicate	10	10	0	100.0	0.0	30.963	10	34.464	3.50	0.35						
129	84	9450F	LW2-G123	1		10	9	1	90.0	10.0	30.929	9	32.822	1.89	0.21						
130	102	9450F	LW2-G123	2		10	9	1	90.0	10.0	27.545	9	29.900	2.36	0.26						
131	152	9450F	LW2-G123	3		10	10	0	100.0	0.0	28.973	10	30.833	1.86	0.19						
132	77	9450F	LW2-G123	4		10	10	0	100.0	0.0	30.194	10	32.022	1.83	0.18						
133	93	9450F	LW2-G123	5		10	6	4	60.0	40.0	26.959	6	28.544	1.59	0.26	Mean	8.6	1.4	86.3	13.8	0.22
134	82	9450F	LW2-G123	6		10	8	2	80.0	20.0	30.165	8	31.951	1.79	0.22	SD	1.3	1.3	13.0	13.0	0.03
135	67	9450F	LW2-G123	7		10	9	1	90.0	10.0	27.423	9	29.220	1.80	0.20	n	8	8	8	8	8
136	147	9450F	LW2-G123	8	wq replicate	10	8	2	80.0	20.0	29.026	7	30.386	1.36	0.19						
137	47	9451F	LW2-G244	1		10	10	0	100.0	0.0	30.878	10	33.542	2.66	0.27						
138	97	9451F	LW2-G244	2		10	9	1	90.0	10.0	27.797	9	30.520	2.72	0.30						
139	52	9451F	LW2-G244	3		10	8	2	80.0	20.0	27.884	8	31.009	3.13	0.39						
140	76	9451F	LW2-G244	4		10	10	0	100.0	0.0	27.127	10	30.214	3.09	0.31						
141	99	9451F	LW2-G244	5		10	10	0	100.0	0.0	27.122	10	30.440	3.32	0.33	Mean	9.4	0.6	93.8	6.3	0.30
142	26	9451F	LW2-G244	6		10	9	1	90.0	10.0	27.915	9	30.196	2.28	0.25	SD	0.7	0.7	7.4	7.4	0.04
143	6	9451F	LW2-G244	7		10	10	0	100.0	0.0	28.528	10	31.254	2.73	0.27	n	8	8	8	8	8
144	58	9451F	LW2-G244	8	wq replicate	10	9	1	90.0	10.0	28.317	9	31.036	2.72	0.30						
145	116	9452F	LW2-G247	1		10	9	1	90.0	10.0	25.822	9	28.484	2.66	0.30						
146	105	9452F	LW2-G247	2		10	10	0	100.0	0.0	28.622	10	31.374	2.75	0.28						
147	127	9452F	LW2-G247	3		10	10	0	100.0	0.0	29.451	10	31.185	1.73	0.17						
148	87	9452F	LW2-G247	4		10	10	0	100.0	0.0	29.153	10	32.026	2.87	0.29						
149	113	9452F	LW2-G247	5		10	9	1	90.0	10.0	28.636	9	31.246	2.61	0.29	Mean	9.8	0.3	97.5	2.5	0.26
150	115	9452F	LW2-G247	6		10	10	0	100.0	0.0	28.406	10	30.882	2.48	0.25	SD	0.5	0.5	4.6	4.6	0.05
151	54	9452F	LW2-G247	7		10	10	0	100.0	0.0	29.666	10	32.823	3.16	0.32	n	8	8	8	8	8
152	2	9452F	LW2-G247	8	wq replicate	10	10	0	100.0	0.0	29.740	10	31.955	2.22	0.22						

ANC07490
BZTO104(e)007490

Test Number: P686-13

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
153	42	9453F	LW2-G254	1		10	9	1	90.0	10.0	28.076	9	30.875	2.80	0.31						
154	158	9453F	LW2-G254	2		10	10	0	100.0	0.0	28.320	10	31.164	2.84	0.28						
155	121	9453F	LW2-G254	3		10	9	1	90.0	10.0	28.544	9	30.610	2.07	0.23						
156	29	9453F	LW2-G254	4		10	10	0	100.0	0.0	28.113	10	31.104	2.99	0.30						
157	151	9453F	LW2-G254	5		10	8	2	80.0	20.0	29.708	8	32.342	2.63	0.33	Mean	9.4	0.6	93.8	6.3	0.29
158	50	9453F	LW2-G254	6		10	10	0	100.0	0.0	27.990	10	30.410	2.42	0.24	SD	0.7	0.7	7.4	7.4	0.03
159	90	9453F	LW2-G254	7		10	9	1	90.0	10.0	28.776	9	31.462	2.69	0.30	n	8	8	8	8	8
160	55	9453F	LW2-G254	8	wq replicate	10	10	0	100.0	0.0	27.706	10	30.668	2.96	0.30						
	Note: Beaker #78 lost 3 animals in transfer to weigh pan. Beaker #147 lost 1 animal in transfer to weigh pan.																				

ANC07491
BZTO104(e)007491

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
BULK SEDIMENT POREWATER														
	9435F	LW2-G207											8.9	5.6
	9436F	LW2-G209											1.4	5.8
	9437F	LW2-G198											3.3	5.9
	9438F	LW2-G199											4.1	6.0
	9439F	LW2-G204											2.7	6.4
	9440F	LW2-G202											3.9	6.3
	9441F	LW2-G231											3.7	6.3
	9442F	LW2-G234											3.3	6.1
	9443F	LW2-G155											7.7	6.2
	9444F	LW2-G166											3.7	6.2
	9445F	LW2-G163											---*	---*
	9446F	LW2-G161											2.9	6.3
	9447F	LW2-G160											7.3	6.7
	9448F	LW2-G157											9.3	6.5
	9449F	LW2-G038											4.5	6.2
	9450F	LW2-G123											3.6	6.3
	9451F	LW2-G244											8.6	6.2
	9452F	LW2-G247											1.7	6.4
	9453F	LW2-G254											1.2	6.1
	9454F	Control												
			* insufficient sample size for analysis											

TEST OVERLYING WATER														
1	9444F	LW2-G166	8	0	22.9	7.1	170	6.8	51	40	0.3			
2	9452F	LW2-G247	8	0	22.9	7.2	165	6.6	43	50	0.2			
8	9446F	LW2-G161	8	0	22.9	7.4	170	6.6	51	50	0.4			
18	9442F	LW2-G234	8	0	22.9	7.3	160	6.6	43	40	0.4			
19	9448F	LW2-G157	8	0	22.9	7.1	170	6.5	51	40	0.8			
22	9447F	LW2-G160	8	0	22.9	7.2	180	6.4	60	50	1.0			
33	9439F	LW2-G204	8	0	22.9	7.2	160	6.6	43	40	0.6			
49	9436F	LW2-G209	8	0	22.9	7.4	170	6.6	51	50	0.3			
55	9453F	LW2-G254	8	0	22.9	7.0	165	6.5	43	40	<0.1			
58	9451F	LW2-G244	8	0	22.9	7.1	180	6.6	60	50	1.0			
61	9445F	LW2-G163	8	0	23.0	7.1	160	6.5	43	40	0.3			
63	9449F	LW2-G038	8	0	22.9	7.2	165	6.5	43	40	0.7			
68	9437F	LW2-G198	8	0	22.9	7.2	165	6.5	51	40	0.7			
79	9438F	LW2-G199	8	0	22.9	7.3	175	6.5	51	50	0.8			
101	9435F	LW2-G207	8	0	23.0	7.5	165	6.6	43	40	2.1			
138	9443F	LW2-G155	8	0	23.0	7.2	170	6.5	43	40	1.3			
147	9450F	LW2-G123	8	0	23.0	7.2	160	6.4	60	50	0.7			
150	9440F	LW2-G202	8	0	23.0	7.3	170	6.5	43	50	0.4			
154	9454F	Control	8	0	23.0	6.8	280	6.8	43	40	0.5			
156	9441F	LW2-G231	8	0	23.0	7.0	175	6.7	51	50	0.5			
1	9444F	LW2-G166	8	1	22.8									
2	9452F	LW2-G247	8	1	22.8									
8	9446F	LW2-G161	8	1	22.8									
18	9442F	LW2-G234	8	1	22.8									
19	9448F	LW2-G157	8	1	22.8									
22	9447F	LW2-G160	8	1	22.8									
33	9439F	LW2-G204	8	1	22.8									
49	9436F	LW2-G209	8	1	22.8									
55	9453F	LW2-G254	8	1	22.9									
58	9451F	LW2-G244	8	1	22.8									
61	9445F	LW2-G163	8	1	22.9									
63	9449F	LW2-G038	8	1	22.8									
68	9437F	LW2-G198	8	1	22.8									
79	9438F	LW2-G199	8	1	22.8									
101	9435F	LW2-G207	8	1	22.9									
138	9443F	LW2-G155	8	1	22.9									
147	9450F	LW2-G123	8	1	22.9									
150	9440F	LW2-G202	8	1	22.9									
154	9454F	Control	8	1	22.9									
156	9441F	LW2-G231	8	1	23.0									

1	9444F	LW2-G166	8	2	22.4									
2	9452F	LW2-G247	8	2	22.4									
8	9446F	LW2-G161	8	2	22.4									
18	9442F	LW2-G234	8	2	22.3									
19	9448F	LW2-G157	8	2	22.3									
22	9447F	LW2-G160	8	2	22.3									
33	9439F	LW2-G204	8	2	22.2									
49	9436F	LW2-G209	8	2	22.2									
55	9453F	LW2-G254	8	2	22.2									
58	9451F	LW2-G244	8	2	22.2									
61	9445F	LW2-G163	8	2	22.3									
63	9449F	LW2-G038	8	2	22.2									
68	9437F	LW2-G198	8	2	22.2									
79	9438F	LW2-G199	8	2	22.2									
101	9435F	LW2-G207	8	2	22.3									
138	9443F	LW2-G155	8	2	22.4									
147	9450F	LW2-G123	8	2	22.4									
150	9440F	LW2-G202	8	2	22.4									
154	9454F	Control	8	2	22.3									
156	9441F	LW2-G231	8	2	22.3									
1	9444F	LW2-G166	8	3	22.5	7.2		6.8						
2	9452F	LW2-G247	8	3	22.4	7.3		6.7						
8	9446F	LW2-G161	8	3	22.4	7.3		6.7						
18	9442F	LW2-G234	8	3	22.3	7.5		6.7						
19	9448F	LW2-G157	8	3	22.3	7.7		6.6						
22	9447F	LW2-G160	8	3	22.3	7.6		6.6						
33	9439F	LW2-G204	8	3	22.3	7.5		6.6						
49	9436F	LW2-G209	8	3	22.3	7.8		6.6						
55	9453F	LW2-G254	8	3	22.4	7.6		6.6						
58	9451F	LW2-G244	8	3	22.3	7.9		6.6						
61	9445F	LW2-G163	8	3	22.4	7.3		6.6						
63	9449F	LW2-G038	8	3	22.3	7.5		6.6						
68	9437F	LW2-G198	8	3	22.3	7.5		6.6						
79	9438F	LW2-G199	8	3	22.3	7.8		6.6						
101	9435F	LW2-G207	8	3	22.5	7.8		6.6						
138	9443F	LW2-G155	8	3	22.4	7.3		6.6						
147	9450F	LW2-G123	8	3	22.3	7.7		6.6						
150	9440F	LW2-G202	8	3	22.4	7.8		6.6						
154	9454F	Control	8	3	22.4	7.7		6.6						
156	9441F	LW2-G231	8	3	22.5	7.5		6.6						

1	9444F	LW2-G166	8	4	22.7									
2	9452F	LW2-G247	8	4	22.7									
8	9446F	LW2-G161	8	4	22.7									
18	9442F	LW2-G234	8	4	22.6									
19	9448F	LW2-G157	8	4	22.6									
22	9447F	LW2-G160	8	4	22.6									
33	9439F	LW2-G204	8	4	22.6									
49	9436F	LW2-G209	8	4	22.7									
55	9453F	LW2-G254	8	4	22.8									
58	9451F	LW2-G244	8	4	22.7									
61	9445F	LW2-G163	8	4	22.8									
63	9449F	LW2-G038	8	4	22.7									
68	9437F	LW2-G198	8	4	22.7									
79	9438F	LW2-G199	8	4	22.7									
101	9435F	LW2-G207	8	4	22.9									
138	9443F	LW2-G155	8	4	22.8									
147	9450F	LW2-G123	8	4	22.8									
150	9440F	LW2-G202	8	4	22.9									
154	9454F	Control	8	4	22.9									
156	9441F	LW2-G231	8	4	22.9									
1	9444F	LW2-G166	8	5	23.1	5.7	170	6.8						
2	9452F	LW2-G247	8	5	23.0	5.9	165	6.7						
8	9446F	LW2-G161	8	5	22.9	6.1	170	6.8						
18	9442F	LW2-G234	8	5	22.9	6.2	160	6.8						
19	9448F	LW2-G157	8	5	22.9	5.9	165	6.7						
22	9447F	LW2-G160	8	5	22.9	6.0	160	6.7						
33	9439F	LW2-G204	8	5	22.9	6.1	160	6.7						
49	9436F	LW2-G209	8	5	22.9	6.1	160	6.8						
55	9453F	LW2-G254	8	5	23.0	7.4	160	6.8						
58	9451F	LW2-G244	8	5	22.9	6.3	160	6.8						
61	9445F	LW2-G163	8	5	23.0	6.7	160	6.8						
63	9449F	LW2-G038	8	5	22.9	5.7	160	6.7						
68	9437F	LW2-G198	8	5	22.9	6.5	160	6.8						
79	9438F	LW2-G199	8	5	22.9	6.1	165	6.8						
101	9435F	LW2-G207	8	5	23.0	6.1	160	6.7						
138	9443F	LW2-G155	8	5	22.9	6.2	160	6.7						
147	9450F	LW2-G123	8	5	22.9	5.6	160	6.7						
150	9440F	LW2-G202	8	5	23.0	5.7	165	6.7						
154	9454F	Control	8	5	23.0	5.9	180	6.7						
156	9441F	LW2-G231	8	5	23.1	6.1	165	6.7						

1	9444F	LW2-G166	8	6	23.0									
2	9452F	LW2-G247	8	6	23.0									
8	9446F	LW2-G161	8	6	22.8									
18	9442F	LW2-G234	8	6	22.6									
19	9448F	LW2-G157	8	6	22.7									
22	9447F	LW2-G160	8	6	22.6									
33	9439F	LW2-G204	8	6	22.6									
49	9436F	LW2-G209	8	6	22.6									
55	9453F	LW2-G254	8	6	22.7									
58	9451F	LW2-G244	8	6	22.6									
61	9445F	LW2-G163	8	6	22.7									
63	9449F	LW2-G038	8	6	22.6									
68	9437F	LW2-G198	8	6	22.6									
79	9438F	LW2-G199	8	6	22.6									
101	9435F	LW2-G207	8	6	22.8									
138	9443F	LW2-G155	8	6	22.7									
147	9450F	LW2-G123	8	6	22.6									
150	9440F	LW2-G202	8	6	22.7									
154	9454F	Control	8	6	22.7									
156	9441F	LW2-G231	8	6	22.8									
1	9444F	LW2-G166	8	7	22.4	6.0		6.8						
2	9452F	LW2-G247	8	7	22.5	5.9		6.5						
8	9446F	LW2-G161	8	7	22.5	6.1		6.4						
18	9442F	LW2-G234	8	7	22.5	6.2		6.4						
19	9448F	LW2-G157	8	7	22.5	6.0		6.3						
22	9447F	LW2-G160	8	7	22.5	5.8		6.3						
33	9439F	LW2-G204	8	7	22.5	6.0		6.2						
49	9436F	LW2-G209	8	7	22.6	5.9		6.2						
55	9453F	LW2-G254	8	7	22.7	6.1		6.3						
58	9451F	LW2-G244	8	7	22.6	6.2		6.2						
61	9445F	LW2-G163	8	7	22.7	5.9		6.3						
63	9449F	LW2-G038	8	7	22.6	6.2		6.3						
68	9437F	LW2-G198	8	7	22.6	6.8		6.3						
79	9438F	LW2-G199	8	7	22.6	5.6		6.3						
101	9435F	LW2-G207	8	7	22.8	5.9		6.3						
138	9443F	LW2-G155	8	7	22.8	5.2		6.2						
147	9450F	LW2-G123	8	7	22.7	5.5		6.1						
150	9440F	LW2-G202	8	7	22.6	5.8		6.3						
154	9454F	Control	8	7	22.7	5.7		6.2						
156	9441F	LW2-G231	8	7	22.7	6.4		6.2						

1	9444F	LW2-G166	8	8	23.1									
2	9452F	LW2-G247	8	8	23.1									
8	9446F	LW2-G161	8	8	23.2									
18	9442F	LW2-G234	8	8	23.2									
19	9448F	LW2-G157	8	8	23.2									
22	9447F	LW2-G160	8	8	23.1									
33	9439F	LW2-G204	8	8	23.1									
49	9436F	LW2-G209	8	8	23.1									
55	9453F	LW2-G254	8	8	23.2									
58	9451F	LW2-G244	8	8	23.1									
61	9445F	LW2-G163	8	8	23.2									
63	9449F	LW2-G038	8	8	23.2									
68	9437F	LW2-G198	8	8	23.1									
79	9438F	LW2-G199	8	8	23.1									
101	9435F	LW2-G207	8	8	23.2									
138	9443F	LW2-G155	8	8	23.1									
147	9450F	LW2-G123	8	8	23.1									
150	9440F	LW2-G202	8	8	23.1									
154	9454F	Control	8	8	23.2									
156	9441F	LW2-G231	8	8	23.1									
1	9444F	LW2-G166	8	9	22.7									
2	9452F	LW2-G247	8	9	22.6									
8	9446F	LW2-G161	8	9	22.6									
18	9442F	LW2-G234	8	9	22.5									
19	9448F	LW2-G157	8	9	22.6									
22	9447F	LW2-G160	8	9	22.6									
33	9439F	LW2-G204	8	9	22.6									
49	9436F	LW2-G209	8	9	22.6									
55	9453F	LW2-G254	8	9	22.7									
58	9451F	LW2-G244	8	9	22.7									
61	9445F	LW2-G163	8	9	22.7									
63	9449F	LW2-G038	8	9	22.6									
68	9437F	LW2-G198	8	9	22.6									
79	9438F	LW2-G199	8	9	22.6									
101	9435F	LW2-G207	8	9	22.7									
138	9443F	LW2-G155	8	9	22.6									
147	9450F	LW2-G123	8	9	22.5									
150	9440F	LW2-G202	8	9	22.6									
154	9454F	Control	8	9	22.7									
156	9441F	LW2-G231	8	9	22.8									

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1	9444F	LW2-G166	8	10	23.0	6.0		6.5						
2	9452F	LW2-G247	8	10	22.9	6.2		6.5						
8	9446F	LW2-G161	8	10	22.8	6.2		6.5						
18	9442F	LW2-G234	8	10	22.8	6.2		6.5						
19	9448F	LW2-G157	8	10	22.9	6.3		6.4						
22	9447F	LW2-G160	8	10	22.8	5.5		6.4						
33	9439F	LW2-G204	8	10	22.8	6.0		6.4						
49	9436F	LW2-G209	8	10	22.9	6.4		6.4						
55	9453F	LW2-G254	8	10	22.9	6.4		6.5						
58	9451F	LW2-G244	8	10	22.9	5.9		6.4						
61	9445F	LW2-G163	8	10	22.9	6.4		6.4						
63	9449F	LW2-G038	8	10	22.9	5.1		6.4						
68	9437F	LW2-G198	8	10	22.9	5.6		6.4						
79	9438F	LW2-G199	8	10	22.9	5.6		6.4						
101	9435F	LW2-G207	8	10	22.9	5.3		6.4						
138	9443F	LW2-G155	8	10	22.9	5.3		6.4						
147	9450F	LW2-G123	8	10	22.9	5.5		6.5						
150	9440F	LW2-G202	8	10	23.0	6.0		6.5						
154	9454F	Control	8	10	23.0	6.2		6.5						
156	9441F	LW2-G231	8	10	23.2	6.1		6.5						
1	9444F	LW2-G166	8	11	22.9									
2	9452F	LW2-G247	8	11	22.8									
8	9446F	LW2-G161	8	11	22.7									
18	9442F	LW2-G234	8	11	22.7									
19	9448F	LW2-G157	8	11	22.7									
22	9447F	LW2-G160	8	11	22.7									
33	9439F	LW2-G204	8	11	22.7									
49	9436F	LW2-G209	8	11	22.8									
55	9453F	LW2-G254	8	11	22.8									
58	9451F	LW2-G244	8	11	22.7									
61	9445F	LW2-G163	8	11	22.8									
63	9449F	LW2-G038	8	11	22.7									
68	9437F	LW2-G198	8	11	22.7									
79	9438F	LW2-G199	8	11	22.7									
101	9435F	LW2-G207	8	11	22.8									
138	9443F	LW2-G155	8	11	22.7									
147	9450F	LW2-G123	8	11	22.7									
150	9440F	LW2-G202	8	11	22.7									
154	9454F	Control	8	11	22.7									
156	9441F	LW2-G231	8	11	22.9									

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1	9444F	LW2-G166	8	12	23.1	5.7		6.2						
2	9452F	LW2-G247	8	12	23.0	5.6		6.1						
8	9446F	LW2-G161	8	12	23.0	5.9		6.0						
18	9442F	LW2-G234	8	12	23.0	6.1		6.0						
19	9448F	LW2-G157	8	12	23.1	5.6		6.1						
22	9447F	LW2-G160	8	12	23.0	5.4		6.1						
33	9439F	LW2-G204	8	12	23.0	5.6		6.0						
49	9436F	LW2-G209	8	12	23.0	5.9		6.0						
55	9453F	LW2-G254	8	12	23.1	6.2		6.2						
58	9451F	LW2-G244	8	12	23.1	5.9		6.1						
61	9445F	LW2-G163	8	12	23.1	6.3		6.1						
63	9449F	LW2-G038	8	12	23.1	5.4		6.1						
68	9437F	LW2-G198	8	12	23.1	5.6		6.2						
79	9438F	LW2-G199	8	12	23.2	5.7		6.1						
101	9435F	LW2-G207	8	12	23.1	5.8		6.1						
138	9443F	LW2-G155	8	12	23.1	5.2		6.1						
147	9450F	LW2-G123	8	12	23.1	5.9		6.2						
150	9440F	LW2-G202	8	12	23.1	6.0		6.1						
154	9454F	Control	8	12	23.1	6.0		6.2						
156	9441F	LW2-G231	8	12	23.2	6.3		6.2						
1	9444F	LW2-G166	8	13	22.5									
2	9452F	LW2-G247	8	13	22.5									
8	9446F	LW2-G161	8	13	22.4									
18	9442F	LW2-G234	8	13	22.4									
19	9448F	LW2-G157	8	13	22.4									
22	9447F	LW2-G160	8	13	22.4									
33	9439F	LW2-G204	8	13	22.4									
49	9436F	LW2-G209	8	13	22.5									
55	9453F	LW2-G254	8	13	22.6									
58	9451F	LW2-G244	8	13	22.5									
61	9445F	LW2-G163	8	13	22.6									
63	9449F	LW2-G038	8	13	22.5									
68	9437F	LW2-G198	8	13	22.5									
79	9438F	LW2-G199	8	13	22.5									
101	9435F	LW2-G207	8	13	22.7									
138	9443F	LW2-G155	8	13	22.6									
147	9450F	LW2-G123	8	13	22.5									
150	9440F	LW2-G202	8	13	22.6									
154	9454F	Control	8	13	22.6									
156	9441F	LW2-G231	8	13	22.6									

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1	9444F	LW2-G166	8	14	23.0	5.8		6.2						
2	9452F	LW2-G247	8	14	22.9	5.8		6.0						
8	9446F	LW2-G161	8	14	22.8	6.0		6.1						
18	9442F	LW2-G234	8	14	22.9	5.8		6.1						
19	9448F	LW2-G157	8	14	22.9	5.2		6.1						
22	9447F	LW2-G160	8	14	22.8	5.4		6.1						
33	9439F	LW2-G204	8	14	22.8	5.4		6.1						
49	9436F	LW2-G209	8	14	22.9	5.6		6.2						
55	9453F	LW2-G254	8	14	23.0	6.0		6.1						
58	9451F	LW2-G244	8	14	22.9	5.4		6.1						
61	9445F	LW2-G163	8	14	22.9	6.1		6.1						
63	9449F	LW2-G038	8	14	22.9	5.4		6.2						
68	9437F	LW2-G198	8	14	22.9	5.6		6.2						
79	9438F	LW2-G199	8	14	22.8	5.6		6.2						
101	9435F	LW2-G207	8	14	23.0	5.3		6.2						
138	9443F	LW2-G155	8	14	22.9	5.1		6.2						
147	9450F	LW2-G123	8	14	23.0	5.7		6.2						
150	9440F	LW2-G202	8	14	23.1	5.7		6.2						
154	9454F	Control	8	14	23.1	6.0		6.3						
156	9441F	LW2-G231	8	14	23.2	5.8		6.3						
1	9444F	LW2-G166	8	15	22.4									
2	9452F	LW2-G247	8	15	22.4									
8	9446F	LW2-G161	8	15	22.3									
18	9442F	LW2-G234	8	15	22.4									
19	9448F	LW2-G157	8	15	22.4									
22	9447F	LW2-G160	8	15	22.3									
33	9439F	LW2-G204	8	15	22.3									
49	9436F	LW2-G209	8	15	22.3									
55	9453F	LW2-G254	8	15	22.4									
58	9451F	LW2-G244	8	15	22.4									
61	9445F	LW2-G163	8	15	22.4									
63	9449F	LW2-G038	8	15	22.3									
68	9437F	LW2-G198	8	15	22.3									
79	9438F	LW2-G199	8	15	22.3									
101	9435F	LW2-G207	8	15	22.4									
138	9443F	LW2-G155	8	15	22.4									
147	9450F	LW2-G123	8	15	22.4									
150	9440F	LW2-G202	8	15	22.4									
154	9454F	Control	8	15	22.4									
156	9441F	LW2-G231	8	15	22.5									

1	9444F	LW2-G166	8	16	23.1									
2	9452F	LW2-G247	8	16	23.0									
8	9446F	LW2-G161	8	16	23.0									
18	9442F	LW2-G234	8	16	22.9									
19	9448F	LW2-G157	8	16	22.9									
22	9447F	LW2-G160	8	16	22.9									
33	9439F	LW2-G204	8	16	22.9									
49	9436F	LW2-G209	8	16	23.0									
55	9453F	LW2-G254	8	16	23.0									
58	9451F	LW2-G244	8	16	22.9									
61	9445F	LW2-G163	8	16	23.0									
63	9449F	LW2-G038	8	16	22.9									
68	9437F	LW2-G198	8	16	22.9									
79	9438F	LW2-G199	8	16	23.0									
101	9435F	LW2-G207	8	16	23.1									
138	9443F	LW2-G155	8	16	23.3									
147	9450F	LW2-G123	8	16	23.2									
150	9440F	LW2-G202	8	16	23.4									
154	9454F	Control	8	16	23.4									
156	9441F	LW2-G231	8	16	23.3									
1	9444F	LW2-G166	8	17	22.8	5.6		6.4						
2	9452F	LW2-G247	8	17	22.7	5.5		6.3						
8	9446F	LW2-G161	8	17	22.7	6.1		6.3						
18	9442F	LW2-G234	8	17	22.6	5.9		6.3						
19	9448F	LW2-G157	8	17	22.6	5.7		6.3						
22	9447F	LW2-G160	8	17	22.6	5.8		6.3						
33	9439F	LW2-G204	8	17	22.6	5.6		6.3						
49	9436F	LW2-G209	8	17	22.6	5.7		6.3						
55	9453F	LW2-G254	8	17	22.7	5.7		6.4						
58	9451F	LW2-G244	8	17	22.6	5.8		6.4						
61	9445F	LW2-G163	8	17	22.7	6.2		6.3						
63	9449F	LW2-G038	8	17	22.7	5.6		6.3						
68	9437F	LW2-G198	8	17	22.6	5.7		6.3						
79	9438F	LW2-G199	8	17	22.7	5.6		6.4						
101	9435F	LW2-G207	8	17	22.9	5.3		6.4						
138	9443F	LW2-G155	8	17	22.8	5.6		6.3						
147	9450F	LW2-G123	8	17	22.8	5.7		6.3						
150	9440F	LW2-G202	8	17	22.7	5.7		6.3						
154	9454F	Control	8	17	22.8	6.0		6.3						
156	9441F	LW2-G231	8	17	22.9	5.8		6.4						

1	9444F	LW2-G166	8	18	22.9									
2	9452F	LW2-G247	8	18	22.9									
8	9446F	LW2-G161	8	18	22.7									
18	9442F	LW2-G234	8	18	22.8									
19	9448F	LW2-G157	8	18	22.8									
22	9447F	LW2-G160	8	18	22.8									
33	9439F	LW2-G204	8	18	22.8									
49	9436F	LW2-G209	8	18	22.8									
55	9453F	LW2-G254	8	18	22.8									
58	9451F	LW2-G244	8	18	22.9									
61	9445F	LW2-G163	8	18	22.8									
63	9449F	LW2-G038	8	18	22.8									
68	9437F	LW2-G198	8	18	22.8									
79	9438F	LW2-G199	8	18	22.8									
101	9435F	LW2-G207	8	18	22.8									
138	9443F	LW2-G155	8	18	22.9									
147	9450F	LW2-G123	8	18	22.9									
150	9440F	LW2-G202	8	18	22.9									
154	9454F	Control	8	18	23.0									
156	9441F	LW2-G231	8	18	23.0									
1	9444F	LW2-G166	8	19	23.2	5.4	160	6.2						
2	9452F	LW2-G247	8	19	23.1	5.3	160	6.1						
8	9446F	LW2-G161	8	19	23.1	6.2	160	6.1						
18	9442F	LW2-G234	8	19	23.0	5.8	160	6.1						
19	9448F	LW2-G157	8	19	23.1	5.6	160	6.1						
22	9447F	LW2-G160	8	19	23.1	5.3	165	6.1						
33	9439F	LW2-G204	8	19	23.0	5.5	160	6.1						
49	9436F	LW2-G209	8	19	23.1	5.6	165	6.1						
55	9453F	LW2-G254	8	19	23.2	5.1	165	6.1						
58	9451F	LW2-G244	8	19	23.1	4.8	165	6.1						
61	9445F	LW2-G163	8	19	23.1	6.0	160	6.1						
63	9449F	LW2-G038	8	19	23.1	6.1	165	6.1						
68	9437F	LW2-G198	8	19	23.0	5.5	165	6.2						
79	9438F	LW2-G199	8	19	23.1	5.3	165	6.2						
101	9435F	LW2-G207	8	19	23.2	4.8	160	6.1						
138	9443F	LW2-G155	8	19	23.1	5.5	160	6.1						
147	9450F	LW2-G123	8	19	23.0	6.0	160	6.1						
150	9440F	LW2-G202	8	19	23.0	5.6	160	6.1						
154	9454F	Control	8	19	23.1	5.8	170	6.2						
156	9441F	LW2-G231	8	19	23.1	6.0	165	6.2						

1	9444F	LW2-G166	8	20	23.2									
2	9452F	LW2-G247	8	20	23.2									
8	9446F	LW2-G161	8	20	23.1									
18	9442F	LW2-G234	8	20	23.1									
19	9448F	LW2-G157	8	20	23.1									
22	9447F	LW2-G160	8	20	23.1									
33	9439F	LW2-G204	8	20	23.1									
49	9436F	LW2-G209	8	20	23.1									
55	9453F	LW2-G254	8	20	23.2									
58	9451F	LW2-G244	8	20	23.1									
61	9445F	LW2-G163	8	20	23.1									
63	9449F	LW2-G038	8	20	23.1									
68	9437F	LW2-G198	8	20	23.1									
79	9438F	LW2-G199	8	20	23.1									
101	9435F	LW2-G207	8	20	23.2									
138	9443F	LW2-G155	8	20	23.1									
147	9450F	LW2-G123	8	20	23.0									
150	9440F	LW2-G202	8	20	23.1									
154	9454F	Control	8	20	23.1									
156	9441F	LW2-G231	8	20	23.0									
1	9444F	LW2-G166	8	21	23.0	7.1		6.7						
2	9452F	LW2-G247	8	21	22.9	6.8		6.6						
8	9446F	LW2-G161	8	21	22.9	7.0		6.6						
18	9442F	LW2-G234	8	21	22.9	7.2		6.6						
19	9448F	LW2-G157	8	21	22.9	7.3		6.5						
22	9447F	LW2-G160	8	21	22.9	6.7		6.6						
33	9439F	LW2-G204	8	21	22.9	6.9		6.6						
49	9436F	LW2-G209	8	21	22.9	7.1		6.6						
55	9453F	LW2-G254	8	21	22.9	7.1		6.7						
58	9451F	LW2-G244	8	21	22.9	6.6		6.6						
61	9445F	LW2-G163	8	21	22.9	6.9		6.6						
63	9449F	LW2-G038	8	21	23.0	6.5		6.6						
68	9437F	LW2-G198	8	21	22.9	6.7		6.7						
79	9438F	LW2-G199	8	21	23.0	6.8		6.7						
101	9435F	LW2-G207	8	21	23.1	6.5		6.7						
138	9443F	LW2-G155	8	21	23.0	6.7		6.6						
147	9450F	LW2-G123	8	21	22.9	6.9		6.6						
150	9440F	LW2-G202	8	21	22.9	7.0		6.7						
154	9454F	Control	8	21	22.9	7.0		6.7						
156	9441F	LW2-G231	8	21	23.0	7.2		6.8						

1	9444F	LW2-G166	8	22	23.0									
2	9452F	LW2-G247	8	22	23.0									
8	9446F	LW2-G161	8	22	23.0									
18	9442F	LW2-G234	8	22	22.9									
19	9448F	LW2-G157	8	22	22.9									
22	9447F	LW2-G160	8	22	22.9									
33	9439F	LW2-G204	8	22	22.9									
49	9436F	LW2-G209	8	22	22.9									
55	9453F	LW2-G254	8	22	22.9									
58	9451F	LW2-G244	8	22	23.0									
61	9445F	LW2-G163	8	22	23.0									
63	9449F	LW2-G038	8	22	23.0									
68	9437F	LW2-G198	8	22	22.9									
79	9438F	LW2-G199	8	22	23.0									
101	9435F	LW2-G207	8	22	23.1									
138	9443F	LW2-G155	8	22	23.0									
147	9450F	LW2-G123	8	22	23.0									
150	9440F	LW2-G202	8	22	23.0									
154	9454F	Control	8	22	23.1									
156	9441F	LW2-G231	8	22	23.1									
1	9444F	LW2-G166	8	23	22.9									
2	9452F	LW2-G247	8	23	22.7									
8	9446F	LW2-G161	8	23	22.7									
18	9442F	LW2-G234	8	23	22.7									
19	9448F	LW2-G157	8	23	22.7									
22	9447F	LW2-G160	8	23	22.7									
33	9439F	LW2-G204	8	23	22.6									
49	9436F	LW2-G209	8	23	22.7									
55	9453F	LW2-G254	8	23	22.7									
58	9451F	LW2-G244	8	23	22.7									
61	9445F	LW2-G163	8	23	22.7									
63	9449F	LW2-G038	8	23	22.7									
68	9437F	LW2-G198	8	23	22.7									
79	9438F	LW2-G199	8	23	22.7									
101	9435F	LW2-G207	8	23	22.8									
138	9443F	LW2-G155	8	23	22.7									
147	9450F	LW2-G123	8	23	22.7									
150	9440F	LW2-G202	8	23	22.7									
154	9454F	Control	8	23	22.8									
156	9441F	LW2-G231	8	23	22.8									

1	9444F	LW2-G166	8	24	22.7	6.0		6.1						
2	9452F	LW2-G247	8	24	22.6	6.2		6.1						
8	9446F	LW2-G161	8	24	22.5	6.1		6.1						
18	9442F	LW2-G234	8	24	22.5	6.4		6.1						
19	9448F	LW2-G157	8	24	22.5	6.4		6.1						
22	9447F	LW2-G160	8	24	22.5	6.2		6.2						
33	9439F	LW2-G204	8	24	22.5	6.2		6.2						
49	9436F	LW2-G209	8	24	22.5	6.2		6.2						
55	9453F	LW2-G254	8	24	22.6	6.5		6.2						
58	9451F	LW2-G244	8	24	22.5	6.1		6.2						
61	9445F	LW2-G163	8	24	22.6	6.6		6.2						
63	9449F	LW2-G038	8	24	22.5	6.0		6.2						
68	9437F	LW2-G198	8	24	22.4	6.1		6.3						
79	9438F	LW2-G199	8	24	22.5	5.8		6.4						
101	9435F	LW2-G207	8	24	22.7	6.0		6.3						
138	9443F	LW2-G155	8	24	22.7	6.2		6.3						
147	9450F	LW2-G123	8	24	22.6	6.4		6.5						
150	9440F	LW2-G202	8	24	22.7	6.2		6.5						
154	9454F	Control	8	24	22.8	6.0		6.9						
156	9441F	LW2-G231	8	24	23.0	6.6		6.6						
1	9444F	LW2-G166	8	25	23.0									
2	9452F	LW2-G247	8	25	22.9									
8	9446F	LW2-G161	8	25	22.8									
18	9442F	LW2-G234	8	25	22.8									
19	9448F	LW2-G157	8	25	22.7									
22	9447F	LW2-G160	8	25	22.8									
33	9439F	LW2-G204	8	25	22.7									
49	9436F	LW2-G209	8	25	22.7									
55	9453F	LW2-G254	8	25	22.9									
58	9451F	LW2-G244	8	25	22.8									
61	9445F	LW2-G163	8	25	22.9									
63	9449F	LW2-G038	8	25	22.9									
68	9437F	LW2-G198	8	25	22.8									
79	9438F	LW2-G199	8	25	22.8									
101	9435F	LW2-G207	8	25	22.9									
138	9443F	LW2-G155	8	25	22.8									
147	9450F	LW2-G123	8	25	22.8									
150	9440F	LW2-G202	8	25	23.0									
154	9454F	Control	8	25	23.1									
156	9441F	LW2-G231	8	25	23.1									

1	9444F	LW2-G166	8	26	23.0	6.0	160	6.1						
2	9452F	LW2-G247	8	26	23.0	5.5	160	6.2						
8	9446F	LW2-G161	8	26	22.9	5.4	165	6.1						
18	9442F	LW2-G234	8	26	22.9	5.8	160	6.1						
19	9448F	LW2-G157	8	26	22.9	5.6	160	6.2						
22	9447F	LW2-G160	8	26	22.9	5.1	165	6.1						
33	9439F	LW2-G204	8	26	22.9	5.4	160	6.2						
49	9436F	LW2-G209	8	26	22.9	5.5	170	6.2						
55	9453F	LW2-G254	8	26	23.0	6.2	165	6.3						
58	9451F	LW2-G244	8	26	22.9	5.1	160	6.2						
61	9445F	LW2-G163	8	26	22.9	5.8	165	6.2						
63	9449F	LW2-G038	8	26	22.9	4.8	165	6.2						
68	9437F	LW2-G198	8	26	22.9	4.8	170	6.2						
79	9438F	LW2-G199	8	26	23.0	5.0	170	6.4						
101	9435F	LW2-G207	8	26	23.0	5.0	160	6.3						
138	9443F	LW2-G155	8	26	23.0	5.0	165	6.2						
147	9450F	LW2-G123	8	26	22.9	6.2	160	6.3						
150	9440F	LW2-G202	8	26	22.9	5.1	175	6.3						
154	9454F	Control	8	26	23.1	4.8	215	8.0						
156	9441F	LW2-G231	8	26	23.2	6.1	165	6.5						
1	9444F	LW2-G166	8	27	23.0									
2	9452F	LW2-G247	8	27	22.9									
8	9446F	LW2-G161	8	27	22.8									
18	9442F	LW2-G234	8	27	22.8									
19	9448F	LW2-G157	8	27	22.8									
22	9447F	LW2-G160	8	27	22.8									
33	9439F	LW2-G204	8	27	22.8									
49	9436F	LW2-G209	8	27	22.9									
55	9453F	LW2-G254	8	27	22.9									
58	9451F	LW2-G244	8	27	22.8									
61	9445F	LW2-G163	8	27	23.0									
63	9449F	LW2-G038	8	27	22.9									
68	9437F	LW2-G198	8	27	22.8									
79	9438F	LW2-G199	8	27	22.9									
101	9435F	LW2-G207	8	27	23.0									
138	9443F	LW2-G155	8	27	23.0									
147	9450F	LW2-G123	8	27	22.8									
150	9440F	LW2-G202	8	27	23.0									
154	9454F	Control	8	27	23.0									
156	9441F	LW2-G231	8	27	23.0									

1	9444F	LW2-G166	8	28	23.0	6.7	160	6.3	34	40	<0.1			
2	9452F	LW2-G247	8	28	23.0	6.2	160	6.1	34	40	<0.1			
8	9446F	LW2-G161	8	28	23.0	6.7	160	6.3	51	40	<0.1			
18	9442F	LW2-G234	8	28	22.9	6.9	160	6.2	43	40	<0.1			
19	9448F	LW2-G157	8	28	22.9	7.1	160	6.2	43	40	<0.1			
22	9447F	LW2-G160	8	28	22.8	6.9	160	6.3	43	40	<0.1			
33	9439F	LW2-G204	8	28	22.8	6.9	160	6.2	43	40	<0.1			
49	9436F	LW2-G209	8	28	22.8	7.2	160	6.3	51	40	<0.1			
55	9453F	LW2-G254	8	28	22.8	7.3	160	6.3	34	40	<0.1			
58	9451F	LW2-G244	8	28	22.8	6.9	160	6.3	34	40	0.1			
61	9445F	LW2-G163	8	28	22.9	7.3	160	6.3	43	40	<0.1			
63	9449F	LW2-G038	8	28	22.8	7.1	160	6.3	43	40	0.1			
68	9437F	LW2-G198	8	28	22.8	7.1	160	6.4	43	40	<0.1			
79	9438F	LW2-G199	8	28	22.9	7.0	160	6.4	43	40	<0.1			
101	9435F	LW2-G207	8	28	22.9	7.1	160	6.3	34	40	<0.1			
138	9443F	LW2-G155	8	28	22.8	7.3	160	6.4	43	40	<0.1			
147	9450F	LW2-G123	8	28	22.8	7.4	160	6.4	51	40	<0.1			
150	9440F	LW2-G202	8	28	22.8	7.0	160	6.5	43	40	<0.1			
154	9454F	Control	8	28	22.8	7.1	170	7.3	43	50	<0.1			
156	9441F	LW2-G231	8	28	22.9	7.3	160	6.7	43	40	<0.1			
				Mean	22.8	6.2	165	6.4	45	43	---		4.5	6.2
				SD	0.2	0.7	14	0.3	7	4	---		2.6	0.3
				n	580	260	100	260	40	40	40		19	19
				Min	22.2	4.8	160	6.0	34	40	<0.1		1.2	5.6
				Max	23.4	7.9	280	8.0	60	50	2.1		9.3	6.7

Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

ASHED DRY WT= weight of ashed pan + weight of ashed test organisms recovered at test termination
TAFDW=DRY WT - ASHED DRY WT= total ash-free organism weight for given replicate
AFDW=average individual ash-free biomass=TAFDW/WT COUNT

INITIAL WEIGHT

pan #	tare wt (mg)	final wt (mg)	wt count	avg. wt/ organism
1	90.45	94.40	20	0.20
2	91.80	95.74	20	0.20
3	96.24	99.85	20	0.18

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)		SURV	MORT	PSURV	PMORT	WT
1	97	9454F	Control	1		10	10	0	100.0	0.0	95.53	10	108.62	98.91	13.09	1.31	9.71	0.97						
2	72	9454F	Control	2		10	9	1	90.0	10.0	94.96	9	106.30	97.51	11.34	1.26	8.79	0.98						
3	4	9454F	Control	3		10	10	0	100.0	0.0	99.18	10	109.26	101.01	10.08	1.01	8.25	0.83						
4	109	9454F	Control	4		10	10	0	100.0	0.0	92.39	10	106.16	96.00	13.77	1.38	10.16	1.02						
5	17	9454F	Control	5		10	10	0	100.0	0.0	95.43	10	104.80	96.93	9.37	0.94	7.87	0.79	Mean	9.5	0.5	95.0	5.0	1.16
6	94	9454F	Control	6		10	9	1	90.0	10.0	93.60	9	102.91	95.83	9.31	1.03	7.08	0.79	SD	0.8	0.8	7.6	7.6	0.16
7	64	9454F	Control	7		10	10	0	100.0	0.0	94.74	10	105.80	97.63	11.06	1.11	8.17	0.82	n	8	8	8	8	8
8	104	9454F	Control	8	wq replicate	10	8	2	80.0	20.0	94.71	8	104.54	97.04	9.83	1.23	7.50	0.94						
9	43	9435F	LW2-G207	1		10	10	0	100.0	0.0	91.25	10	103.72	95.77	12.47	1.25	7.95	0.80						
10	132	9435F	LW2-G207	2		10	8	2	80.0	20.0	88.49	8	99.42	92.27	10.93	1.37	7.15	0.89						
11	70	9435F	LW2-G207	3		10	8	2	80.0	20.0	90.04	8	99.60	93.26	9.56	1.20	6.34	0.79						
12	24	9435F	LW2-G207	4		10	9	1	90.0	10.0	102.76	9	112.98	105.53	10.22	1.14	7.45	0.83						
13	102	9435F	LW2-G207	5		10	8	2	80.0	20.0	96.31	8	106.95	99.91	10.64	1.33	7.04	0.88	Mean	8.6	1.4	86.3	13.8	1.31
14	29	9435F	LW2-G207	6		10	8	2	80.0	20.0	89.64	8	100.93	93.62	11.29	1.41	7.31	0.91	SD	0.7	0.7	7.4	7.4	0.14
15	15	9435F	LW2-G207	7		10	9	1	90.0	10.0	95.16	9	106.38	98.91	11.22	1.25	7.47	0.83	n	8	8	8	8	8
16	146	9435F	LW2-G207	8	wq replicate	10	9	1	90.0	10.0	91.57	9	105.68	96.47	14.11	1.57	9.21	1.02						
17	9	9436F	LW2-G209	1		10	10	0	100.0	0.0	91.70	10	106.95	97.30	15.25	1.53	9.65	0.97						
18	59	9436F	LW2-G209	2		10	9	1	90.0	10.0	93.20	9	108.48	99.54	15.28	1.70	8.94	0.99						
19	81	9436F	LW2-G209	3		10	10	0	100.0	0.0	82.81	10	97.06	88.14	14.25	1.43	8.92	0.89						
20	101	9436F	LW2-G209	4		10	7	3	70.0	30.0	89.64	7	102.97	94.24	13.33	1.90	8.73	1.25						
21	113	9436F	LW2-G209	5		10	10	0	100.0	0.0	90.43	10	108.42	97.18	17.99	1.80	11.24	1.12	Mean	9.5	0.5	95.0	5.0	1.59
22	60	9436F	LW2-G209	6		10	10	0	100.0	0.0	93.63	10	108.12	99.09	14.49	1.45	9.03	0.90	SD	1.1	1.1	10.7	10.7	0.19
23	28	9436F	LW2-G209	7		10	10	0	100.0	0.0	99.03	10	112.86	103.29	13.83	1.38	9.57	0.96	n	8	8	8	8	8
24	39	9436F	LW2-G209	8	wq replicate	10	10	0	100.0	0.0	108.81	10	124.25	114.01	15.44	1.54	10.24	1.02						
25	78	9437F	LW2-G198	1		10	10	0	100.0	0.0	91.24	10	104.70	95.99	13.46	1.35	8.71	0.87						
26	92	9437F	LW2-G198	2		10	10	0	100.0	0.0	90.32	10	104.61	95.83	14.29	1.43	8.78	0.88						
27	158	9437F	LW2-G198	3		10	10	0	100.0	0.0	86.41	10	99.73	90.57	13.32	1.33	9.16	0.92						
28	58	9437F	LW2-G198	4		10	10	0	100.0	0.0	89.98	10	104.06	94.30	14.08	1.41	9.76	0.98						
29	86	9437F	LW2-G198	5		10	10	0	100.0	0.0	90.36	10	100.92	94.16	10.56	1.06	6.76	0.68	Mean	10.0	0.0	100.0	0.0	1.30
30	116	9437F	LW2-G198	6		10	10	0	100.0	0.0	97.10	10	111.30	102.41	14.20	1.42	8.89	0.89	SD	0.0	0.0	0.0	0.0	0.14
31	69	9437F	LW2-G198	7		10	10	0	100.0	0.0	95.44	10	107.16	99.60	11.72	1.17	7.56	0.76	n	8	8	8	8	8
32	160	9437F	LW2-G198	8	wq replicate	10	10	0	100.0	0.0	96.22	10	108.25	100.42	12.03	1.20	7.83	0.78						
33	123	9438F	LW2-G199	1		10	10	0	100.0	0.0	100.50	10	117.10	106.84	16.60	1.66	10.26	1.03						
34	91	9438F	LW2-G199	2		10	10	0	100.0	0.0	87.62	10	101.02	92.08	13.40	1.34	8.94	0.89						
35	38	9438F	LW2-G199	3		10	10	0	100.0	0.0	94.58	10	107.51	99.00	12.93	1.29	8.51	0.85						
36	82	9438F	LW2-G199	4		10	10	0	100.0	0.0	96.11	10	109.18	100.75	13.07	1.31	8.43	0.84						
37	42	9438F	LW2-G199	5		10	10	0	100.0	0.0	97.08	10	110.42	101.33	13.34	1.33	9.09	0.91	Mean	9.5	0.5	95.0	5.0	1.34
38	49	9438F	LW2-G199	6		10	7	3	70.0	30.0	93.52	7	104.14	96.06	10.62	1.52	8.08	1.15	SD	1.1	1.1	10.7	10.7	0.18
39	41	9438F	LW2-G199	7		10	9	1	90.0	10.0	91.79	9	101.84	94.51	10.05	1.12	7.33	0.81	n	8	8	8	8	8
40	131	9438F	LW2-G199	8	wq replicate	10	10	0	100.0	0.0	90.46	10	102.18	94.55	11.72	1.17	7.63	0.76						

ANC07508
BZTO104(e)007508

Test Number: 686-14

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)		SURV	MORT	PSURV	PMORT	WT
41	10	9439F	LW2-G204	1		10	8	2	80.0	20.0	95.04	8	104.81	97.47	9.77	1.22	7.34	0.92						
42	8	9439F	LW2-G204	2		10	9	1	90.0	10.0	94.35	9	104.13	97.11	9.78	1.09	7.02	0.78						
43	25	9439F	LW2-G204	3		10	9	1	90.0	10.0	92.41	9	103.65	96.47	11.24	1.25	7.18	0.80						
44	147	9439F	LW2-G204	4		10	10	0	100.0	0.0	94.73	10	107.60	99.62	12.87	1.29	7.98	0.80						
45	80	9439F	LW2-G204	5		10	8	2	80.0	20.0	94.92	8	106.36	98.93	11.44	1.43	7.43	0.93	Mean	9.1	0.9	91.3	8.8	1.26
46	126	9439F	LW2-G204	6		10	10	0	100.0	0.0	101.18	10	113.49	105.92	12.31	1.23	7.57	0.76	SD	0.8	0.8	8.3	8.3	0.10
47	112	9439F	LW2-G204	7		10	9	1	90.0	10.0	87.71	9	99.32	91.31	11.61	1.29	8.01	0.89	n	8	8	8	8	8
48	128	9439F	LW2-G204	8	wq replicate	10	10	0	100.0	0.0	94.68	10	107.45	99.35	12.77	1.28	8.10	0.81						
49	12	9440F	LW2-G202	1		10	10	0	100.0	0.0	93.33	10	105.59	95.38	12.26	1.23	10.21	1.02						
50	157	9440F	LW2-G202	2		10	9	1	90.0	10.0	93.64	9	106.66	97.94	13.02	1.45	8.72	0.97						
51	125	9440F	LW2-G202	3		10	10	0	100.0	0.0	93.48	10	109.10	98.99	15.62	1.56	10.11	1.01						
52	36	9440F	LW2-G202	4		10	9	1	90.0	10.0	89.98	9	102.55	93.63	12.57	1.40	8.92	0.99						
53	68	9440F	LW2-G202	5		10	9	1	90.0	10.0	87.72	9	99.33	90.76	11.61	1.29	8.57	0.95	Mean	9.6	0.4	96.3	3.8	1.35
54	16	9440F	LW2-G202	6		10	10	0	100.0	0.0	100.15	10	109.30	102.27	9.15	0.91	7.03	0.70	SD	0.5	0.5	5.2	5.2	0.20
55	142	9440F	LW2-G202	7		10	10	0	100.0	0.0	90.02	10	104.45	95.29	14.43	1.44	9.16	0.92	n	8	8	8	8	8
56	96	9440F	LW2-G202	8	wq replicate	10	10	0	100.0	0.0	95.25	10	110.12	100.14	14.87	1.49	9.98	1.00						
57	137	9441F	LW2-G231	1		10	10	0	100.0	0.0	94.42	10	110.60	100.06	16.18	1.62	10.54	1.05						
58	95	9441F	LW2-G231	2		10	10	0	100.0	0.0	84.33	10	97.44	88.73	13.11	1.31	8.71	0.87						
59	159	9441F	LW2-G231	3		10	10	0	100.0	0.0	86.61	10	101.89	91.48	15.28	1.53	10.41	1.04						
60	53	9441F	LW2-G231	4		10	9	1	90.0	10.0	94.98	9	108.89	98.90	13.91	1.55	9.99	1.11						
61	110	9441F	LW2-G231	5		10	10	0	100.0	0.0	91.08	10	107.33	96.57	16.25	1.63	10.76	1.08	Mean	9.6	0.4	96.3	3.8	1.54
62	30	9441F	LW2-G231	6		10	9	1	90.0	10.0	89.30	9	101.39	92.07	12.09	1.34	9.32	1.04	SD	0.5	0.5	5.2	5.2	0.14
63	133	9441F	LW2-G231	7		10	9	1	90.0	10.0	96.61	9	111.66	101.67	15.07	1.67	10.01	1.11	n	8	8	8	8	8
64	117	9441F	LW2-G231	8	wq replicate	10	10	0	100.0	0.0	87.66	10	104.47	93.64	16.81	1.68	10.83	1.08						
65	89	9442F	LW2-G234	1		10	9	1	90.0	10.0	93.70	9	106.60	97.48	12.90	1.43	9.12	1.01						
66	11	9442F	LW2-G234	2		10	9	1	90.0	10.0	92.64	9	102.29	94.79	9.65	1.07	7.50	0.83						
67	67	9442F	LW2-G234	3		10	9	1	90.0	10.0	94.45	9	107.10	97.81	12.65	1.41	9.29	1.03						
68	40	9442F	LW2-G234	4		10	10	0	100.0	0.0	91.36	10	105.41	95.63	14.05	1.41	9.78	0.98						
69	6	9442F	LW2-G234	5		10	10	0	100.0	0.0	94.99	10	108.25	98.90	13.26	1.33	9.35	0.93	Mean	9.5	0.5	95.0	5.0	1.31
70	32	9442F	LW2-G234	6		10	10	0	100.0	0.0	88.42	10	100.01	91.14	11.59	1.16	8.87	0.89	SD	0.5	0.5	5.3	5.3	0.13
71	57	9442F	LW2-G234	7		10	10	0	100.0	0.0	94.73	10	108.21	98.75	13.48	1.35	9.46	0.95	n	8	8	8	8	8
72	31	9442F	LW2-G234	8	wq replicate	10	9	1	90.0	10.0	89.31	9	101.31	92.08	12.00	1.33	9.23	1.03						
73	7	9443F	LW2-G155	1		10	9	1	90.0	10.0	93.02	9	102.46	95.72	9.44	1.05	6.74	0.75						
74	155	9443F	LW2-G155	2		10	10	0	100.0	0.0	89.99	10	100.44	92.96	10.45	1.05	7.48	0.75						
75	21	9443F	LW2-G155	3		10	10	0	100.0	0.0	91.77	10	98.69	93.58	6.92	0.69	5.11	0.51						
76	34	9443F	LW2-G155	4		10	6	4	60.0	40.0	97.01	6	103.81	99.16	6.80	1.13	4.65	0.78						
77	5	9443F	LW2-G155	5		10	9	1	90.0	10.0	96.13	9	104.24	97.94	8.11	0.90	6.30	0.70	Mean	8.9	1.1	88.8	11.3	0.97
78	54	9443F	LW2-G155	6		10	9	1	90.0	10.0	93.19	9	103.28	96.25	10.09	1.12	7.03	0.78	SD	1.4	1.4	13.6	13.6	0.16
79	88	9443F	LW2-G155	7		10	10	0	100.0	0.0	88.68	10	96.83	90.97	8.15	0.81	5.86	0.59	n	8	8	8	8	8
80	26	9443F	LW2-G155	8	wq replicate	10	8	2	80.0	20.0	101.88	8	109.98	104.15	8.10	1.01	5.83	0.73						
81	61	9444F	LW2-G166	1		11	11	0	100.0	0.0	92.31	11	106.67	98.49	14.36	1.31	8.18	0.74						
82	130	9444F	LW2-G166	2		10	9	1	90.0	10.0	93.55	9	107.38	99.52	13.83	1.54	7.86	0.87						
83	23	9444F	LW2-G166	3		10	10	0	100.0	0.0	90.95	10	101.20	94.17	10.25	1.03	7.03	0.70						
84	2	9444F	LW2-G166	4		10	9	1	90.0	10.0	97.93	9	108.21	100.77	10.28	1.14	7.44	0.83						
85	156	9444F	LW2-G166	5		10	10	0	100.0	0.0	92.18	10	107.73	98.47	15.55	1.56	9.26	0.93	Mean	9.6	0.5	95.0	5.0	1.38
86	148	9444F	LW2-G166	6		10	10	0	100.0	0.0	83.24	10	97.23	88.40	13.99	1.40	8.83	0.88	SD	0.9	0.8	7.6	7.6	0.30
87	138	9444F	LW2-G166	7		10	8	2	80.0	20.0	92.17	8	107.76	98.41	15.59	1.95	9.35	1.17	n	8	8	8	8	8
88	48	9444F	LW2-G166	8	wq replicate	10	10	0	100.0	0.0	90.30	10	101.95	93.46	11.65	1.17	8.49	0.85						
89	1	9445F	LW2-G163	1		10	10	0	100.0	0.0	99.10	10	110.09	101.63	10.99	1.10	8.46	0.85						
90	18	9445F	LW2-G163	2		10	10	0	100.0	0.0	96.77	10	106.05	98.45	9.28	0.93	7.60	0.76						
91	47	9445F	LW2-G163	3		10	9	1	90.0	10.0	99.36	9	108.43	101.08	9.07	1.01	7.35	0.82						
92	20	9445F	LW2-G163	4		10	10	0	100.0	0.0	100.29	10	110.95	103.07	10.66	1.07	7.88	0.79						
93	51	9445F	LW2-G163	5		10	10	0	100.0	0.0	93.29	10	105.74	96.82	12.45	1.25	8.92	0.89	Mean	9.8	0.3	97.5	2.5	1.14
94	27	9445F	LW2-G163	6		10	9	1	90.0	10.0	96.92	9	106.97	99.13	10.05	1.12	7.84	0.87	SD	0.5	0.5	4.6	4.6	0.15
95	62	9445F	LW2-G163	7		10	10	0	100.0	0.0	97.78	10	110.83	100.43	13.05	1.31	10.40	1.04	n	8	8	8	8	8

ANC07509
BZTO104(e)007509

Test Number: 686-14

Freshwater Sediment Test
10-Day Chironomus tentans

		NAS	CLIENT								TARE	WT	DRY	ASHED	TWT	WT	TAFDW	AFDW							
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	WT (mg)	COUNT	WT (mg)	DRY WT (mg)	(mg)	(mg)	(mg)	(mg)			SURV	MORT	PSURV	PMORT	WT
96	74	9445F	LW2-G163	8	wq replicate	10	10	0	100.0	0.0	91.56	10	105.20	95.78	13.64	1.36	9.42	0.94							

ANC07510
BZTO104(e)007510

Test Number: 686-14

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)		SURV	MORT	PSURV	PMORT	WT
97	22	9446F	LW2-G161	1		10	8	2	80.0	20.0	95.78	8	97.70	96.06	1.92	0.24	1.64	0.21						
98	134	9446F	LW2-G161	2		10	8	2	80.0	20.0	90.21	8	95.49	91.53	5.28	0.66	3.96	0.49						
99	85	9446F	LW2-G161	3		10	9	1	90.0	10.0	91.20	9	95.45	92.57	4.25	0.47	2.88	0.32						
100	121	9446F	LW2-G161	4		10	4	6	40.0	60.0	89.20	4	90.30	89.44	1.10	0.27	0.86	0.22						
101	76	9446F	LW2-G161	5		10	8	2	80.0	20.0	94.75	8	99.21	95.83	4.46	0.56	3.38	0.42	Mean	7.0	3.0	70.0	30.0	0.44
102	52	9446F	LW2-G161	6		10	1	9	10.0	90.0	97.42	1	97.64	97.48	0.22	0.22	0.16	0.16	SD	2.9	2.9	29.3	29.3	0.17
103	107	9446F	LW2-G161	7		10	9	1	90.0	10.0	90.66	9	95.67	91.72	5.01	0.56	3.95	0.44	n	8	8	8	8	8
104	84	9446F	LW2-G161	8	wq replicate	10	9	1	90.0	10.0	90.08	9	95.13	91.34	5.05	0.56	3.79	0.42						
105	129	9447F	LW2-G160	1		10	4	6	40.0	60.0	94.89	4	97.82	95.68	2.93	0.73	2.14	0.53						
106	135	9447F	LW2-G160	2		10	5	5	50.0	50.0	97.37	5	100.49	98.45	2.62	0.52	2.04	0.41						
107	90	9447F	LW2-G160	3		10	1	9	10.0	90.0	98.18	1	98.43	98.23	0.25	0.25	0.20	0.20						
108	45	9447F	LW2-G160	4		10	2	8	20.0	80.0	93.87	2	94.18	93.92	0.31	0.16	0.26	0.13						
109	100	9447F	LW2-G160	5		10	6	4	60.0	40.0	89.49	6	94.11	90.65	4.62	0.77	3.46	0.58	Mean	4.1	5.9	41.3	58.8	0.46
110	111	9447F	LW2-G160	6		10	7	3	70.0	30.0	88.86	7	91.72	89.43	2.86	0.41	2.29	0.33	SD	2.0	2.0	20.3	20.3	0.21
111	150	9447F	LW2-G160	7		10	3	7	30.0	70.0	88.43	3	89.55	88.72	1.12	0.37	0.83	0.28	n	8	8	8	8	8
112	114	9447F	LW2-G160	8	wq replicate	10	5	5	50.0	50.0	87.60	5	90.05	88.33	2.45	0.49	1.72	0.34						
113	50	9448F	LW2-G157	1		10	4	6	40.0	60.0	94.48	4	95.37	94.64	0.89	0.22	0.73	0.18						
114	33	9448F	LW2-G157	2		10	4	6	40.0	60.0	95.61	4	96.75	95.81	1.14	0.29	0.94	0.23						
115	140	9448F	LW2-G157	3		10	6	4	60.0	40.0	95.00	6	98.34	95.78	3.34	0.56	2.56	0.43						
116	152	9448F	LW2-G157	4		10	3	7	30.0	70.0	97.16	3	100.52	98.05	3.36	1.12	2.47	0.82						
117	46	9448F	LW2-G157	5		10	2	8	20.0	80.0	94.41	2	94.87	94.51	0.46	0.23	0.36	0.18	Mean	4.6	5.4	46.3	53.8	0.37
118	149	9448F	LW2-G157	6		10	5	5	50.0	50.0	90.84	5	91.74	91.11	0.90	0.18	0.63	0.13	SD	1.8	1.8	18.5	18.5	0.33
119	44	9448F	LW2-G157	7		10	5	5	50.0	50.0	97.82	5	98.64	98.00	0.82	0.16	0.64	0.13	n	8	8	8	8	8
120	73	9448F	LW2-G157	8	wq replicate	10	8	2	80.0	20.0	94.02	8	95.70	94.37	1.68	0.21	1.33	0.17						
121	13	9449F	LW2-G038	1		10	10	0	100.0	0.0	96.82	10	109.93	99.81	13.11	1.31	10.12	1.01						
122	14	9449F	LW2-G038	2		10	10	0	100.0	0.0	96.34	10	109.72	99.26	13.38	1.34	10.46	1.05						
123	118	9449F	LW2-G038	3		10	10	0	100.0	0.0	94.49	10	109.39	98.67	14.90	1.49	10.72	1.07						
124	98	9449F	LW2-G038	4		10	10	0	100.0	0.0	95.23	10	110.87	99.72	15.64	1.56	11.15	1.12						
125	153	9449F	LW2-G038	5		10	10	0	100.0	0.0	91.75	10	102.41	94.10	10.66	1.07	8.31	0.83	Mean	10.0	0.0	100.0	0.0	1.41
126	83	9449F	LW2-G038	6		10	10	0	100.0	0.0	95.27	10	109.68	99.24	14.41	1.44	10.44	1.04	SD	0.0	0.0	0.0	0.0	0.17
127	141	9449F	LW2-G038	7		10	10	0	100.0	0.0	93.65	10	109.54	98.40	15.89	1.59	11.14	1.11	n	8	8	8	8	8
128	99	9449F	LW2-G038	8	wq replicate	10	10	0	100.0	0.0	93.73	10	108.47	97.71	14.74	1.47	10.76	1.08						
129	139	9450F	LW2-G123	1		10	8	2	80.0	20.0	87.23	8	100.01	91.64	12.78	1.60	8.37	1.05						
130	19	9450F	LW2-G123	2		10	8	2	80.0	20.0	95.76	8	105.23	98.04	9.47	1.18	7.19	0.90						
131	145	9450F	LW2-G123	3		10	8	2	80.0	20.0	96.22	8	107.65	100.08	11.43	1.43	7.57	0.95						
132	87	9450F	LW2-G123	4		10	6	4	60.0	40.0	94.45	6	104.07	96.99	9.62	1.60	7.08	1.18						
133	108	9450F	LW2-G123	5		10	8	2	80.0	20.0	90.41	8	103.57	94.25	13.16	1.65	9.32	1.17	Mean	7.9	2.1	78.8	21.3	1.43
134	115	9450F	LW2-G123	6		10	9	1	90.0	10.0	90.64	9	104.12	95.42	13.48	1.50	8.70	0.97	SD	1.0	1.0	9.9	9.9	0.18
135	93	9450F	LW2-G123	7		10	9	1	90.0	10.0	95.21	9	105.94	98.63	10.73	1.19	7.31	0.81	n	8	8	8	8	8
136	37	9450F	LW2-G123	8	wq replicate	10	7	3	70.0	30.0	87.44	7	96.64	90.44	9.20	1.31	6.20	0.89						
137	56	9451F	LW2-G244	1		10	10	0	100.0	0.0	95.37	10	109.19	99.88	13.82	1.38	9.31	0.93						
138	122	9451F	LW2-G244	2		10	9	1	90.0	10.0	88.12	9	102.87	92.87	14.75	1.64	10.00	1.11						
139	77	9451F	LW2-G244	3		10	10	0	100.0	0.0	90.44	10	106.90	96.29	16.46	1.65	10.61	1.06						
140	154	9451F	LW2-G244	4		10	10	0	100.0	0.0	92.22	10	106.77	96.78	14.55	1.46	9.99	1.00						
141	79	9451F	LW2-G244	5		10	10	0	100.0	0.0	94.07	10	107.72	98.70	13.65	1.37	9.02	0.90	Mean	9.8	0.3	97.5	2.5	1.55
142	71	9451F	LW2-G244	6		10	9	1	90.0	10.0	98.48	9	112.02	102.72	13.54	1.50	9.30	1.03	SD	0.5	0.5	4.6	4.6	0.14
143	119	9451F	LW2-G244	7		10	10	0	100.0	0.0	94.19	10	111.28	100.64	17.09	1.71	10.64	1.06	n	8	8	8	8	8
144	124	9451F	LW2-G244	8	wq replicate	10	10	0	100.0	0.0	103.31	10	120.52	109.39	17.21	1.72	11.13	1.11						
145	127	9452F	LW2-G247	1		10	10	0	100.0	0.0	97.16	9	112.57	103.16	15.41	1.71	9.41	1.05						
146	151	9452F	LW2-G247	2		10	10	0	100.0	0.0	94.17	10	107.70	98.88	13.53	1.35	8.82	0.88						
147	105	9452F	LW2-G247	3		10	8	2	80.0	20.0	90.71	8	103.86	95.80	13.15	1.64	8.06	1.01						
148	106	9452F	LW2-G247	4		10	10	0	100.0	0.0	97.55	10	111.82	102.26	14.27	1.43	9.56	0.96						
149	55	9452F	LW2-G247	5		10	9	1	90.0	10.0	98.35	9	111.91	102.88	13.56	1.51	9.03	1.00	Mean	9.6	0.4	96.3	3.8	1.52
150	144	9452F	LW2-G247	6		10	10	0	100.0	0.0	94.26	10	110.90	100.85	16.64	1.66	10.05	1.01	SD	0.7	0.7	7.4	7.4	0.15
151	63	9452F	LW2-G247	7		10	10	0	100.0	0.0	93.28	10	106.33	98.11	13.05	1.31	8.22	0.82	n	8	8	8	8	8

ANC07511
BZTO104(e)007511

Test Number: 686-14

Freshwater Sediment Test
10-Day Chironomus tentans

		NAS	CLIENT								TARE	WT	DRY	ASHED	TWT	WT	TAFDW	AFDW							
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	WT (mg)	COUNT	WT (mg)	DRY WT (mg)	(mg)	(mg)	(mg)	(mg)			SURV	MORT	PSURV	PMORT	WT
152	66	9452F	LW2-G247	8	wq replicate	10	10	0	100.0	0.0	92.94	10	108.38	99.24	15.44	1.54	9.14	0.91							

ANC07512
BZTO104(e)007512

Test Number: 686-14

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)			SURV	MORT	PSURV	PMORT	WT
153	65	9453F	LW2-G254	1		10	10	0	100.0	0.0	85.20	10	94.90	88.12	9.70	0.97	6.78	0.68							
154	136	9453F	LW2-G254	2		10	10	0	100.0	0.0	89.63	10	102.01	93.90	12.38	1.24	8.11	0.81							
155	103	9453F	LW2-G254	3		10	8	2	80.0	20.0	98.65	8	109.02	101.48	10.37	1.30	7.54	0.94							
156	35	9453F	LW2-G254	4		10	9	1	90.0	10.0	100.93	9	111.15	104.12	10.22	1.14	7.03	0.78							
157	3	9453F	LW2-G254	5		10	9	1	90.0	10.0	92.85	9	102.23	95.07	9.38	1.04	7.16	0.80	Mean		9.1	0.9	91.3	8.8	1.17
158	143	9453F	LW2-G254	6		10	9	1	90.0	10.0	93.66	9	106.00	97.40	12.34	1.37	8.60	0.96	SD		0.6	0.6	6.4	6.4	0.13
159	120	9453F	LW2-G254	7		10	9	1	90.0	10.0	93.21	9	103.99	96.95	10.78	1.20	7.04	0.78	n		8	8	8	8	8
160	75	9453F	LW2-G254	8	wq replicate	10	9	1	90.0	10.0	92.57	9	102.38	95.38	9.81	1.09	7.00	0.78							
	Bkr # 127 lost one animal in transfer to weigh pan.																								

ANC07513
BZTO104(e)007513

Test Number: 686-14

Freshwater Sediment Test
10-Day Chironomus tentans

AFDW
0.89
0.09
8
0.87
0.06
8
1.01
0.12
8
0.84
0.10
8
0.91
0.13
8

ANC07514
BZTO104(e)007514

Test Number: 686-14

Freshwater Sediment Test
10-Day Chironomus tentans

AFDW
0.83
0.07
8
0.95
0.10
8
1.05
0.08
8
0.96
0.07
8
0.70
0.10
8
0.87
0.14
8
0.87
0.09
8

ANC07515
BZTO104(e)007515

Test Number: 686-14

Freshwater Sediment Test
10-Day Chironomus tentans

AFDW

ANC07516
BZTO104(e)007516

Test Number: 686-14

Freshwater Sediment Test
10-Day Chironomus tentans

AFDW
0.33
0.13
8
0.35
0.15
8
0.28
0.24
8
1.04
0.09
8
0.99
0.13
8
1.03
0.08
8
0.95
0.08
8

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ANC07517
BZTO104(e)007517

Test Number: 686-14

Freshwater Sediment Test
10-Day Chironomus tentans

AFDW

ANC07518
BZTO104(e)007518

Test Number: 686-14

Freshwater Sediment Test
10-Day Chironomus tentans

AFDW
0.82
0.09
8

ANC07519
BZTO104(e)007519

Water Quality Data

	NAS	CLIENT			Bulk Sediment Interstitial water	
	SMPL	DESCRIP			NH3	pH
	9435F	LW2-G207			8.9	5.6
	9436F	LW2-G209			1.4	5.8
	9437F	LW2-G198			3.3	5.9
	9438F	LW2-G199			4.1	6.0
	9439F	LW2-G204			2.7	6.4
	9440F	LW2-G202			3.9	6.3
	9441F	LW2-G231			3.7	6.3
	9442F	LW2-G234			3.3	6.1
	9443F	LW2-G155			7.7	6.2
	9444F	LW2-G166			3.7	6.2
	9445F	LW2-G163			---	---
	9446F	LW2-G161			2.9	6.3
	9447F	LW2-G160			7.3	6.7
	9448F	LW2-G157			9.3	6.5
	9449F	LW2-G038			4.5	6.2
	9450F	LW2-G123			3.6	6.3
	9451F	LW2-G244			8.6	6.2
	9452F	LW2-G247			1.7	6.4
	9453F	LW2-G254			1.2	6.1

	NAS	CLIENT			Overlying water						
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	NH3	HARD	ALK
26	9443F	LW2-G155	8	0	23.1	7.2	170	6.6	1.0	43	40
31	9442F	LW2-G234	8	0	23.1	7.4	160	6.5	0.3	43	40
37	9450F	LW2-G123	8	0	23.1	6.5	160	6.5	0.4	43	40
39	9436F	LW2-G209	8	0	23.1	7.2	170	6.6	0.2	43	40
48	9444F	LW2-G166	8	0	23.1	7.1	165	6.7	0.2	60	40
66	9452F	LW2-G247	8	0	23.1	7.5	160	6.6	0.2	43	40
73	9448F	LW2-G157	8	0	23.1	7.3	170	6.5	0.8	51	50
74	9445F	LW2-G163	8	0	23.1	7.4	160	6.6	0.3	43	40
75	9453F	LW2-G254	8	0	23.1	7.2	165	6.6	0.1	51	40
84	9446F	LW2-G161	8	0	23.1	7.2	170	6.6	0.3	51	50
96	9440F	LW2-G202	8	0	23.1	6.8	165	6.5	0.8	51	40
99	9449F	LW2-G038	8	0	23.1	7.3	165	6.5	0.6	43	40
104	9454F	Control	8	0	23.0	7.4	240	6.5	0.3	43	50
114	9447F	LW2-G160	8	0	23.0	7.7	170	6.7	0.7	43	40
117	9441F	LW2-G231	8	0	23.0	7.6	170	6.6	0.4	51	50
124	9451F	LW2-G244	8	0	23.0	7.5	175	6.5	0.8	51	50
128	9439F	LW2-G204	8	0	23.0	7.4	165	6.5	0.4	43	40
131	9438F	LW2-G199	8	0	23.1	7.2	175	6.6	0.6	60	50
146	9435F	LW2-G207	8	0	23.1	7.5	165	6.6	2.0	43	40
160	9437F	LW2-G198	8	0	23.2	7.6	165	6.6	0.5	43	40
26	9443F	LW2-G155	8	1	23.0	6.6					
31	9442F	LW2-G234	8	1	23.0	6.8					
37	9450F	LW2-G123	8	1	23.0	6.4					
39	9436F	LW2-G209	8	1	23.0	6.5					
48	9444F	LW2-G166	8	1	23.0	6.6					
66	9452F	LW2-G247	8	1	23.0	6.9					
73	9448F	LW2-G157	8	1	23.1	6.8					
74	9445F	LW2-G163	8	1	23.1	6.5					
75	9453F	LW2-G254	8	1	23.1	6.7					
84	9446F	LW2-G161	8	1	23.1	6.4					
96	9440F	LW2-G202	8	1	23.0	6.6					
99	9449F	LW2-G038	8	1	23.0	6.3					
104	9454F	Control	8	1	22.9	6.4					
114	9447F	LW2-G160	8	1	22.9	6.9					
117	9441F	LW2-G231	8	1	23.0	6.7					
124	9451F	LW2-G244	8	1	22.9	6.8					
128	9439F	LW2-G204	8	1	22.9	7.0					
131	9438F	LW2-G199	8	1	23.0	6.8					
146	9435F	LW2-G207	8	1	23.0	6.8					
160	9437F	LW2-G198	8	1	23.1	6.7					
26	9443F	LW2-G155	8	2	22.4	6.6					
31	9442F	LW2-G234	8	2	22.4	6.8					
37	9450F	LW2-G123	8	2	22.4	6.4					
39	9436F	LW2-G209	8	2	22.4	6.4					
48	9444F	LW2-G166	8	2	22.4	6.1					
66	9452F	LW2-G247	8	2	22.4	6.2					
73	9448F	LW2-G157	8	2	22.4	6.3					
74	9445F	LW2-G163	8	2	22.4	6.3					
75	9453F	LW2-G254	8	2	22.4	6.4					

ANC07520
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84	9446F	LW2-G161	8	2	22.4	6.2								
96	9440F	LW2-G202	8	2	22.3	6.9								
99	9449F	LW2-G038	8	2	22.2	6.6								
104	9454F	Control	8	2	22.2	6.5								
114	9447F	LW2-G160	8	2	22.2	6.6								
117	9441F	LW2-G231	8	2	22.2	6.4								
124	9451F	LW2-G244	8	2	22.2	6.5								
128	9439F	LW2-G204	8	2	22.2	6.3								
131	9438F	LW2-G199	8	2	22.2	6.2								
146	9435F	LW2-G207	8	2	22.4	6.4								
160	9437F	LW2-G198	8	2	22.6	6.7								
26	9443F	LW2-G155	8	3	22.6	6.7		6.7						
31	9442F	LW2-G234	8	3	22.7	6.1		6.7						
37	9450F	LW2-G123	8	3	22.6	6.0		6.6						
39	9436F	LW2-G209	8	3	22.6	6.0		6.6						
48	9444F	LW2-G166	8	3	22.5	6.1		6.7						
66	9452F	LW2-G247	8	3	22.6	5.9		6.6						
73	9448F	LW2-G157	8	3	22.5	5.7		6.7						
74	9445F	LW2-G163	8	3	22.5	6.4		6.7						
75	9453F	LW2-G254	8	3	22.6	6.3		6.7						
84	9446F	LW2-G161	8	3	22.6	6.2		6.7						
96	9440F	LW2-G202	8	3	22.6	6.8		6.7						
99	9449F	LW2-G038	8	3	22.5	5.9		6.6						
104	9454F	Control	8	3	22.5	6.3		6.7						
114	9447F	LW2-G160	8	3	22.5	6.5		6.7						
117	9441F	LW2-G231	8	3	22.5	6.0		6.7						
124	9451F	LW2-G244	8	3	22.5	5.7		6.7						
128	9439F	LW2-G204	8	3	22.5	6.4		6.6						
131	9438F	LW2-G199	8	3	22.8	6.1		6.6						
146	9435F	LW2-G207	8	3	22.9	6.2		6.6						
160	9437F	LW2-G198	8	3	22.9	6.2		6.6						
26	9443F	LW2-G155	8	4	23.1	5.6								
31	9442F	LW2-G234	8	4	23.1	4.8								
37	9450F	LW2-G123	8	4	23.0	5.1								
39	9436F	LW2-G209	8	4	23.1	4.5								
48	9444F	LW2-G166	8	4	23.1	5.0								
66	9452F	LW2-G247	8	4	23.1	5.0								
73	9448F	LW2-G157	8	4	23.0	5.5								
74	9445F	LW2-G163	8	4	23.0	5.6								
75	9453F	LW2-G254	8	4	23.1	5.5								
84	9446F	LW2-G161	8	4	23.1	5.4								
96	9440F	LW2-G202	8	4	23.0	5.4								
99	9449F	LW2-G038	8	4	23.0	4.9								
104	9454F	Control	8	4	22.9	5.3								
114	9447F	LW2-G160	8	4	23.0	5.8								
117	9441F	LW2-G231	8	4	23.0	5.3								
124	9451F	LW2-G244	8	4	23.0	4.6								
128	9439F	LW2-G204	8	4	23.0	5.5								
131	9438F	LW2-G199	8	4	23.0	5.2								
146	9435F	LW2-G207	8	4	23.3	5.6								
160	9437F	LW2-G198	8	4	23.3	5.4								
26	9443F	LW2-G155	8	5	23.1	5.5								
31	9442F	LW2-G234	8	5	23.1	4.9								
37	9450F	LW2-G123	8	5	23.1	4.6								
39	9436F	LW2-G209	8	5	23.1	4.8								
48	9444F	LW2-G166	8	5	23.0	4.6								
66	9452F	LW2-G247	8	5	23.0	4.6								
73	9448F	LW2-G157	8	5	23.1	5.0								
74	9445F	LW2-G163	8	5	23.0	5.1								
75	9453F	LW2-G254	8	5	23.0	4.9								
84	9446F	LW2-G161	8	5	23.1	4.9								
96	9440F	LW2-G202	8	5	23.0	4.7								
99	9449F	LW2-G038	8	5	23.0	5.0								
104	9454F	Control	8	5	22.9	4.9								
114	9447F	LW2-G160	8	5	22.9	5.2								
117	9441F	LW2-G231	8	5	23.0	5.1								
124	9451F	LW2-G244	8	5	22.9	4.1								
128	9439F	LW2-G204	8	5	22.9	5.0								
131	9438F	LW2-G199	8	5	23.0	4.9								
146	9435F	LW2-G207	8	5	23.2	5.4								
160	9437F	LW2-G198	8	5	23.2	5.2								
26	9443F	LW2-G155	8	6	22.8	6.5								
31	9442F	LW2-G234	8	6	22.8	6.4								
37	9450F	LW2-G123	8	6	22.8	6.0								
39	9436F	LW2-G209	8	6	22.8	6.1								
48	9444F	LW2-G166	8	6	22.7	6.1								
66	9452F	LW2-G247	8	6	22.8	6.2								
73	9448F	LW2-G157	8	6	22.7	6.3								
74	9445F	LW2-G163	8	6	22.7	6.7								

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75	9453F	LW2-G254	8	6	22.8	6.3								
84	9446F	LW2-G161	8	6	22.8	6.1								
96	9440F	LW2-G202	8	6	22.8	6.1								
99	9449F	LW2-G038	8	6	22.7	6.3								
104	9454F	Control	8	6	22.7	5.6								
114	9447F	LW2-G160	8	6	22.7	6.4								
117	9441F	LW2-G231	8	6	22.6	6.7								
124	9451F	LW2-G244	8	6	22.6	6.3								
128	9439F	LW2-G204	8	6	22.6	6.5								
131	9438F	LW2-G199	8	6	22.9	6.3								
146	9435F	LW2-G207	8	6	22.9	6.3								
160	9437F	LW2-G198	8	6	23.0	6.7								
26	9443F	LW2-G155	8	7	22.7	5.2								
31	9442F	LW2-G234	8	7	22.7	5.2								
37	9450F	LW2-G123	8	7	22.7	5.3								
39	9436F	LW2-G209	8	7	22.7	5.5								
48	9444F	LW2-G166	8	7	22.7	4.6								
66	9452F	LW2-G247	8	7	22.7	5.2								
73	9448F	LW2-G157	8	7	22.8	5.5								
74	9445F	LW2-G163	8	7	22.8	5.2								
75	9453F	LW2-G254	8	7	22.8	5.4								
84	9446F	LW2-G161	8	7	22.8	5.1								
96	9440F	LW2-G202	8	7	22.7	4.8								
99	9449F	LW2-G038	8	7	22.7	5.0								
104	9454F	Control	8	7	22.7	4.2								
114	9447F	LW2-G160	8	7	22.7	5.3								
117	9441F	LW2-G231	8	7	22.7	5.4								
124	9451F	LW2-G244	8	7	22.7	5.3								
128	9439F	LW2-G204	8	7	22.7	5.2								
131	9438F	LW2-G199	8	7	22.6	5.1								
146	9435F	LW2-G207	8	7	22.8	5.3								
160	9437F	LW2-G198	8	7	22.9	5.5								
26	9443F	LW2-G155	8	8	22.4	6.0								
31	9442F	LW2-G234	8	8	22.4	6.0								
37	9450F	LW2-G123	8	8	22.4	5.6								
39	9436F	LW2-G209	8	8	22.4	5.8								
48	9444F	LW2-G166	8	8	22.4	5.6								
66	9452F	LW2-G247	8	8	22.5	5.6								
73	9448F	LW2-G157	8	8	22.4	5.8								
74	9445F	LW2-G163	8	8	22.4	6.4								
75	9453F	LW2-G254	8	8	22.4	6.0								
84	9446F	LW2-G161	8	8	22.5	5.4								
96	9440F	LW2-G202	8	8	22.4	5.2								
99	9449F	LW2-G038	8	8	22.3	5.4								
104	9454F	Control	8	8	22.3	4.0								
114	9447F	LW2-G160	8	8	22.3	4.3								
117	9441F	LW2-G231	8	8	22.4	5.4								
124	9451F	LW2-G244	8	8	22.4	5.0								
128	9439F	LW2-G204	8	8	22.4	5.3								
131	9438F	LW2-G199	8	8	22.6	5.2								
146	9435F	LW2-G207	8	8	22.6	5.5								
160	9437F	LW2-G198	8	8	22.8	4.6								
26	9443F	LW2-G155	8	9	22.7	5.1								
31	9442F	LW2-G234	8	9	22.7	5.6								
37	9450F	LW2-G123	8	9	22.7	5.4								
39	9436F	LW2-G209	8	9	22.7	5.6								
48	9444F	LW2-G166	8	9	22.6	5.7								
66	9452F	LW2-G247	8	9	22.7	5.7								
73	9448F	LW2-G157	8	9	22.7	5.5								
74	9445F	LW2-G163	8	9	22.6	6.0								
75	9453F	LW2-G254	8	9	22.7	5.7								
84	9446F	LW2-G161	8	9	22.7	5.1								
96	9440F	LW2-G202	8	9	22.6	4.7								
99	9449F	LW2-G038	8	9	22.6	5.4								
104	9454F	Control	8	9	22.6	4.2								
114	9447F	LW2-G160	8	9	22.6	5.2								
117	9441F	LW2-G231	8	9	22.6	5.1								
124	9451F	LW2-G244	8	9	22.6	5.6								
128	9439F	LW2-G204	8	9	22.5	5.2								
131	9438F	LW2-G199	8	9	22.8	5.6								
146	9435F	LW2-G207	8	9	22.9	5.7								
160	9437F	LW2-G198	8	9	23.0	5.8								
26	9443F	LW2-G155	8	10	22.8	6.7	165	6.6	0.6	43	50			
31	9442F	LW2-G234	8	10	22.9	6.7	165	6.6	0.4	43	40			
37	9450F	LW2-G123	8	10	22.9	6.8	165	6.8	0.5	34	50			
39	9436F	LW2-G209	8	10	22.9	6.6	165	6.7	0.3	43	40			
48	9444F	LW2-G166	8	10	22.9	6.5	165	6.7	0.5	34	40			
66	9452F	LW2-G247	8	10	23.0	6.6	165	6.7	0.3	43	40			
73	9448F	LW2-G157	8	10	22.9	6.8	165	6.7	0.6	43	40			

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74	9445F	LW2-G163	8	10	22.9	6.5	165	6.7	0.4	43	50			
75	9453F	LW2-G254	8	10	22.9	6.5	165	6.7	0.4	43	40			
84	9446F	LW2-G161	8	10	22.9	6.1	165	6.7	0.5	43	50			
96	9440F	LW2-G202	8	10	22.9	6.6	165	6.6	0.7	43	50			
99	9449F	LW2-G038	8	10	22.9	5.9	165	6.6	0.4	43	40			
104	9454F	Control	8	10	22.9	6.4	170	6.7	0.5	34	50			
114	9447F	LW2-G160	8	10	22.9	6.6	165	6.6	0.7	43	40			
117	9441F	LW2-G231	8	10	22.9	6.6	165	6.6	0.5	43	40			
124	9451F	LW2-G244	8	10	22.9	6.6	165	6.6	0.6	34	40			
128	9439F	LW2-G204	8	10	22.9	6.6	165	6.6	0.5	43	50			
131	9438F	LW2-G199	8	10	23.0	6.5	165	6.6	0.5	43	40			
146	9435F	LW2-G207	8	10	23.1	6.8	165	6.6	0.9	34	50			
160	9437F	LW2-G198	8	10	23.1	6.6	165	6.6	0.4	43	50			
				Mean	22.8	6.0	168	6.6	---	44	44		---	---
				SD	0.3	0.8	12	0.1	---	6	5		---	---
				n	220	220	40	60	40	40	40		19	19
				Min	22.2	4.0	160	6.5	0.1	34	40		1.2	5.6
				Max	23.3	7.7	240	6.8	2.0	60	50		9.3	6.7

ANC07523
BZTO104(e)007523

Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or
dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

INITIAL WEIGHT

pan #	tare wt (mg)	final wt (mg)	wt count	avg. wt/ organism
1	29.649	30.313	20	0.033
2	29.351	30.035	20	0.034
3	29.770	30.326	20	0.028
4	28.930	29.616	20	0.034
5	31.044	31.690	20	0.032

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
1	105	9454F	Control	1		10	9	1	90.0	10.0	28.146	9	30.638	2.49	0.28						
2	20	9454F	Control	2		10	9	1	90.0	10.0	26.937	9	29.377	2.44	0.27						
3	93	9454F	Control	3		10	9	1	90.0	10.0	29.859	9	31.548	1.69	0.19						
4	26	9454F	Control	4		10	10	0	100.0	0.0	29.242	10	31.629	2.39	0.24						
5	62	9454F	Control	5		10	10	0	100.0	0.0	30.443	10	33.250	2.81	0.28	Mean	9.5	0.5	95.0	5.0	0.26
6	56	9454F	Control	6		10	10	0	100.0	0.0	30.508	10	33.144	2.64	0.26	SD	0.5	0.5	5.3	5.3	0.03
7	47	9454F	Control	7		10	9	1	90.0	10.0	28.759	9	31.147	2.39	0.27	n	8	8	8	8	8
8	120	9454F	Control	8	wq replicate	10	10	0	100.0	0.0	30.039	10	32.862	2.82	0.28						
9	149	9456F	LW2-G301	1		10	10	0	100.0	0.0	30.147	10	32.169	2.02	0.20						
10	5	9456F	LW2-G301	2		10	9	1	90.0	10.0	29.419	9	31.239	1.82	0.20						
11	134	9456F	LW2-G301	3		10	10	0	100.0	0.0	29.155	10	31.682	2.53	0.25						
12	49	9456F	LW2-G301	4		10	10	0	100.0	0.0	29.357	10	31.759	2.40	0.24						
13	28	9456F	LW2-G301	5		10	10	0	100.0	0.0	28.995	10	31.057	2.06	0.21	Mean	9.3	0.8	92.5	7.5	0.24
14	139	9456F	LW2-G301	6		10	7	3	70.0	30.0	29.005	7	31.250	2.25	0.32	SD	1.2	1.2	11.6	11.6	0.04
15	114	9456F	LW2-G301	7		10	10	0	100.0	0.0	29.302	10	31.658	2.36	0.24	n	8	8	8	8	8
16	135	9456F	LW2-G301	8	wq replicate	10	8	2	80.0	20.0	28.485	8	30.256	1.77	0.22						
17	19	9457F	LW2-G302	1		10	1	9	10.0	90.0	28.987	1	29.236	0.25	0.25						
18	6	9457F	LW2-G302	2		10	0	10	0.0	100.0	28.614	0									
19	159	9457F	LW2-G302	3		10	0	10	0.0	100.0	28.385	0									
20	12	9457F	LW2-G302	4		10	0	10	0.0	100.0	29.505	0									
21	127	9457F	LW2-G302	5		10	0	10	0.0	100.0	29.508	0				Mean	0.1	9.9	1.3	98.8	0.25
22	33	9457F	LW2-G302	6		10	0	10	0.0	100.0	29.022	0				SD	0.4	0.4	3.5	3.5	
23	72	9457F	LW2-G302	7		10	0	10	0.0	100.0	28.637	0				n	8	8	8	8	1
24	146	9457F	LW2-G302	8	wq replicate	10	0	10	0.0	100.0	30.628	0									
25	113	9458F	LW2-G308	1		10	7	3	70.0	30.0	29.844	7	31.683	1.84	0.26						
26	78	9458F	LW2-G308	2		10	8	2	80.0	20.0	29.292	8	31.190	1.90	0.24						
27	83	9458F	LW2-G308	3		10	8	2	80.0	20.0	27.960	8	29.401	1.44	0.18						
28	45	9458F	LW2-G308	4		10	9	1	90.0	10.0	26.733	9	28.414	1.68	0.19						
29	111	9458F	LW2-G308	5		10	9	1	90.0	10.0	26.794	9	29.137	2.34	0.26	Mean	7.9	2.1	78.8	21.3	0.23
30	145	9458F	LW2-G308	6		10	7	3	70.0	30.0	28.049	7	29.815	1.77	0.25	SD	0.8	0.8	8.3	8.3	0.04
31	84	9458F	LW2-G308	7		10	8	2	80.0	20.0	30.147	8	32.111	1.96	0.25	n	8	8	8	8	8
32	132	9458F	LW2-G308	8	wq replicate	10	7	3	70.0	30.0	28.873	7	30.182	1.31	0.19						

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Test No.: 686-15

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)			SURV	MORT	PSURV	PMORT	WT
33	109	9459F	LW2-G288	1		10	0	10	0.0	100.0	29.102	0										
34	9	9459F	LW2-G288	2		10	0	10	0.0	100.0	28.750	0										
35	14	9459F	LW2-G288	3		10	0	10	0.0	100.0	27.387	0										
36	160	9459F	LW2-G288	4		10	0	10	0.0	100.0	27.857	0										
37	112	9459F	LW2-G288	5		10	0	10	0.0	100.0	28.630	0					Mean	0.0	10.0	0.0	100.0	
38	32	9459F	LW2-G288	6		10	0	10	0.0	100.0	29.965	0					SD	0.0	0.0	0.0	0.0	
39	167	9459F	LW2-G288	7		10	0	10	0.0	100.0	30.451	0					n	8	8	8	8	0
40	87	9459F	LW2-G288	8	wq replicate	10	0	10	0.0	100.0	30.735	0										
41	130	9460F	LW2-G292	1		10	5	5	50.0	50.0	31.237	5	32.942	1.71	0.34							
42	67	9460F	LW2-G292	2		10	10	0	100.0	0.0	27.152	10	29.882	2.73	0.27							
43	129	9460F	LW2-G292	3		10	7	3	70.0	30.0	29.353	7	31.830	2.48	0.35							
44	76	9460F	LW2-G292	4		10	9	1	90.0	10.0	28.626	9	31.537	2.91	0.32							
45	164	9460F	LW2-G292	5		11	11	0	100.0	0.0	30.898	11	33.189	2.29	0.21		Mean	8.9	1.3	87.5	12.5	0.27
46	91	9460F	LW2-G292	6		10	9	1	90.0	10.0	29.480	9	31.563	2.08	0.23		SD	2.0	1.8	18.3	18.3	0.06
47	158	9460F	LW2-G292	7		10	10	0	100.0	0.0	27.949	10	29.832	1.88	0.19		n	8	8	8	8	8
48	152	9460F	LW2-G292	8	wq replicate	10	10	0	100.0	0.0	30.435	10	33.127	2.69	0.27							
49	142	9461F	LW2-G298	1		10	0	10	0.0	100.0	30.829	0										
50	44	9461F	LW2-G298	2		10	0	10	0.0	100.0	30.224	0										
51	46	9461F	LW2-G298	3		10	0	10	0.0	100.0	29.427	0										
52	122	9461F	LW2-G298	4		10	0	10	0.0	100.0	29.274	0										
53	58	9461F	LW2-G298	5		10	0	10	0.0	100.0	30.186	0					Mean	0.0	10.0	0.0	100.0	
54	23	9461F	LW2-G298	6		10	0	10	0.0	100.0	30.835	0					SD	0.0	0.0	0.0	0.0	
55	73	9461F	LW2-G298	7		10	0	10	0.0	100.0	30.588	0					n	8	8	8	8	0
56	90	9461F	LW2-G298	8	wq replicate	10	0	10	0.0	100.0	29.957	0										
57	2	9462F	LW2-G315	1		10	10	0	100.0	0.0	29.748	10	31.876	2.13	0.21							
58	27	9462F	LW2-G315	2		10	10	0	100.0	0.0	28.856	10	30.540	1.68	0.17							
59	38	9462F	LW2-G315	3		10	9	1	90.0	10.0	28.346	9	30.410	2.06	0.23							
60	150	9462F	LW2-G315	4		10	6	4	60.0	40.0	31.162	6	32.763	1.60	0.27							
61	162	9462F	LW2-G315	5		10	10	0	100.0	0.0	28.746	10	31.118	2.37	0.24		Mean	9.3	0.8	92.5	7.5	0.23
62	108	9462F	LW2-G315	6		10	9	1	90.0	10.0	30.056	9	32.360	2.30	0.26		SD	1.4	1.4	13.9	13.9	0.03
63	70	9462F	LW2-G315	7		10	10	0	100.0	0.0	29.456	10	31.396	1.94	0.19		n	8	8	8	8	8
64	53	9462F	LW2-G315	8	wq replicate	10	10	0	100.0	0.0	31.203	10	33.604	2.40	0.24							
65	52	9463F	LW2-G316	1		10	10	0	100.0	0.0	27.854	10	30.635	2.78	0.28							
66	57	9463F	LW2-G316	2		10	10	0	100.0	0.0	29.387	10	32.506	3.12	0.31							
67	77	9463F	LW2-G316	3		10	10	0	100.0	0.0	28.902	10	31.861	2.96	0.30							
68	165	9463F	LW2-G316	4		10	8	2	80.0	20.0	29.791	8	31.965	2.17	0.27							
69	156	9463F	LW2-G316	5		10	9	1	90.0	10.0	28.206	9	30.785	2.58	0.29		Mean	9.6	0.4	96.3	3.8	0.28
70	104	9463F	LW2-G316	6		10	10	0	100.0	0.0	29.221	10	31.660	2.44	0.24		SD	0.7	0.7	7.4	7.4	0.02
71	55	9463F	LW2-G316	7		10	10	0	100.0	0.0	28.250	10	30.753	2.50	0.25		n	8	8	8	8	8
72	123	9463F	LW2-G316	8	wq replicate	10	10	0	100.0	0.0	28.128	10	30.948	2.82	0.28							

ANC07525
BZTO104(e)007525

Test No.: 686-15

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)			SURV	MORT	PSURV	PMORT	WT
73	31	9464F	LW2-G260	1		10	9	1	90.0	10.0	28.768	9	30.768	2.00	0.22							
74	138	9464F	LW2-G260	2		10	10	0	100.0	0.0	28.466	10	31.680	3.21	0.32							
75	96	9464F	LW2-G260	3		10	10	0	100.0	0.0	27.244	10	30.829	3.59	0.36							
76	21	9464F	LW2-G260	4		10	10	0	100.0	0.0	31.009	10	34.077	3.07	0.31							
77	136	9464F	LW2-G260	5		10	9	1	90.0	10.0	30.238	9	33.300	3.06	0.34		Mean	9.5	0.5	95.0	5.0	0.30
78	15	9464F	LW2-G260	6		10	10	0	100.0	0.0	28.734	10	31.148	2.41	0.24		SD	0.8	0.8	7.6	7.6	0.05
79	75	9464F	LW2-G260	7		10	8	2	80.0	20.0	29.106	8	31.385	2.28	0.28		n	8	8	8	8	8
80	13	9464F	LW2-G260	8	wq replicate	10	10	0	100.0	0.0	29.495	10	32.810	3.32	0.33							
81	64	9465F	LW2-G268	1		10	10	0	100.0	0.0	29.367	10	31.392	2.03	0.20							
82	8	9465F	LW2-G268	2		10	10	0	100.0	0.0	28.940	10	30.854	1.91	0.19							
83	4	9465F	LW2-G268	3		10	9	1	90.0	10.0	28.690	9	30.712	2.02	0.22							
84	95	9465F	LW2-G268	4		10	10	0	100.0	0.0	28.996	10	31.382	2.39	0.24							
85	161	9465F	LW2-G268	5		10	9	1	90.0	10.0	29.142	9	31.096	1.95	0.22		Mean	9.3	0.8	92.5	7.5	0.21
86	59	9465F	LW2-G268	6		10	9	1	90.0	10.0	29.818	9	31.656	1.84	0.20		SD	0.7	0.7	7.1	7.1	0.01
87	140	9465F	LW2-G268	7		10	8	2	80.0	20.0	30.087	8	31.739	1.65	0.21		n	8	8	8	8	8
88	11	9465F	LW2-G268	8	wq replicate	10	9	1	90.0	10.0	30.141	9	32.036	1.90	0.21							
89	82	9466F	LW2-G318	1		10	10	0	100.0	0.0	29.314	10	32.016	2.70	0.27							
90	144	9466F	LW2-G318	2		10	10	0	100.0	0.0	30.835	10	33.376	2.54	0.25							
91	7	9466F	LW2-G318	3		10	10	0	100.0	0.0	29.013	10	30.890	1.88	0.19							
92	143	9466F	LW2-G318	4		10	9	1	90.0	10.0	28.328	9	29.945	1.62	0.18							
93	124	9466F	LW2-G318	5		10	10	0	100.0	0.0	29.520	10	31.698	2.18	0.22		Mean	9.9	0.1	98.8	1.3	0.24
94	43	9466F	LW2-G318	6		10	10	0	100.0	0.0	28.939	10	31.434	2.50	0.25		SD	0.4	0.4	3.5	3.5	0.04
95	48	9466F	LW2-G318	7		10	10	0	100.0	0.0	28.816	10	31.347	2.53	0.25		n	8	8	8	8	8
96	16	9466F	LW2-G318	8	wq replicate	10	10	0	100.0	0.0	29.143	10	31.868	2.73	0.27							
97	99	9467F	LW2-G320	1		10	10	0	100.0	0.0	28.889	10	30.637	1.75	0.17							
98	157	9467F	LW2-G320	2		10	10	0	100.0	0.0	28.308	10	30.551	2.24	0.22							
99	24	9467F	LW2-G320	3		10	10	0	100.0	0.0	28.239	10	30.172	1.93	0.19							
100	89	9467F	LW2-G320	4		10	9	1	90.0	10.0	30.015	9	31.661	1.65	0.18							
101	148	9467F	LW2-G320	5		10	8	2	80.0	20.0	30.140	8	32.026	1.89	0.24		Mean	9.4	0.6	93.8	6.3	0.22
102	29	9467F	LW2-G320	6		10	9	1	90.0	10.0	29.992	9	32.349	2.36	0.26		SD	0.7	0.7	7.4	7.4	0.04
103	154	9467F	LW2-G320	7		10	9	1	90.0	10.0	29.084	9	31.102	2.02	0.22		n	8	8	8	8	8
104	137	9467F	LW2-G320	8	wq replicate	10	10	0	100.0	0.0	29.235	10	32.045	2.81	0.28							
105	81	9468F	LW2-G323	1		10	9	1	90.0	10.0	29.891	9	31.892	2.00	0.22							
106	39	9468F	LW2-G323	2		10	9	1	90.0	10.0	29.698	9	32.120	2.42	0.27							
107	36	9468F	LW2-G323	3		10	10	0	100.0	0.0	30.082	10	33.188	3.11	0.31							
108	126	9468F	LW2-G323	4		10	7	3	70.0	30.0	29.633	7	31.704	2.07	0.30							
109	117	9468F	LW2-G323	5		10	9	1	90.0	10.0	29.190	9	32.018	2.83	0.31		Mean	8.8	1.3	87.5	12.5	0.29
110	102	9468F	LW2-G323	6		10	9	1	90.0	10.0	28.923	9	31.649	2.73	0.30		SD	0.9	0.9	8.9	8.9	0.03
111	153	9468F	LW2-G323	7		10	8	2	80.0	20.0	29.366	8	31.993	2.63	0.33		n	8	8	8	8	8
112	92	9468F	LW2-G323	8	wq replicate	10	9	1	90.0	10.0	28.060	9	30.454	2.39	0.27							

ANC07526
BZTO104(e)007526

Test No.: 686-15

Freshwater Sediment Test
28-day Hyalella azteca

		NAS	CLIENT								TARE	WT	DRY	TWT	WT							
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	WT (mg)	COUNT	WT (mg)	(mg)	(mg)			SURV	MORT	PSURV	PMORT	WT
113	18	9469F	LW2-G327	1		10	10	0	100.0	0.0	27.683	10	30.389	2.71	0.27							
114	86	9469F	LW2-G327	2		10	9	1	90.0	10.0	30.130	9	31.834	1.70	0.19							
115	110	9469F	LW2-G327	3		10	8	2	80.0	20.0	29.536	8	31.531	2.00	0.25							
116	155	9469F	LW2-G327	4		10	8	2	80.0	20.0	30.527	8	31.865	1.34	0.17							
117	69	9469F	LW2-G327	5		11	11	0	100.0	0.0	28.221	11	30.282	2.06	0.19		Mean	9.0	1.1	88.8	11.3	0.22
118	34	9469F	LW2-G327	6		10	9	1	90.0	10.0	29.283	9	31.159	1.88	0.21		SD	1.1	0.8	8.3	8.3	0.04
119	54	9469F	LW2-G327	7		10	9	1	90.0	10.0	28.475	9	30.849	2.37	0.26		n	8	8	8	8	8
120	74	9469F	LW2-G327	8	wq replicate	10	8	2	80.0	20.0	30.465	8	32.556	2.09	0.26							
121	98	9470F	LW2-G331	1		10	9	1	90.0	10.0	28.886	9	30.370	1.48	0.16							
122	17	9470F	LW2-G331	2		10	9	1	90.0	10.0	29.946	9	32.713	2.77	0.31							
123	85	9470F	LW2-G331	3		10	10	0	100.0	0.0	31.344	10	33.774	2.43	0.24							
124	128	9470F	LW2-G331	4		10	9	1	90.0	10.0	28.818	9	31.590	2.77	0.31							
125	37	9470F	LW2-G331	5		10	10	0	100.0	0.0	28.591	10	31.109	2.52	0.25		Mean	9.3	0.8	92.5	7.5	0.28
126	35	9470F	LW2-G331	6		10	9	1	90.0	10.0	28.340	9	30.680	2.34	0.26		SD	0.5	0.5	4.6	4.6	0.06
127	141	9470F	LW2-G331	7		10	9	1	90.0	10.0	29.512	9	32.411	2.90	0.32		n	8	8	8	8	8
128	163	9470F	LW2-G331	8	wq replicate	10	9	1	90.0	10.0	29.493	9	32.785	3.29	0.37							
129	100	9471F	LW2-G333	1		10	10	0	100.0	0.0	29.221	10	31.776	2.56	0.26							
130	121	9471F	LW2-G333	2		11	11	0	100.0	0.0	29.519	11	32.251	2.73	0.25							
131	106	9471F	LW2-G333	3		10	10	0	100.0	0.0	28.137	10	31.242	3.11	0.31							
132	41	9471F	LW2-G333	4		10	10	0	100.0	0.0	30.252	10	32.631	2.38	0.24							
133	116	9471F	LW2-G333	5		10	9	1	90.0	10.0	29.539	9	32.355	2.82	0.31		Mean	9.9	0.3	97.5	2.5	0.27
134	103	9471F	LW2-G333	6		10	10	0	100.0	0.0	29.031	10	31.699	2.67	0.27		SD	0.6	0.5	4.6	4.6	0.04
135	63	9471F	LW2-G333	7		10	9	1	90.0	10.0	30.753	9	33.526	2.77	0.31		n	8	8	8	8	8
136	25	9471F	LW2-G333	8	wq replicate	10	10	0	100.0	0.0	28.502	10	30.695	2.19	0.22							
137	88	9472F	LW2-G335	1		10	9	1	90.0	10.0	28.574	9	30.752	2.18	0.24							
138	3	9472F	LW2-G335	2		10	8	2	80.0	20.0	28.639	8	30.493	1.85	0.23							
139	50	9472F	LW2-G335	3		10	10	0	100.0	0.0	32.474	10	35.150	2.68	0.27							
140	133	9472F	LW2-G335	4		10	9	1	90.0	10.0	29.762	9	32.316	2.55	0.28							
141	65	9472F	LW2-G335	5		10	8	2	80.0	20.0	29.386	8	31.129	1.74	0.22		Mean	9.1	0.9	91.3	8.8	0.23
142	125	9472F	LW2-G335	6		10	10	0	100.0	0.0	30.327	10	31.933	1.61	0.16		SD	0.8	0.8	8.3	8.3	0.04
143	68	9472F	LW2-G335	7		10	10	0	100.0	0.0	28.451	10	30.738	2.29	0.23		n	8	8	8	8	8
144	60	9472F	LW2-G335	8	wq replicate	10	9	1	90.0	10.0	28.019	9	30.029	2.01	0.22							
145	80	9473F	LW2-G336	1		10	9	1	90.0	10.0	28.115	9	30.331	2.22	0.25							
146	10	9473F	LW2-G336	2		10	10	0	100.0	0.0	27.533	10	29.535	2.00	0.20							
147	101	9473F	LW2-G336	3		10	10	0	100.0	0.0	29.490	10	31.262	1.77	0.18							
148	131	9473F	LW2-G336	4		10	9	1	90.0	10.0	28.243	9	30.190	1.95	0.22							
149	115	9473F	LW2-G336	5		10	10	0	100.0	0.0	28.772	10	30.346	1.57	0.16		Mean	9.3	0.8	92.5	7.5	0.23
150	30	9473F	LW2-G336	6		10	9	1	90.0	10.0	28.450	8	30.646	2.20	0.27		SD	0.7	0.7	7.1	7.1	0.05
151	94	9473F	LW2-G336	7		10	9	1	90.0	10.0	29.200	9	31.577	2.38	0.26		n	8	8	8	8	8
152	40	9473F	LW2-G336	8	wq replicate	10	8	2	80.0	20.0	30.132	8	32.317	2.19	0.27							

ANC07527
BZTO104(e)007527

Test No.: 686-15

Freshwater Sediment Test
28-day Hyalella azteca

		NAS	CLIENT									TARE	WT	DRY	TWT	WT						
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT		WT (mg)	COUNT	WT (mg)	(mg)	(mg)			SURV	MORT	PSURV	PMORT	WT
153	42	9474F	LW2-G348	1		10	10	0	100.0	0.0		31.053	10	33.574	2.52	0.25							
154	166	9474F	LW2-G348	2		10	9	1	90.0	10.0		28.503	9	30.703	2.20	0.24							
155	71	9474F	LW2-G348	3		10	9	1	90.0	10.0		27.594	9	30.184	2.59	0.29							
156	119	9474F	LW2-G348	4		10	9	1	90.0	10.0		27.330	9	29.967	2.64	0.29							
157	51	9474F	LW2-G348	5		10	10	0	100.0	0.0		29.721	10	31.866	2.15	0.21		Mean	9.1	0.9	91.3	8.8	0.26
158	147	9474F	LW2-G348	6		10	8	2	80.0	20.0		29.657	8	32.030	2.37	0.30		SD	0.8	0.8	8.3	8.3	0.03
159	79	9474F	LW2-G348	7		10	10	0	100.0	0.0		31.254	10	33.564	2.31	0.23		n	8	8	8	8	8
160	118	9474F	LW2-G348	8	wq replicate	10	8	2	80.0	20.0		29.047	8	31.205	2.16	0.27							
161	1	9475F	LW2-G350	1		10	10	0	100.0	0.0		28.282	10	30.130	1.85	0.18							
162	107	9475F	LW2-G350	2		10	9	1	90.0	10.0		29.735	9	31.782	2.05	0.23							
163	168	9475F	LW2-G350	3		10	9	1	90.0	10.0		28.443	9	30.501	2.06	0.23							
164	97	9475F	LW2-G350	4		10	7	3	70.0	30.0		30.677	7	32.147	1.47	0.21							
165	66	9475F	LW2-G350	5		10	10	0	100.0	0.0		28.671	10	31.136	2.47	0.25		Mean	9.3	0.8	92.5	7.5	0.23
166	22	9475F	LW2-G350	6		10	10	0	100.0	0.0		31.418	10	34.246	2.83	0.28		SD	1.0	1.0	10.4	10.4	0.03
167	61	9475F	LW2-G350	7		10	10	0	100.0	0.0		30.669	10	33.198	2.53	0.25		n	8	8	8	8	8
168	151	9475F	LW2-G350	8	wq replicate	10	9	1	90.0	10.0		28.837	9	30.949	2.11	0.23							
	Note: Beaker #30 lost one animal in transfer to weigh pan																						

ANC07528
BZTO104(e)007528

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
BULK SEDIMENT POREWATER														
	9454F	Control											9.6	6.5
	9456F	LW2-G301											5.5	6.4
	9457F	LW2-G302											7.0	6.4
	9458F	LW2-G308											5.3	6.3
	9459F	LW2-G288											---*	---*
	9460F	LW2-G292											5.4	6.4
	9461F	LW2-G298											11.8	5.9
	9462F	LW2-G315											6.1	6.2
	9463F	LW2-G316											1.6	6.4
	9464F	LW2-G260											1.4	6.2
	9465F	LW2-G268											1.4	6.5
	9466F	LW2-G318											4.8	6.5
	9467F	LW2-G320											16.1	6.2
	9468F	LW2-G323											1.8	6.5
	9469F	LW2-G327											13.5	6.4
	9470F	LW2-G331											---*	---*
	9471F	LW2-G333											3.7	6.5
	9472F	LW2-G335											4.7	6.8
	9473F	LW2-G336											6.5	6.0
	9474F	LW2-G348											11.3	6.9
	9475F	LW2-G350											13.5	6.8
			* Insuficient sample for analysis											

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
TEST OVERLYING WATER														
11	9465F	LW2-G268	8	0	22.9	7.2	175	6.5	51	50	0.1			
13	9464F	LW2-G260	8	0	22.9	6.8	165	6.5	43	40	0.3			
16	9466F	LW2-G318	8	0	22.9	6.9	190	6.4	43	50	0.7			
25	9471F	LW2-G333	8	0	23.1	6.6	190	6.5	43	50	0.6			
40	9473F	LW2-G336	8	0	23.1	6.5	265	6.4	77	50	0.9			
53	9462F	LW2-G315	8	0	23.1	6.2	190	6.5	51	50	1.8			
60	9472F	LW2-G335	8	0	22.9	6.6	170	6.5	43	40	0.4			
74	9469F	LW2-G327	8	0	22.9	6.8	190	6.4	43	60	4.8			
87	9459F	LW2-G288	8	0	22.9	6.9	280	6.4	43	40	2.7			
90	9461F	LW2-G298	8	0	22.9	6.7	255	6.4	51	40	2.7			
92	9468F	LW2-G323	8	0	22.9	6.8	170	6.4	43	40	1.0			
118	9474F	LW2-G348	8	0	22.8	6.7	390	6.5	43	60	1.0			
120	9454F	Control	8	0	22.8	6.8	240	6.6	43	50	0.2			
123	9463F	LW2-G316	8	0	22.8	7.2	170	6.6	43	40	0.2			
132	9458F	LW2-G308	8	0	22.8	6.8	175	6.5	43	50	1.0			
135	9456F	LW2-G301	8	0	22.9	6.9	170	6.4	34	50	1.1			
137	9467F	LW2-G320	8	0	22.9	6.2	205	6.3	43	50	2.3			
146	9457F	LW2-G302	8	0	22.8	6.6	175	6.4	51	50	1.8			
151	9475F	LW2-G350	8	0	22.8	6.6	300	6.3	43	50	2.1			
152	9460F	LW2-G292	8	0	22.8	6.7	175	6.3	43	50	1.3			
163	9470F	LW2-G331	8	0	22.7	6.8	165	6.3	34	50	0.3			
11	9465F	LW2-G268	8	1	22.8									
13	9464F	LW2-G260	8	1	22.6									
16	9466F	LW2-G318	8	1	22.8									
25	9471F	LW2-G333	8	1	22.8									
40	9473F	LW2-G336	8	1	22.8									
53	9462F	LW2-G315	8	1	22.4									
60	9472F	LW2-G335	8	1	22.6									
74	9469F	LW2-G327	8	1	22.5									
87	9459F	LW2-G288	8	1	22.5									
90	9461F	LW2-G298	8	1	22.5									
92	9468F	LW2-G323	8	1	22.4									
118	9474F	LW2-G348	8	1	22.4									
120	9454F	Control	8	1	22.5									
123	9463F	LW2-G316	8	1	22.5									
132	9458F	LW2-G308	8	1	22.4									
135	9456F	LW2-G301	8	1	22.5									
137	9467F	LW2-G320	8	1	22.4									
146	9457F	LW2-G302	8	1	22.4									
151	9475F	LW2-G350	8	1	22.4									
152	9460F	LW2-G292	8	1	22.4									
163	9470F	LW2-G331	8	1	22.4									

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
11	9465F	LW2-G268	8	2	22.9									
13	9464F	LW2-G260	8	2	22.7									
16	9466F	LW2-G318	8	2	22.9									
25	9471F	LW2-G333	8	2	22.9									
40	9473F	LW2-G336	8	2	22.9									
53	9462F	LW2-G315	8	2	22.5									
60	9472F	LW2-G335	8	2	22.7									
74	9469F	LW2-G327	8	2	22.6									
87	9459F	LW2-G288	8	2	22.5									
90	9461F	LW2-G298	8	2	22.6									
92	9468F	LW2-G323	8	2	22.4									
118	9474F	LW2-G348	8	2	22.5									
120	9454F	Control	8	2	22.6									
123	9463F	LW2-G316	8	2	22.5									
132	9458F	LW2-G308	8	2	22.6									
135	9456F	LW2-G301	8	2	22.6									
137	9467F	LW2-G320	8	2	22.6									
146	9457F	LW2-G302	8	2	22.7									
151	9475F	LW2-G350	8	2	22.7									
152	9460F	LW2-G292	8	2	22.5									
163	9470F	LW2-G331	8	2	22.5									
11	9465F	LW2-G268	8	3	23.2	7.4		6.6						
13	9464F	LW2-G260	8	3	23.1	7.3		6.6						
16	9466F	LW2-G318	8	3	23.1	7.2		6.6						
25	9471F	LW2-G333	8	3	23.2	7.3		6.6						
40	9473F	LW2-G336	8	3	23.2	7.3		6.6						
53	9462F	LW2-G315	8	3	22.9	7.1		6.6						
60	9472F	LW2-G335	8	3	23.0	7.4		6.6						
74	9469F	LW2-G327	8	3	23.0	7.1		6.6						
87	9459F	LW2-G288	8	3	22.9	6.1		6.5						
90	9461F	LW2-G298	8	3	23.0	5.8		6.4						
92	9468F	LW2-G323	8	3	22.9	7.0		6.5						
118	9474F	LW2-G348	8	3	22.9	7.3		6.6						
120	9454F	Control	8	3	22.9	7.0		6.6						
123	9463F	LW2-G316	8	3	22.9	7.4		6.7						
132	9458F	LW2-G308	8	3	22.9	7.1		6.6						
135	9456F	LW2-G301	8	3	23.0	7.1		6.6						
137	9467F	LW2-G320	8	3	22.9	6.9		6.6						
146	9457F	LW2-G302	8	3	23.0	6.5		6.5						
151	9475F	LW2-G350	8	3	23.0	6.9		6.5						
152	9460F	LW2-G292	8	3	22.9	6.9		6.5						
163	9470F	LW2-G331	8	3	22.9	6.8		6.5						

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
11	9465F	LW2-G268	8	4	22.9									
13	9464F	LW2-G260	8	4	22.8									
16	9466F	LW2-G318	8	4	22.9									
25	9471F	LW2-G333	8	4	22.9									
40	9473F	LW2-G336	8	4	22.9									
53	9462F	LW2-G315	8	4	22.7									
60	9472F	LW2-G335	8	4	22.7									
74	9469F	LW2-G327	8	4	22.7									
87	9459F	LW2-G288	8	4	22.7									
90	9461F	LW2-G298	8	4	22.8									
92	9468F	LW2-G323	8	4	22.7									
118	9474F	LW2-G348	8	4	22.7									
120	9454F	Control	8	4	22.8									
123	9463F	LW2-G316	8	4	22.7									
132	9458F	LW2-G308	8	4	22.7									
135	9456F	LW2-G301	8	4	22.8									
137	9467F	LW2-G320	8	4	22.8									
146	9457F	LW2-G302	8	4	22.8									
151	9475F	LW2-G350	8	4	22.8									
152	9460F	LW2-G292	8	4	22.8									
163	9470F	LW2-G331	8	4	22.8									
11	9465F	LW2-G268	8	5	23.2	6.6		6.8						
13	9464F	LW2-G260	8	5	23.2	6.2		6.5						
16	9466F	LW2-G318	8	5	23.2	6.3		6.4						
25	9471F	LW2-G333	8	5	23.1	6.4		6.5						
40	9473F	LW2-G336	8	5	23.1	6.4		6.5						
53	9462F	LW2-G315	8	5	23.1	6.3		6.4						
60	9472F	LW2-G335	8	5	23.1	6.4		6.5						
74	9469F	LW2-G327	8	5	23.1	6.4		6.5						
87	9459F	LW2-G288	8	5	22.9	4.9		6.5						
90	9461F	LW2-G298	8	5	23.1	5.3		6.6						
92	9468F	LW2-G323	8	5	23.0	5.9		6.6						
118	9474F	LW2-G348	8	5	23.1	7.1		6.9						
120	9454F	Control	8	5	23.1	6.8		6.8						
123	9463F	LW2-G316	8	5	23.0	6.4		6.7						
132	9458F	LW2-G308	8	5	23.1	5.7		6.7						
135	9456F	LW2-G301	8	5	23.2	5.9		6.6						
137	9467F	LW2-G320	8	5	23.1	5.6		6.5						
146	9457F	LW2-G302	8	5	23.2	5.2		6.5						
151	9475F	LW2-G350	8	5	23.2	5.9		6.5						
152	9460F	LW2-G292	8	5	23.2	5.7		6.5						
163	9470F	LW2-G331	8	5	23.1	5.6		6.5						

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
11	9465F	LW2-G268	8	6	23.0									
13	9464F	LW2-G260	8	6	22.9									
16	9466F	LW2-G318	8	6	22.9									
25	9471F	LW2-G333	8	6	22.9									
40	9473F	LW2-G336	8	6	22.8									
53	9462F	LW2-G315	8	6	22.7									
60	9472F	LW2-G335	8	6	22.7									
74	9469F	LW2-G327	8	6	22.7									
87	9459F	LW2-G288	8	6	22.7									
90	9461F	LW2-G298	8	6	22.6									
92	9468F	LW2-G323	8	6	22.7									
118	9474F	LW2-G348	8	6	22.6									
120	9454F	Control	8	6	22.6									
123	9463F	LW2-G316	8	6	22.7									
132	9458F	LW2-G308	8	6	22.6									
135	9456F	LW2-G301	8	6	22.6									
137	9467F	LW2-G320	8	6	22.6									
146	9457F	LW2-G302	8	6	22.7									
151	9475F	LW2-G350	8	6	22.7									
152	9460F	LW2-G292	8	6	22.7									
163	9470F	LW2-G331	8	6	22.6									
11	9465F	LW2-G268	8	7	23.2	6.4		6.5						
13	9464F	LW2-G260	8	7	23.1	6.0		6.4						
16	9466F	LW2-G318	8	7	23.1	5.8		6.4						
25	9471F	LW2-G333	8	7	23.2	5.8		6.3						
40	9473F	LW2-G336	8	7	23.0	6.0		6.4						
53	9462F	LW2-G315	8	7	22.8	5.6		6.3						
60	9472F	LW2-G335	8	7	23.0	5.8		6.4						
74	9469F	LW2-G327	8	7	23.0	5.8		6.3						
87	9459F	LW2-G288	8	7	22.9	5.4		6.3						
90	9461F	LW2-G298	8	7	22.8	4.8		6.3						
92	9468F	LW2-G323	8	7	22.9	5.4		6.3						
118	9474F	LW2-G348	8	7	22.9	6.0		6.5						
120	9454F	Control	8	7	23.0	5.8		6.5						
123	9463F	LW2-G316	8	7	22.9	5.8		6.4						
132	9458F	LW2-G308	8	7	22.9	5.4		6.4						
135	9456F	LW2-G301	8	7	22.8	5.4		6.3						
137	9467F	LW2-G320	8	7	22.9	5.2		6.3						
146	9457F	LW2-G302	8	7	22.9	5.2		6.3						
151	9475F	LW2-G350	8	7	22.8	5.5		6.3						
152	9460F	LW2-G292	8	7	22.8	5.3		6.3						
163	9470F	LW2-G331	8	7	22.9	5.4		6.3						

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
11	9465F	LW2-G268	8	8	22.5									
13	9464F	LW2-G260	8	8	22.5									
16	9466F	LW2-G318	8	8	22.5									
25	9471F	LW2-G333	8	8	22.6									
40	9473F	LW2-G336	8	8	22.6									
53	9462F	LW2-G315	8	8	22.5									
60	9472F	LW2-G335	8	8	22.5									
74	9469F	LW2-G327	8	8	22.4									
87	9459F	LW2-G288	8	8	22.4									
90	9461F	LW2-G298	8	8	22.5									
92	9468F	LW2-G323	8	8	22.4									
118	9474F	LW2-G348	8	8	22.5									
120	9454F	Control	8	8	22.5									
123	9463F	LW2-G316	8	8	22.5									
132	9458F	LW2-G308	8	8	22.4									
135	9456F	LW2-G301	8	8	22.5									
137	9467F	LW2-G320	8	8	22.5									
146	9457F	LW2-G302	8	8	22.5									
151	9475F	LW2-G350	8	8	22.5									
152	9460F	LW2-G292	8	8	22.5									
163	9470F	LW2-G331	8	8	22.5									
11	9465F	LW2-G268	8	9	23.3									
13	9464F	LW2-G260	8	9	23.2									
16	9466F	LW2-G318	8	9	23.3									
25	9471F	LW2-G333	8	9	23.3									
40	9473F	LW2-G336	8	9	23.2									
53	9462F	LW2-G315	8	9	23.1									
60	9472F	LW2-G335	8	9	23.2									
74	9469F	LW2-G327	8	9	23.1									
87	9459F	LW2-G288	8	9	23.2									
90	9461F	LW2-G298	8	9	23.2									
92	9468F	LW2-G323	8	9	23.1									
118	9474F	LW2-G348	8	9	23.0									
120	9454F	Control	8	9	23.2									
123	9463F	LW2-G316	8	9	23.0									
132	9458F	LW2-G308	8	9	23.0									
135	9456F	LW2-G301	8	9	23.2									
137	9467F	LW2-G320	8	9	23.0									
146	9457F	LW2-G302	8	9	23.1									
151	9475F	LW2-G350	8	9	23.1									
152	9460F	LW2-G292	8	9	23.0									
163	9470F	LW2-G331	8	9	23.0									

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Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
11	9465F	LW2-G268	8	10	23.1	6.7		6.6						
13	9464F	LW2-G260	8	10	23.0	6.3		6.5						
16	9466F	LW2-G318	8	10	23.0	5.9		6.5						
25	9471F	LW2-G333	8	10	23.0	6.3		6.5						
40	9473F	LW2-G336	8	10	22.9	6.2		6.5						
53	9462F	LW2-G315	8	10	22.8	6.0		6.5						
60	9472F	LW2-G335	8	10	22.8	6.3		6.5						
74	9469F	LW2-G327	8	10	22.8	5.5		6.4						
87	9459F	LW2-G288	8	10	22.8	4.9		6.4						
90	9461F	LW2-G298	8	10	22.8	4.2		6.4						
92	9468F	LW2-G323	8	10	22.8	5.9		6.4						
118	9474F	LW2-G348	8	10	22.7	6.1		6.5						
120	9454F	Control	8	10	22.8	5.9		6.7						
123	9463F	LW2-G316	8	10	22.8	6.0		6.5						
132	9458F	LW2-G308	8	10	22.7	5.4		6.5						
135	9456F	LW2-G301	8	10	22.8	5.6		6.5						
137	9467F	LW2-G320	8	10	22.7	5.7		6.5						
146	9457F	LW2-G302	8	10	22.7	5.2		6.4						
151	9475F	LW2-G350	8	10	22.8	5.7		6.4						
152	9460F	LW2-G292	8	10	22.8	5.3		6.4						
163	9470F	LW2-G331	8	10	22.8	5.8		6.5						
11	9465F	LW2-G268	8	11	23.2									
13	9464F	LW2-G260	8	11	23.2									
16	9466F	LW2-G318	8	11	23.1									
25	9471F	LW2-G333	8	11	23.2									
40	9473F	LW2-G336	8	11	23.1									
53	9462F	LW2-G315	8	11	23.0									
60	9472F	LW2-G335	8	11	22.9									
74	9469F	LW2-G327	8	11	22.9									
87	9459F	LW2-G288	8	11	22.9									
90	9461F	LW2-G298	8	11	22.9									
92	9468F	LW2-G323	8	11	22.9									
118	9474F	LW2-G348	8	11	22.9									
120	9454F	Control	8	11	22.9									
123	9463F	LW2-G316	8	11	23.0									
132	9458F	LW2-G308	8	11	22.9									
135	9456F	LW2-G301	8	11	22.9									
137	9467F	LW2-G320	8	11	23.0									
146	9457F	LW2-G302	8	11	22.9									
151	9475F	LW2-G350	8	11	22.9									
152	9460F	LW2-G292	8	11	23.0									
163	9470F	LW2-G331	8	11	22.9									

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
11	9465F	LW2-G268	8	12	23.3	5.8	165	6.6						
13	9464F	LW2-G260	8	12	23.2	5.8	165	6.6						
16	9466F	LW2-G318	8	12	23.2	5.3	165	6.5						
25	9471F	LW2-G333	8	12	23.2	5.6	165	6.5						
40	9473F	LW2-G336	8	12	23.1	5.2	165	6.5						
53	9462F	LW2-G315	8	12	23.1	5.3	160	6.4						
60	9472F	LW2-G335	8	12	23.1	5.8	165	6.6						
74	9469F	LW2-G327	8	12	23.1	5.0	160	6.5						
87	9459F	LW2-G288	8	12	23.1	4.6	165	6.4						
90	9461F	LW2-G298	8	12	23.1	3.8	160	6.4						
92	9468F	LW2-G323	8	12	23.1	5.6	165	6.5						
118	9474F	LW2-G348	8	12	23.1	5.7	180	6.6						
120	9454F	Control	8	12	23.2	5.6	180	7.5						
123	9463F	LW2-G316	8	12	23.2	5.6	165	6.7						
132	9458F	LW2-G308	8	12	23.2	5.5	160	6.7						
135	9456F	LW2-G301	8	12	23.2	4.7	170	6.7						
137	9467F	LW2-G320	8	12	23.2	5.2	160	6.6						
146	9457F	LW2-G302	8	12	23.2	5.4	165	6.6						
151	9475F	LW2-G350	8	12	23.2	5.4	165	6.7						
152	9460F	LW2-G292	8	12	23.1	5.0	160	6.6						
163	9470F	LW2-G331	8	12	23.1	5.6	160	6.7						
11	9465F	LW2-G268	8	13	23.2									
13	9464F	LW2-G260	8	13	23.2									
16	9466F	LW2-G318	8	13	23.1									
25	9471F	LW2-G333	8	13	23.2									
40	9473F	LW2-G336	8	13	23.2									
53	9462F	LW2-G315	8	13	23.2									
60	9472F	LW2-G335	8	13	23.1									
74	9469F	LW2-G327	8	13	23.2									
87	9459F	LW2-G288	8	13	23.2									
90	9461F	LW2-G298	8	13	23.1									
92	9468F	LW2-G323	8	13	23.2									
118	9474F	LW2-G348	8	13	23.1									
120	9454F	Control	8	13	23.1									
123	9463F	LW2-G316	8	13	23.1									
132	9458F	LW2-G308	8	13	23.1									
135	9456F	LW2-G301	8	13	23.1									
137	9467F	LW2-G320	8	13	23.2									
146	9457F	LW2-G302	8	13	23.2									
151	9475F	LW2-G350	8	13	23.2									
152	9460F	LW2-G292	8	13	23.2									
163	9470F	LW2-G331	8	13	23.2									

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
11	9465F	LW2-G268	8	14	23.4	6.9		6.8						
13	9464F	LW2-G260	8	14	23.4	6.9		6.6						
16	9466F	LW2-G318	8	14	23.2	6.9		6.5						
25	9471F	LW2-G333	8	14	23.1	7.1		6.5						
40	9473F	LW2-G336	8	14	23.2	7.2		6.5						
53	9462F	LW2-G315	8	14	23.0	6.4		6.5						
60	9472F	LW2-G335	8	14	23.2	7.0		6.5						
74	9469F	LW2-G327	8	14	23.1	6.5		6.5						
87	9459F	LW2-G288	8	14	23.1	6.3		6.5						
90	9461F	LW2-G298	8	14	23.1	4.0		6.4						
92	9468F	LW2-G323	8	14	23.0	6.4		6.4						
118	9474F	LW2-G348	8	14	23.0	6.7		6.5						
120	9454F	Control	8	14	23.0	6.5		7.5						
123	9463F	LW2-G316	8	14	23.0	6.8		6.8						
132	9458F	LW2-G308	8	14	22.9	6.3		6.7						
135	9456F	LW2-G301	8	14	22.9	6.4		6.6						
137	9467F	LW2-G320	8	14	23.0	6.1		6.6						
146	9457F	LW2-G302	8	14	22.9	6.5		6.6						
151	9475F	LW2-G350	8	14	23.0	6.3		6.6						
152	9460F	LW2-G292	8	14	23.0	6.2		6.6						
163	9470F	LW2-G331	8	14	23.0	6.4		6.6						
11	9465F	LW2-G268	8	15	23.2									
13	9464F	LW2-G260	8	15	23.2									
16	9466F	LW2-G318	8	15	23.2									
25	9471F	LW2-G333	8	15	23.2									
40	9473F	LW2-G336	8	15	23.3									
53	9462F	LW2-G315	8	15	23.2									
60	9472F	LW2-G335	8	15	23.1									
74	9469F	LW2-G327	8	15	23.2									
87	9459F	LW2-G288	8	15	23.2									
90	9461F	LW2-G298	8	15	23.1									
92	9468F	LW2-G323	8	15	23.1									
118	9474F	LW2-G348	8	15	23.1									
120	9454F	Control	8	15	23.2									
123	9463F	LW2-G316	8	15	23.1									
132	9458F	LW2-G308	8	15	23.1									
135	9456F	LW2-G301	8	15	23.2									
137	9467F	LW2-G320	8	15	23.1									
146	9457F	LW2-G302	8	15	23.2									
151	9475F	LW2-G350	8	15	23.2									
152	9460F	LW2-G292	8	15	23.2									
163	9470F	LW2-G331	8	15	23.2									

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
11	9465F	LW2-G268	8	16	22.8									
13	9464F	LW2-G260	8	16	22.7									
16	9466F	LW2-G318	8	16	22.7									
25	9471F	LW2-G333	8	16	22.8									
40	9473F	LW2-G336	8	16	22.8									
53	9462F	LW2-G315	8	16	22.7									
60	9472F	LW2-G335	8	16	22.7									
74	9469F	LW2-G327	8	16	22.7									
87	9459F	LW2-G288	8	16	22.7									
90	9461F	LW2-G298	8	16	22.8									
92	9468F	LW2-G323	8	16	22.7									
118	9474F	LW2-G348	8	16	22.8									
120	9454F	Control	8	16	22.8									
123	9463F	LW2-G316	8	16	22.8									
132	9458F	LW2-G308	8	16	22.7									
135	9456F	LW2-G301	8	16	22.8									
137	9467F	LW2-G320	8	16	22.9									
146	9457F	LW2-G302	8	16	22.9									
151	9475F	LW2-G350	8	16	22.9									
152	9460F	LW2-G292	8	16	22.8									
163	9470F	LW2-G331	8	16	22.8									
11	9465F	LW2-G268	8	17	23.0	7.0		6.7						
13	9464F	LW2-G260	8	17	22.9	7.0		6.7						
16	9466F	LW2-G318	8	17	23.0	6.8		6.6						
25	9471F	LW2-G333	8	17	23.1	6.9		6.6						
40	9473F	LW2-G336	8	17	22.9	7.0		6.7						
53	9462F	LW2-G315	8	17	22.7	6.3		6.7						
60	9472F	LW2-G335	8	17	22.7	7.0		6.7						
74	9469F	LW2-G327	8	17	22.7	6.4		6.6						
87	9459F	LW2-G288	8	17	22.6	5.6		6.5						
90	9461F	LW2-G298	8	17	22.6	4.4		6.5						
92	9468F	LW2-G323	8	17	22.7	6.4		6.7						
118	9474F	LW2-G348	8	17	22.6	6.2		6.7						
120	9454F	Control	8	17	22.8	6.4		7.3						
123	9463F	LW2-G316	8	17	22.6	6.7		6.7						
132	9458F	LW2-G308	8	17	22.6	6.4		6.6						
135	9456F	LW2-G301	8	17	22.8	6.2		6.8						
137	9467F	LW2-G320	8	17	22.7	6.2		6.7						
146	9457F	LW2-G302	8	17	22.7	5.6		6.7						
151	9475F	LW2-G350	8	17	22.7	6.4		6.6						
152	9460F	LW2-G292	8	17	22.6	6.0		6.5						
163	9470F	LW2-G331	8	17	22.5	6.6		6.6						

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
11	9465F	LW2-G268	8	18	23.2									
13	9464F	LW2-G260	8	18	23.1									
16	9466F	LW2-G318	8	18	23.1									
25	9471F	LW2-G333	8	18	23.2									
40	9473F	LW2-G336	8	18	23.2									
53	9462F	LW2-G315	8	18	22.9									
60	9472F	LW2-G335	8	18	23.1									
74	9469F	LW2-G327	8	18	23.1									
87	9459F	LW2-G288	8	18	23.0									
90	9461F	LW2-G298	8	18	23.1									
92	9468F	LW2-G323	8	18	22.9									
118	9474F	LW2-G348	8	18	22.9									
120	9454F	Control	8	18	23.0									
123	9463F	LW2-G316	8	18	22.9									
132	9458F	LW2-G308	8	18	22.9									
135	9456F	LW2-G301	8	18	23.1									
137	9467F	LW2-G320	8	18	23.1									
146	9457F	LW2-G302	8	18	23.0									
151	9475F	LW2-G350	8	18	23.0									
152	9460F	LW2-G292	8	18	23.0									
163	9470F	LW2-G331	8	18	22.9									
11	9465F	LW2-G268	8	19	23.0	7.0	175	6.6						
13	9464F	LW2-G260	8	19	23.0	6.6	170	6.6						
16	9466F	LW2-G318	8	19	23.0	6.4	170	6.6						
25	9471F	LW2-G333	8	19	22.9	6.5	170	6.6						
40	9473F	LW2-G336	8	19	23.0	6.8	170	6.6						
53	9462F	LW2-G315	8	19	22.8	5.3	165	6.5						
60	9472F	LW2-G335	8	19	22.9	6.7	170	6.6						
74	9469F	LW2-G327	8	19	23.0	5.0	165	6.9						
87	9459F	LW2-G288	8	19	22.9	4.8	170	6.5						
90	9461F	LW2-G298	8	19	22.9	3.6	170	6.5						
92	9468F	LW2-G323	8	19	22.9	5.6	165	6.4						
118	9474F	LW2-G348	8	19	22.9	5.0	180	6.5						
120	9454F	Control	8	19	23.0	4.9	200	7.3						
123	9463F	LW2-G316	8	19	23.0	5.8	165	6.5						
132	9458F	LW2-G308	8	19	23.0	5.2	160	6.5						
135	9456F	LW2-G301	8	19	23.0	5.0	175	6.5						
137	9467F	LW2-G320	8	19	23.0	4.6	160	6.5						
146	9457F	LW2-G302	8	19	23.0	4.6	160	6.4						
151	9475F	LW2-G350	8	19	23.0	5.0	170	6.4						
152	9460F	LW2-G292	8	19	23.0	4.6	170	6.5						
163	9470F	LW2-G331	8	19	22.9	4.3	160	6.4						

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
11	9465F	LW2-G268	8	20	23.0									
13	9464F	LW2-G260	8	20	22.9									
16	9466F	LW2-G318	8	20	22.9									
25	9471F	LW2-G333	8	20	22.9									
40	9473F	LW2-G336	8	20	22.9									
53	9462F	LW2-G315	8	20	22.8									
60	9472F	LW2-G335	8	20	22.9									
74	9469F	LW2-G327	8	20	22.9									
87	9459F	LW2-G288	8	20	22.8									
90	9461F	LW2-G298	8	20	22.9									
92	9468F	LW2-G323	8	20	22.8									
118	9474F	LW2-G348	8	20	22.9									
120	9454F	Control	8	20	22.9									
123	9463F	LW2-G316	8	20	22.9									
132	9458F	LW2-G308	8	20	22.9									
135	9456F	LW2-G301	8	20	22.9									
137	9467F	LW2-G320	8	20	22.9									
146	9457F	LW2-G302	8	20	22.9									
151	9475F	LW2-G350	8	20	23.0									
152	9460F	LW2-G292	8	20	22.9									
163	9470F	LW2-G331	8	20	22.9									
11	9465F	LW2-G268	8	21	22.9	7.5		6.6						
13	9464F	LW2-G260	8	21	22.9	7.3		6.5						
16	9466F	LW2-G318	8	21	22.8	7.3		6.5						
25	9471F	LW2-G333	8	21	22.9	7.1		6.5						
40	9473F	LW2-G336	8	21	22.8	7.4		6.5						
53	9462F	LW2-G315	8	21	22.7	6.9		6.4						
60	9472F	LW2-G335	8	21	22.8	7.2		6.4						
74	9469F	LW2-G327	8	21	22.8	6.7		6.4						
87	9459F	LW2-G288	8	21	22.8	6.2		6.3						
90	9461F	LW2-G298	8	21	22.9	5.6		6.3						
92	9468F	LW2-G323	8	21	22.9	7.1		6.4						
118	9474F	LW2-G348	8	21	22.9	6.8		6.5						
120	9454F	Control	8	21	22.9	6.8		6.5						
123	9463F	LW2-G316	8	21	22.9	7.2		6.6						
132	9458F	LW2-G308	8	21	22.8	7.0		6.4						
135	9456F	LW2-G301	8	21	22.9	6.9		6.5						
137	9467F	LW2-G320	8	21	22.9	6.9		6.4						
146	9457F	LW2-G302	8	21	22.9	6.7		6.4						
151	9475F	LW2-G350	8	21	22.9	6.9		6.4						
152	9460F	LW2-G292	8	21	22.9	6.9		6.5						
163	9470F	LW2-G331	8	21	22.9	6.8		6.4						

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Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
11	9465F	LW2-G268	8	22	22.8									
13	9464F	LW2-G260	8	22	22.7									
16	9466F	LW2-G318	8	22	22.8									
25	9471F	LW2-G333	8	22	22.9									
40	9473F	LW2-G336	8	22	22.8									
53	9462F	LW2-G315	8	22	22.8									
60	9472F	LW2-G335	8	22	22.7									
74	9469F	LW2-G327	8	22	22.8									
87	9459F	LW2-G288	8	22	22.7									
90	9461F	LW2-G298	8	22	22.8									
92	9468F	LW2-G323	8	22	22.7									
118	9474F	LW2-G348	8	22	22.7									
120	9454F	Control	8	22	22.7									
123	9463F	LW2-G316	8	22	22.7									
132	9458F	LW2-G308	8	22	22.7									
135	9456F	LW2-G301	8	22	22.8									
137	9467F	LW2-G320	8	22	22.7									
146	9457F	LW2-G302	8	22	22.7									
151	9475F	LW2-G350	8	22	22.8									
152	9460F	LW2-G292	8	22	22.8									
163	9470F	LW2-G331	8	22	22.7									
11	9465F	LW2-G268	8	23	22.7									
13	9464F	LW2-G260	8	23	22.6									
16	9466F	LW2-G318	8	23	22.6									
25	9471F	LW2-G333	8	23	22.7									
40	9473F	LW2-G336	8	23	22.7									
53	9462F	LW2-G315	8	23	22.6									
60	9472F	LW2-G335	8	23	22.6									
74	9469F	LW2-G327	8	23	22.5									
87	9459F	LW2-G288	8	23	22.5									
90	9461F	LW2-G298	8	23	22.5									
92	9468F	LW2-G323	8	23	22.5									
118	9474F	LW2-G348	8	23	22.5									
120	9454F	Control	8	23	22.6									
123	9463F	LW2-G316	8	23	22.6									
132	9458F	LW2-G308	8	23	22.6									
135	9456F	LW2-G301	8	23	22.6									
137	9467F	LW2-G320	8	23	22.6									
146	9457F	LW2-G302	8	23	22.6									
151	9475F	LW2-G350	8	23	22.7									
152	9460F	LW2-G292	8	23	22.6									
163	9470F	LW2-G331	8	23	22.6									

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
11	9465F	LW2-G268	8	24	22.5	6.2		6.5						
13	9464F	LW2-G260	8	24	22.7	6.2		6.2						
16	9466F	LW2-G318	8	24	22.7	6.0		6.3						
25	9471F	LW2-G333	8	24	22.9	6.2		6.4						
40	9473F	LW2-G336	8	24	22.8	5.2		6.3						
53	9462F	LW2-G315	8	24	22.4	6.2		6.1						
60	9472F	LW2-G335	8	24	22.7	5.1		6.3						
74	9469F	LW2-G327	8	24	22.7	5.2		6.2						
87	9459F	LW2-G288	8	24	22.5	4.4		6.2						
90	9461F	LW2-G298	8	24	22.7	4.0		6.2						
92	9468F	LW2-G323	8	24	22.5	5.6		6.3						
118	9474F	LW2-G348	8	24	22.5	5.0		6.6						
120	9454F	Control	8	24	22.7	5.3		6.7						
123	9463F	LW2-G316	8	24	22.5	5.7		6.4						
132	9458F	LW2-G308	8	24	22.5	5.5		6.4						
135	9456F	LW2-G301	8	24	22.7	5.2		6.7						
137	9467F	LW2-G320	8	24	22.5	5.3		6.3						
146	9457F	LW2-G302	8	24	22.6	5.3		6.3						
151	9475F	LW2-G350	8	24	22.7	5.4		6.5						
152	9460F	LW2-G292	8	24	22.5	5.0		6.5						
163	9470F	LW2-G331	8	24	22.5	5.4		6.6						
11	9465F	LW2-G268	8	25	22.8									
13	9464F	LW2-G260	8	25	22.8									
16	9466F	LW2-G318	8	25	22.7									
25	9471F	LW2-G333	8	25	22.8									
40	9473F	LW2-G336	8	25	22.9									
53	9462F	LW2-G315	8	25	22.8									
60	9472F	LW2-G335	8	25	22.6									
74	9469F	LW2-G327	8	25	22.7									
87	9459F	LW2-G288	8	25	22.7									
90	9461F	LW2-G298	8	25	22.6									
92	9468F	LW2-G323	8	25	22.6									
118	9474F	LW2-G348	8	25	22.5									
120	9454F	Control	8	25	22.6									
123	9463F	LW2-G316	8	25	22.6									
132	9458F	LW2-G308	8	25	22.5									
135	9456F	LW2-G301	8	25	22.5									
137	9467F	LW2-G320	8	25	22.6									
146	9457F	LW2-G302	8	25	22.6									
151	9475F	LW2-G350	8	25	22.6									
152	9460F	LW2-G292	8	25	22.5									
163	9470F	LW2-G331	8	25	22.4									

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
11	9465F	LW2-G268	8	26	22.8	7.1	175	6.4						
13	9464F	LW2-G260	8	26	22.7	7.0	170	6.5						
16	9466F	LW2-G318	8	26	22.7	7.0	165	6.5						
25	9471F	LW2-G333	8	26	22.8	7.0	170	6.5						
40	9473F	LW2-G336	8	26	22.7	6.9	165	6.5						
53	9462F	LW2-G315	8	26	22.5	6.2	165	6.5						
60	9472F	LW2-G335	8	26	22.5	6.9	165	6.5						
74	9469F	LW2-G327	8	26	22.6	6.4	165	6.5						
87	9459F	LW2-G288	8	26	22.5	5.8	165	6.4						
90	9461F	LW2-G298	8	26	22.6	5.0	165	6.3						
92	9468F	LW2-G323	8	26	22.5	6.5	165	6.4						
118	9474F	LW2-G348	8	26	22.5	6.6	170	6.5						
120	9454F	Control	8	26	22.6	6.6	175	6.8						
123	9463F	LW2-G316	8	26	22.5	6.8	165	6.5						
132	9458F	LW2-G308	8	26	22.5	6.3	165	6.5						
135	9456F	LW2-G301	8	26	22.6	6.2	165	6.5						
137	9467F	LW2-G320	8	26	22.5	6.2	165	6.4						
146	9457F	LW2-G302	8	26	22.5	6.2	165	6.4						
151	9475F	LW2-G350	8	26	22.6	6.4	170	6.5						
152	9460F	LW2-G292	8	26	22.5	6.0	165	6.5						
163	9470F	LW2-G331	8	26	22.5	6.5	165	6.5						
11	9465F	LW2-G268	8	27	23.1									
13	9464F	LW2-G260	8	27	23.1									
16	9466F	LW2-G318	8	27	23.2									
25	9471F	LW2-G333	8	27	23.2									
40	9473F	LW2-G336	8	27	22.9									
53	9462F	LW2-G315	8	27	23.0									
60	9472F	LW2-G335	8	27	22.9									
74	9469F	LW2-G327	8	27	22.9									
87	9459F	LW2-G288	8	27	22.9									
90	9461F	LW2-G298	8	27	23.0									
92	9468F	LW2-G323	8	27	22.8									
118	9474F	LW2-G348	8	27	22.8									
120	9454F	Control	8	27	22.9									
123	9463F	LW2-G316	8	27	22.9									
132	9458F	LW2-G308	8	27	22.8									
135	9456F	LW2-G301	8	27	22.8									
137	9467F	LW2-G320	8	27	22.9									
146	9457F	LW2-G302	8	27	22.8									
151	9475F	LW2-G350	8	27	22.9									
152	9460F	LW2-G292	8	27	22.8									
163	9470F	LW2-G331	8	27	22.8									

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Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
11	9465F	LW2-G268	8	28	22.8	7.7	165	6.6	43	40	<0.1			
13	9464F	LW2-G260	8	28	22.7	7.7	165	6.5	43	40	<0.1			
16	9466F	LW2-G318	8	28	22.7	7.3	160	6.5	43	40	0.1			
25	9471F	LW2-G333	8	28	22.7	7.3	160	6.5	43	40	0.1			
40	9473F	LW2-G336	8	28	22.6	7.6	160	6.6	43	40	<0.1			
53	9462F	LW2-G315	8	28	22.5	7.0	155	6.5	43	40	<0.1			
60	9472F	LW2-G335	8	28	22.5	7.4	160	6.5	34	40	<0.1			
74	9469F	LW2-G327	8	28	22.5	6.8	160	6.5	43	40	<0.1			
87	9459F	LW2-G288	8	28	22.4	6.1	160	6.3	43	50	<0.1			
90	9461F	LW2-G298	8	28	22.5	5.4	155	6.3	43	40	<0.1			
92	9468F	LW2-G323	8	28	22.4	7.3	160	6.5	43	40	<0.1			
118	9474F	LW2-G348	8	28	22.4	7.0	160	6.5	34	40	<0.1			
120	9454F	Control	8	28	22.5	7.1	165	6.9	43	40	<0.1			
123	9463F	LW2-G316	8	28	22.4	7.2	160	6.6	34	40	0.2			
132	9458F	LW2-G308	8	28	22.4	6.9	160	6.5	43	40	<0.1			
135	9456F	LW2-G301	8	28	22.5	6.7	160	6.5	43	40	<0.1			
137	9467F	LW2-G320	8	28	22.4	6.7	155	6.4	34	40	<0.1			
146	9457F	LW2-G302	8	28	22.4	6.6	155	6.4	34	40	<0.1			
151	9475F	LW2-G350	8	28	22.5	6.6	160	6.5	34	40	<0.1			
152	9460F	LW2-G292	8	28	22.5	6.8	160	6.5	34	40	<0.1			
163	9470F	LW2-G331	8	28	22.4	7.1	160	6.5	43	40	<0.1			
				Mean	22.8	6.2	174	6.5	43	44	---		6.9	6.4
				SD	0.2	0.8	32	0.2	7	6	---		4.5	0.3
				n	609	273	105	273	42	42	42		21	21
				Min	22.4	3.6	155	6.1	34	40	<0.1		1.4	5.9
				Max	23.4	7.7	390	7.5	77	60	4.8		16.1	6.9

Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

ASHED DRY WT= weight of ashed pan + weight of ashed test organisms recovered at test termination
TAFDW=DRY WT - ASHED DRY WT= total ash-free organism weight for given replicate
AFDW=average individual ash-free biomass=TAFDW/WT COUNT

INITIAL WEIGHT

pan #	tare wt (mg)	final wt (mg)	wt count	avg. wt/ organism
1	91.75	95.40	20	0.18
2	97.17	100.65	20	0.17
3	88.60	91.78	20	0.16

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)		SURV	MORT	PSURV	PMORT	WT	AFDW
1	6	9454F	Control	1		10	7	3	70.0	30.0	95.90	7	107.92	98.16	12.02	1.72	9.76	1.39							
2	139	9454F	Control	2		10	9	1	90.0	10.0	95.61	9	107.18	98.61	11.57	1.29	8.57	0.95							
3	50	9454F	Control	3		10	10	0	100.0	0.0	91.55	10	102.79	94.22	11.24	1.12	8.57	0.86							
4	167	9454F	Control	4		10	8	2	80.0	20.0	85.92	8	95.30	87.85	9.38	1.17	7.45	0.93							
5	127	9454F	Control	5		10	10	0	100.0	0.0	92.94	10	106.08	96.23	13.14	1.31	9.85	0.98	Mean	9.1	0.9	91.3	8.8	1.25	0.97
6	44	9454F	Control	6		10	9	1	90.0	10.0	87.58	9	97.74	89.70	10.16	1.13	8.04	0.89	SD	1.1	1.1	11.3	11.3	0.21	0.18
7	29	9454F	Control	7		10	10	0	100.0	0.0	94.54	10	105.13	97.06	10.59	1.06	8.07	0.81	n	8	8	8	8	8	8
8	45	9454F	Control	8	wq replicate	10	10	0	100.0	0.0	91.00	10	103.16	93.61	12.16	1.22	9.55	0.96							
9	101	9456F	LW2-G301	1		10	10	0	100.0	0.0	91.74	10	110.42	99.06	18.68	1.87	11.36	1.14							
10	93	9456F	LW2-G301	2		10	9	1	90.0	10.0	88.67	9	104.18	94.68	15.51	1.72	9.50	1.06							
11	76	9456F	LW2-G301	3		10	9	1	90.0	10.0	95.18	9	112.50	101.65	17.32	1.92	10.85	1.21							
12	88	9456F	LW2-G301	4		10	10	0	100.0	0.0	89.23	10	101.61	93.29	12.38	1.24	8.32	0.83							
13	25	9456F	LW2-G301	5		10	9	1	90.0	10.0	104.95	9	118.39	108.74	13.44	1.49	9.65	1.07	Mean	9.3	0.8	92.5	7.5	1.59	1.04
14	129	9456F	LW2-G301	6		10	9	1	90.0	10.0	97.79	9	111.05	101.60	13.26	1.47	9.45	1.05	SD	0.5	0.5	4.6	4.6	0.23	0.11
15	87	9456F	LW2-G301	7		10	9	1	90.0	10.0	95.47	9	108.71	100.06	13.24	1.47	8.65	0.96	n	8	8	8	8	8	8
16	32	9456F	LW2-G301	8	wq replicate	10	9	1	90.0	10.0	93.82	9	107.62	98.47	13.80	1.53	9.15	1.02							
17	73	9457F	LW2-G302	1		10	0	10	0.0	100.0	91.71	0													
18	131	9457F	LW2-G302	2		10	0	10	0.0	100.0	86.35	0													
19	53	9457F	LW2-G302	3		10	0	10	0.0	100.0	98.05	0													
20	113	9457F	LW2-G302	4		10	0	10	0.0	100.0	92.85	0													
21	46	9457F	LW2-G302	5		10	0	10	0.0	100.0	97.41	0							Mean	0.0	10.0	0.0	100.0		
22	120	9457F	LW2-G302	6		10	0	10	0.0	100.0	93.38	0							SD	0.0	0.0	0.0	0.0		
23	92	9457F	LW2-G302	7		10	0	10	0.0	100.0	89.39	0							n	8	8	8	8	0	0
24	66	9457F	LW2-G302	8	wq replicate	10	0	10	0.0	100.0	93.07	0													
25	166	9458F	LW2-G308	1		10	6	4	60.0	40.0	86.38	6	91.08	87.54	4.70	0.78	3.54	0.59							
26	146	9458F	LW2-G308	2		10	8	2	80.0	20.0	86.60	8	99.30	90.04	12.70	1.59	9.26	1.16							
27	126	9458F	LW2-G308	3		10	7	3	70.0	30.0	89.51	7	98.51	92.46	9.00	1.29	6.05	0.86							
28	115	9458F	LW2-G308	4		10	5	5	50.0	50.0	94.94	5	100.33	96.39	5.39	1.08	3.94	0.79							
29	119	9458F	LW2-G308	5		10	7	3	70.0	30.0	99.99	7	108.50	102.79	8.51	1.22	5.71	0.82	Mean	6.5	3.5	65.0	35.0	1.15	0.81
30	17	9458F	LW2-G308	6		10	5	5	50.0	50.0	95.34	5	98.30	95.98	2.96	0.59	2.32	0.46	SD	1.1	1.1	10.7	10.7	0.34	0.21
31	37	9458F	LW2-G308	7		10	7	3	70.0	30.0	95.41	7	103.45	97.76	8.04	1.15	5.69	0.81	n	8	8	8	8	8	8
32	107	9458F	LW2-G308	8	wq replicate	10	7	3	70.0	30.0	83.36	7	93.87	87.19	10.51	1.50	6.68	0.95							
33	148	9459F	LW2-G288	1		10	0	10	0.0	100.0	87.74	0													
34	20	9459F	LW2-G288	2		10	0	10	0.0	100.0	91.28	0													
35	114	9459F	LW2-G288	3		10	0	10	0.0	100.0	93.83	0													
36	163	9459F	LW2-G288	4		10	0	10	0.0	100.0	85.11	0													
37	1	9459F	LW2-G288	5		10	0	10	0.0	100.0	91.60	0							Mean	0.0	10.0	0.0	100.0		
38	97	9459F	LW2-G288	6		10	0	10	0.0	100.0	91.41	0							SD	0.0	0.0	0.0	0.0		
39	164	9459F	LW2-G288	7		10	0	10	0.0	100.0	90.55	0							n	8	8	8	8	0	0
40	15	9459F	LW2-G288	8	wq replicate	10	0	10	0.0	100.0	102.33	0													
41	7	9460F	LW2-G292	1		10	9	1	90.0	10.0	92.12	9	106.94	96.22	14.82	1.65	10.72	1.19							
42	79	9460F	LW2-G292	2		10	9	1	90.0	10.0	89.94	9	103.87	94.10	13.93	1.55	9.77	1.09							
43	31	9460F	LW2-G292	3		10	8	2	80.0	20.0	97.75	8	112.50	101.98	14.75	1.84	10.52	1.32							
44	26	9460F	LW2-G292	4		10	10	0	100.0	0.0	95.81	10	110.83	100.09	15.02	1.50	10.74	1.07							
45	42	9460F	LW2-G292	5		10	7	3	70.0	30.0	94.98	7	106.81	98.18	11.83	1.69	8.63	1.23	Mean	8.3	1.8	82.5	17.5	1.59	1.13
46	103	9460F	LW2-G292	6		10	7	3	70.0	30.0	86.97	7	99.01	90.94	12.04	1.72	8.07	1.15	SD	1.2	1.2	11.6	11.6	0.27	0.16
47	82	9460F	LW2-G292	7		10	9	1	90.0	10.0	93.64	9	109.50	98.55	15.86	1.76	10.95	1.22	n	8	8	8	8	8	8
48	2	9460F	LW2-G292	8	wq replicate	10	7	3	70.0	30.0	88.77	7	95.62	90.12	6.85	0.98	5.50	0.79							

ANC07545
BZTO104(e)007545

Test Number: 686-16

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)		SURV	MORT	PSURV	PMORT	WT	AFDW
49	47	9461F	LW2-G298	1		10	0	10	0.0	100.0	87.83	0													
50	65	9461F	LW2-G298	2		10	0	10	0.0	100.0	97.63	0													
51	96	9461F	LW2-G298	3		10	0	10	0.0	100.0	92.20	0													
52	84	9461F	LW2-G298	4		10	0	10	0.0	100.0	92.54	0													
53	3	9461F	LW2-G298	5		10	0	10	0.0	100.0	90.26	0							Mean	0.0	10.0	0.0	100.0		
54	57	9461F	LW2-G298	6		10	0	10	0.0	100.0	90.55	0							SD	0.0	0.0	0.0	0.0		
55	111	9461F	LW2-G298	7		10	0	10	0.0	100.0	90.37	0							n	8	8	8	8	0	0
56	91	9461F	LW2-G298	8	wq replicate	10	0	10	0.0	100.0	94.10	0													
57	135	9462F	LW2-G315	1		10	8	2	80.0	20.0	92.63	8	105.34	96.88	12.71	1.59	8.46	1.06							
58	140	9462F	LW2-G315	2		10	9	1	90.0	10.0	91.82	9	106.61	96.65	14.79	1.64	9.96	1.11							
59	110	9462F	LW2-G315	3		10	9	1	90.0	10.0	88.24	9	102.80	93.03	14.56	1.62	9.77	1.09							
60	151	9462F	LW2-G315	4		10	8	2	80.0	20.0	93.66	8	107.32	98.57	13.66	1.71	8.75	1.09							
61	145	9462F	LW2-G315	5		10	8	2	80.0	20.0	87.81	8	101.61	92.49	13.80	1.73	9.12	1.14	Mean	8.6	1.4	86.3	13.8	1.62	1.05
62	150	9462F	LW2-G315	6		10	7	3	70.0	30.0	88.06	7	102.98	93.49	14.92	2.13	9.49	1.36	SD	1.1	1.1	10.6	10.6	0.28	0.19
63	106	9462F	LW2-G315	7		10	10	0	100.0	0.0	89.58	10	101.42	94.17	11.84	1.18	7.25	0.73	n	8	8	8	8	8	8
64	70	9462F	LW2-G315	8	wq replicate	10	10	0	100.0	0.0	87.12	10	100.73	92.22	13.61	1.36	8.51	0.85							
65	144	9463F	LW2-G316	1		10	8	2	80.0	20.0	88.49	8	101.59	92.45	13.10	1.64	9.14	1.14							
66	64	9463F	LW2-G316	2		10	7	3	70.0	30.0	89.75	7	103.45	94.19	13.70	1.96	9.26	1.32							
67	99	9463F	LW2-G316	3		10	9	1	90.0	10.0	90.94	9	107.76	96.14	16.82	1.87	11.62	1.29							
68	34	9463F	LW2-G316	4		10	8	2	80.0	20.0	90.57	8	105.77	95.94	15.20	1.90	9.83	1.23							
69	157	9463F	LW2-G316	5		10	10	0	100.0	0.0	90.07	10	103.58	93.09	13.51	1.35	10.49	1.05	Mean	8.8	1.3	87.5	12.5	1.64	1.14
70	51	9463F	LW2-G316	6		10	10	0	100.0	0.0	87.83	10	100.59	91.71	12.76	1.28	8.88	0.89	SD	1.0	1.0	10.4	10.4	0.25	0.14
71	21	9463F	LW2-G316	7		10	9	1	90.0	10.0	89.11	9	102.87	92.82	13.76	1.53	10.05	1.12	n	8	8	8	8	8	8
72	56	9463F	LW2-G316	8	wq replicate	10	9	1	90.0	10.0	96.72	9	110.79	101.22	14.07	1.56	9.57	1.06							
73	60	9464F	LW2-G260	1		10	8	2	80.0	20.0	87.20	8	104.52	92.26	17.32	2.17	12.26	1.53							
74	11	9464F	LW2-G260	2		10	9	1	90.0	10.0	84.59	9	98.73	88.46	14.14	1.57	10.27	1.14							
75	89	9464F	LW2-G260	3		10	10	0	100.0	0.0	88.86	10	103.25	92.45	14.39	1.44	10.80	1.08							
76	149	9464F	LW2-G260	4		10	10	0	100.0	0.0	98.27	10	111.75	101.79	13.48	1.35	9.96	1.00							
77	43	9464F	LW2-G260	5		10	9	1	90.0	10.0	92.01	9	106.78	95.67	14.77	1.64	11.11	1.23	Mean	9.3	0.8	92.5	7.5	1.66	1.20
78	62	9464F	LW2-G260	6		10	10	0	100.0	0.0	96.06	10	115.10	102.60	19.04	1.90	12.50	1.25	SD	0.9	0.9	8.9	8.9	0.34	0.21
79	105	9464F	LW2-G260	7		10	8	2	80.0	20.0	94.13	8	110.12	98.74	15.99	2.00	11.38	1.42	n	8	8	8	8	8	8
80	159	9464F	LW2-G260	8	wq replicate	10	10	0	100.0	0.0	90.88	10	102.70	93.66	11.82	1.18	9.04	0.90							
81	86	9465F	LW2-G268	1		10	9	1	90.0	10.0	88.49	9	102.64	93.55	14.15	1.57	9.09	1.01							
82	141	9465F	LW2-G268	2		10	8	2	80.0	20.0	90.38	7	104.21	95.89	13.83	1.98	8.32	1.19							
83	9	9465F	LW2-G268	3		10	9	1	90.0	10.0	92.36	9	107.49	97.40	15.13	1.68	10.09	1.12							
84	122	9465F	LW2-G268	4		10	9	1	90.0	10.0	94.93	9	112.74	102.08	17.81	1.98	10.66	1.18							
85	154	9465F	LW2-G268	5		10	8	2	80.0	20.0	94.72	8	107.92	99.12	13.20	1.65	8.80	1.10	Mean	8.8	1.3	87.5	12.5	1.71	1.08
86	124	9465F	LW2-G268	6		10	10	0	100.0	0.0	93.45	10	106.62	98.16	13.17	1.32	8.46	0.85	SD	1.0	1.0	10.4	10.4	0.22	0.12
87	121	9465F	LW2-G268	7		10	10	0	100.0	0.0	88.70	10	105.28	94.80	16.58	1.66	10.48	1.05	n	8	8	8	8	8	8
88	83	9465F	LW2-G268	8	wq replicate	10	7	3	70.0	30.0	91.76	7	104.73	96.46	12.97	1.85	8.27	1.18							
89	137	9466F	LW2-G318	1		10	8	2	80.0	20.0	89.95	7	103.02	94.66	13.07	1.87	8.36	1.19							
90	69	9466F	LW2-G318	2		10	9	1	90.0	10.0	81.92	9	93.46	86.07	11.54	1.28	7.39	0.82							
91	71	9466F	LW2-G318	3		10	10	0	100.0	0.0	91.13	10	107.16	97.38	16.03	1.60	9.78	0.98							
92	133	9466F	LW2-G318	4		10	10	0	100.0	0.0	89.79	10	103.41	93.88	13.62	1.36	9.53	0.95							
93	33	9466F	LW2-G318	5		10	7	3	70.0	30.0	95.76	7	103.69	97.78	7.93	1.13	5.91	0.84	Mean	8.8	1.3	87.5	12.5	1.46	0.96
94	52	9466F	LW2-G318	6		10	10	0	100.0	0.0	94.41	10	104.95	97.38	10.54	1.05	7.57	0.76	SD	1.2	1.2	11.6	11.6	0.29	0.15
95	98	9466F	LW2-G318	7		10	8	2	80.0	20.0	91.89	8	104.62	96.44	12.73	1.59	8.18	1.02	n	8	8	8	8	8	8
96	74	9466F	LW2-G318	8	wq replicate	10	8	2	80.0	20.0	90.08	8	104.11	95.08	14.03	1.75	9.03	1.13							
97	38	9467F	LW2-G320	1		10	6	4	60.0	40.0	98.06	6	104.19	99.53	6.13	1.02	4.66	0.78							
98	59	9467F	LW2-G320	2		10	6	4	60.0	40.0	88.48	6	97.68	90.94	9.20	1.53	6.74	1.12							
99	116	9467F	LW2-G320	3		10	9	1	90.0	10.0	89.01	9	104.34	94.56	15.33	1.70	9.78	1.09							
100	23	9467F	LW2-G320	4		10	6	4	60.0	40.0	104.11	6	108.63	105.40	4.52	0.75	3.23	0.54							
101	153	9467F	LW2-G320	5		10	4	6	40.0	60.0	91.75	4	95.29	92.71	3.54	0.89	2.58	0.65	Mean	6.1	3.9	61.3	38.8	1.14	0.82
102	160	9467F	LW2-G320	6		10	5	5	50.0	50.0	88.41	5	92.29	89.08	3.88	0.78	3.21	0.64	SD	1.6	1.6	16.4	16.4	0.35	0.21
103	8	9467F	LW2-G320	7		10	8	2	80.0	20.0	93.83	8	104.51	97.02	10.68	1.34	7.49	0.94	n	8	8	8	8	8	8
104	13	9467F	LW2-G320	8	wq replicate	10	5	5	50.0	50.0	93.45	5	99.06	94.99	5.61	1.12	4.07	0.81							
105	118	9468F	LW2-G323	1		10	9	1	90.0	10.0	88.39	9	106.17	94.88	17.78	1.98	11.29	1.25							
106	27	9468F	LW2-G323	2		10	7	3	70.0	30.0	87.77	7	102.36	91.87	14.59	2.08	10.49	1.50							
107	12	9468F	LW2-G323	3		10	8	2	80.0	20.0	94.08	8	108.15	97.67	14.07	1.76	10.48	1.31							
108	94	9468F	LW2-G323	4		10	9	1	90.0	10.0	91.39	9	108.92	97.98	17.53	1.95	10.94	1.22							
109	100	9468F	LW2-G323	5		10	10	0	100.0	0.0	96.01	10	113.51	102.27	17.50	1.75	11.24	1.12	Mean	8.9	1.1	88.8	11.3	1.84	1.24
110	80	9468F	LW2-G323	6		10	9	1	90.0	10.0	97.63	9	114.50	103.45	16.87	1.87	11.05	1.23	SD	1.0	1.0	9.9	9.9	0.17	0.13
111	24	9468F	LW2-G323	7		10	10	0	100.0	0.0	85.23	10	100.71	89.77	15.48	1.55	10.94	1.09	n	8	8	8	8	8	8

ANC07546
BZTO104(e)007546

Test Number: 686-16

Freshwater Sediment Test
10-Day Chironomus tentans

		NAS	CLIENT									TARE	WT	DRY	ASHED	TWT	WT	TAFDW	AFDW								
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT		WT (mg)	COUNT	WT (mg)	DRY WT (mg)	(mg)	(mg)	(mg)	(mg)			SURV	MORT	PSURV	PMORT	WT	AFDW
112	108	9468F	LW2-G323	8	wq replicate	10	9	1	90.0	10.0		80.67	9	96.90	86.42	16.23	1.80	10.48	1.16								

ANC07547
BZTO104(e)007547

Test Number: 686-16

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)			SURV	MORT	PSURV	PMORT	WT	AFDW
113	18	9469F	LW2-G327	1		10	5	5	50.0	50.0	94.40	5	97.05	94.98	2.65	0.53	2.07	0.41								
114	85	9469F	LW2-G327	2		10	8	2	80.0	20.0	90.52	8	99.52	93.65	9.00	1.13	5.87	0.73								
115	162	9469F	LW2-G327	3		10	10	0	100.0	0.0	85.88	10	90.73	87.09	4.85	0.49	3.64	0.36								
116	75	9469F	LW2-G327	4		10	10	0	100.0	0.0	93.41	10	102.29	95.83	8.88	0.89	6.46	0.65								
117	125	9469F	LW2-G327	5		10	7	3	70.0	30.0	96.41	7	102.68	98.26	6.27	0.90	4.42	0.63	Mean	8.3	1.8	82.5	17.5	0.73	0.53
118	40	9469F	LW2-G327	6		10	8	2	80.0	20.0	99.67	8	104.49	100.94	4.82	0.60	3.55	0.44	SD	1.8	1.8	17.5	17.5	0.22	0.13
119	30	9469F	LW2-G327	7		10	8	2	80.0	20.0	93.76	8	98.80	95.07	5.04	0.63	3.73	0.47	n	8	8	8	8	8	8
120	165	9469F	LW2-G327	8	wq replicate	10	10	0	100.0	0.0	92.87	10	99.90	94.66	7.03	0.70	5.24	0.52								
121	63	9470F	LW2-G331	1		10	10	0	100.0	0.0	90.44	10	105.38	95.39	14.94	1.49	9.99	1.00								
122	132	9470F	LW2-G331	2		10	10	0	100.0	0.0	86.15	10	98.86	89.99	12.71	1.27	8.87	0.89								
123	28	9470F	LW2-G331	3		10	8	2	80.0	20.0	87.15	8	102.38	91.14	15.23	1.90	11.24	1.41								
124	136	9470F	LW2-G331	4		10	10	0	100.0	0.0	84.29	9	99.30	89.58	15.01	1.67	9.72	1.08								
125	49	9470F	LW2-G331	5		10	9	1	90.0	10.0	92.39	9	103.49	95.21	11.10	1.23	8.28	0.92	Mean	9.5	0.5	95.0	5.0	1.49	1.05
126	55	9470F	LW2-G331	6		10	10	0	100.0	0.0	87.54	9	98.57	90.28	11.03	1.23	8.29	0.92	SD	0.8	0.8	7.6	7.6	0.26	0.18
127	19	9470F	LW2-G331	7		10	9	1	90.0	10.0	96.24	9	112.10	101.20	15.86	1.76	10.90	1.21	n	8	8	8	8	8	8
128	77	9470F	LW2-G331	8	wq replicate	10	10	0	100.0	0.0	91.78	10	105.59	95.74	13.81	1.38	9.85	0.99								
129	68	9471F	LW2-G333	1		10	9	1	90.0	10.0	97.86	9	115.34	104.63	17.48	1.94	10.71	1.19								
130	104	9471F	LW2-G333	2		10	7	3	70.0	30.0	88.23	7	103.84	94.15	15.61	2.23	9.69	1.38								
131	142	9471F	LW2-G333	3		10	9	1	90.0	10.0	88.14	9	105.05	94.50	16.91	1.88	10.55	1.17								
132	109	9471F	LW2-G333	4		10	9	1	90.0	10.0	93.40	9	109.26	99.06	15.86	1.76	10.20	1.13								
133	5	9471F	LW2-G333	5		10	10	0	100.0	0.0	97.46	10	110.31	101.50	12.85	1.29	8.81	0.88	Mean	8.6	1.4	86.3	13.8	1.77	1.13
134	161	9471F	LW2-G333	6		10	9	1	90.0	10.0	98.37	9	110.76	102.40	12.39	1.38	8.36	0.93	SD	1.4	1.4	14.1	14.1	0.30	0.16
135	138	9471F	LW2-G333	7		10	10	0	100.0	0.0	87.09	10	105.46	94.23	18.37	1.84	11.23	1.12	n	8	8	8	8	8	8
136	16	9471F	LW2-G333	8	wq replicate	10	6	4	60.0	40.0	94.74	6	105.61	98.37	10.87	1.81	7.24	1.21								
137	78	9472F	LW2-G335	1		10	9	1	90.0	10.0	102.26	9	116.03	107.07	13.77	1.53	8.96	1.00								
138	22	9472F	LW2-G335	2		10	9	1	90.0	10.0	96.76	9	110.66	101.00	13.90	1.54	9.66	1.07								
139	67	9472F	LW2-G335	3		10	8	2	80.0	20.0	89.57	8	104.97	94.31	15.40	1.93	10.66	1.33								
140	4	9472F	LW2-G335	4		10	9	1	90.0	10.0	88.43	9	96.66	89.98	8.23	0.91	6.68	0.74								
141	41	9472F	LW2-G335	5		10	8	2	80.0	20.0	91.79	8	105.97	97.43	14.18	1.77	8.54	1.07	Mean	8.6	1.4	86.3	13.8	1.56	1.03
142	147	9472F	LW2-G335	6		10	9	1	90.0	10.0	88.31	8	100.94	92.85	12.63	1.58	8.09	1.01	SD	0.9	0.9	9.2	9.2	0.30	0.16
143	152	9472F	LW2-G335	7		10	10	0	100.0	0.0	84.17	10	99.64	89.74	15.47	1.55	9.90	0.99	n	8	8	8	8	8	8
144	36	9472F	LW2-G335	8	wq replicate	10	7	3	70.0	30.0	93.31	7	105.07	97.66	11.76	1.68	7.41	1.06								
145	58	9473F	LW2-G336	1		10	8	2	80.0	20.0	89.01	8	104.80	95.71	15.79	1.97	9.09	1.14								
146	48	9473F	LW2-G336	2		10	9	1	90.0	10.0	98.01	9	105.76	99.91	7.75	0.86	5.85	0.65								
147	117	9473F	LW2-G336	3		10	7	3	70.0	30.0	90.63	7	105.92	96.70	15.29	2.18	9.22	1.32								
148	10	9473F	LW2-G336	4		10	9	1	90.0	10.0	97.06	9	110.57	100.67	13.51	1.50	9.90	1.10								
149	35	9473F	LW2-G336	5		10	7	3	70.0	30.0	95.86	7	111.58	101.57	15.72	2.25	10.01	1.43	Mean	8.1	1.9	81.3	18.8	1.77	1.14
150	90	9473F	LW2-G336	6		10	7	3	70.0	30.0	94.13	7	106.76	98.58	12.63	1.80	8.18	1.17	SD	1.1	1.1	11.3	11.3	0.49	0.24
151	123	9473F	LW2-G336	7		10	8	2	80.0	20.0	100.02	8	117.43	106.81	17.41	2.18	10.62	1.33	n	8	8	8	8	8	8
152	14	9473F	LW2-G336	8	wq replicate	10	10	0	100.0	0.0	94.92	10	108.79	98.87	13.87	1.39	9.92	0.99								
153	130	9474F	LW2-G348	1		10	8	2	80.0	20.0	91.90	8	99.59	94.22	7.69	0.96	5.37	0.67								
154	112	9474F	LW2-G348	2		10	8	2	80.0	20.0	93.15	8	106.55	97.91	13.40	1.68	8.64	1.08								
155	168	9474F	LW2-G348	3		10	4	6	40.0	60.0	92.02	4	94.71	92.76	2.69	0.67	1.95	0.49								
156	72	9474F	LW2-G348	4		10	8	2	80.0	20.0	91.42	8	102.76	95.19	11.34	1.42	7.57	0.95								
157	143	9474F	LW2-G348	5		10	4	6	40.0	60.0	90.02	4	96.95	92.83	6.93	1.73	4.12	1.03	Mean	6.4	3.6	63.8	36.3	1.31	0.87
158	128	9474F	LW2-G348	6		10	2	8	20.0	80.0	100.96	2	105.06	102.36	4.10	2.05	2.70	1.35	SD	2.7	2.7	27.2	27.2	0.49	0.29
159	54	9474F	LW2-G348	7		10	10	0	100.0	0.0	91.72	10	99.71	94.00	7.99	0.80	5.71	0.57	n	8	8	8	8	8	8
160	102	9474F	LW2-G348	8	wq replicate	10	7	3	70.0	30.0	95.72	7	103.92	98.39	8.20	1.17	5.53	0.79								
161	95	9475F	LW2-G350	1		10	8	2	80.0	20.0	89.90	8	102.05	94.28	12.15	1.52	7.77	0.97								
162	158	9475F	LW2-G350	2		10	4	6	40.0	60.0	92.09	4	98.69	94.23	6.60	1.65	4.46	1.12								
163	61	9475F	LW2-G350	3		10	10	0	100.0	0.0	91.74	10	108.41	98.14	16.67	1.67	10.27	1.03								
164	155	9475F	LW2-G350	4		10	9	1	90.0	10.0	93.78	9	107.19	98.37	13.41	1.49	8.82	0.98								
165	81	9475F	LW2-G350	5		10	9	1	90.0	10.0	90.49	9	108.32	97.38	17.83	1.98	10.94	1.22	Mean	8.8	1.3	87.5	12.5	1.55	0.99
166	134	9475F	LW2-G350	6		10	10	0	100.0	0.0	96.33	10	109.54	100.72	13.21	1.32	8.82	0.88	SD	2.1	2.1	20.5	20.5	0.22	0.13
167	39	9475F	LW2-G350	7		10	10	0	100.0	0.0	90.48	10	105.56	95.91	15.08	1.51	9.65	0.97	n	8	8	8	8	8	8
168	156	9475F	LW2-G350	8	wq replicate	10	10	0	100.0	0.0	84.73	10	97.51	89.71	12.78	1.28	7.80	0.78								

Bkr # 136 & 137 each lost one animal in transfer to weigh pans.

Bkrs # 55, 141, & 147 each had one pupa. Pupae are not included in weight calculations (EPA/600/R-99/064, p. 59, section 12.3.8.2).

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Water Quality Data

													Bulk Sediment	
	NAS	CLIENT											Interstitial water	
	SMPL	DESCRIP											NH3	pH
	9454F	Control											9.6	6.5
	9456F	LW2-G301											5.5	6.4
	9457F	LW2-G302											7.0	6.4
	9458F	LW2-G308											5.3	6.3
	9459F	LW2-G288											---	---
	9460F	LW2-G292											5.4	6.4
	9461F	LW2-G298											11.8	5.9
	9462F	LW2-G315											6.1	6.2
	9463F	LW2-G316											1.6	6.4
	9464F	LW2-G260											1.4	6.2
	9465F	LW2-G268											1.4	6.5
	9466F	LW2-G318											4.8	6.5
	9467F	LW2-G320											16.1	6.2
	9468F	LW2-G323											1.8	6.5
	9469F	LW2-G327											13.5	6.4
	9470F	LW2-G331											---	---
	9471F	LW2-G333											3.7	6.5
	9472F	LW2-G335											4.7	6.8
	9473F	LW2-G336											6.5	6.0
	9474F	LW2-G348											11.3	6.9
	9475F	LW2-G350											13.5	6.8

	NAS	CLIENT			Overlying water						
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	NH3	HARD	ALK
2	9460F	LW2-G292	8	0	23.0	6.4	180	6.6	1.4	43	50
13	9467F	LW2-G320	8	0	22.8	6.7	205	6.4	2.3	43	50
14	9473F	LW2-G336	8	0	22.8	6.8	260	6.3	1.0	77	50
15	9459F	LW2-G288	8	0	22.8	6.5	185	6.3	2.9	43	50
16	9471F	LW2-G333	8	0	22.8	6.2	200	6.3	0.7	51	60
32	9456F	LW2-G301	8	0	22.9	6.8	180	6.3	1.1	43	60
36	9472F	LW2-G335	8	0	22.8	6.6	170	6.5	0.4	43	40
45	9454F	Control	8	0	22.8	6.0	225	6.6	0.3	34	40
56	9463F	LW2-G316	8	0	22.8	7.4	165	6.5	0.2	43	40
66	9457F	LW2-G302	8	0	22.8	6.6	175	6.4	2.0	43	40
70	9462F	LW2-G315	8	0	22.8	6.8	185	6.3	1.5	51	60
74	9466F	LW2-G318	8	0	22.8	6.6	190	6.3	0.8	43	50
77	9470F	LW2-G331	8	0	22.7	6.8	160	6.4	0.2	34	40
83	9465F	LW2-G268	8	0	22.8	6.9	175	6.3	0.2	43	40
91	9461F	LW2-G298	8	0	22.7	7.0	175	6.3	1.5	43	50
102	9474F	LW2-G348	8	0	22.8	6.6	680	6.2	1.0	43	80
107	9458F	LW2-G308	8	0	22.7	6.6	180	6.3	1.1	51	50
108	9468F	LW2-G323	8	0	22.7	6.8	165	6.3	0.3	43	40
156	9475F	LW2-G350	8	0	22.7	6.6	285	6.4	1.9	43	60
159	9464F	LW2-G260	8	0	22.7	6.9	175	6.4	0.2	43	50
165	9469F	LW2-G327	8	0	22.6	6.5	190	6.3	2.6	43	50
2	9460F	LW2-G292	8	1	23.0	6.4					
13	9467F	LW2-G320	8	1	22.9	6.4					
14	9473F	LW2-G336	8	1	22.8	6.1					
15	9459F	LW2-G288	8	1	22.9	6.4					
16	9471F	LW2-G333	8	1	22.8	6.4					
32	9456F	LW2-G301	8	1	22.6	6.5					
36	9472F	LW2-G335	8	1	22.6	6.4					
45	9454F	Control	8	1	22.6	6.0					
56	9463F	LW2-G316	8	1	22.7	6.6					
66	9457F	LW2-G302	8	1	22.7	6.4					
70	9462F	LW2-G315	8	1	22.6	6.5					
74	9466F	LW2-G318	8	1	22.6	6.6					
77	9470F	LW2-G331	8	1	22.5	6.2					
83	9465F	LW2-G268	8	1	22.5	6.6					
91	9461F	LW2-G298	8	1	22.6	4.7					
102	9474F	LW2-G348	8	1	22.6	6.4					
107	9458F	LW2-G308	8	1	22.5	6.6					
108	9468F	LW2-G323	8	1	22.5	6.8					
156	9475F	LW2-G350	8	1	22.5	6.4					
159	9464F	LW2-G260	8	1	22.4	6.6					
165	9469F	LW2-G327	8	1	22.4	6.7					
2	9460F	LW2-G292	8	2	22.7	6.7					
13	9467F	LW2-G320	8	2	22.7	7.1					
14	9473F	LW2-G336	8	2	22.6	6.3					
15	9459F	LW2-G288	8	2	22.7	5.9					
16	9471F	LW2-G333	8	2	22.8	6.1					
32	9456F	LW2-G301	8	2	22.7	6.1					

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36	9472F	LW2-G335	8	2	22.7	6.4								
45	9454F	Control	8	2	22.8	6.3								
56	9463F	LW2-G316	8	2	22.8	6.3								
66	9457F	LW2-G302	8	2	22.8	6.8								
70	9462F	LW2-G315	8	2	22.8	6.4								
74	9466F	LW2-G318	8	2	22.7	6.6								
77	9470F	LW2-G331	8	2	22.7	6.5								
83	9465F	LW2-G268	8	2	22.8	7.0								
91	9461F	LW2-G298	8	2	22.9	3.8								
102	9474F	LW2-G348	8	2	22.8	6.6								
107	9458F	LW2-G308	8	2	22.8	6.8								
108	9468F	LW2-G323	8	2	22.7	6.2								
156	9475F	LW2-G350	8	2	22.7	6.4								
159	9464F	LW2-G260	8	2	22.6	6.4								
165	9469F	LW2-G327	8	2	22.6	6.7								
2	9460F	LW2-G292	8	3	23.0	5.6								
13	9467F	LW2-G320	8	3	23.0	5.8								
14	9473F	LW2-G336	8	3	23.0	5.6								
15	9459F	LW2-G288	8	3	23.0	5.0								
16	9471F	LW2-G333	8	3	23.1	5.3								
32	9456F	LW2-G301	8	3	23.0	5.0								
36	9472F	LW2-G335	8	3	23.1	5.6								
45	9454F	Control	8	3	23.0	5.3								
56	9463F	LW2-G316	8	3	23.0	5.8								
66	9457F	LW2-G302	8	3	23.1	5.7								
70	9462F	LW2-G315	8	3	23.1	5.2								
74	9466F	LW2-G318	8	3	23.0	5.1								
77	9470F	LW2-G331	8	3	23.0	4.8								
83	9465F	LW2-G268	8	3	23.0	5.4								
91	9461F	LW2-G298	8	3	23.0	3.0								
102	9474F	LW2-G348	8	3	23.0	5.8								
107	9458F	LW2-G308	8	3	23.0	4.8								
108	9468F	LW2-G323	8	3	22.9	4.9								
156	9475F	LW2-G350	8	3	22.9	5.6								
159	9464F	LW2-G260	8	3	22.9	5.7								
165	9469F	LW2-G327	8	3	22.9	5.7								
2	9460F	LW2-G292	8	4	22.7	6.3								
13	9467F	LW2-G320	8	4	22.6	6.7								
14	9473F	LW2-G336	8	4	22.6	6.9								
15	9459F	LW2-G288	8	4	22.7	6.9								
16	9471F	LW2-G333	8	4	22.7	6.7								
32	9456F	LW2-G301	8	4	22.7	6.8								
36	9472F	LW2-G335	8	4	22.7	6.8								
45	9454F	Control	8	4	22.8	6.3								
56	9463F	LW2-G316	8	4	22.8	7.1								
66	9457F	LW2-G302	8	4	22.7	7.1								
70	9462F	LW2-G315	8	4	22.7	6.7								
74	9466F	LW2-G318	8	4	22.7	6.1								
77	9470F	LW2-G331	8	4	22.7	6.6								
83	9465F	LW2-G268	8	4	22.7	6.9								
91	9461F	LW2-G298	8	4	22.8	5.8								
102	9474F	LW2-G348	8	4	22.8	6.5								
107	9458F	LW2-G308	8	4	22.8	6.7								
108	9468F	LW2-G323	8	4	22.7	6.3								
156	9475F	LW2-G350	8	4	22.7	6.8								
159	9464F	LW2-G260	8	4	22.7	7.2								
165	9469F	LW2-G327	8	4	22.7	6.7								
2	9460F	LW2-G292	8	5	23.0	6.6								
13	9467F	LW2-G320	8	5	23.0	6.6								
14	9473F	LW2-G336	8	5	23.0	6.9								
15	9459F	LW2-G288	8	5	23.0	6.4								
16	9471F	LW2-G333	8	5	23.1	6.7								
32	9456F	LW2-G301	8	5	23.0	6.9								
36	9472F	LW2-G335	8	5	23.1	6.8								
45	9454F	Control	8	5	23.1	6.9								
56	9463F	LW2-G316	8	5	23.1	7.0								
66	9457F	LW2-G302	8	5	23.1	6.8								
70	9462F	LW2-G315	8	5	23.1	7.0								
74	9466F	LW2-G318	8	5	23.1	6.9								
77	9470F	LW2-G331	8	5	23.1	7.1								
83	9465F	LW2-G268	8	5	23.1	7.0								
91	9461F	LW2-G298	8	5	23.1	6.2								
102	9474F	LW2-G348	8	5	23.1	6.3								
107	9458F	LW2-G308	8	5	23.1	6.7								
108	9468F	LW2-G323	8	5	23.1	6.8								
156	9475F	LW2-G350	8	5	23.1	6.7								
159	9464F	LW2-G260	8	5	23.0	6.7								
165	9469F	LW2-G327	8	5	23.0	6.6								
2	9460F	LW2-G292	8	6	22.7	5.3								

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13	9467F	LW2-G320	8	6	22.5	5.3								
14	9473F	LW2-G336	8	6	22.5	5.2								
15	9459F	LW2-G288	8	6	22.5	5.4								
16	9471F	LW2-G333	8	6	22.7	5.1								
32	9456F	LW2-G301	8	6	22.6	5.7								
36	9472F	LW2-G335	8	6	22.6	6.5								
45	9454F	Control	8	6	22.6	5.5								
56	9463F	LW2-G316	8	6	22.6	6.7								
66	9457F	LW2-G302	8	6	22.6	6.3								
70	9462F	LW2-G315	8	6	22.6	6.0								
74	9466F	LW2-G318	8	6	22.6	6.1								
77	9470F	LW2-G331	8	6	22.5	6.2								
83	9465F	LW2-G268	8	6	22.6	6.3								
91	9461F	LW2-G298	8	6	22.6	5.5								
102	9474F	LW2-G348	8	6	22.7	6.0								
107	9458F	LW2-G308	8	6	22.6	6.1								
108	9468F	LW2-G323	8	6	22.6	6.5								
156	9475F	LW2-G350	8	6	22.6	5.9								
159	9464F	LW2-G260	8	6	22.6	6.1								
165	9469F	LW2-G327	8	6	22.5	6.1								
2	9460F	LW2-G292	8	7	23.0	5.8								
13	9467F	LW2-G320	8	7	22.8	6.2								
14	9473F	LW2-G336	8	7	22.8	5.7								
15	9459F	LW2-G288	8	7	22.9	6.0								
16	9471F	LW2-G333	8	7	22.9	5.8								
32	9456F	LW2-G301	8	7	22.8	6.2								
36	9472F	LW2-G335	8	7	22.9	6.1								
45	9454F	Control	8	7	22.9	5.9								
56	9463F	LW2-G316	8	7	22.9	6.4								
66	9457F	LW2-G302	8	7	22.9	6.3								
70	9462F	LW2-G315	8	7	22.9	5.9								
74	9466F	LW2-G318	8	7	22.8	6.1								
77	9470F	LW2-G331	8	7	22.9	6.1								
83	9465F	LW2-G268	8	7	22.9	6.6								
91	9461F	LW2-G298	8	7	23.0	6.1								
102	9474F	LW2-G348	8	7	22.9	5.9								
107	9458F	LW2-G308	8	7	22.9	6.1								
108	9468F	LW2-G323	8	7	22.8	6.3								
156	9475F	LW2-G350	8	7	22.9	6.1								
159	9464F	LW2-G260	8	7	22.8	5.9								
165	9469F	LW2-G327	8	7	22.8	6.3								
2	9460F	LW2-G292	8	8	22.2	5.9								
13	9467F	LW2-G320	8	8	22.2	6.1								
14	9473F	LW2-G336	8	8	22.1	6.1								
15	9459F	LW2-G288	8	8	22.2	5.2								
16	9471F	LW2-G333	8	8	22.2	6.1								
32	9456F	LW2-G301	8	8	22.2	5.2								
36	9472F	LW2-G335	8	8	22.1	5.9								
45	9454F	Control	8	8	22.2	5.4								
56	9463F	LW2-G316	8	8	22.2	6.5								
66	9457F	LW2-G302	8	8	22.2	5.9								
70	9462F	LW2-G315	8	8	22.2	6.1								
74	9466F	LW2-G318	8	8	22.2	6.1								
77	9470F	LW2-G331	8	8	22.2	6.2								
83	9465F	LW2-G268	8	8	22.2	6.3								
91	9461F	LW2-G298	8	8	22.2	4.7								
102	9474F	LW2-G348	8	8	22.1	5.7								
107	9458F	LW2-G308	8	8	22.1	6.2								
108	9468F	LW2-G323	8	8	22.1	6.7								
156	9475F	LW2-G350	8	8	22.1	6.5								
159	9464F	LW2-G260	8	8	22.1	6.2								
165	9469F	LW2-G327	8	8	22.1	6.4								
2	9460F	LW2-G292	8	9	23.2	3.9								
13	9467F	LW2-G320	8	9	23.0	4.2								
14	9473F	LW2-G336	8	9	23.0	4.0								
15	9459F	LW2-G288	8	9	22.9	4.2								
16	9471F	LW2-G333	8	9	23.1	4.6								
32	9456F	LW2-G301	8	9	23.0	3.7								
36	9472F	LW2-G335	8	9	23.1	4.4								
45	9454F	Control	8	9	23.0	3.2								
56	9463F	LW2-G316	8	9	23.1	4.9								
66	9457F	LW2-G302	8	9	23.1	5.0								
70	9462F	LW2-G315	8	9	22.9	4.0								
74	9466F	LW2-G318	8	9	22.9	4.2								
77	9470F	LW2-G331	8	9	23.0	4.2								
83	9465F	LW2-G268	8	9	23.0	4.9								
91	9461F	LW2-G298	8	9	23.1	3.8								
102	9474F	LW2-G348	8	9	23.0	4.2								
107	9458F	LW2-G308	8	9	23.0	3.9								

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108	9468F	LW2-G323	8	9	23.0	4.4								
156	9475F	LW2-G350	8	9	23.0	4.2								
159	9464F	LW2-G260	8	9	22.8	4.4								
165	9469F	LW2-G327	8	9	22.8	3.8								
2	9460F	LW2-G292	8	10	22.8	6.5	155	6.4	0.4	43	40			
13	9467F	LW2-G320	8	10	22.8	5.8	160	6.4	0.6	43	40			
14	9473F	LW2-G336	8	10	22.7	6.3	160	6.4	0.3	34	50			
15	9459F	LW2-G288	8	10	22.7	5.9	160	6.4	0.6	43	40			
16	9471F	LW2-G333	8	10	22.8	6.6	155	6.4	0.3	43	40			
32	9456F	LW2-G301	8	10	22.8	6.2	155	6.4	0.5	43	50			
36	9472F	LW2-G335	8	10	22.8	6.3	160	6.4	0.3	43	40			
45	9454F	Control	8	10	22.7	5.9	160	6.4	0.3	43	40			
56	9463F	LW2-G316	8	10	22.8	6.9	160	6.5	0.2	43	40			
66	9457F	LW2-G302	8	10	22.8	6.9	160	6.5	0.5	43	40			
70	9462F	LW2-G315	8	10	22.7	6.4	155	6.5	0.7	43	40			
74	9466F	LW2-G318	8	10	22.7	6.3	160	6.4	0.7	43	40			
77	9470F	LW2-G331	8	10	22.7	6.4	155	6.4	0.3	43	40			
83	9465F	LW2-G268	8	10	22.7	6.3	160	6.4	0.3	43	40			
91	9461F	LW2-G298	8	10	22.7	5.0	160	6.4	0.4	43	40			
102	9474F	LW2-G348	8	10	22.9	6.1	185	6.4	0.4	34	50			
107	9458F	LW2-G308	8	10	22.8	6.3	160	6.4	0.4	43	40			
108	9468F	LW2-G323	8	10	22.8	6.4	160	6.4	0.4	43	40			
156	9475F	LW2-G350	8	10	22.8	6.2	160	6.5	0.6	43	40			
159	9464F	LW2-G260	8	10	22.7	6.0	160	6.4	0.3	43	40			
165	9469F	LW2-G327	8	10	22.6	6.3	160	6.5	0.6	43	40			
				Mean	22.8	6.0	187	6.4	0.8	44	46		---	---
				SD	0.3	0.8	82	0.1	0.7	6	9		---	---
				n	231	231	42	42	42	42	42		21	21
				Min	22.1	3.0	155	6.2	0.2	34	40		1.4	5.9
				Max	23.2	7.4	680	6.6	2.9	77	80		16.1	6.9

ANC07552
BZTO104(e)007552

Test Number: P686-17

Freshwater Sediment Test
28-day Hyalella azteca

Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or
dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

Data entry verified against laboratory bench sheets
MSR 12/9/04

pan #	INITIAL WEIGHT tare wt (mg)	final wt (mg)	wt count	avg. wt/ organism
1	29.504	30.097	20	0.030
2	30.695	31.216	20	0.026
3	30.595	31.113	20	0.026
4	28.705	29.362	20	0.033
5	28.559	29.248	20	0.034

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)
1	23	9534F	Control	1		10	10	0	100.0	0.0	28.756	10	32.538	3.78	0.38
2	74	9534F	Control	2		10	9	1	90.0	10.0	30.911	9	33.879	2.97	0.33
3	4	9534F	Control	3		10	10	0	100.0	0.0	26.777	10	29.963	3.19	0.32
4	114	9534F	Control	4		10	10	0	100.0	0.0	30.396	10	33.896	3.50	0.35
5	159	9534F	Control	5		10	10	0	100.0	0.0	28.146	10	31.123	2.98	0.30
6	8	9534F	Control	6		10	10	0	100.0	0.0	27.140	10	30.561	3.42	0.34
7	124	9534F	Control	7		10	10	0	100.0	0.0	29.818	10	33.198	3.38	0.34
8	160	9534F	Control	8	wq replicate	10	10	0	100.0	0.0	31.424	10	34.304	2.88	0.29
9	129	9514F	LW2-G273	1		10	8	2	80.0	20.0	28.212	8	30.407	2.20	0.27
10	122	9514F	LW2-G273	2		10	6	4	60.0	40.0	28.972	6	29.742	0.77	0.13
11	113	9514F	LW2-G273	3		10	9	1	90.0	10.0	30.759	9	33.307	2.55	0.28
12	34	9514F	LW2-G273	4		10	5	5	50.0	50.0	29.354	5	31.485	2.13	0.43
13	143	9514F	LW2-G273	5		10	8	2	80.0	20.0	30.097	8	31.877	1.78	0.22
14	138	9514F	LW2-G273	6		10	6	4	60.0	40.0	30.864	6	32.468	1.60	0.27
15	6	9514F	LW2-G273	7		10	6	4	60.0	40.0	28.744	6	30.622	1.88	0.31
16	150	9514F	LW2-G273	8	wq replicate	10	8	2	80.0	20.0	28.270	8	30.284	2.01	0.25
17	120	9515F	LW2-G124	1		10	10	0	100.0	0.0	28.383	10	29.947	1.56	0.16
18	154	9515F	LW2-G124	2		10	10	0	100.0	0.0	28.147	10	31.388	3.24	0.32
19	41	9515F	LW2-G124	3		10	9	1	90.0	10.0	29.203	9	31.827	2.62	0.29
20	62	9515F	LW2-G124	4		10	10	0	100.0	0.0	28.090	10	30.559	2.47	0.25
21	145	9515F	LW2-G124	5		10	8	2	80.0	20.0	29.739	8	32.576	2.84	0.35
22	146	9515F	LW2-G124	6		10	10	0	100.0	0.0	27.893	10	30.234	2.34	0.23
23	142	9515F	LW2-G124	7		10	9	1	90.0	10.0	28.356	9	30.844	2.49	0.28
24	90	9515F	LW2-G124	8	wq replicate	10	9	1	90.0	10.0	29.206	9	31.149	1.94	0.22
25	95	9516F	LW2-G425	1		10	10	0	100.0	0.0	28.763	10	30.711	1.95	0.19
26	81	9516F	LW2-G425	2		10	10	0	100.0	0.0	28.037	10	30.902	2.87	0.29
27	71	9516F	LW2-G425	3		10	10	0	100.0	0.0	29.578	10	32.910	3.33	0.33
28	97	9516F	LW2-G425	4		10	10	0	100.0	0.0	27.581	10	30.881	3.30	0.33
29	27	9516F	LW2-G425	5		10	10	0	100.0	0.0	28.450	10	31.264	2.81	0.28
30	110	9516F	LW2-G425	6		10	10	0	100.0	0.0	30.315	10	34.003	3.69	0.37
31	158	9516F	LW2-G425	7		10	10	0	100.0	0.0	27.881	10	30.507	2.63	0.26
32	12	9516F	LW2-G425	8	wq replicate	10	10	0	100.0	0.0	27.842	10	30.436	2.59	0.26
33	68	9517F	LW2-G364	1		10	9	1	90.0	10.0	27.431	9	29.356	1.93	0.21
34	32	9517F	LW2-G364	2		10	8	2	80.0	20.0	29.300	8	31.011	1.71	0.21
35	125	9517F	LW2-G364	3		10	9	1	90.0	10.0	29.129	9	30.969	1.84	0.20
36	85	9517F	LW2-G364	4		10	8	2	80.0	20.0	28.101	8	29.870	1.77	0.22
37	51	9517F	LW2-G364	5		10	10	0	100.0	0.0	28.458	10	31.477	3.02	0.30
38	15	9517F	LW2-G364	6		10	9	1	90.0	10.0	28.273	9	30.040	1.77	0.20
39	24	9517F	LW2-G364	7		10	10	0	100.0	0.0	32.167	10	34.549	2.38	0.24
40	38	9517F	LW2-G364	8	wq replicate	10	9	1	90.0	10.0	30.869	9	32.976	2.11	0.23

	SURV	MORT	PSURV	PMORT	WT
Mean	9.9	0.1	98.8	1.3	0.33
SD	0.4	0.4	3.5	3.5	0.03
n	8	8	8	8	8
Mean	7.0	3.0	70.0	30.0	0.27
SD	1.4	1.4	14.1	14.1	0.08
n	8	8	8	8	8
Mean	9.4	0.6	93.8	6.3	0.26
SD	0.7	0.7	7.4	7.4	0.06
n	8	8	8	8	8
Mean	10.0	0.0	100.0	0.0	0.29
SD	0.0	0.0	0.0	0.0	0.05
n	8	8	8	8	8
Mean	9.0	1.0	90.0	10.0	0.23
SD	0.8	0.8	7.6	7.6	0.03
n	8	8	8	8	8

ANC07553
BZTO104(e)007553

Test Number: P686-17

Freshwater Sediment Test
28-day Hyalella azteca

		NAS	CLIENT								TARE	WT	DRY	TWT	WT						
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	WT (mg)	COUNT	WT (mg)	(mg)	(mg)		SURV	MORT	PSURV	PMORT	WT
41	99	9518F	LW2-G420	1		10	10	0	100.0	0.0	28.894	10	31.104	2.21	0.22						
42	135	9518F	LW2-G420	2		10	10	0	100.0	0.0	29.056	10	31.621	2.57	0.26						
43	69	9518F	LW2-G420	3		10	9	1	90.0	10.0	30.753	9	34.001	3.25	0.36						
44	152	9518F	LW2-G420	4		10	10	0	100.0	0.0	27.575	10	30.220	2.65	0.26						
45	123	9518F	LW2-G420	5		10	9	1	90.0	10.0	28.599	9	31.237	2.64	0.29	Mean	9.8	0.3	97.5	2.5	0.27
46	127	9518F	LW2-G420	6		10	10	0	100.0	0.0	29.381	10	31.976	2.60	0.26	SD	0.5	0.5	4.6	4.6	0.05
47	53	9518F	LW2-G420	7		10	10	0	100.0	0.0	29.188	10	32.243	3.06	0.31	n	8	8	8	8	8
48	161	9518F	LW2-G420	8	wq replicate	10	10	0	100.0	0.0	27.922	10	29.980	2.06	0.21						
49	117	9519F	LW2-G409	1		10	10	0	100.0	0.0	26.593	10	29.287	2.69	0.27						
50	42	9519F	LW2-G409	2		10	9	1	90.0	10.0	29.624	9	31.867	2.04	0.23						
51	52	9519F	LW2-G409	3		10	10	0	100.0	0.0	29.012	10	31.725	2.71	0.27						
52	86	9519F	LW2-G409	4		10	9	1	90.0	10.0	28.750	9	30.676	1.93	0.21						
53	100	9519F	LW2-G409	5		10	9	1	90.0	10.0	29.873	9	31.792	1.92	0.21	Mean	9.4	0.6	93.8	6.3	0.25
54	163	9519F	LW2-G409	6		10	10	0	100.0	0.0	30.523	10	33.149	2.63	0.26	SD	0.7	0.7	7.4	7.4	0.03
55	5	9519F	LW2-G409	7		10	8	2	80.0	20.0	29.022	8	31.175	2.15	0.27	n	8	8	8	8	8
56	153	9519F	LW2-G409	8	wq replicate	10	10	0	100.0	0.0	33.329	10	36.372	3.04	0.30						
57	33	9520F	LW2-G383	1		10	10	0	100.0	0.0	29.489	10	32.223	2.73	0.27						
58	82	9520F	LW2-G383	2		10	9	1	90.0	10.0	30.649	9	33.400	2.75	0.31						
59	37	9520F	LW2-G383	3		10	10	0	100.0	0.0	31.587	10	35.222	3.64	0.36						
60	139	9520F	LW2-G383	4		10	8	2	80.0	20.0	28.553	8	31.549	3.00	0.37						
61	118	9520F	LW2-G383	5		10	10	0	100.0	0.0	28.670	10	32.356	3.69	0.37	Mean	9.6	0.4	96.3	3.8	0.30
62	162	9520F	LW2-G383	6		10	10	0	100.0	0.0	30.434	10	33.071	2.64	0.26	SD	0.7	0.7	7.4	7.4	0.06
63	39	9520F	LW2-G383	7		10	10	0	100.0	0.0	30.318	10	32.772	2.45	0.25	n	8	8	8	8	8
64	119	9520F	LW2-G383	8	wq replicate	10	10	0	100.0	0.0	28.917	10	31.332	2.42	0.24						
65	89	9521F	LW2-G368	1		10	1	9	10.0	90.0	29.453	1	30.230	0.78	0.78						
66	121	9521F	LW2-G368	2		10	4	6	40.0	60.0	28.765	4	30.726	1.96	0.49						
67	29	9521F	LW2-G368	3		10	1	9	10.0	90.0	31.404	1	32.030	0.63	0.63						
68	91	9521F	LW2-G368	4		10	2	8	20.0	80.0	28.810	2	29.644	0.83	0.42						
69	141	9521F	LW2-G368	5		10	3	7	30.0	70.0	28.082	3	30.108	2.03	0.68	Mean	1.8	8.3	17.5	82.5	0.60
70	2	9521F	LW2-G368	6		10	0	10	0.0	100.0	28.924	0				SD	1.5	1.5	14.9	14.9	0.13
71	77	9521F	LW2-G368	7		10	3	7	30.0	70.0	30.289	3	32.050	1.76	0.59	n	8	8	8	8	6
72	21	9521F	LW2-G368	8	wq replicate	10	0	10	0.0	100.0	29.116	0									
73	28	9522F	LW2-G382	1		10	8	2	80.0	20.0	29.074	8	30.583	1.51	0.19						
74	26	9522F	LW2-G382	2		10	9	1	90.0	10.0	28.910	9	30.642	1.73	0.19						
75	157	9522F	LW2-G382	3		10	10	0	100.0	0.0	29.505	10	31.772	2.27	0.23						
76	1	9522F	LW2-G382	4		10	8	2	80.0	20.0	27.047	8	28.292	1.25	0.16						
77	164	9522F	LW2-G382	5		10	10	0	100.0	0.0	28.555	10	30.415	1.86	0.19	Mean	9.1	0.9	91.3	8.8	0.21
78	57	9522F	LW2-G382	6		10	10	0	100.0	0.0	29.474	10	31.819	2.35	0.23	SD	1.0	1.0	9.9	9.9	0.05
79	31	9522F	LW2-G382	7		10	8	2	80.0	20.0	27.784	8	30.289	2.51	0.31	n	8	8	8	8	8
80	151	9522F	LW2-G382	8	wq replicate	10	10	0	100.0	0.0	30.279	10	32.426	2.15	0.21						
81	136	9523F	LW2-G392	1		10	10	0	100.0	0.0	28.919	10	31.192	2.27	0.23						
82	87	9523F	LW2-G392	2		10	9	1	90.0	10.0	29.812	9	31.863	2.05	0.23						
83	149	9523F	LW2-G392	3		10	9	1	90.0	10.0	29.938	9	31.975	2.04	0.23						
84	55	9523F	LW2-G392	4		10	9	1	90.0	10.0	29.248	9	31.759	2.51	0.28						
85	78	9523F	LW2-G392	5		10	10	0	100.0	0.0	28.457	10	30.637	2.18	0.22	Mean	9.5	0.5	95.0	5.0	0.22
86	80	9523F	LW2-G392	6		10	9	1	90.0	10.0	29.863	9	31.936	2.07	0.23	SD	0.5	0.5	5.3	5.3	0.03
87	65	9523F	LW2-G392	7		10	10	0	100.0	0.0	28.310	10	30.454	2.14	0.21	n	8	8	8	8	8
88	9	9523F	LW2-G392	8	wq replicate	10	10	0	100.0	0.0	27.349	10	28.932	1.58	0.16						

ANC07554
BZTO104(e)007554

Test Number: P686-17

Freshwater Sediment Test
28-day Hyalella azteca

		NAS	CLIENT								TARE	WT	DRY	TWT	WT							
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	WT (mg)	COUNT	WT (mg)	(mg)	(mg)			SURV	MORT	PSURV	PMORT	WT
89	60	9524F	LW2-G346	1		10	9	1	90.0	10.0	28.394	9	30.486	2.09	0.23							
90	131	9524F	LW2-G346	2		10	10	0	100.0	0.0	27.745	10	29.849	2.10	0.21							
91	165	9524F	LW2-G346	3		10	10	0	100.0	0.0	29.063	10	31.214	2.15	0.22							
92	92	9524F	LW2-G346	4		10	9	1	90.0	10.0	29.844	9	30.214	0.37	0.04							
93	130	9524F	LW2-G346	5		10	10	0	100.0	0.0	28.070	10	29.742	1.67	0.17	Mean		9.5	0.5	95.0	5.0	0.18
94	14	9524F	LW2-G346	6		10	10	0	100.0	0.0	31.950	10	33.794	1.84	0.18	SD		0.8	0.8	7.6	7.6	0.06
95	19	9524F	LW2-G346	7		10	8	2	80.0	20.0	27.416	8	28.924	1.51	0.19	n		8	8	8	8	8
96	22	9524F	LW2-G346	8	wq replicate	10	10	0	100.0	0.0	26.998	10	29.075	2.08	0.21							
97	3	9525F	LW2-G347	1		10	10	0	100.0	0.0	29.500	10	31.409	1.91	0.19							
98	61	9525F	LW2-G347	2		10	10	0	100.0	0.0	27.774	10	30.996	3.22	0.32							
99	35	9525F	LW2-G347	3		10	10	0	100.0	0.0	28.188	9	30.309	2.12	0.24							
100	67	9525F	LW2-G347	4		10	10	0	100.0	0.0	28.744	10	30.920	2.18	0.22							
101	56	9525F	LW2-G347	5		10	9	1	90.0	10.0	26.953	9	29.670	2.72	0.30	Mean		9.3	0.8	92.5	7.5	0.22
102	134	9525F	LW2-G347	6		10	8	2	80.0	20.0	29.192	8	30.674	1.48	0.19	SD		0.9	0.9	8.9	8.9	0.06
103	98	9525F	LW2-G347	7		10	8	2	80.0	20.0	27.355	8	28.724	1.37	0.17	n		8	8	8	8	8
104	111	9525F	LW2-G347	8	wq replicate	10	9	1	90.0	10.0	28.374	9	29.652	1.28	0.14							
105	137	9526F	LW2-G342	1		10	8	2	80.0	20.0	29.193	8	31.445	2.25	0.28							
106	54	9526F	LW2-G342	2		10	10	0	100.0	0.0	28.244	10	30.982	2.74	0.27							
107	156	9526F	LW2-G342	3		10	9	1	90.0	10.0	28.062	9	29.650	1.59	0.18							
108	44	9526F	LW2-G342	4		10	9	1	90.0	10.0	28.668	9	30.351	1.68	0.19							
109	133	9526F	LW2-G342	5		10	9	1	90.0	10.0	27.644	9	30.242	2.60	0.29	Mean		9.4	0.6	93.8	6.3	0.23
110	48	9526F	LW2-G342	6		10	10	0	100.0	0.0	30.950	10	33.450	2.50	0.25	SD		0.7	0.7	7.4	7.4	0.05
111	126	9526F	LW2-G342	7		10	10	0	100.0	0.0	30.671	10	32.485	1.61	0.16	n		8	8	8	8	8
112	30	9526F	LW2-G342	8	wq replicate	10	10	0	100.0	0.0	33.860	10	35.885	2.03	0.20							
113	73	9527F	LW2-G352	1		10	10	0	100.0	0.0	28.598	10	31.279	2.68	0.27							
114	105	9527F	LW2-G352	2		10	9	1	90.0	10.0	28.047	9	29.867	1.82	0.20							
115	58	9527F	LW2-G352	3		10	10	0	100.0	0.0	30.805	10	33.696	2.89	0.29							
116	49	9527F	LW2-G352	4		10	9	1	90.0	10.0	28.928	9	30.746	1.82	0.20							
117	18	9527F	LW2-G352	5		10	10	0	100.0	0.0	29.135	10	31.018	1.88	0.19	Mean		9.6	0.4	96.3	3.8	0.24
118	20	9527F	LW2-G352	6		10	10	0	100.0	0.0	31.300	10	33.549	2.25	0.22	SD		0.5	0.5	5.2	5.2	0.05
119	102	9527F	LW2-G352	7		10	10	0	100.0	0.0	27.835	10	30.030	2.20	0.22	n		8	8	8	8	8
120	76	9527F	LW2-G352	8	wq replicate	10	9	1	90.0	10.0	27.768	9	30.641	2.87	0.32							
121	83	9528F	LW2-G396	1		10	7	3	70.0	30.0	27.974	7	30.054	2.08	0.30							
122	75	9528F	LW2-G396	2		10	9	1	90.0	10.0	30.190	9	32.234	2.04	0.23							
123	108	9528F	LW2-G396	3		10	8	2	80.0	20.0	29.192	8	30.396	1.20	0.15							
124	96	9528F	LW2-G396	4		10	8	2	80.0	20.0	27.584	8	30.962	3.38	0.42							
125	79	9528F	LW2-G396	5		10	7	3	70.0	30.0	29.093	7	31.157	2.06	0.29	Mean		8.1	1.9	81.3	18.8	0.27
126	132	9528F	LW2-G396	6		10	10	0	100.0	0.0	29.690	10	31.744	2.05	0.21	SD		1.1	1.1	11.3	11.3	0.08
127	64	9528F	LW2-G396	7		10	9	1	90.0	10.0	34.208	9	36.414	2.21	0.25	n		8	8	8	8	8
128	46	9528F	LW2-G396	8	wq replicate	10	7	3	70.0	30.0	30.780	7	32.895	2.12	0.30							
129	101	9529F	LW2-G405	1		10	8	2	80.0	20.0	29.636	8	32.209	2.57	0.32							
130	140	9529F	LW2-G405	2		10	10	0	100.0	0.0	29.104	10	31.618	2.51	0.25							
131	94	9529F	LW2-G405	3		10	8	2	80.0	20.0	26.748	8	30.507	3.76	0.47							
132	128	9529F	LW2-G405	4		10	10	0	100.0	0.0	27.648	10	30.876	3.23	0.32							
133	72	9529F	LW2-G405	5		10	8	2	80.0	20.0	28.241	8	31.382	3.14	0.39	Mean		9.0	1.0	90.0	10.0	0.34
134	66	9529F	LW2-G405	6		10	9	1	90.0	10.0	28.023	9	30.958	2.94	0.33	SD		0.9	0.9	9.3	9.3	0.07
135	25	9529F	LW2-G405	7		10	10	0	100.0	0.0	28.698	10	32.292	3.59	0.36	n		8	8	8	8	8
136	88	9529F	LW2-G405	8	wq replicate	10	9	1	90.0	10.0	29.673	9	31.885	2.21	0.25							

ANC07555
BZTO104(e)007555

Test Number: P686-17

Freshwater Sediment Test
28-day Hyalella azteca

		NAS	CLIENT								TARE	WT	DRY	TWT	WT							
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	WT (mg)	COUNT	WT (mg)	(mg)	(mg)			SURV	MORT	PSURV	PMORT	WT
137	112	9530F	LW2-G426	1		10	10	0	100.0	0.0	27.977	10	30.441	2.46	0.25							
138	155	9530F	LW2-G426	2		10	7	3	70.0	30.0	29.450	7	31.037	1.59	0.23							
139	7	9530F	LW2-G426	3		10	9	1	90.0	10.0	28.981	9	31.370	2.39	0.27							
140	43	9530F	LW2-G426	4		10	10	0	100.0	0.0	28.784	10	31.129	2.35	0.23							
141	106	9530F	LW2-G426	5		10	9	1	90.0	10.0	28.328	9	30.892	2.56	0.28	Mean		9.3	0.8	92.5	7.5	0.24
142	167	9530F	LW2-G426	6		10	9	1	90.0	10.0	28.966	8	30.519	1.55	0.19	SD		1.0	1.0	10.4	10.4	0.03
143	109	9530F	LW2-G426	7		10	10	0	100.0	0.0	29.900	10	32.487	2.59	0.26	n		8	8	8	8	8
144	40	9530F	LW2-G426	8	wq replicate	10	10	0	100.0	0.0	28.881	10	31.112	2.23	0.22							
145	93	9531F	LW2-G277	1		10	9	1	90.0	10.0	28.296	9	32.234	3.94	0.44							
146	36	9531F	LW2-G277	2		10	10	0	100.0	0.0	28.556	10	31.300	2.74	0.27							
147	45	9531F	LW2-G277	3		10	10	0	100.0	0.0	28.321	10	30.082	1.76	0.18							
148	50	9531F	LW2-G277	4		10	10	0	100.0	0.0	27.220	10	29.163	1.94	0.19							
149	10	9531F	LW2-G277	5		10	6	4	60.0	40.0	28.184	6	29.758	1.57	0.26	Mean		9.1	0.9	91.3	8.8	0.26
150	84	9531F	LW2-G277	6		10	9	1	90.0	10.0	28.303	9	30.845	2.54	0.28	SD		1.4	1.4	13.6	13.6	0.08
151	13	9531F	LW2-G277	7		10	10	0	100.0	0.0	29.247	10	31.223	1.98	0.20	n		8	8	8	8	8
152	116	9531F	LW2-G277	8	wq replicate	10	9	1	90.0	10.0	28.679	9	30.980	2.30	0.26							
153	103	9532F	LW2-G295	1		10	8	2	80.0	20.0	28.791	8	30.419	1.63	0.20							
154	104	9532F	LW2-G295	2		10	10	0	100.0	0.0	29.742	10	32.215	2.47	0.25							
155	17	9532F	LW2-G295	3		10	10	0	100.0	0.0	31.021	10	32.986	1.97	0.20							
156	166	9532F	LW2-G295	4		10	9	1	90.0	10.0	27.966	9	29.525	1.56	0.17							
157	47	9532F	LW2-G295	5		10	8	2	80.0	20.0	29.074	8	31.524	2.45	0.31	Mean		8.9	1.1	88.8	11.3	0.22
158	147	9532F	LW2-G295	6		10	8	2	80.0	20.0	28.270	8	29.946	1.68	0.21	SD		1.0	1.0	9.9	9.9	0.05
159	70	9532F	LW2-G295	7		10	10	0	100.0	0.0	28.568	10	30.311	1.74	0.17	n		8	8	8	8	8
160	11	9532F	LW2-G295	8	wq replicate	10	8	2	80.0	20.0	27.661	8	29.663	2.00	0.25							
161	16	9533F	LW2-G280	1		10	10	0	100.0	0.0	28.702	10	30.978	2.28	0.23							
162	144	9533F	LW2-G280	2		10	9	1	90.0	10.0	30.232	9	32.579	2.35	0.26							
163	148	9533F	LW2-G280	3		10	9	1	90.0	10.0	31.894	9	33.509	1.62	0.18							
164	115	9533F	LW2-G280	4		10	9	1	90.0	10.0	28.526	9	29.916	1.39	0.15							
165	107	9533F	LW2-G280	5		10	10	0	100.0	0.0	29.737	10	31.751	2.01	0.20	Mean		9.4	0.6	93.8	6.3	0.21
166	63	9533F	LW2-G280	6		10	9	1	90.0	10.0	29.162	9	30.943	1.78	0.20	SD		0.5	0.5	5.2	5.2	0.04
167	59	9533F	LW2-G280	7		10	9	1	90.0	10.0	29.530	9	32.155	2.63	0.29	n		8	8	8	8	8
168	168	9533F	LW2-G280	8	wq replicate	10	10	0	100.0	0.0	29.349	10	31.310	1.96	0.20							

Notes:

beaker #35 and beaker #167: one animal each lost in transfer to weighing pan

beaker #84: additional animal found when counted into pan, apparent initial miscount in number of survivors; the survival count was adjusted to reflect this

ANC07556
BZTO104(e)007556

Test Number: 686-17

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT										Interstitial water	
BKR	SMPL	DESCRIP										NH3	pH
	9534F	Control										1.5	6.6
	9514F	LW2-G273										11.6	6.2
	9515F	LW2-G124										3.2	5.6
	9516F	LW2-G425										0.9	5.3
	9517F	LW2-G364										2.6	5.7
	9518F	LW2-G420										4.6	6.0
	9519F	LW2-G409										5.0	6.1
	9520F	LW2-G383										---	---
	9521F	LW2-G368										22.9	6.9
	9522F	LW2-G382										3.8	7.0
	9523F	LW2-G392										4.8	7.2
	9524F	LW2-G346										3.4	7.0
	9525F	LW2-G347										2.4	6.8
	9526F	LW2-G342										1.9	6.6
	9527F	LW2-G352										3.2	6.5
	9528F	LW2-G396										4.3	6.7
	9529F	LW2-G405										1.6	6.3
	9530F	LW2-G426										5.0	6.2
	9531F	LW2-G277										2.5	6.3
	9532F	LW2-G295										2.1	6.4
	9533F	LW2-G280										2.4	6.3
					Overlying water								
			REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		
9	9523F	LW2-G392	8	0	22.4	6.8	165	6.8	34	40	0.7		
11	9532F	LW2-G295	8	0	22.4	6.5	160	6.6	43	40	0.5		
12	9516F	LW2-G425	8	0	22.4	6.3	160	6.5	34	40	0.3		
21	9521F	LW2-G368	8	0	22.4	6.7	4750	6.4	68	70	1.5		
22	9524F	LW2-G346	8	0	22.4	6.6	175	7.0	43	40	0.6		
30	9526F	LW2-G342	8	0	22.3	6.6	160	6.5	43	40	0.5		
38	9517F	LW2-G364	8	0	22.3	6.0	170	6.6	43	40	0.7		
40	9530F	LW2-G426	8	0	22.3	6.3	170	6.5	43	50	1.0		
46	9528F	LW2-G396	8	0	22.3	6.4	160	6.3	51	40	0.7		
76	9527F	LW2-G352	8	0	22.3	6.2	170	6.3	51	40	0.8		
88	9529F	LW2-G405	8	0	22.3	6.5	165	6.5	51	40	0.4		
90	9515F	LW2-G124	8	0	22.3	6.9	160	6.4	34	40	0.4		
111	9525F	LW2-G347	8	0	22.4	6.7	170	6.5	43	40	0.5		
116	9531F	LW2-G277	8	0	22.3	6.8	165	6.5	43	40	0.6		
119	9520F	LW2-G383	8	0	22.3	6.4	160	6.6	34	40	0.3		
150	9514F	LW2-G273	8	0	22.1	6.2	175	6.5	43	40	2.0		
151	9522F	LW2-G382	8	0	22.3	6.3	165	6.4	43	40	0.9		
153	9519F	LW2-G409	8	0	22.2	6.3	175	6.5	43	40	1.0		
160	9534F	Control	8	0	22.4	6.2	230	6.6	43	40	0.2		
161	9518F	LW2-G420	8	0	22.3	6.7	180	6.5	51	40	0.9		
168	9533F	LW2-G280	8	0	22.5	6.6	165	6.6	43	40	0.5		
9	9523F	LW2-G392	8	1	22.4	7.6	165	6.4					
11	9532F	LW2-G295	8	1	22.4	7.5	165	6.5					
12	9516F	LW2-G425	8	1	22.4	7.4	165	6.4					
21	9521F	LW2-G368	8	1	22.5	6.8	2580	6.5					
22	9524F	LW2-G346	8	1	22.4	7.4	175	6.4					
30	9526F	LW2-G342	8	1	22.4	7.5	170	6.5					
38	9517F	LW2-G364	8	1	22.3	7.5	165	6.5					
40	9530F	LW2-G426	8	1	22.4	7.6	170	6.5					
46	9528F	LW2-G396	8	1	22.4	7.6	165	6.5					
76	9527F	LW2-G352	8	1	22.4	7.4	170	6.5					

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88	9529F	LW2-G405	8	1	22.5	7.3	165	6.5						
90	9515F	LW2-G124	8	1	22.6	7.5	165	6.5						
111	9525F	LW2-G347	8	1	22.5	7.3	170	6.5						
116	9531F	LW2-G277	8	1	22.5	7.4	165	6.5						
119	9520F	LW2-G383	8	1	22.5	7.4	165	6.5						
150	9514F	LW2-G273	8	1	22.4	7.4	170	6.6						
151	9522F	LW2-G382	8	1	22.4	7.3	165	6.5						
153	9519F	LW2-G409	8	1	22.5	7.2	170	6.5						
160	9534F	Control	8	1	22.5	7.4	210	6.6						
161	9518F	LW2-G420	8	1	22.4	7.6	170	6.6						
168	9533F	LW2-G280	8	1	22.5	7.4	165	6.6						
9	9523F	LW2-G392	8	2	22.7									
11	9532F	LW2-G295	8	2	22.7									
12	9516F	LW2-G425	8	2	22.6									
21	9521F	LW2-G368	8	2	22.7									
22	9524F	LW2-G346	8	2	22.7									
30	9526F	LW2-G342	8	2	22.7									
38	9517F	LW2-G364	8	2	22.7									
40	9530F	LW2-G426	8	2	22.7									
46	9528F	LW2-G396	8	2	22.7									
76	9527F	LW2-G352	8	2	22.8									
88	9529F	LW2-G405	8	2	22.8									
90	9515F	LW2-G124	8	2	22.9									
111	9525F	LW2-G347	8	2	22.8									
116	9531F	LW2-G277	8	2	22.8									
119	9520F	LW2-G383	8	2	22.8									
150	9514F	LW2-G273	8	2	22.7									
151	9522F	LW2-G382	8	2	22.7									
153	9519F	LW2-G409	8	2	22.7									
160	9534F	Control	8	2	22.7									
161	9518F	LW2-G420	8	2	22.7									
168	9533F	LW2-G280	8	2	22.8									
9	9523F	LW2-G392	8	3	22.6	7.2		6.4						
11	9532F	LW2-G295	8	3	22.4	7.4		6.4						
12	9516F	LW2-G425	8	3	22.3	7.4		6.4						
21	9521F	LW2-G368	8	3	22.4	7.4		6.7						
22	9524F	LW2-G346	8	3	22.3	7.5		6.5						
30	9526F	LW2-G342	8	3	22.5	7.7		6.6						
38	9517F	LW2-G364	8	3	22.4	7.7		6.5						
40	9530F	LW2-G426	8	3	22.4	7.6		6.5						
46	9528F	LW2-G396	8	3	22.4	7.7		6.6						
76	9527F	LW2-G352	8	3	22.4	7.4		6.5						
88	9529F	LW2-G405	8	3	22.5	6.9		6.4						
90	9515F	LW2-G124	8	3	22.6	7.4		6.5						
111	9525F	LW2-G347	8	3	22.6	7.1		6.5						
116	9531F	LW2-G277	8	3	22.5	7.3		6.5						
119	9520F	LW2-G383	8	3	22.4	7.1		6.5						
150	9514F	LW2-G273	8	3	22.5	7.1		6.5						
151	9522F	LW2-G382	8	3	22.3	7.4		6.6						
153	9519F	LW2-G409	8	3	22.3	7.5		6.5						
160	9534F	Control	8	3	22.6	7.5		6.6						
161	9518F	LW2-G420	8	3	22.6	7.5		6.5						
168	9533F	LW2-G280	8	3	22.6	7.4		6.5						
9	9523F	LW2-G392	8	4	22.5									
11	9532F	LW2-G295	8	4	22.5									
12	9516F	LW2-G425	8	4	22.5									
21	9521F	LW2-G368	8	4	22.6									
22	9524F	LW2-G346	8	4	22.5									
30	9526F	LW2-G342	8	4	22.4									

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38	9517F	LW2-G364	8	4	22.4									
40	9530F	LW2-G426	8	4	22.4									
46	9528F	LW2-G396	8	4	22.5									
76	9527F	LW2-G352	8	4	22.5									
88	9529F	LW2-G405	8	4	22.5									
90	9515F	LW2-G124	8	4	22.3									
111	9525F	LW2-G347	8	4	22.4									
116	9531F	LW2-G277	8	4	22.4									
119	9520F	LW2-G383	8	4	22.5									
150	9514F	LW2-G273	8	4	22.4									
151	9522F	LW2-G382	8	4	22.6									
153	9519F	LW2-G409	8	4	22.5									
160	9534F	Control	8	4	22.4									
161	9518F	LW2-G420	8	4	22.5									
168	9533F	LW2-G280	8	4	22.7									
9	9523F	LW2-G392	8	5	22.6									
11	9532F	LW2-G295	8	5	22.6									
12	9516F	LW2-G425	8	5	22.6									
21	9521F	LW2-G368	8	5	22.5									
22	9524F	LW2-G346	8	5	22.5									
30	9526F	LW2-G342	8	5	22.5									
38	9517F	LW2-G364	8	5	22.6									
40	9530F	LW2-G426	8	5	22.6									
46	9528F	LW2-G396	8	5	22.6									
76	9527F	LW2-G352	8	5	22.6									
88	9529F	LW2-G405	8	5	22.6									
90	9515F	LW2-G124	8	5	22.6									
111	9525F	LW2-G347	8	5	22.6									
116	9531F	LW2-G277	8	5	22.6									
119	9520F	LW2-G383	8	5	22.6									
150	9514F	LW2-G273	8	5	22.6									
151	9522F	LW2-G382	8	5	22.6									
153	9519F	LW2-G409	8	5	22.5									
160	9534F	Control	8	5	22.6									
161	9518F	LW2-G420	8	5	22.6									
168	9533F	LW2-G280	8	5	22.7									
9	9523F	LW2-G392	8	6	22.5	5.5		6.6						
11	9532F	LW2-G295	8	6	22.5	6.1		6.6						
12	9516F	LW2-G425	8	6	22.4	6.0		6.6						
21	9521F	LW2-G368	8	6	22.4	5.5		6.8						
22	9524F	LW2-G346	8	6	22.4	6.3		6.9						
30	9526F	LW2-G342	8	6	22.3	6.0		6.7						
38	9517F	LW2-G364	8	6	22.4	5.9		6.7						
40	9530F	LW2-G426	8	6	22.4	5.9		6.7						
46	9528F	LW2-G396	8	6	22.5	6.3		6.7						
76	9527F	LW2-G352	8	6	22.5	6.2		6.7						
88	9529F	LW2-G405	8	6	22.5	6.3		6.7						
90	9515F	LW2-G124	8	6	22.5	6.8		6.7						
111	9525F	LW2-G347	8	6	22.5	6.2		6.7						
116	9531F	LW2-G277	8	6	22.5	6.1		6.7						
119	9520F	LW2-G383	8	6	22.5	5.8		6.7						
150	9514F	LW2-G273	8	6	22.4	6.1		6.7						
151	9522F	LW2-G382	8	6	22.4	6.1		6.7						
153	9519F	LW2-G409	8	6	22.4	5.9		6.7						
160	9534F	Control	8	6	22.4	6.5		6.7						
161	9518F	LW2-G420	8	6	22.5	6.0		6.7						
168	9533F	LW2-G280	8	6	22.6	6.5		6.7						
9	9523F	LW2-G392	8	7	22.2									
11	9532F	LW2-G295	8	7	22.2									

12	9516F	LW2-G425	8	7	22.1									
21	9521F	LW2-G368	8	7	22.2									
22	9524F	LW2-G346	8	7	22.0									
30	9526F	LW2-G342	8	7	22.0									
38	9517F	LW2-G364	8	7	22.1									
40	9530F	LW2-G426	8	7	22.0									
46	9528F	LW2-G396	8	7	22.2									
76	9527F	LW2-G352	8	7	22.2									
88	9529F	LW2-G405	8	7	22.0									
90	9515F	LW2-G124	8	7										
111	9525F	LW2-G347	8	7	22.1									
116	9531F	LW2-G277	8	7	22.2									
119	9520F	LW2-G383	8	7	22.1									
150	9514F	LW2-G273	8	7	22.0									
151	9522F	LW2-G382	8	7	22.1									
153	9519F	LW2-G409	8	7	22.2									
160	9534F	Control	8	7	22.2									
161	9518F	LW2-G420	8	7	22.1									
168	9533F	LW2-G280	8	7	22.0									
9	9523F	LW2-G392	8	8	22.5	7.4	150	6.7						
11	9532F	LW2-G295	8	8	22.4	7.5	155	6.7						
12	9516F	LW2-G425	8	8	22.4	7.4	155	6.7						
21	9521F	LW2-G368	8	8	22.4	7.6	820	7.1						
22	9524F	LW2-G346	8	8	22.4	7.4	160	6.8						
30	9526F	LW2-G342	8	8	22.4	7.6	155	6.7						
38	9517F	LW2-G364	8	8	22.4	7.6	155	6.7						
40	9530F	LW2-G426	8	8	22.6	7.6	155	6.7						
46	9528F	LW2-G396	8	8	22.5	7.6	155	6.8						
76	9527F	LW2-G352	8	8	22.5	7.4	155	6.8						
88	9529F	LW2-G405	8	8	22.5	7.4	155	6.8						
90	9515F	LW2-G124	8	8	22.7	7.6	155	6.8						
111	9525F	LW2-G347	8	8	22.7	7.8	160	6.9						
116	9531F	LW2-G277	8	8	22.7	7.5	160	6.8						
119	9520F	LW2-G383	8	8	22.7	7.4	155	6.8						
150	9514F	LW2-G273	8	8	22.6	7.4	160	6.7						
151	9522F	LW2-G382	8	8	22.4	7.4	155	6.8						
153	9519F	LW2-G409	8	8	22.4	7.0	155	6.8						
160	9534F	Control	8	8	22.5	7.4	160	6.9						
161	9518F	LW2-G420	8	8	22.6	7.0	160	6.8						
168	9533F	LW2-G280	8	8	22.6	7.5	155	6.8						
9	9523F	LW2-G392	8	9	23.1									
11	9532F	LW2-G295	8	9	23.0									
12	9516F	LW2-G425	8	9	23.0									
21	9521F	LW2-G368	8	9	22.9									
22	9524F	LW2-G346	8	9	22.9									
30	9526F	LW2-G342	8	9	22.9									
38	9517F	LW2-G364	8	9	23.0									
40	9530F	LW2-G426	8	9	23.0									
46	9528F	LW2-G396	8	9	23.0									
76	9527F	LW2-G352	8	9	23.1									
88	9529F	LW2-G405	8	9	23.1									
90	9515F	LW2-G124	8	9	23.1									
111	9525F	LW2-G347	8	9	23.2									
116	9531F	LW2-G277	8	9	23.2									
119	9520F	LW2-G383	8	9	23.2									
150	9514F	LW2-G273	8	9	23.1									
151	9522F	LW2-G382	8	9	23.1									
153	9519F	LW2-G409	8	9	22.9									
160	9534F	Control	8	9	22.9									

161	9518F	LW2-G420	8	9	23.0									
168	9533F	LW2-G280	8	9	23.0									
9	9523F	LW2-G392	8	10	22.7	6.2		6.2						
11	9532F	LW2-G295	8	10	22.7	6.4		6.2						
12	9516F	LW2-G425	8	10	22.7	6.4		6.2						
21	9521F	LW2-G368	8	10	22.7	6.8		6.5						
22	9524F	LW2-G346	8	10	22.7	6.8		6.2						
30	9526F	LW2-G342	8	10	22.7	6.4		6.2						
38	9517F	LW2-G364	8	10	22.7	6.4		6.2						
40	9530F	LW2-G426	8	10	22.7	6.2		6.2						
46	9528F	LW2-G396	8	10	22.7	6.6		6.3						
76	9527F	LW2-G352	8	10	22.7	6.4		6.2						
88	9529F	LW2-G405	8	10	22.7	6.8		6.3						
90	9515F	LW2-G124	8	10	22.8	7.0		6.3						
111	9525F	LW2-G347	8	10	22.8	6.5		6.3						
116	9531F	LW2-G277	8	10	22.7	6.8		6.3						
119	9520F	LW2-G383	8	10	22.7	6.4		6.3						
150	9514F	LW2-G273	8	10	22.7	6.6		6.3						
151	9522F	LW2-G382	8	10	22.6	6.6		6.3						
153	9519F	LW2-G409	8	10	22.6	6.0		6.3						
160	9534F	Control	8	10	22.6	6.5		6.3						
161	9518F	LW2-G420	8	10	22.6	6.4		6.4						
168	9533F	LW2-G280	8	10	22.7	6.5		6.4						
9	9523F	LW2-G392	8	11	22.7									
11	9532F	LW2-G295	8	11	22.7									
12	9516F	LW2-G425	8	11	22.6									
21	9521F	LW2-G368	8	11	22.7									
22	9524F	LW2-G346	8	11	22.6									
30	9526F	LW2-G342	8	11	22.7									
38	9517F	LW2-G364	8	11	22.6									
40	9530F	LW2-G426	8	11	22.8									
46	9528F	LW2-G396	8	11	22.6									
76	9527F	LW2-G352	8	11	22.6									
88	9529F	LW2-G405	8	11	22.8									
90	9515F	LW2-G124	8	11	22.9									
111	9525F	LW2-G347	8	11	22.8									
116	9531F	LW2-G277	8	11	22.7									
119	9520F	LW2-G383	8	11	22.7									
150	9514F	LW2-G273	8	11	22.7									
151	9522F	LW2-G382	8	11	22.6									
153	9519F	LW2-G409	8	11	22.5									
160	9534F	Control	8	11	22.7									
161	9518F	LW2-G420	8	11	22.6									
168	9533F	LW2-G280	8	11	22.7									
9	9523F	LW2-G392	8	12	22.7									
11	9532F	LW2-G295	8	12	22.7									
12	9516F	LW2-G425	8	12	22.7									
21	9521F	LW2-G368	8	12	22.6									
22	9524F	LW2-G346	8	12	22.6									
30	9526F	LW2-G342	8	12	22.7									
38	9517F	LW2-G364	8	12	22.6									
40	9530F	LW2-G426	8	12	22.7									
46	9528F	LW2-G396	8	12	22.8									
76	9527F	LW2-G352	8	12	22.7									
88	9529F	LW2-G405	8	12	22.7									
90	9515F	LW2-G124	8	12	22.8									
111	9525F	LW2-G347	8	12	22.9									
116	9531F	LW2-G277	8	12	22.8									
119	9520F	LW2-G383	8	12	22.7									

150	9514F	LW2-G273	8	12	22.7									
151	9522F	LW2-G382	8	12	22.7									
153	9519F	LW2-G409	8	12	22.6									
160	9534F	Control	8	12	22.7									
161	9518F	LW2-G420	8	12	22.7									
168	9533F	LW2-G280	8	12	22.7									
9	9523F	LW2-G392	8	13	22.7	6.2		6.2						
11	9532F	LW2-G295	8	13	22.7	6.2		6.2						
12	9516F	LW2-G425	8	13	22.7	6.0		6.2						
21	9521F	LW2-G368	8	13	22.6	5.2		6.6						
22	9524F	LW2-G346	8	13	22.6	6.2		6.4						
30	9526F	LW2-G342	8	13	22.7	6.0		6.3						
38	9517F	LW2-G364	8	13	22.6	5.8		6.2						
40	9530F	LW2-G426	8	13	22.6	6.2		6.2						
46	9528F	LW2-G396	8	13	22.7	6.2		6.3						
76	9527F	LW2-G352	8	13	22.7	6.0		6.3						
88	9529F	LW2-G405	8	13	22.7	6.0		6.3						
90	9515F	LW2-G124	8	13	22.9	6.2		6.3						
111	9525F	LW2-G347	8	13	22.8	6.2		6.4						
116	9531F	LW2-G277	8	13	22.8	6.0		6.4						
119	9520F	LW2-G383	8	13	22.8	5.9		6.4						
150	9514F	LW2-G273	8	13	22.8	5.4		6.3						
151	9522F	LW2-G382	8	13	22.7	5.7		6.3						
153	9519F	LW2-G409	8	13	22.6	5.4		6.3						
160	9534F	Control	8	13	22.7	6.0		6.4						
161	9518F	LW2-G420	8	13	22.7	5.9		6.4						
168	9533F	LW2-G280	8	13	22.7	5.8		6.4						
9	9523F	LW2-G392	8	14	22.9									
11	9532F	LW2-G295	8	14	22.8									
12	9516F	LW2-G425	8	14	22.8									
21	9521F	LW2-G368	8	14	22.7									
22	9524F	LW2-G346	8	14	22.8									
30	9526F	LW2-G342	8	14	22.8									
38	9517F	LW2-G364	8	14	22.8									
40	9530F	LW2-G426	8	14	22.8									
46	9528F	LW2-G396	8	14	22.9									
76	9527F	LW2-G352	8	14	22.8									
88	9529F	LW2-G405	8	14	22.8									
90	9515F	LW2-G124	8	14	22.8									
111	9525F	LW2-G347	8	14	23.0									
116	9531F	LW2-G277	8	14	22.9									
119	9520F	LW2-G383	8	14	22.8									
150	9514F	LW2-G273	8	14	22.8									
151	9522F	LW2-G382	8	14	22.6									
153	9519F	LW2-G409	8	14	22.6									
160	9534F	Control	8	14	22.7									
161	9518F	LW2-G420	8	14	22.7									
168	9533F	LW2-G280	8	14	22.7									
9	9523F	LW2-G392	8	15	22.7	6.4	155	6.4						
11	9532F	LW2-G295	8	15	22.7	6.5	155	7.5						
12	9516F	LW2-G425	8	15	22.7	6.4	155	6.4						
21	9521F	LW2-G368	8	15	22.7	6.4	465	6.5						
22	9524F	LW2-G346	8	15	22.7	6.2	160	6.4						
30	9526F	LW2-G342	8	15	22.8	6.6	160	6.4						
38	9517F	LW2-G364	8	15	22.7	6.6	155	6.4						
40	9530F	LW2-G426	8	15	22.9	6.4	155	6.3						
46	9528F	LW2-G396	8	15	22.8	6.4	155	6.4						
76	9527F	LW2-G352	8	15	22.8	6.6	155	6.4						
88	9529F	LW2-G405	8	15	22.8	6.6	155	6.4						

90	9515F	LW2-G124	8	15	23.1	6.7	155	6.4						
111	9525F	LW2-G347	8	15	22.9	6.6	160	6.4						
116	9531F	LW2-G277	8	15	22.9	6.4	160	6.4						
119	9520F	LW2-G383	8	15	22.9	6.5	155	6.4						
150	9514F	LW2-G273	8	15	22.8	5.8	155	6.3						
151	9522F	LW2-G382	8	15	22.7	6.3	155	6.4						
153	9519F	LW2-G409	8	15	22.7	6.0	155	6.4						
160	9534F	Control	8	15	22.7	6.2	160	6.4						
161	9518F	LW2-G420	8	15	22.8	6.4	160	6.4						
168	9533F	LW2-G280	8	15	22.8	6.3	160	6.5						
9	9523F	LW2-G392	8	16	22.3									
11	9532F	LW2-G295	8	16	22.2									
12	9516F	LW2-G425	8	16	22.2									
21	9521F	LW2-G368	8	16	22.2									
22	9524F	LW2-G346	8	16	22.1									
30	9526F	LW2-G342	8	16	22.1									
38	9517F	LW2-G364	8	16	22.1									
40	9530F	LW2-G426	8	16	22.1									
46	9528F	LW2-G396	8	16	22.2									
76	9527F	LW2-G352	8	16	22.2									
88	9529F	LW2-G405	8	16	22.2									
90	9515F	LW2-G124	8	16	22.5									
111	9525F	LW2-G347	8	16	22.3									
116	9531F	LW2-G277	8	16	22.3									
119	9520F	LW2-G383	8	16	22.3									
150	9514F	LW2-G273	8	16	22.3									
151	9522F	LW2-G382	8	16	22.2									
153	9519F	LW2-G409	8	16	22.1									
160	9534F	Control	8	16	22.2									
161	9518F	LW2-G420	8	16	22.2									
168	9533F	LW2-G280	8	16	22.3									
9	9523F	LW2-G392	8	17	22.3	6.2		6.6						
11	9532F	LW2-G295	8	17	22.2	6.4		6.6						
12	9516F	LW2-G425	8	17	22.2	6.2		6.8						
21	9521F	LW2-G368	8	17	22.1	6.2		6.8						
22	9524F	LW2-G346	8	17	22.1	6.3		6.7						
30	9526F	LW2-G342	8	17	22.2	6.4		6.7						
38	9517F	LW2-G364	8	17	22.3	6.5		6.7						
40	9530F	LW2-G426	8	17	22.2	6.1		6.7						
46	9528F	LW2-G396	8	17	22.2	6.5		6.7						
76	9527F	LW2-G352	8	17	22.2	6.4		6.6						
88	9529F	LW2-G405	8	17	22.3	6.2		6.6						
90	9515F	LW2-G124	8	17	22.5	6.6		6.7						
111	9525F	LW2-G347	8	17	22.4	6.2		6.6						
116	9531F	LW2-G277	8	17	22.4	6.4		6.7						
119	9520F	LW2-G383	8	17	22.4	6.4		6.7						
150	9514F	LW2-G273	8	17	22.3	6.2		6.7						
151	9522F	LW2-G382	8	17	22.2	6.3		6.7						
153	9519F	LW2-G409	8	17	22.1	5.8		6.7						
160	9534F	Control	8	17	22.2	6.2		6.7						
161	9518F	LW2-G420	8	17	22.2	6.3		6.7						
168	9533F	LW2-G280	8	17	22.3	6.4		6.7						
9	9523F	LW2-G392	8	18	22.2									
11	9532F	LW2-G295	8	18	22.3									
12	9516F	LW2-G425	8	18	22.3									
21	9521F	LW2-G368	8	18	22.3									
22	9524F	LW2-G346	8	18	22.3									
30	9526F	LW2-G342	8	18	22.4									
38	9517F	LW2-G364	8	18	22.4									

40	9530F	LW2-G426	8	18	22.3									
46	9528F	LW2-G396	8	18	22.5									
76	9527F	LW2-G352	8	18	22.4									
88	9529F	LW2-G405	8	18	22.5									
90	9515F	LW2-G124	8	18	22.7									
111	9525F	LW2-G347	8	18	22.6									
116	9531F	LW2-G277	8	18	22.6									
119	9520F	LW2-G383	8	18	22.6									
150	9514F	LW2-G273	8	18	22.5									
151	9522F	LW2-G382	8	18	22.5									
153	9519F	LW2-G409	8	18	22.4									
160	9534F	Control	8	18	22.3									
161	9518F	LW2-G420	8	18	22.4									
168	9533F	LW2-G280	8	18	22.4									
9	9523F	LW2-G392	8	19	22.9									
11	9532F	LW2-G295	8	19	22.9									
12	9516F	LW2-G425	8	19	22.8									
21	9521F	LW2-G368	8	19	22.8									
22	9524F	LW2-G346	8	19	22.7									
30	9526F	LW2-G342	8	19	22.9									
38	9517F	LW2-G364	8	19	22.7									
40	9530F	LW2-G426	8	19	23.0									
46	9528F	LW2-G396	8	19	22.8									
76	9527F	LW2-G352	8	19	22.8									
88	9529F	LW2-G405	8	19	23.0									
90	9515F	LW2-G124	8	19	23.2									
111	9525F	LW2-G347	8	19	22.8									
116	9531F	LW2-G277	8	19	22.8									
119	9520F	LW2-G383	8	19	23.0									
150	9514F	LW2-G273	8	19	23.1									
151	9522F	LW2-G382	8	19	22.7									
153	9519F	LW2-G409	8	19	22.7									
160	9534F	Control	8	19	23.0									
161	9518F	LW2-G420	8	19	22.9									
168	9533F	LW2-G280	8	19	23.0									
9	9523F	LW2-G392	8	20	22.8	6.9		6.8						
11	9532F	LW2-G295	8	20	22.8	6.5		6.8						
12	9516F	LW2-G425	8	20	22.7	6.4		6.7						
21	9521F	LW2-G368	8	20	22.7	6.4		6.8						
22	9524F	LW2-G346	8	20	22.6	6.4		6.8						
30	9526F	LW2-G342	8	20	22.8	6.8		6.8						
38	9517F	LW2-G364	8	20	22.7	6.5		6.7						
40	9530F	LW2-G426	8	20	22.9	6.8		6.7						
46	9528F	LW2-G396	8	20	22.6	6.4		6.7						
76	9527F	LW2-G352	8	20	22.6	6.4		6.7						
88	9529F	LW2-G405	8	20	22.8	6.6		6.7						
90	9515F	LW2-G124	8	20	23.1	7.0		6.6						
111	9525F	LW2-G347	8	20	22.8	6.3		6.7						
116	9531F	LW2-G277	8	20	22.7	6.5		6.7						
119	9520F	LW2-G383	8	20	22.9	6.6		6.7						
150	9514F	LW2-G273	8	20	22.9	6.3		6.7						
151	9522F	LW2-G382	8	20	22.6	6.0		6.7						
153	9519F	LW2-G409	8	20	22.5	5.7		6.7						
160	9534F	Control	8	20	22.7	6.1		6.7						
161	9518F	LW2-G420	8	20	22.6	6.3		6.6						
168	9533F	LW2-G280	8	20	22.6	6.3		6.7						
9	9523F	LW2-G392	8	21	22.6									
11	9532F	LW2-G295	8	21	22.6									
12	9516F	LW2-G425	8	21	22.6									

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21	9521F	LW2-G368	8	21	22.5									
22	9524F	LW2-G346	8	21	22.6									
30	9526F	LW2-G342	8	21	22.6									
38	9517F	LW2-G364	8	21	22.6									
40	9530F	LW2-G426	8	21	22.7									
46	9528F	LW2-G396	8	21	22.7									
76	9527F	LW2-G352	8	21	22.6									
88	9529F	LW2-G405	8	21	22.6									
90	9515F	LW2-G124	8	21	22.7									
111	9525F	LW2-G347	8	21	22.6									
116	9531F	LW2-G277	8	21	22.5									
119	9520F	LW2-G383	8	21	22.6									
150	9514F	LW2-G273	8	21	22.7									
151	9522F	LW2-G382	8	21	22.6									
153	9519F	LW2-G409	8	21	22.5									
160	9534F	Control	8	21	22.6									
161	9518F	LW2-G420	8	21	22.6									
168	9533F	LW2-G280	8	21	22.6									
9	9523F	LW2-G392	8	22	23.0	6.5	160	6.7						
11	9532F	LW2-G295	8	22	22.9	6.4	160	6.7						
12	9516F	LW2-G425	8	22	22.9	6.2	155	6.7						
21	9521F	LW2-G368	8	22	22.9	6.3	205	6.9						
22	9524F	LW2-G346	8	22	22.8	6.6	160	6.8						
30	9526F	LW2-G342	8	22	23.0	6.2	160	6.8						
38	9517F	LW2-G364	8	22	23.0	6.2	160	6.7						
40	9530F	LW2-G426	8	22	23.2	6.7	160	6.7						
46	9528F	LW2-G396	8	22	23.0	6.4	155	6.7						
76	9527F	LW2-G352	8	22	22.9	6.2	155	6.6						
88	9529F	LW2-G405	8	22	23.0	6.6	155	6.7						
90	9515F	LW2-G124	8	22	23.2	7.0	155	6.7						
111	9525F	LW2-G347	8	22	22.9	6.0	155	6.7						
116	9531F	LW2-G277	8	22	22.8	5.9	160	6.7						
119	9520F	LW2-G383	8	22	23.1	5.9	160	6.7						
150	9514F	LW2-G273	8	22	23.0	6.1	155	6.7						
151	9522F	LW2-G382	8	22	22.8	6.0	155	6.6						
153	9519F	LW2-G409	8	22	22.7	5.7	150	6.6						
160	9534F	Control	8	22	22.9	5.9	155	6.6						
161	9518F	LW2-G420	8	22	22.9	5.9	150	6.6						
168	9533F	LW2-G280	8	22	23.0	6.3	155	6.7						
9	9523F	LW2-G392	8	23	22.9									
11	9532F	LW2-G295	8	23	22.9									
12	9516F	LW2-G425	8	23	22.7									
21	9521F	LW2-G368	8	23	22.7									
22	9524F	LW2-G346	8	23	22.6									
30	9526F	LW2-G342	8	23	22.6									
38	9517F	LW2-G364	8	23	22.9									
40	9530F	LW2-G426	8	23	23.0									
46	9528F	LW2-G396	8	23	23.1									
76	9527F	LW2-G352	8	23	22.7									
88	9529F	LW2-G405	8	23	22.9									
90	9515F	LW2-G124	8	23	22.9									
111	9525F	LW2-G347	8	23	22.8									
116	9531F	LW2-G277	8	23	22.7									
119	9520F	LW2-G383	8	23	22.7									
150	9514F	LW2-G273	8	23	22.9									
151	9522F	LW2-G382	8	23	22.9									
153	9519F	LW2-G409	8	23	22.7									
160	9534F	Control	8	23	22.7									
161	9518F	LW2-G420	8	23	22.8									

168	9533F	LW2-G280	8	23	22.7									
9	9523F	LW2-G392	8	24	22.7	6.8		6.5						
11	9532F	LW2-G295	8	24	22.5	6.6		6.6						
12	9516F	LW2-G425	8	24	22.4	6.6		6.6						
21	9521F	LW2-G368	8	24	22.4	6.6		6.6						
22	9524F	LW2-G346	8	24	22.3	6.6		6.6						
30	9526F	LW2-G342	8	24	22.6	7.2		6.6						
38	9517F	LW2-G364	8	24	22.5	6.8		6.6						
40	9530F	LW2-G426	8	24	22.9	7.2		6.6						
46	9528F	LW2-G396	8	24	22.5	7.0		6.6						
76	9527F	LW2-G352	8	24	22.5	6.4		6.5						
88	9529F	LW2-G405	8	24	22.7	7.0		6.6						
90	9515F	LW2-G124	8	24	23.0	7.4		6.6						
111	9525F	LW2-G347	8	24	22.6	6.9		6.6						
116	9531F	LW2-G277	8	24	22.5	6.9		6.7						
119	9520F	LW2-G383	8	24	22.7	6.7		6.6						
150	9514F	LW2-G273	8	24	22.7	6.5		6.6						
151	9522F	LW2-G382	8	24	22.4	6.4		6.7						
153	9519F	LW2-G409	8	24	22.2	6.0		6.6						
160	9534F	Control	8	24	22.5	6.2		6.7						
161	9518F	LW2-G420	8	24	22.5	6.4		6.6						
168	9533F	LW2-G280	8	24	22.6	6.6		6.7						
9	9523F	LW2-G392	8	25	22.6									
11	9532F	LW2-G295	8	25	22.5									
12	9516F	LW2-G425	8	25	22.4									
21	9521F	LW2-G368	8	25	22.4									
22	9524F	LW2-G346	8	25	22.5									
30	9526F	LW2-G342	8	25	22.5									
38	9517F	LW2-G364	8	25	22.4									
40	9530F	LW2-G426	8	25	22.4									
46	9528F	LW2-G396	8	25	22.7									
76	9527F	LW2-G352	8	25	22.5									
88	9529F	LW2-G405	8	25	22.5									
90	9515F	LW2-G124	8	25	22.7									
111	9525F	LW2-G347	8	25	22.5									
116	9531F	LW2-G277	8	25	22.5									
119	9520F	LW2-G383	8	25	22.5									
150	9514F	LW2-G273	8	25	22.5									
151	9522F	LW2-G382	8	25	22.5									
153	9519F	LW2-G409	8	25	22.5									
160	9534F	Control	8	25	22.5									
161	9518F	LW2-G420	8	25	22.4									
168	9533F	LW2-G280	8	25										
9	9523F	LW2-G392	8	26	22.9									
11	9532F	LW2-G295	8	26	22.8									
12	9516F	LW2-G425	8	26	22.7									
21	9521F	LW2-G368	8	26	22.7									
22	9524F	LW2-G346	8	26	22.7									
30	9526F	LW2-G342	8	26	22.8									
38	9517F	LW2-G364	8	26	22.8									
40	9530F	LW2-G426	8	26	23.0									
46	9528F	LW2-G396	8	26	22.8									
76	9527F	LW2-G352	8	26	22.8									
88	9529F	LW2-G405	8	26	22.8									
90	9515F	LW2-G124	8	26	23.0									
111	9525F	LW2-G347	8	26	22.7									
116	9531F	LW2-G277	8	26	22.7									
119	9520F	LW2-G383	8	26	22.7									
150	9514F	LW2-G273	8	26	22.9									

151	9522F	LW2-G382	8	26	22.7									
153	9519F	LW2-G409	8	26	22.6									
160	9534F	Control	8	26	22.9									
161	9518F	LW2-G420	8	26	22.8									
168	9533F	LW2-G280	8	26	22.9									
9	9523F	LW2-G392	8	27	22.8	6.2		6.7						
11	9532F	LW2-G295	8	27	22.6	5.8		6.7						
12	9516F	LW2-G425	8	27	22.6	6.0		6.7						
21	9521F	LW2-G368	8	27	22.6	4.6		6.7						
22	9524F	LW2-G346	8	27	22.7	5.6		6.7						
30	9526F	LW2-G342	8	27	22.6	6.4		6.7						
38	9517F	LW2-G364	8	27	22.6	6.1		6.7						
40	9530F	LW2-G426	8	27	22.9	6.5		6.7						
46	9528F	LW2-G396	8	27	22.6	6.1		6.7						
76	9527F	LW2-G352	8	27	22.6	5.7		6.7						
88	9529F	LW2-G405	8	27	22.7	6.2		6.7						
90	9515F	LW2-G124	8	27	22.7	6.8		6.7						
111	9525F	LW2-G347	8	27	22.6	6.2		6.8						
116	9531F	LW2-G277	8	27	22.5	6.4		6.8						
119	9520F	LW2-G383	8	27	22.7	6.0		6.7						
150	9514F	LW2-G273	8	27	22.6	5.6		6.7						
151	9522F	LW2-G382	8	27	22.6	5.5		6.7						
153	9519F	LW2-G409	8	27	22.5	5.0		6.7						
160	9534F	Control	8	27	22.5	5.2		6.7						
161	9518F	LW2-G420	8	27	22.6	5.4		6.7						
168	9533F	LW2-G280	8	27	22.7	5.8		6.8						
9	9523F	LW2-G392	8	28	22.5	7.7	145	6.6	34	40	0.6			
11	9532F	LW2-G295	8	28	22.4	7.6	150	6.6	34	40	<0.1			
12	9516F	LW2-G425	8	28	22.4	7.1	145	6.6	34	40	<0.1			
21	9521F	LW2-G368	8	28	22.4	7.4	160	6.6	34	40	<0.1			
22	9524F	LW2-G346	8	28	22.3	7.6	150	6.6	34	40	<0.1			
30	9526F	LW2-G342	8	28	22.4	7.6	150	6.6	34	40	<0.1			
38	9517F	LW2-G364	8	28	22.4	7.5	145	6.6	34	40	<0.1			
40	9530F	LW2-G426	8	28	22.4	8.0	150	6.6	43	40	<0.1			
46	9528F	LW2-G396	8	28	22.5	7.9	145	6.6	43	40	<0.1			
76	9527F	LW2-G352	8	28	22.4	7.3	150	6.6	34	40	0.3			
88	9529F	LW2-G405	8	28	22.4	7.8	150	6.5	43	40	<0.1			
90	9515F	LW2-G124	8	28	22.6	8.2	150	6.6	34	40	<0.1			
111	9525F	LW2-G347	8	28	22.6	7.9	150	6.6	34	40	<0.1			
116	9531F	LW2-G277	8	28	22.4	7.9	150	6.6	51	40	<0.1			
119	9520F	LW2-G383	8	28	22.4	7.8	150	6.6	34	40	<0.1			
150	9514F	LW2-G273	8	28	22.5	7.4	150	6.6	34	40	<0.1			
151	9522F	LW2-G382	8	28	22.4	7.0	150	6.6	34	40	<0.1			
153	9519F	LW2-G409	8	28	22.3	6.9	150	6.6	34	40	<0.1			
160	9534F	Control	8	28	22.4	6.7	155	6.6	34	40	<0.1			
161	9518F	LW2-G420	8	28	22.4	6.9	145	6.5	43	40	<0.1			
168	9533F	LW2-G280	8	28	22.5	7.2	155	6.8	43	40	<0.1			
				Mean	22.6	6.6	223	6.6	40	41	---		4.5	6.4
				SD	0.2	0.6	464	0.2	7	5	---		4.9	0.5
				n	607	294	126	294	42	42	42		21	21
				Min	22.0	4.6	145	6.2	34	40	<0.1		0.9	5.3
				Max	23.2	8.2	4750	7.5	68	70	2.0		22.9	7.2

Test Number: 686-18

Freshwater Sediment Test
10-Day Chironomus tentans

Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

ASHED DRY WT= weight of ashed pan + weight of ashed test organisms recovered at test termination
TAFDW=DRY WT - ASHED DRY WT= total ash-free organism weight for given replicate
AFDW=average individual ash-free biomass=TAFDW/WT COUNT

INITIAL WEIGHT

pan #	tare wt (mg)	final wt (mg)	wt count	avg. wt/ organism
1	89.86	92.55	20	0.13
2	92.68	95.50	20	0.14
3	105.13	108.04	20	0.15

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)		SURV	MORT	PSURV	PMORT	WT	AFDW
1	164	9534F	Control	1		10	8	2	80.0	20.0	83.89	8	97.33	87.08	13.44	1.68	10.25	1.28							
2	136	9534F	Control	2		10	9	1	90.0	10.0	100.38	9	111.21	102.82	10.83	1.20	8.39	0.93							
3	147	9534F	Control	3		10	9	1	90.0	10.0	94.32	9	108.76	98.59	14.44	1.60	10.17	1.13							
4	158	9534F	Control	4		10	9	1	90.0	10.0	86.57	9	97.15	89.52	10.58	1.18	7.63	0.85							
5	168	9534F	Control	5		10	10	0	100.0	0.0	92.67	10	103.24	95.46	10.57	1.06	7.78	0.78	Mean	9.3	0.8	92.5	7.5	1.33	0.99
6	91	9534F	Control	6		10	9	1	90.0	10.0	88.43	9	101.82	92.26	13.39	1.49	9.56	1.06	SD	0.7	0.7	7.1	7.1	0.25	0.18
7	72	9534F	Control	7		10	10	0	100.0	0.0	93.36	10	103.36	95.44	10.00	1.00	7.92	0.79	n	8	8	8	8	8	8
8	33	9534F	Control	8	wq replicate	10	10	0	100.0	0.0	90.60	10	104.65	93.53	14.05	1.41	11.12	1.11							
9	48	9514F	LW2-G273	1		10	9	1	90.0	10.0	89.62	9	101.23	93.26	11.61	1.29	7.97	0.89							
10	13	9514F	LW2-G273	2		10	10	0	100.0	0.0	96.12	10	105.86	98.68	9.74	0.97	7.18	0.72							
11	59	9514F	LW2-G273	3		10	6	4	60.0	40.0	86.68	6	93.86	88.69	7.18	1.20	5.17	0.86							
12	69	9514F	LW2-G273	4		10	7	3	70.0	30.0	89.62	7	100.45	92.68	10.83	1.55	7.77	1.11							
13	15	9514F	LW2-G273	5		10	9	1	90.0	10.0	98.70	9	105.46	100.52	6.76	0.75	4.94	0.55	Mean	8.6	1.4	86.3	13.8	1.08	0.77
14	83	9514F	LW2-G273	6		10	9	1	90.0	10.0	87.56	9	96.23	89.76	8.67	0.96	6.47	0.72	SD	1.4	1.4	14.1	14.1	0.25	0.17
15	39	9514F	LW2-G273	7		10	9	1	90.0	10.0	94.97	9	103.09	97.32	8.12	0.90	5.77	0.64	n	8	8	8	8	8	8
16	87	9514F	LW2-G273	8	wq replicate	10	10	0	100.0	0.0	94.83	10	105.18	98.16	10.35	1.04	7.02	0.70							
17	70	9515F	LW2-G124	1		10	8	2	80.0	20.0	93.98	8	108.16	98.17	14.18	1.77	9.99	1.25							
18	27	9515F	LW2-G124	2		10	7	3	70.0	30.0	88.87	6	100.71	92.48	11.84	1.97	8.23	1.37							
19	65	9515F	LW2-G124	3		10	7	3	70.0	30.0	92.13	7	105.68	96.84	13.55	1.94	8.84	1.26							
20	55	9515F	LW2-G124	4		10	8	2	80.0	20.0	93.11	6	103.98	96.40	10.87	1.81	7.58	1.26							
21	20	9515F	LW2-G124	5		10	9	1	90.0	10.0	88.24	9	101.89	92.70	13.65	1.52	9.19	1.02	Mean	8.4	1.6	83.8	16.3	1.67	1.12
22	85	9515F	LW2-G124	6		10	9	1	90.0	10.0	90.52	9	105.70	96.34	15.18	1.69	9.36	1.04	SD	1.1	1.1	10.6	10.6	0.29	0.20
23	78	9515F	LW2-G124	7		10	9	1	90.0	10.0	84.39	9	94.11	87.12	9.72	1.08	6.99	0.78	n	8	8	8	8	8	8
24	76	9515F	LW2-G124	8	wq replicate	10	10	0	100.0	0.0	90.52	10	106.42	96.64	15.90	1.59	9.78	0.98							
25	62	9516F	LW2-G425	1		10	10	0	100.0	0.0	88.34	10	104.20	92.70	15.86	1.59	11.50	1.15							
26	88	9516F	LW2-G425	2		10	10	0	100.0	0.0	92.99	10	108.32	97.22	15.33	1.53	11.10	1.11							
27	56	9516F	LW2-G425	3		10	9	1	90.0	10.0	92.55	9	106.76	95.96	14.21	1.58	10.80	1.20							
28	16	9516F	LW2-G425	4		10	8	2	80.0	20.0	86.80	8	99.33	89.96	12.53	1.57	9.37	1.17							
29	135	9516F	LW2-G425	5		10	8	2	80.0	20.0	93.78	8	106.92	97.44	13.14	1.64	9.48	1.19	Mean	9.0	1.0	90.0	10.0	1.61	1.17
30	95	9516F	LW2-G425	6		10	9	1	90.0	10.0	78.52	9	94.50	83.73	15.98	1.78	10.77	1.20	SD	0.9	0.9	9.3	9.3	0.12	0.09
31	160	9516F	LW2-G425	7		10	10	0	100.0	0.0	89.11	10	103.59	93.53	14.48	1.45	10.06	1.01	n	8	8	8	8	8	8
32	152	9516F	LW2-G425	8	wq replicate	10	8	2	80.0	20.0	96.56	8	110.87	100.19	14.31	1.79	10.68	1.34							
33	43	9517F	LW2-G364	1		10	10	0	100.0	0.0	91.18	10	103.07	95.17	11.89	1.19	7.90	0.79							
34	108	9517F	LW2-G364	2		10	10	0	100.0	0.0	88.28	10	104.24	95.15	15.96	1.60	9.09	0.91							
35	75	9517F	LW2-G364	3		10	10	0	100.0	0.0	86.93	10	97.84	90.91	10.91	1.09	6.93	0.69							
36	89	9517F	LW2-G364	4		10	8	2	80.0	20.0	91.65	8	103.69	96.53	12.04	1.51	7.16	0.90							
37	14	9517F	LW2-G364	5		10	8	2	80.0	20.0	100.07	8	109.89	102.63	9.82	1.23	7.26	0.91	Mean	8.5	1.5	85.0	15.0	1.45	0.91
38	94	9517F	LW2-G364	6		10	7	3	70.0	30.0	82.26	7	94.99	87.54	12.73	1.82	7.45	1.06	SD	1.3	1.3	13.1	13.1	0.27	0.15
39	49	9517F	LW2-G364	7		10	8	2	80.0	20.0	97.88	8	111.95	102.50	14.07	1.76	9.45	1.18	n	8	8	8	8	8	8
40	163	9517F	LW2-G364	8	wq replicate	10	7	3	70.0	30.0	93.60	7	103.40	97.56	9.80	1.40	5.84	0.83							

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Test Number: 686-18

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)			SURV	MORT	PSURV	PMORT	WT	AFDW
41	162	9518F	LW2-G420	1		10	10	0	100.0	0.0	91.95	10	107.06	97.62	15.11	1.51	9.44	0.94								
42	151	9518F	LW2-G420	2		10	10	0	100.0	0.0	98.72	10	115.69	105.35	16.97	1.70	10.34	1.03								
43	111	9518F	LW2-G420	3		10	5	5	50.0	50.0	78.80	5	88.14	80.09	9.34	1.87	8.05	1.61								
44	73	9518F	LW2-G420	4		10	10	0	100.0	0.0	90.12	10	103.92	95.16	13.80	1.38	8.76	0.88								
45	148	9518F	LW2-G420	5		10	9	1	90.0	10.0	98.77	9	114.00	105.18	15.23	1.69	8.82	0.98	Mean	8.9	1.1	88.8	11.3	1.69	1.09
46	106	9518F	LW2-G420	6		10	10	0	100.0	0.0	84.65	10	101.95	91.68	17.30	1.73	10.27	1.03	SD	1.7	1.7	17.3	17.3	0.21	0.23
47	144	9518F	LW2-G420	7		10	9	1	90.0	10.0	91.30	9	109.88	99.19	18.58	2.06	10.69	1.19	n	8	8	8	8	8	8
48	60	9518F	LW2-G420	8	wq replicate	10	8	2	80.0	20.0	95.23	8	107.84	99.57	12.61	1.58	8.27	1.03								
49	131	9519F	LW2-G409	1		10	10	0	100.0	0.0	91.88	10	107.33	97.47	15.45	1.55	9.86	0.99								
50	45	9519F	LW2-G409	2		10	10	0	100.0	0.0	85.35	10	99.37	90.13	14.02	1.40	9.24	0.92								
51	114	9519F	LW2-G409	3		10	10	0	100.0	0.0	84.29	10	100.92	90.77	16.63	1.66	10.15	1.02								
52	103	9519F	LW2-G409	4		10	10	0	100.0	0.0	88.20	10	105.81	95.42	17.61	1.76	10.39	1.04								
53	58	9519F	LW2-G409	5		10	9	1	90.0	10.0	90.10	7	103.88	95.19	13.78	1.97	8.69	1.24	Mean	9.5	0.5	95.0	5.0	1.61	1.01
54	165	9519F	LW2-G409	6		10	8	2	80.0	20.0	88.23	8	103.23	94.72	15.00	1.88	8.51	1.06	SD	0.8	0.8	7.6	7.6	0.25	0.11
55	84	9519F	LW2-G409	7		10	10	0	100.0	0.0	81.31	10	94.16	85.39	12.85	1.29	8.77	0.88	n	8	8	8	8	8	8
56	10	9519F	LW2-G409	8	wq replicate	10	9	1	90.0	10.0	91.93	9	104.14	95.62	12.21	1.36	8.52	0.95								
57	129	9520F	LW2-G383	1		10	9	1	90.0	10.0	90.32	9	105.49	94.56	15.17	1.69	10.93	1.21								
58	34	9520F	LW2-G383	2		10	7	3	70.0	30.0	89.05	7	100.50	91.69	11.45	1.64	8.81	1.26								
59	145	9520F	LW2-G383	3		10	8	2	80.0	20.0	92.02	8	107.46	96.95	15.44	1.93	10.51	1.31								
60	141	9520F	LW2-G383	4		10	9	1	90.0	10.0	102.11	9	116.73	106.16	14.62	1.62	10.57	1.17								
61	110	9520F	LW2-G383	5		10	10	0	100.0	0.0	89.90	10	105.21	95.56	15.31	1.53	9.65	0.96	Mean	8.9	1.1	88.8	11.3	1.62	1.14
62	97	9520F	LW2-G383	6		10	10	0	100.0	0.0	88.14	10	104.56	93.23	16.42	1.64	11.33	1.13	SD	1.1	1.1	11.3	11.3	0.16	0.12
63	133	9520F	LW2-G383	7		10	10	0	100.0	0.0	91.78	10	106.00	95.32	14.22	1.42	10.68	1.07	n	8	8	8	8	8	8
64	140	9520F	LW2-G383	8	wq replicate	10	8	2	80.0	20.0	82.57	8	94.36	86.22	11.79	1.47	8.14	1.02								
65	150	9521F	LW2-G368	1		10	3	7	30.0	70.0	84.63	3	86.94	85.47	2.31	0.77	1.47	0.49								
66	157	9521F	LW2-G368	2		10	2	8	20.0	80.0	80.64	2	80.95	80.77	0.31	0.16	0.18	0.09								
67	155	9521F	LW2-G368	3		10	0	10	0.0	100.0	86.99	0														
68	32	9521F	LW2-G368	4		10	0	10	0.0	100.0	90.37	0														
69	154	9521F	LW2-G368	5		10	2	8	20.0	80.0	90.26	2	92.35	90.95	2.09	1.04	1.40	0.70	Mean	1.1	8.9	11.3	88.8	0.52	0.32
70	2	9521F	LW2-G368	6		10	0	10	0.0	100.0	94.09	0							SD	1.1	1.1	11.3	11.3	0.39	0.28
71	86	9521F	LW2-G368	7		10	1	9	10.0	90.0	90.66	1	91.11	90.82	0.45	0.45	0.29	0.29	n	8	8	8	8	5	5
72	132	9521F	LW2-G368	8	wq replicate	10	1	9	10.0	90.0	95.62	1	95.78	95.77	0.16	0.16	0.01	0.01								
73	138	9522F	LW2-G382	1		10	10	0	100.0	0.0	78.81	10	94.93	83.90	16.12	1.61	11.03	1.10								
74	112	9522F	LW2-G382	2		10	8	2	80.0	20.0	78.73	8	91.18	81.98	12.45	1.56	9.20	1.15								
75	122	9522F	LW2-G382	3		10	10	0	100.0	0.0	85.02	10	101.97	90.18	16.95	1.70	11.79	1.18								
76	134	9522F	LW2-G382	4		10	7	3	70.0	30.0	94.26	7	108.04	99.01	13.78	1.97	9.03	1.29								
77	100	9522F	LW2-G382	5		10	9	1	90.0	10.0	84.97	9	99.89	90.21	14.92	1.66	9.68	1.08	Mean	8.9	1.1	88.8	11.3	1.62	1.11
78	113	9522F	LW2-G382	6		10	10	0	100.0	0.0	81.32	10	97.84	87.16	16.52	1.65	10.68	1.07	SD	1.1	1.1	11.3	11.3	0.18	0.10
79	57	9522F	LW2-G382	7		10	8	2	80.0	20.0	84.46	8	96.22	87.65	11.76	1.47	8.57	1.07	n	8	8	8	8	8	8
80	37	9522F	LW2-G382	8	wq replicate	10	9	1	90.0	10.0	100.31	9	112.65	104.01	12.34	1.37	8.64	0.96								
81	46	9523F	LW2-G392	1		10	7	3	70.0	30.0	98.53	7	107.31	100.47	8.78	1.25	6.84	0.98								
82	153	9523F	LW2-G392	2		10	8	2	80.0	20.0	93.26	8	104.64	97.08	11.38	1.42	7.56	0.95								
83	117	9523F	LW2-G392	3		10	10	0	100.0	0.0	87.31	10	98.73	90.99	11.42	1.14	7.74	0.77								
84	24	9523F	LW2-G392	4		10	10	0	100.0	0.0	86.73	10	96.65	89.14	9.92	0.99	7.51	0.75								
85	18	9523F	LW2-G392	5		10	9	1	90.0	10.0	99.74	9	109.66	101.94	9.92	1.10	7.72	0.86	Mean	9.3	0.8	92.5	7.5	1.12	0.81
86	4	9523F	LW2-G392	6		10	10	0	100.0	0.0	92.14	10	100.42	94.29	8.28	0.83	6.13	0.61	SD	1.2	1.2	11.6	11.6	0.18	0.12
87	101	9523F	LW2-G392	7		10	10	0	100.0	0.0	83.85	9	94.51	87.42	10.66	1.18	7.09	0.79	n	8	8	8	8	8	8
88	54	9523F	LW2-G392	8	wq replicate	10	10	0	100.0	0.0	90.29	10	100.76	92.99	10.47	1.05	7.77	0.78								
89	116	9524F	LW2-G346	1		10	9	1	90.0	10.0	85.01	9	101.35	91.45	16.34	1.82	9.90	1.10								
90	3	9524F	LW2-G346	2		10	10	0	100.0	0.0	94.77	10	110.93	98.71	16.16	1.62	12.22	1.22								
91	125	9524F	LW2-G346	3		10	9	1	90.0	10.0	87.39	9	102.92	92.94	15.53	1.73	9.98	1.11								
92	96	9524F	LW2-G346	4		10	10	0	100.0	0.0	82.35	10	99.48	89.72	17.13	1.71	9.76	0.98								
93	38	9524F	LW2-G346	5		10	9	1	90.0	10.0	86.91	9	99.62	91.18	12.71	1.41	8.44	0.94	Mean	9.0	1.0	90.0	10.0	1.67	1.05
94	149	9524F	LW2-G346	6		10	8	2	80.0	20.0	78.98	8	94.27	85.49	15.29	1.91	8.78	1.10	SD	0.8	0.8	7.6	7.6	0.18	0.09
95	6	9524F	LW2-G346	7		10	9	1	90.0	10.0	90.35	9	103.18	94.34	12.83	1.43	8.84	0.98	n	8	8	8	8	8	8
96	105	9524F	LW2-G346	8	wq replicate	10	8	2	80.0	20.0	87.27	8	101.30	93.18	14.03	1.75	8.12	1.02								

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Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)			SURV	MORT	PSURV	PMORT	WT	AFDW
97	115	9525F	LW2-G347	1		10	9	1	90.0	10.0	93.38	9	106.69	98.09	13.31	1.48	8.60	0.96								
98	8	9525F	LW2-G347	2		10	6	4	60.0	40.0	86.38	6	95.35	88.74	8.97	1.50	6.61	1.10								
99	143	9525F	LW2-G347	3		10	9	1	90.0	10.0	83.61	9	97.93	89.34	14.32	1.59	8.59	0.95								
100	137	9525F	LW2-G347	4		10	10	0	100.0	0.0	93.10	10	107.47	98.26	14.37	1.44	9.21	0.92								
101	19	9525F	LW2-G347	5		10	9	1	90.0	10.0	100.27	9	113.00	104.13	12.73	1.41	8.87	0.99	Mean	8.6	1.4	86.3	13.8	1.43	0.97
102	63	9525F	LW2-G347	6		10	9	1	90.0	10.0	90.43	9	104.38	94.77	13.95	1.55	9.61	1.07	SD	1.2	1.2	11.9	11.9	0.13	0.08
103	12	9525F	LW2-G347	7		10	9	1	90.0	10.0	91.48	9	102.18	94.30	10.70	1.19	7.88	0.88	n	8	8	8	8	8	8
104	23	9525F	LW2-G347	8	wq replicate	10	8	2	80.0	20.0	87.90	8	98.45	90.95	10.55	1.32	7.50	0.94								
105	98	9526F	LW2-G342	1		10	9	1	90.0	10.0	77.41	9	92.85	83.77	15.44	1.72	9.08	1.01								
106	61	9526F	LW2-G342	2		10	10	0	100.0	0.0	83.06	10	98.51	88.51	15.45	1.55	10.00	1.00								
107	17	9526F	LW2-G342	3		10	9	1	90.0	10.0	87.22	9	99.39	90.83	12.17	1.35	8.56	0.95								
108	127	9526F	LW2-G342	4		10	7	3	70.0	30.0	93.34	7	108.56	99.41	15.22	2.17	9.15	1.31								
109	64	9526F	LW2-G342	5		10	9	1	90.0	10.0	91.09	9	105.34	96.29	14.25	1.58	9.05	1.01	Mean	8.8	1.3	87.5	12.5	1.64	1.04
110	26	9526F	LW2-G342	6		10	10	0	100.0	0.0	97.78	10	112.25	101.74	14.47	1.45	10.51	1.05	SD	1.0	1.0	10.4	10.4	0.31	0.12
111	107	9526F	LW2-G342	7		10	8	2	80.0	20.0	86.00	8	102.00	93.00	16.00	2.00	9.00	1.13	n	8	8	8	8	8	8
112	7	9526F	LW2-G342	8	wq replicate	10	8	2	80.0	20.0	99.25	8	109.74	102.51	10.49	1.31	7.23	0.90								
113	93	9527F	LW2-G352	1		10	10	0	100.0	0.0	90.06	10	107.72	97.74	17.66	1.77	9.98	1.00								
114	77	9527F	LW2-G352	2		10	6	4	60.0	40.0	95.77	6	107.14	100.00	11.37	1.90	7.14	1.19								
115	67	9527F	LW2-G352	3		10	9	1	90.0	10.0	93.01	9	107.87	97.94	14.86	1.65	9.93	1.10								
116	71	9527F	LW2-G352	4		10	9	1	90.0	10.0	84.91	9	98.02	89.34	13.11	1.46	8.68	0.96								
117	74	9527F	LW2-G352	5		10	10	0	100.0	0.0	88.53	10	101.58	92.84	13.05	1.31	8.74	0.87	Mean	8.8	1.3	87.5	12.5	1.68	1.06
118	68	9527F	LW2-G352	6		10	8	2	80.0	20.0	89.78	8	104.79	94.63	15.01	1.88	10.16	1.27	SD	1.3	1.3	12.8	12.8	0.21	0.13
119	156	9527F	LW2-G352	7		10	9	1	90.0	10.0	79.98	9	95.11	85.70	15.13	1.68	9.41	1.05	n	8	8	8	8	8	8
120	92	9527F	LW2-G352	8	wq replicate	10	9	1	90.0	10.0	82.09	9	98.33	88.92	16.24	1.80	9.41	1.05								
121	166	9528F	LW2-G396	1		10	9	1	90.0	10.0	92.70	9	105.44	97.21	12.74	1.42	8.23	0.91								
122	142	9528F	LW2-G396	2		10	8	2	80.0	20.0	94.15	8	108.19	99.65	14.04	1.76	8.54	1.07								
123	119	9528F	LW2-G396	3		10	9	1	90.0	10.0	88.52	9	102.72	94.48	14.20	1.58	8.24	0.92								
124	50	9528F	LW2-G396	4		10	8	2	80.0	20.0	95.16	8	109.34	100.18	14.18	1.77	9.16	1.15								
125	120	9528F	LW2-G396	5		10	8	2	80.0	20.0	89.80	8	103.20	94.72	13.40	1.68	8.48	1.06	Mean	8.4	1.6	83.8	16.3	1.65	1.04
126	118	9528F	LW2-G396	6		10	7	3	70.0	30.0	86.93	7	98.88	91.36	11.95	1.71	7.52	1.07	SD	0.9	0.9	9.2	9.2	0.13	0.09
127	123	9528F	LW2-G396	7		10	8	2	80.0	20.0	85.32	8	99.49	90.44	14.17	1.77	9.05	1.13	n	8	8	8	8	8	8
128	47	9528F	LW2-G396	8	wq replicate	10	10	0	100.0	0.0	83.73	10	99.28	89.40	15.55	1.56	9.88	0.99								
129	30	9529F	LW2-G405	1		10	6	4	60.0	40.0	88.20	6	100.21	90.62	12.01	2.00	9.59	1.60								
130	81	9529F	LW2-G405	2		10	10	0	100.0	0.0	87.63	10	101.78	92.08	14.15	1.42	9.70	0.97								
131	167	9529F	LW2-G405	3		10	9	1	90.0	10.0	90.17	9	102.93	93.73	12.76	1.42	9.20	1.02								
132	109	9529F	LW2-G405	4		10	9	1	90.0	10.0	81.06	9	95.20	84.33	14.14	1.57	10.87	1.21								
133	9	9529F	LW2-G405	5		10	8	2	80.0	20.0	86.96	8	99.03	89.75	12.07	1.51	9.28	1.16	Mean	8.6	1.4	86.3	13.8	1.57	1.18
134	22	9529F	LW2-G405	6		10	10	0	100.0	0.0	90.07	10	103.01	92.94	12.94	1.29	10.07	1.01	SD	1.3	1.3	13.0	13.0	0.27	0.23
135	28	9529F	LW2-G405	7		10	8	2	80.0	20.0	87.65	7	101.54	91.58	13.89	1.98	9.96	1.42	n	8	8	8	8	8	8
136	5	9529F	LW2-G405	8	wq replicate	10	9	1	90.0	10.0	81.79	8	93.04	84.82	11.25	1.41	8.22	1.03								
137	124	9530F	LW2-G426	1		10	10	0	100.0	0.0	87.96	10	102.55	92.18	14.59	1.46	10.37	1.04								
138	35	9530F	LW2-G426	2		10	9	1	90.0	10.0	85.89	9	97.97	89.11	12.08	1.34	8.86	0.98								
139	159	9530F	LW2-G426	3		10	10	0	100.0	0.0	84.49	10	97.39	88.70	12.90	1.29	8.69	0.87								
140	44	9530F	LW2-G426	4		10	10	0	100.0	0.0	88.45	10	99.97	91.54	11.52	1.15	8.43	0.84								
141	66	9530F	LW2-G426	5		10	9	1	90.0	10.0	92.14	9	105.73	96.22	13.59	1.51	9.51	1.06	Mean	9.4	0.6	93.8	6.3	1.36	0.97
142	42	9530F	LW2-G426	6		10	10	0	100.0	0.0	90.57	10	102.10	93.48	11.53	1.15	8.62	0.86	SD	0.7	0.7	7.4	7.4	0.17	0.10
143	79	9530F	LW2-G426	7		10	8	2	80.0	20.0	88.37	8	99.13	91.16	10.76	1.35	7.97	1.00	n	8	8	8	8	8	8
144	128	9530F	LW2-G426	8	wq replicate	10	9	1	90.0	10.0	89.34	9	104.13	94.13	14.79	1.64	10.00	1.11								
145	130	9531F	LW2-G277	1		10	10	0	100.0	0.0	85.66	10	102.83	92.46	17.17	1.72	10.37	1.04								
146	161	9531F	LW2-G277	2		10	10	0	100.0	0.0	90.26	10	105.23	96.23	14.97	1.50	9.00	0.90								
147	139	9531F	LW2-G277	3		10	9	1	90.0	10.0	93.48	9	108.86	99.67	15.38	1.71	9.19	1.02								
148	146	9531F	LW2-G277	4		10	7	3	70.0	30.0	96.60	7	112.74	103.52	16.14	2.31	9.22	1.32								
149	29	9531F	LW2-G277	5		10	7	3	70.0	30.0	87.56	7	99.26	90.90	11.70	1.67	8.36	1.19	Mean	8.9	1.1	88.8	11.3	1.69	1.05
150	82	9531F	LW2-G277	6		10	10	0	100.0	0.0	87.88	10	101.96	92.88	14.08	1.41	9.08	0.91	SD	1.2	1.2	12.5	12.5	0.29	0.15
151	121	9531F	LW2-G277	7		10	9	1	90.0	10.0	85.74	9	101.76	91.67	16.02	1.78	10.09	1.12	n	8	8	8	8	8	8
152	11	9531F	LW2-G277	8	wq replicate	10	9	1	90.0	10.0	101.81	9	114.74	106.33	12.93	1.44	8.41	0.93								

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Test Number: 686-18

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)			SURV	MORT	PSURV	PMORT	WT	AFDW
153	126	9532F	LW2-G295	1		10	10	0	100.0	0.0	92.55	10	109.56	99.37	17.01	1.70	10.19	1.02								
154	31	9532F	LW2-G295	2		10	10	0	100.0	0.0	90.25	10	104.66	94.88	14.41	1.44	9.78	0.98								
155	40	9532F	LW2-G295	3		10	10	0	100.0	0.0	92.84	10	106.99	97.85	14.15	1.42	9.14	0.91								
156	51	9532F	LW2-G295	4		10	9	1	90.0	10.0	96.85	9	111.48	101.59	14.63	1.63	9.89	1.10								
157	99	9532F	LW2-G295	5		10	10	0	100.0	0.0	78.44	10	95.56	85.63	17.12	1.71	9.93	0.99		Mean	9.4	0.6	93.8	6.3	1.54	0.99
158	53	9532F	LW2-G295	6		10	9	1	90.0	10.0	89.38	9	104.71	94.55	15.33	1.70	10.16	1.13		SD	0.7	0.7	7.4	7.4	0.17	0.09
159	80	9532F	LW2-G295	7		10	8	2	80.0	20.0	91.83	8	102.80	95.49	10.97	1.37	7.31	0.91		n	8	8	8	8	8	8
160	25	9532F	LW2-G295	8	wq replicate	10	9	1	90.0	10.0	87.72	9	99.61	91.46	11.89	1.32	8.15	0.91								
161	36	9533F	LW2-G280	1		10	9	1	90.0	10.0	85.75	9	98.97	90.34	13.22	1.47	8.63	0.96								
162	1	9533F	LW2-G280	2		10	10	0	100.0	0.0	97.83	10	110.88	101.90	13.05	1.31	8.98	0.90								
163	102	9533F	LW2-G280	3		10	9	1	90.0	10.0	91.54	9	108.06	98.12	16.52	1.84	9.94	1.10								
164	104	9533F	LW2-G280	4		10	8	2	80.0	20.0	87.42	8	102.04	92.97	14.62	1.83	9.07	1.13								
165	41	9533F	LW2-G280	5		10	10	0	100.0	0.0	88.60	10	101.97	93.22	13.37	1.34	8.75	0.88		Mean	9.0	1.0	90.0	10.0	1.56	1.00
166	52	9533F	LW2-G280	6		10	10	0	100.0	0.0	90.61	10	108.29	97.59	17.68	1.77	10.70	1.07		SD	1.1	1.1	10.7	10.7	0.25	0.10
167	21	9533F	LW2-G280	7		10	9	1	90.0	10.0	88.67	9	99.93	91.77	11.26	1.25	8.16	0.91		n	8	8	8	8	8	8
168	90	9533F	LW2-G280	8	wq replicate	10	7	3	70.0	30.0	93.47	7	105.50	98.00	12.03	1.72	7.50	1.07								

Beaker #5 one animal was lost or damaged in transfering to weighing pan. Beaker #58 lost two animals.

Beakers #27, 28, and 101 each had one pupa which was not included in the weighing. Beaker #55 had two pupae which were not included in the weighing.

Pupae are not included in the sample to estimate ash-free dry weight (as per EPA/600/R-99/064, p. 59, section 12.3.8.2)

ANC07571
BZTO104(e)007571

Water Quality Data

	NAS	CLIENT										Bulk Sediment Interstitial water	
	SMPL	DESCRIP										NH3	pH
	9534F	Control										1.5	6.6
	9514F	LW2-G273										11.6	6.2
	9515F	LW2-G124										3.2	5.6
	9516F	LW2-G425										0.9	5.3
	9517F	LW2-G364										2.6	5.7
	9518F	LW2-G420										4.6	6.0
	9519F	LW2-G409										5.0	6.1
	9520F	LW2-G383										---	---
	9521F	LW2-G368										22.9	6.9
	9522F	LW2-G382										3.8	7.0
	9523F	LW2-G392										4.8	7.2
	9524F	LW2-G346										3.4	7.0
	9525F	LW2-G347										2.4	6.8
	9526F	LW2-G342										1.9	6.6
	9527F	LW2-G352										3.2	6.5
	9528F	LW2-G396										4.3	6.7
	9529F	LW2-G405										1.6	6.3
	9530F	LW2-G426										5.0	6.2
	9531F	LW2-G277										2.5	6.3
	9532F	LW2-G295										2.1	6.4
	9533F	LW2-G280										2.4	6.3

	NAS	CLIENT			Overlying water								
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	NH3	HARD	ALK		
5	9529F	LW2-G405	8	0	22.8	6.6	165	6.6	0.4	43	50		
7	9526F	LW2-G342	8	0	22.8	6.4	165	6.6	0.5	43	40		
10	9519F	LW2-G409	8	0	22.7	6.1	170	6.4	1.0	43	50		
11	9531F	LW2-G277	8	0	22.7	6.3	160	6.5	0.6	34	40		
23	9525F	LW2-G347	8	0	22.7	6.7	160	6.2	0.6	43	40		
25	9532F	LW2-G295	8	0	22.6	6.9	160	6.5	0.5	34	40		
33	9534F	Control	8	0	22.8	6.8	230	6.5	0.2	43	40		
37	9522F	LW2-G382	8	0	22.6	6.2	165	6.6	0.9	43	40		
47	9528F	LW2-G396	8	0	22.5	6.2	160	6.5	0.6	51	40		
54	9523F	LW2-G392	8	0	22.7	6.5	160	6.5	0.6	43	40		
60	9518F	LW2-G420	8	0	22.7	6.1	175	6.4	1.0	43	40		
76	9515F	LW2-G124	8	0	22.7	6.9	155	6.5	0.4	43	40		
87	9514F	LW2-G273	8	0	22.5	6.4	175	6.4	2.3	43	50		
90	9533F	LW2-G280	8	0	22.5	6.3	160	6.5	0.5	43	40		
92	9527F	LW2-G352	8	0	22.5	6.7	170	6.4	0.8	43	40		
105	9524F	LW2-G346	8	0	22.5	6.8	160	6.5	0.6	43	40		
128	9530F	LW2-G426	8	0	22.5	6.8	170	6.4	1.1	43	40		
132	9521F	LW2-G368	8	0	22.6	6.6	4800	7.0	2.6	68	70		
140	9520F	LW2-G383	8	0	22.8	6.8	180	7.4	0.3	34	40		
152	9516F	LW2-G425	8	0	22.8	7.0	170	6.6	0.4	34	40		
163	9517F	LW2-G364	8	0	22.9	6.6	170	6.5	0.7	43	40		
5	9529F	LW2-G405	8	1	22.6	6.4	165	6.2					
7	9526F	LW2-G342	8	1	22.5	6.6	165	6.2					
10	9519F	LW2-G409	8	1	22.5	6.5	165	6.2					
11	9531F	LW2-G277	8	1	22.5	6.6	165	6.2					
23	9525F	LW2-G347	8	1	22.4	6.5	165	6.2					
25	9532F	LW2-G295	8	1	22.5	6.5	165	6.2					
33	9534F	Control	8	1	22.4	6.6	200	6.3					
37	9522F	LW2-G382	8	1	22.4	6.4	170	6.3					
47	9528F	LW2-G396	8	1	22.4	6.3	160	6.2					
54	9523F	LW2-G392	8	1	22.4	6.7	165	6.3					
60	9518F	LW2-G420	8	1	22.4	6.8	170	6.3					
76	9515F	LW2-G124	8	1	22.5	6.7	160	6.3					
87	9514F	LW2-G273	8	1	22.4	6.4	170	6.2					
90	9533F	LW2-G280	8	1	22.4	6.6	165	6.2					
92	9527F	LW2-G352	8	1	22.4	6.7	165	6.3					
105	9524F	LW2-G346	8	1	22.4	6.6	165	6.3					
128	9530F	LW2-G426	8	1	22.4	6.8	170	6.3					
132	9521F	LW2-G368	8	1	22.4	7.1	1890	6.4					
140	9520F	LW2-G383	8	1	22.5	6.8	165	6.5					
152	9516F	LW2-G425	8	1	22.3	6.9	170	6.3					
163	9517F	LW2-G364	8	1	22.4	7.2	170	6.5					
5	9529F	LW2-G405	8	2	22.9	6.4							
7	9526F	LW2-G342	8	2	22.8	6.7							
10	9519F	LW2-G409	8	2	22.8	6.7							
11	9531F	LW2-G277	8	2	22.8	6.7							
23	9525F	LW2-G347	8	2	22.8	6.5							
25	9532F	LW2-G295	8	2	22.8	6.5							
33	9534F	Control	8	2	22.7	6.6							

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37	9522F	LW2-G382	8	2	22.7	6.2								
47	9528F	LW2-G396	8	2	22.7	6.5								
54	9523F	LW2-G392	8	2	22.7	6.0								
60	9518F	LW2-G420	8	2	22.7	6.1								
76	9515F	LW2-G124	8	2	22.8	6.4								
87	9514F	LW2-G273	8	2	22.7	6.3								
90	9533F	LW2-G280	8	2	22.7	6.5								
92	9527F	LW2-G352	8	2	22.7	6.1								
105	9524F	LW2-G346	8	2	22.7	6.3								
128	9530F	LW2-G426	8	2	22.6	6.1								
132	9521F	LW2-G368	8	2	22.6	6.5								
140	9520F	LW2-G383	8	2	22.8	6.7								
152	9516F	LW2-G425	8	2	22.6	6.7								
163	9517F	LW2-G364	8	2	22.7	7.0								
5	9529F	LW2-G405	8	3	22.3	5.5								
7	9526F	LW2-G342	8	3	22.3	5.9								
10	9519F	LW2-G409	8	3	22.3	6.5								
11	9531F	LW2-G277	8	3	22.3	6.3								
23	9525F	LW2-G347	8	3	22.2	6.4								
25	9532F	LW2-G295	8	3	22.2	6.7								
33	9534F	Control	8	3	22.2	6.4								
37	9522F	LW2-G382	8	3	22.1	6.0								
47	9528F	LW2-G396	8	3	22.1	6.5								
54	9523F	LW2-G392	8	3	22.1	6.2								
60	9518F	LW2-G420	8	3	22.2	6.5								
76	9515F	LW2-G124	8	3	22.2	6.6								
87	9514F	LW2-G273	8	3	22.2	6.6								
90	9533F	LW2-G280	8	3	22.1	6.7								
92	9527F	LW2-G352	8	3	22.2	6.2								
105	9524F	LW2-G346	8	3	22.2	5.4								
128	9530F	LW2-G426	8	3	22.1	6.6								
132	9521F	LW2-G368	8	3	22.1	6.9								
140	9520F	LW2-G383	8	3	22.1	6.0								
152	9516F	LW2-G425	8	3	22.1	6.3								
163	9517F	LW2-G364	8	3	22.2	6.7								
5	9529F	LW2-G405	8	4	23.2	5.9								
7	9526F	LW2-G342	8	4	23.2	6.1								
10	9519F	LW2-G409	8	4	23.2	6.3								
11	9531F	LW2-G277	8	4	23.0	6.5								
23	9525F	LW2-G347	8	4	22.9	6.4								
25	9532F	LW2-G295	8	4	22.8	6.6								
33	9534F	Control	8	4	22.8	6.7								
37	9522F	LW2-G382	8	4	22.6	6.5								
47	9528F	LW2-G396	8	4	22.6	6.4								
54	9523F	LW2-G392	8	4	22.3	6.2								
60	9518F	LW2-G420	8	4	22.5	6.3								
76	9515F	LW2-G124	8	4	22.6	6.5								
87	9514F	LW2-G273	8	4	22.5	6.5								
90	9533F	LW2-G280	8	4	22.7	6.6								
92	9527F	LW2-G352	8	4	22.6	6.8								
105	9524F	LW2-G346	8	4	22.5	5.6								
128	9530F	LW2-G426	8	4	22.5	6.4								
132	9521F	LW2-G368	8	4	22.6	6.7								
140	9520F	LW2-G383	8	4	22.5	6.4								
152	9516F	LW2-G425	8	4	22.5	6.6								
163	9517F	LW2-G364	8	4	22.6	6.5								
5	9529F	LW2-G405	8	5	22.7	5.0								
7	9526F	LW2-G342	8	5	22.6	5.2								
10	9519F	LW2-G409	8	5	22.7	5.0								
11	9531F	LW2-G277	8	5	22.7	4.8								
23	9525F	LW2-G347	8	5	22.6	5.0								
25	9532F	LW2-G295	8	5	22.8	5.0								
33	9534F	Control	8	5	22.8	4.3								
37	9522F	LW2-G382	8	5	22.6	4.2								
47	9528F	LW2-G396	8	5	22.5	5.2								
54	9523F	LW2-G392	8	5	22.6	4.6								
60	9518F	LW2-G420	8	5	22.7	4.5								
76	9515F	LW2-G124	8	5	22.7	4.8								
87	9514F	LW2-G273	8	5	22.5	4.8								
90	9533F	LW2-G280	8	5	22.6	4.7								
92	9527F	LW2-G352	8	5	22.5	4.6								
105	9524F	LW2-G346	8	5	22.5	4.5								
128	9530F	LW2-G426	8	5	22.5	3.9								
132	9521F	LW2-G368	8	5	22.5	5.0								
140	9520F	LW2-G383	8	5	22.7	4.7								
152	9516F	LW2-G425	8	5	22.7	4.3								
163	9517F	LW2-G364	8	5	22.6	4.9								
5	9529F	LW2-G405	8	6	22.5	4.7								
7	9526F	LW2-G342	8	6	22.4	4.6								

10	9519F	LW2-G409	8	6	22.4	4.6								
11	9531F	LW2-G277	8	6	22.6	4.4								
23	9525F	LW2-G347	8	6	22.6	4.5								
25	9532F	LW2-G295	8	6	22.6	5.0								
33	9534F	Control	8	6	22.7	4.5								
37	9522F	LW2-G382	8	6	22.4	4.6								
47	9528F	LW2-G396	8	6	22.4	5.0								
54	9523F	LW2-G392	8	6	22.4	4.8								
60	9518F	LW2-G420	8	6	22.4	4.8								
76	9515F	LW2-G124	8	6	22.6	5.6								
87	9514F	LW2-G273	8	6	22.3	5.0								
90	9533F	LW2-G280	8	6	22.3	5.1								
92	9527F	LW2-G352	8	6	22.4	4.8								
105	9524F	LW2-G346	8	6	22.3	5.2								
128	9530F	LW2-G426	8	6	22.4	4.5								
132	9521F	LW2-G368	8	6	22.3	5.0								
140	9520F	LW2-G383	8	6	22.3	4.8								
152	9516F	LW2-G425	8	6	22.6	4.4								
163	9517F	LW2-G364	8	6	22.4	5.3								
5	9529F	LW2-G405	8	7	22.5	5.2								
7	9526F	LW2-G342	8	7	22.5	5.0								
10	9519F	LW2-G409	8	7	22.3	5.1								
11	9531F	LW2-G277	8	7	22.3	4.8								
23	9525F	LW2-G347	8	7	22.4	5.0								
25	9532F	LW2-G295	8	7	22.1	5.2								
33	9534F	Control	8	7	22.3	5.4								
37	9522F	LW2-G382	8	7	22.2	5.3								
47	9528F	LW2-G396	8	7	22.2	5.5								
54	9523F	LW2-G392	8	7	22.2	5.1								
60	9518F	LW2-G420	8	7	22.1	4.8								
76	9515F	LW2-G124	8	7	22.1	4.6								
87	9514F	LW2-G273	8	7	22.1	5.0								
90	9533F	LW2-G280	8	7	22.2	5.1								
92	9527F	LW2-G352	8	7	22.1	5.2								
105	9524F	LW2-G346	8	7	22.0	5.3								
128	9530F	LW2-G426	8	7	22.0	4.9								
132	9521F	LW2-G368	8	7	22.0	5.1								
140	9520F	LW2-G383	8	7	22.0	4.8								
152	9516F	LW2-G425	8	7	22.1	5.0								
163	9517F	LW2-G364	8	7	22.0	5.6								
5	9529F	LW2-G405	8	8	22.8	6.2								
7	9526F	LW2-G342	8	8	22.4	6.4								
10	9519F	LW2-G409	8	8	22.5	6.4								
11	9531F	LW2-G277	8	8	22.5	6.2								
23	9525F	LW2-G347	8	8	22.3	6.4								
25	9532F	LW2-G295	8	8	22.5	6.7								
33	9534F	Control	8	8	22.3	5.6								
37	9522F	LW2-G382	8	8	22.2	5.9								
47	9528F	LW2-G396	8	8	22.2	6.2								
54	9523F	LW2-G392	8	8	22.2	6.2								
60	9518F	LW2-G420	8	8	22.3	5.8								
76	9515F	LW2-G124	8	8	22.3	6.3								
87	9514F	LW2-G273	8	8	22.2	6.1								
90	9533F	LW2-G280	8	8	22.2	6.6								
92	9527F	LW2-G352	8	8	22.2	6.6								
105	9524F	LW2-G346	8	8	22.4	7.0								
128	9530F	LW2-G426	8	8	22.3	6.5								
132	9521F	LW2-G368	8	8	22.2	6.6								
140	9520F	LW2-G383	8	8	22.6	6.7								
152	9516F	LW2-G425	8	8	22.4	6.2								
163	9517F	LW2-G364	8	8	22.4	6.6								
5	9529F	LW2-G405	8	9	23.2	5.2								
7	9526F	LW2-G342	8	9	23.0	5.0								
10	9519F	LW2-G409	8	9	23.1	5.4								
11	9531F	LW2-G277	8	9	23.0	4.9								
23	9525F	LW2-G347	8	9	22.9	5.6								
25	9532F	LW2-G295	8	9	22.9	5.6								
33	9534F	Control	8	9	23.1	4.4								
37	9522F	LW2-G382	8	9	22.9	4.8								
47	9528F	LW2-G396	8	9	22.8	5.4								
54	9523F	LW2-G392	8	9	22.8	5.4								
60	9518F	LW2-G420	8	9	22.9	5.0								
76	9515F	LW2-G124	8	9	22.9	6.0								
87	9514F	LW2-G273	8	9	22.9	5.4								
90	9533F	LW2-G280	8	9	22.8	5.7								
92	9527F	LW2-G352	8	9	22.8	5.2								
105	9524F	LW2-G346	8	9	22.8	5.6								
128	9530F	LW2-G426	8	9	22.8	5.0								
132	9521F	LW2-G368	8	9	22.8	5.4								

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140	9520F	LW2-G383	8	9	22.8	5.0								
152	9516F	LW2-G425	8	9	23.0	5.4								
163	9517F	LW2-G364	8	9	22.9	5.2								
5	9529F	LW2-G405	8	10	23.0	6.2	150	6.0	0.1	43	40			
7	9526F	LW2-G342	8	10	22.9	6.4	150	6.0	0.2	34	40			
10	9519F	LW2-G409	8	10	23.0	6.4	145	6.1	0.4	34	40			
11	9531F	LW2-G277	8	10	22.9	6.3	145	6.0	0.3	34	40			
23	9525F	LW2-G347	8	10	22.8	6.0	145	6.0	0.3	43	40			
25	9532F	LW2-G295	8	10	22.9	6.4	145	6.0	0.2	34	40			
33	9534F	Control	8	10	22.8	5.1	155	6.1	1.9	34	50			
37	9522F	LW2-G382	8	10	22.7	5.8	145	6.1	0.3	43	40			
47	9528F	LW2-G396	8	10	22.7	6.3	145	6.1	0.2	43	40			
54	9523F	LW2-G392	8	10	22.7	6.2	145	6.0	0.3	43	40			
60	9518F	LW2-G420	8	10	22.7	6.4	150	6.1	0.4	34	40			
76	9515F	LW2-G124	8	10	22.8	6.9	145	6.1	0.4	34	40			
87	9514F	LW2-G273	8	10	22.8	6.1	150	6.1	0.8	43	40			
90	9533F	LW2-G280	8	10	22.7	6.4	150	6.0	0.5	43	40			
92	9527F	LW2-G352	8	10	22.7	6.3	150	6.1	0.4	34	40			
105	9524F	LW2-G346	8	10	22.7	6.0	150	6.1	0.4	43	40			
128	9530F	LW2-G426	8	10	22.7	5.8	150	6.0	0.4	34	40			
132	9521F	LW2-G368	8	10	22.7	6.1	440	6.4	0.4	34	40			
140	9520F	LW2-G383	8	10	22.9	6.0	150	6.1	0.3	34	50			
152	9516F	LW2-G425	8	10	22.7	6.0	150	6.1	0.3	34	40			
163	9517F	LW2-G364	8	10	22.8	6.1	150	6.1	0.3	43	40			
				Mean	22.5	5.9	267	6.3	0.6	40	42		---	---
				SD	0.3	0.8	621	0.2	0.5	6	6		---	---
				n	231	231	63	63	42	42	42		20	20
				Min	22.0	3.9	145	6.0	0.1	34	40		0.9	5.3
				Max	23.2	7.2	4800	7.4	2.6	68	70		22.9	7.2

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Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

Data entry verified against laboratory bench sheets - MSR 12/13/04

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

INITIAL WEIGHT

pan #	tare wt (mg)	final wt (mg)	wt count	avg. wt/ organism
1	31.923	32.537	20	0.031
2	27.486	28.080	20	0.030
3	30.337	31.020	20	0.034
4	29.300	29.983	20	0.034
5	28.938	29.530	20	0.030

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)
1	166	9534F	Control	1		10	10	0	100.0	0.0	27.463	10	31.533	4.07	0.41
2	114	9534F	Control	2		10	9	1	90.0	10.0	30.017	9	33.715	3.70	0.41
3	146	9534F	Control	3		10	10	0	100.0	0.0	28.376	10	33.332	4.96	0.50
4	88	9534F	Control	4		10	10	0	100.0	0.0	27.808	10	31.940	4.13	0.41
5	128	9534F	Control	5		10	10	0	100.0	0.0	28.958	10	33.822	4.86	0.49
6	137	9534F	Control	6		10	10	0	100.0	0.0	26.885	10	31.525	4.64	0.46
7	13	9534F	Control	7		10	10	0	100.0	0.0	27.604	10	31.538	3.93	0.39
8	110	9534F	Control	8	wq replicate	10	10	0	100.0	0.0	27.144	10	31.298	4.15	0.42
9	115	9542F	LW2-G210	1		10	5	5	50.0	50.0	28.120	5	30.113	1.99	0.40
10	4	9542F	LW2-G210	2		10	3	7	30.0	70.0	28.769	3	29.932	1.16	0.39
11	1	9542F	LW2-G210	3		10	6	4	60.0	40.0	28.351	6	30.504	2.15	0.36
12	104	9542F	LW2-G210	4		10	4	6	40.0	60.0	29.960	4	32.002	2.04	0.51
13	27	9542F	LW2-G210	5		10	1	9	10.0	90.0	29.358	1	29.454	0.10	0.10
14	143	9542F	LW2-G210	6		10	4	6	40.0	60.0	27.788	4	29.380	1.59	0.40
15	123	9542F	LW2-G210	7		10	1	9	10.0	90.0	27.640	1	28.098	0.46	0.46
16	21	9542F	LW2-G210	8	wq replicate	10	1	9	10.0	90.0	27.626	1	28.270	0.64	0.64
17	68	9543F	LW2-G213	1		10	8	2	80.0	20.0	28.108	8	31.338	3.23	0.40
18	52	9543F	LW2-G213	2		10	9	1	90.0	10.0	29.474	9	32.693	3.22	0.36
19	11	9543F	LW2-G213	3		10	10	0	100.0	0.0	28.845	10	30.148	1.30	0.13
20	26	9543F	LW2-G213	4		10	9	1	90.0	10.0	24.787	9	27.127	2.34	0.26
21	16	9543F	LW2-G213	5		10	10	0	100.0	0.0	27.419	10	31.361	3.94	0.39
22	50	9543F	LW2-G213	6		10	9	1	90.0	10.0	31.256	9	34.472	3.22	0.36
23	156	9543F	LW2-G213	7		10	9	1	90.0	10.0	28.305	9	31.591	3.29	0.37
24	161	9543F	LW2-G213	8	wq replicate	10	10	0	100.0	0.0	28.758	10	31.822	3.06	0.31
25	113	9544F	LW2-G200	1		10	10	0	100.0	0.0	27.508	10	29.892	2.38	0.24
26	102	9544F	LW2-G200	2		10	10	0	100.0	0.0	30.262	10	33.698	3.44	0.34
27	162	9544F	LW2-G200	3		10	10	0	100.0	0.0	27.306	10	30.017	2.71	0.27
28	149	9544F	LW2-G200	4		10	10	0	100.0	0.0	29.713	10	33.435	3.72	0.37
29	29	9544F	LW2-G200	5		10	9	1	90.0	10.0	29.445	9	31.962	2.52	0.28
30	72	9544F	LW2-G200	6		10	10	0	100.0	0.0	27.903	10	30.704	2.80	0.28
31	118	9544F	LW2-G200	7		10	10	0	100.0	0.0	27.430	10	30.258	2.83	0.28
32	23	9544F	LW2-G200	8	wq replicate	10	8	2	80.0	20.0	26.716	8	29.201	2.49	0.31

	SURV	MORT	PSURV	PMORT	WT
Mean	9.9	0.1	98.8	1.3	0.44
SD	0.4	0.4	3.5	3.5	0.04
n	8	8	8	8	8
Mean	3.1	6.9	31.3	68.8	0.41
SD	2.0	2.0	19.6	19.6	0.16
n	8	8	8	8	8
Mean	9.3	0.8	92.5	7.5	0.32
SD	0.7	0.7	7.1	7.1	0.09
n	8	8	8	8	8
Mean	9.6	0.4	96.3	3.8	0.30
SD	0.7	0.7	7.4	7.4	0.04
n	8	8	8	8	8

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		NAS	CLIENT								TARE	WT	DRY	TWT	WT						
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	WT (mg)	COUNT	WT (mg)	(mg)	(mg)		SURV	MORT	PSURV	PMORT	WT
33	97	9545F	LW2-G093	1		10	8	2	80.0	20.0	29.503	8	32.938	3.44	0.43						
34	37	9545F	LW2-G093	2		10	10	0	100.0	0.0	29.851	10	33.703	3.85	0.39						
35	98	9545F	LW2-G093	3		10	9	1	90.0	10.0	27.685	9	30.774	3.09	0.34						
36	45	9545F	LW2-G093	4		10	10	0	100.0	0.0	29.220	10	32.782	3.56	0.36						
37	76	9545F	LW2-G093	5		10	10	0	100.0	0.0	31.710	10	34.536	2.83	0.28	Mean	9.3	0.8	92.5	7.5	0.35
38	55	9545F	LW2-G093	6		10	9	1	90.0	10.0	33.703	9	36.747	3.04	0.34	SD	0.9	0.9	8.9	8.9	0.05
39	83	9545F	LW2-G093	7		10	8	2	80.0	20.0	27.045	8	29.459	2.41	0.30	n	8	8	8	8	8
40	126	9545F	LW2-G093	8	wq replicate	10	10	0	100.0	0.0	27.364	10	31.001	3.64	0.36						
41	69	9546F	LW2-G206	1		10	10	0	100.0	0.0	26.894	10	30.038	3.14	0.31						
42	78	9546F	LW2-G206	2		10	10	0	100.0	0.0	27.199	10	30.418	3.22	0.32						
43	71	9546F	LW2-G206	3		10	10	0	100.0	0.0	31.392	10	34.838	3.45	0.34						
44	148	9546F	LW2-G206	4		10	10	0	100.0	0.0	27.714	10	31.708	3.99	0.40						
45	94	9546F	LW2-G206	5		10	10	0	100.0	0.0	27.009	10	30.983	3.97	0.40	Mean	10.0	0.0	100.0	0.0	0.31
46	96	9546F	LW2-G206	6		10	10	0	100.0	0.0	27.715	10	31.521	3.81	0.38	SD	0.0	0.0	0.0	0.0	0.09
47	7	9546F	LW2-G206	7		10	10	0	100.0	0.0	27.439	10	29.466	2.03	0.20	n	8	8	8	8	8
48	66	9546F	LW2-G206	8	wq replicate	10	10	0	100.0	0.0	28.796	10	30.200	1.40	0.14						
49	25	9547F	LW2-G362-1	1		10	8	2	80.0	20.0	28.005	8	31.794	3.79	0.47						
50	90	9547F	LW2-G362-1	2		10	10	0	100.0	0.0	28.146	10	31.442	3.30	0.33						
51	101	9547F	LW2-G362-1	3		10	10	0	100.0	0.0	30.236	10	33.020	2.78	0.28						
52	74	9547F	LW2-G362-1	4		10	8	2	80.0	20.0	31.123	8	34.471	3.35	0.42						
53	95	9547F	LW2-G362-1	5		10	9	1	90.0	10.0	29.898	9	32.936	3.04	0.34	Mean	9.1	0.9	91.3	8.8	0.37
54	164	9547F	LW2-G362-1	6		10	10	0	100.0	0.0	27.316	10	30.912	3.60	0.36	SD	1.0	1.0	9.9	9.9	0.06
55	48	9547F	LW2-G362-1	7		10	8	2	80.0	20.0	27.968	8	31.279	3.31	0.41	n	8	8	8	8	8
56	109	9547F	LW2-G362-1	8	wq replicate	10	10	0	100.0	0.0	27.723	10	31.155	3.43	0.34						
57	125	9548F	LW2-G413	1		10	10	0	100.0	0.0	27.830	10	32.125	4.30	0.43						
58	75	9548F	LW2-G413	2		10	9	1	90.0	10.0	28.762	9	32.298	3.54	0.39						
59	168	9548F	LW2-G413	3		10	10	0	100.0	0.0	29.309	10	31.861	2.55	0.26						
60	18	9548F	LW2-G413	4		10	10	0	100.0	0.0	27.289	10	30.948	3.66	0.37						
61	167	9548F	LW2-G413	5		10	10	0	100.0	0.0	27.682	10	31.873	4.19	0.42	Mean	9.9	0.1	98.8	1.3	0.38
62	20	9548F	LW2-G413	6		10	10	0	100.0	0.0	28.982	9	32.343	3.36	0.37	SD	0.4	0.4	3.5	3.5	0.07
63	144	9548F	LW2-G413	7		10	10	0	100.0	0.0	27.464	10	30.641	3.18	0.32	n	8	8	8	8	8
64	142	9548F	LW2-G413	8	wq replicate	10	10	0	100.0	0.0	27.832	10	32.660	4.83	0.48						
65	107	9549F	LW2-G393	1		10	10	0	100.0	0.0	29.634	10	33.250	3.62	0.36						
66	30	9549F	LW2-G393	2		10	10	0	100.0	0.0	28.190	10	32.161	3.97	0.40						
67	73	9549F	LW2-G393	3		10	10	0	100.0	0.0	29.485	10	32.935	3.45	0.35						
68	47	9549F	LW2-G393	4		10	8	2	80.0	20.0	27.710	8	31.012	3.30	0.41						
69	65	9549F	LW2-G393	5		10	10	0	100.0	0.0	27.826	10	30.643	2.82	0.28	Mean	9.5	0.5	95.0	5.0	0.36
70	163	9549F	LW2-G393	6		10	10	0	100.0	0.0	27.702	10	31.337	3.64	0.36	SD	0.8	0.8	7.6	7.6	0.04
71	121	9549F	LW2-G393	7		10	9	1	90.0	10.0	27.335	9	30.491	3.16	0.35	n	8	8	8	8	8
72	33	9549F	LW2-G393	8	wq replicate	10	9	1	90.0	10.0	28.156	9	31.703	3.55	0.39						

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INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)			SURV	MORT	PSURV	PMORT	WT
73	46	9550F	LW2-G417	1		10	9	1	90.0	10.0	26.182	9	28.749	2.57	0.29							
74	135	9550F	LW2-G417	2		10	10	0	100.0	0.0	28.728	10	33.024	4.30	0.43							
75	24	9550F	LW2-G417	3		10	10	0	100.0	0.0	28.469	10	31.158	2.69	0.27							
76	22	9550F	LW2-G417	4		10	7	3	70.0	30.0	27.553	7	30.524	2.97	0.42							
77	34	9550F	LW2-G417	5		10	10	0	100.0	0.0	28.924	10	33.082	4.16	0.42	Mean		9.5	0.5	95.0	5.0	0.36
78	122	9550F	LW2-G417	6		10	10	0	100.0	0.0	28.009	10	32.632	4.62	0.46	SD		1.1	1.1	10.7	10.7	0.08
79	147	9550F	LW2-G417	7		10	10	0	100.0	0.0	27.730	9	30.908	3.18	0.35	n		8	8	8	8	8
80	136	9550F	LW2-G417	8	wq replicate	10	10	0	100.0	0.0	28.981	9	31.285	2.30	0.26							
81	119	9551F	LW2-G415	1		10	9	1	90.0	10.0	28.768	8	31.613	2.85	0.36							
82	61	9551F	LW2-G415	2		10	10	0	100.0	0.0	28.080	10	31.254	3.17	0.32							
83	89	9551F	LW2-G415	3		10	8	2	80.0	20.0	28.724	8	31.823	3.10	0.39							
84	87	9551F	LW2-G415	4		10	10	0	100.0	0.0	28.504	10	31.914	3.41	0.34							
85	12	9551F	LW2-G415	5		10	7	3	70.0	30.0	30.237	7	32.679	2.44	0.35	Mean		9.1	0.9	91.3	8.8	0.35
86	67	9551F	LW2-G415	6		10	10	0	100.0	0.0	28.420	10	32.248	3.83	0.38	SD		1.1	1.1	11.3	11.3	0.03
87	105	9551F	LW2-G415	7		10	10	0	100.0	0.0	27.983	10	31.077	3.09	0.31	n		8	8	8	8	8
88	133	9551F	LW2-G415	8	wq replicate	10	9	1	90.0	10.0	26.582	9	29.712	3.13	0.35							
89	31	9552F	LW2-G380	1		10	10	0	100.0	0.0	27.958	10	31.858	3.90	0.39							
90	15	9552F	LW2-G380	2		10	8	2	80.0	20.0	27.517	8	30.964	3.45	0.43							
91	140	9552F	LW2-G380	3		10	9	1	90.0	10.0	31.067	9	35.334	4.27	0.47							
92	160	9552F	LW2-G380	4		10	10	0	100.0	0.0	26.711	10	31.147	4.44	0.44							
93	49	9552F	LW2-G380	5		10	9	1	90.0	10.0	29.266	9	32.868	3.60	0.40	Mean		9.0	1.0	90.0	10.0	0.43
94	145	9552F	LW2-G380	6		10	7	3	70.0	30.0	29.382	7	32.853	3.47	0.50	SD		1.1	1.1	10.7	10.7	0.05
95	5	9552F	LW2-G380	7		10	9	1	90.0	10.0	30.900	9	34.048	3.15	0.35	n		8	8	8	8	8
96	42	9552F	LW2-G380	8	wq replicate	10	10	0	100.0	0.0	27.184	10	31.664	4.48	0.45							
97	84	9553F	LW2-G430	1		10	10	0	100.0	0.0	28.920	10	33.661	4.74	0.47							
98	51	9553F	LW2-G430	2		10	9	1	90.0	10.0	27.100	9	29.983	2.88	0.32							
99	93	9553F	LW2-G430	3		10	9	1	90.0	10.0	26.833	9	30.782	3.95	0.44							
100	63	9553F	LW2-G430	4		10	9	1	90.0	10.0	29.640	9	34.163	4.52	0.50							
101	41	9553F	LW2-G430	5		10	10	0	100.0	0.0	29.402	10	33.466	4.06	0.41	Mean		9.6	0.4	96.3	3.8	0.42
102	44	9553F	LW2-G430	6		10	10	0	100.0	0.0	29.569	10	33.846	4.28	0.43	SD		0.5	0.5	5.2	5.2	0.06
103	39	9553F	LW2-G430	7		10	10	0	100.0	0.0	29.170	10	33.489	4.32	0.43	n		8	8	8	8	8
104	82	9553F	LW2-G430	8	wq replicate	10	10	0	100.0	0.0	29.996	10	33.504	3.51	0.35							
105	60	9554F	LW2-G437	1		10	9	1	90.0	10.0	26.732	9	29.604	2.87	0.32							
106	138	9554F	LW2-G437	2		10	10	0	100.0	0.0	29.047	10	32.424	3.38	0.34							
107	150	9554F	LW2-G437	3		10	10	0	100.0	0.0	32.055	10	35.683	3.63	0.36							
108	111	9554F	LW2-G437	4		10	9	1	90.0	10.0	28.888	9	32.644	3.76	0.42							
109	19	9554F	LW2-G437	5		10	9	1	90.0	10.0	27.708	9	30.803	3.10	0.34	Mean		9.4	0.6	93.8	6.3	0.36
110	106	9554F	LW2-G437	6		10	10	0	100.0	0.0	29.703	10	32.816	3.11	0.31	SD		0.7	0.7	7.4	7.4	0.04
111	53	9554F	LW2-G437	7		10	8	2	80.0	20.0	28.360	8	31.603	3.24	0.41	n		8	8	8	8	8
112	129	9554F	LW2-G437	8	wq replicate	10	10	0	100.0	0.0	29.829	10	33.748	3.92	0.39							

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INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)			SURV	MORT	PSURV	PMORT	WT
113	58	9555F	LW2-G403	1		10	9	1	90.0	10.0	29.777	9	33.095	3.32	0.37							
114	85	9555F	LW2-G403	2		10	9	1	90.0	10.0	28.255	9	32.018	3.76	0.42							
115	43	9555F	LW2-G403	3		10	10	0	100.0	0.0	27.799	10	31.252	3.45	0.35							
116	120	9555F	LW2-G403	4		10	9	1	90.0	10.0	27.963	9	31.675	3.71	0.41							
117	131	9555F	LW2-G403	5		10	10	0	100.0	0.0	28.324	10	31.279	2.96	0.30	Mean		9.6	0.4	96.3	3.8	0.36
118	36	9555F	LW2-G403	6		10	10	0	100.0	0.0	30.454	10	34.151	3.70	0.37	SD		0.5	0.5	5.2	5.2	0.05
119	14	9555F	LW2-G403	7		10	10	0	100.0	0.0	28.836	10	32.630	3.79	0.38	n		8	8	8	8	8
120	152	9555F	LW2-G403	8	wq replicate	10	10	0	100.0	0.0	27.384	9	29.739	2.36	0.26							
121	132	9556F	LW2-G401	1		10	10	0	100.0	0.0	28.976	10	31.273	2.30	0.23							
122	80	9556F	LW2-G401	2		10	10	0	100.0	0.0	27.078	10	29.254	2.18	0.22							
123	40	9556F	LW2-G401	3		10	10	0	100.0	0.0	28.246	10	29.957	1.71	0.17							
124	158	9556F	LW2-G401	4		10	8	2	80.0	20.0	28.616	8	31.571	2.96	0.37							
125	134	9556F	LW2-G401	5		10	10	0	100.0	0.0	29.876	10	32.390	2.51	0.25	Mean		9.6	0.4	96.3	3.8	0.28
126	153	9556F	LW2-G401	6		10	9	1	90.0	10.0	28.348	9	31.371	3.02	0.34	SD		0.7	0.7	7.4	7.4	0.07
127	139	9556F	LW2-G401	7		10	10	0	100.0	0.0	30.786	10	33.900	3.11	0.31	n		8	8	8	8	8
128	56	9556F	LW2-G401	8	wq replicate	10	10	0	100.0	0.0	30.157	10	33.824	3.67	0.37							
129	17	9557F	LW2-G377	1		10	10	0	100.0	0.0	27.728	10	31.648	3.92	0.39							
130	2	9557F	LW2-G377	2		10	10	0	100.0	0.0	27.468	10	30.170	2.70	0.27							
131	86	9557F	LW2-G377	3		10	7	3	70.0	30.0	27.723	7	29.453	1.73	0.25							
132	38	9557F	LW2-G377	4		10	10	0	100.0	0.0	28.442	10	32.327	3.89	0.39							
133	127	9557F	LW2-G377	5		10	10	0	100.0	0.0	30.374	10	34.476	4.10	0.41	Mean		9.5	0.5	95.0	5.0	0.30
134	57	9557F	LW2-G377	6		10	10	0	100.0	0.0	29.218	10	31.364	2.15	0.21	SD		1.1	1.1	10.7	10.7	0.08
135	32	9557F	LW2-G377	7		10	10	0	100.0	0.0	26.619	10	29.595	2.98	0.30	n		8	8	8	8	8
136	130	9557F	LW2-G377	8	wq replicate	10	9	1	90.0	10.0	27.068	9	28.928	1.86	0.21							
137	92	9558F	LW2-G371	1		10	5	5	50.0	50.0	29.105	5	31.834	2.73	0.55							
138	141	9558F	LW2-G371	2		10	5	5	50.0	50.0	30.354	5	32.830	2.48	0.50							
139	62	9558F	LW2-G371	3		10	4	6	40.0	60.0	27.861	4	30.305	2.44	0.61							
140	124	9558F	LW2-G371	4		10	5	5	50.0	50.0	28.191	5	30.644	2.45	0.49							
141	165	9558F	LW2-G371	5		10	2	8	20.0	80.0	29.473	2	30.515	1.04	0.52	Mean		3.9	6.1	38.8	61.3	0.52
142	157	9558F	LW2-G371	6		10	3	7	30.0	70.0	28.857	3	30.221	1.36	0.45	SD		1.1	1.1	11.3	11.3	0.05
143	103	9558F	LW2-G371	7		10	4	6	40.0	60.0	29.706	4	31.722	2.02	0.50	n		8	8	8	8	8
144	108	9558F	LW2-G371	8	wq replicate	10	3	7	30.0	70.0	30.611	3	32.320	1.71	0.57							
145	81	9559F	LW2-G366	1		10	4	6	40.0	60.0	30.521	4	32.150	1.63	0.41							
146	91	9559F	LW2-G366	2		10	5	5	50.0	50.0	27.377	5	29.139	1.76	0.35							
147	77	9559F	LW2-G366	3		10	1	9	10.0	90.0	27.242	1	27.707	0.47	0.47							
148	154	9559F	LW2-G366	4		10	2	8	20.0	80.0	28.153	2	28.690	0.54	0.27							
149	3	9559F	LW2-G366	5		10	2	8	20.0	80.0	31.418	2	32.430	1.01	0.51	Mean		3.3	6.8	32.5	67.5	0.42
150	112	9559F	LW2-G366	6		10	2	8	20.0	80.0	28.886	2	29.905	1.02	0.51	SD		1.8	1.8	17.5	17.5	0.08
151	6	9559F	LW2-G366	7		10	4	6	40.0	60.0	27.793	4	29.394	1.60	0.40	n		8	8	8	8	8
152	155	9559F	LW2-G366	8	wq replicate	10	6	4	60.0	40.0	29.045	6	31.605	2.56	0.43							

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		NAS	CLIENT									TARE	WT	DRY	TWT	WT						
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT		WT (mg)	COUNT	WT (mg)	(mg)	(mg)			SURV	MORT	PSURV	PMORT	WT
153	35	9560F	LW2-G351	1		10	10	0	100.0	0.0		29.470	10	30.798	1.33	0.13							
154	100	9560F	LW2-G351	2		10	9	1	90.0	10.0		28.110	9	30.950	2.84	0.32							
155	159	9560F	LW2-G351	3		10	10	0	100.0	0.0		26.454	10	29.622	3.17	0.32							
156	28	9560F	LW2-G351	4		10	10	0	100.0	0.0		28.833	10	32.470	3.64	0.36							
157	54	9560F	LW2-G351	5		10	10	0	100.0	0.0		28.517	10	30.982	2.47	0.25		Mean	9.9	0.1	98.8	1.3	0.27
158	64	9560F	LW2-G351	6		10	10	0	100.0	0.0		27.390	10	29.658	2.27	0.23		SD	0.4	0.4	3.5	3.5	0.07
159	59	9560F	LW2-G351	7		10	10	0	100.0	0.0		29.554	10	32.300	2.75	0.27		n	8	8	8	8	8
160	9	9560F	LW2-G351	8	wq replicate	10	10	0	100.0	0.0		28.753	10	31.695	2.94	0.29							
161	117	9561F	LW2-G282	1		10	10	0	100.0	0.0		29.262	10	32.744	3.48	0.35							
162	8	9561F	LW2-G282	2		10	9	1	90.0	10.0		27.464	9	29.648	2.18	0.24							
163	151	9561F	LW2-G282	3		10	10	0	100.0	0.0		28.206	10	30.962	2.76	0.28							
164	116	9561F	LW2-G282	4		10	10	0	100.0	0.0		28.513	10	33.150	4.64	0.46							
165	99	9561F	LW2-G282	5		10	7	3	70.0	30.0		30.219	7	32.557	2.34	0.33		Mean	9.5	0.6	93.8	6.3	0.33
166	10	9561F	LW2-G282	6		10	9	1	90.0	10.0		28.197	9	30.756	2.56	0.28		SD	1.2	1.1	10.6	10.6	0.08
167	79	9561F	LW2-G282	7		10	10	0	100.0	0.0		27.945	10	32.156	4.21	0.42		n	8	8	8	8	8
168	70	9561F	LW2-G282	8	wq replicate	11	11	0	100.0	0.0		28.837	11	31.579	2.74	0.25							

Notes:

beakers #20, 119, 136, 147, 152: one animal each lost in transfer to weighing pan

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Water Quality Data

	NAS	CLIENT										Interstitial water	
BKR	SMPL	DESCRIP										NH3	pH
	9542F	LW2-G210										26.2	6.4
	9543F	LW2-G213										1.8	5.8
	9544F	LW2-G200										2.6	5.8
	9545F	LW2-G093										6.4	5.9
	9546F	LW2-G206										3.6	5.8
	9547F	LW2-G362-1										19.5	5.7
	9548F	LW2-G413										1.0	5.9
	9549F	LW2-G393										7.4	6.9
	9550F	LW2-G417										4.5	6.0
	9551F	LW2-G415										3.3	6.0
	9552F	LW2-G380										1.0	6.1
	9553F	LW2-G430										---	---
	9554F	LW2-G437										1.3	6.0
	9555F	LW2-G403										1.0	6.0
	9556F	LW2-G401										5.1	6.6
	9557F	LW2-G377										0.9	6.7
	9558F	LW2-G371										27.1	6.2
	9559F	LW2-G366										6.4	6.3
	9560F	LW2-G351										10.8	7.5
	9561F	LW2-G282										1.0	6.8
					Overlying water								
			REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		
9	9560F	LW2-G351	8	0	22.2	7.2	260	6.8	51	60	0.9		
21	9542F	LW2-G210	8	0	22.2	7.2	155	6.8	34	40	0.7		
23	9544F	LW2-G200	8	0	22.2	7.5	155	6.7	43	50	0.5		
33	9549F	LW2-G393	8	0	22.2	7.4	170	6.8	43	55	1.1		
42	9552F	LW2-G380	8	0	22.1	7.2	160	6.8	43	40	0.2		
56	9556F	LW2-G401	8	0	22.2	7.6	170	6.7	51	50	0.6		
66	9546F	LW2-G206	8	0	22.2	7.4	150	6.7	43	50	0.6		
70	9561F	LW2-G282	8	0	22.5	7.5	160	6.6	34	40	0.2		
82	9553F	LW2-G430	8	0	22.3	7.2	140	6.6	34	40	0.1		
108	9558F	LW2-G371	8	0	22.2	6.4	2530	6.5	60	60	1.5		
109	9547F	LW2-G362-1	8	0	22.2	7.2	710	6.6	60	50	1.4		
110	9534F	Control	8	0	22.4	7.0	250	6.8	34	50	0.4		
126	9545F	LW2-G093	8	0	22.1	7.1	170	6.7	43	40	0.9		
129	9554F	LW2-G437	8	0	22.1	7.2	160	6.7	43	40	0.3		
130	9557F	LW2-G377	8	0	22.1	7.4	310	6.8	43	60	0.2		
133	9551F	LW2-G415	8	0	22.2	7.0	160	6.7	43	40	0.5		
136	9550F	LW2-G417	8	0	22.1	7.2	160	6.6	43	40	0.6		
142	9548F	LW2-G413	8	0	22.0	7.1	150	6.7	34	40	0.3		
152	9555F	LW2-G403	8	0	22.0	7.2	160	6.6	43	40	0.2		
155	9559F	LW2-G366	8	0	22.0	7.6	1560	6.7	34	50	0.3		
161	9543F	LW2-G213	8	0	22.2	7.2	180	6.9	43	40	0.3		
9	9560F	LW2-G351	8	1	22.7	7.2	225	7.0					
21	9542F	LW2-G210	8	1	22.8	7.4	155	6.9					
23	9544F	LW2-G200	8	1	22.7	7.6	155	6.8					
33	9549F	LW2-G393	8	1	22.7	7.8	155	6.9					
42	9552F	LW2-G380	8	1	22.8	7.8	160	6.9					
56	9556F	LW2-G401	8	1	22.8	7.8	165	6.8					
66	9546F	LW2-G206	8	1	22.7	7.8	155	6.8					
70	9561F	LW2-G282	8	1	23.1	7.8	150	6.8					
82	9553F	LW2-G430	8	1	22.7	7.6	150	6.8					
108	9558F	LW2-G371	8	1	22.6	6.0	1890	6.9					

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					Overlying water									
			REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3			
109	9547F	LW2-G362-1	8	1	22.8	7.2	540	6.8						
110	9534F	Control	8	1	22.9	7.8	190	7.0						
126	9545F	LW2-G093	8	1	22.8	7.5	160	6.8						
129	9554F	LW2-G437	8	1	22.7	7.4	160	6.8						
130	9557F	LW2-G377	8	1	22.9	7.6	225	6.9						
133	9551F	LW2-G415	8	1	22.7	7.5	160	6.9						
136	9550F	LW2-G417	8	1	22.7	7.4	150	6.7						
142	9548F	LW2-G413	8	1	22.6	7.4	150	6.9						
152	9555F	LW2-G403	8	1	22.5	7.6	155	6.8						
155	9559F	LW2-G366	8	1	23.0	7.8	2190	6.9						
161	9543F	LW2-G213	8	1	22.8	7.4	160	6.9						
9	9560F	LW2-G351	8	2	23.4									
21	9542F	LW2-G210	8	2	23.3									
23	9544F	LW2-G200	8	2	23.2									
33	9549F	LW2-G393	8	2	23.2									
42	9552F	LW2-G380	8	2	23.3									
56	9556F	LW2-G401	8	2	23.3									
66	9546F	LW2-G206	8	2	23.2									
70	9561F	LW2-G282	8	2	23.2									
82	9553F	LW2-G430	8	2	23.2									
108	9558F	LW2-G371	8	2	23.1									
109	9547F	LW2-G362-1	8	2	23.1									
110	9534F	Control	8	2	23.2									
126	9545F	LW2-G093	8	2	23.2									
129	9554F	LW2-G437	8	2	23.2									
130	9557F	LW2-G377	8	2	23.2									
133	9551F	LW2-G415	8	2	23.2									
136	9550F	LW2-G417	8	2	23.1									
142	9548F	LW2-G413	8	2	23.0									
152	9555F	LW2-G403	8	2	23.0									
155	9559F	LW2-G366	8	2	22.9									
161	9543F	LW2-G213	8	2	23.2									
9	9560F	LW2-G351	8	3	22.8	7.2		6.6						
21	9542F	LW2-G210	8	3	22.8	7.2		6.5						
23	9544F	LW2-G200	8	3	22.7	7.2		6.4						
33	9549F	LW2-G393	8	3	22.7	7.3		6.5						
42	9552F	LW2-G380	8	3	22.7	7.4		6.5						
56	9556F	LW2-G401	8	3	22.7	7.4		6.5						
66	9546F	LW2-G206	8	3	22.7	7.4		6.4						
70	9561F	LW2-G282	8	3	23.0	7.4		6.4						
82	9553F	LW2-G430	8	3	22.8	7.2		6.4						
108	9558F	LW2-G371	8	3	22.7	7.6		6.7						
109	9547F	LW2-G362-1	8	3	22.8	7.4		6.5						
110	9534F	Control	8	3	22.9	7.3		6.6						
126	9545F	LW2-G093	8	3	22.7	7.0		6.4						
129	9554F	LW2-G437	8	3	22.7	7.2		6.4						
130	9557F	LW2-G377	8	3	22.9	7.4		6.6						
133	9551F	LW2-G415	8	3	22.7	7.2		6.5						
136	9550F	LW2-G417	8	3	22.7	7.4		6.4						
142	9548F	LW2-G413	8	3	22.7	7.2		6.4						
152	9555F	LW2-G403	8	3	22.7	7.1		6.5						
155	9559F	LW2-G366	8	3	22.9	7.2		6.6						
161	9543F	LW2-G213	8	3	22.9	7.2		6.8						
9	9560F	LW2-G351	8	4	22.8									
21	9542F	LW2-G210	8	4	22.8									
23	9544F	LW2-G200	8	4	22.7									
33	9549F	LW2-G393	8	4	22.7									

					Overlying water									
			REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3			
42	9552F	LW2-G380	8	4	22.6									
56	9556F	LW2-G401	8	4	22.6									
66	9546F	LW2-G206	8	4	22.6									
70	9561F	LW2-G282	8	4	22.8									
82	9553F	LW2-G430	8	4	22.7									
108	9558F	LW2-G371	8	4	22.6									
109	9547F	LW2-G362-1	8	4	22.7									
110	9534F	Control	8	4	22.8									
126	9545F	LW2-G093	8	4	22.8									
129	9554F	LW2-G437	8	4	22.7									
130	9557F	LW2-G377	8	4	22.8									
133	9551F	LW2-G415	8	4	22.6									
136	9550F	LW2-G417	8	4	22.6									
142	9548F	LW2-G413	8	4	22.6									
152	9555F	LW2-G403	8	4	22.5									
155	9559F	LW2-G366	8	4	22.8									
161	9543F	LW2-G213	8	4	22.7									
9	9560F	LW2-G351	8	5	22.9									
21	9542F	LW2-G210	8	5	22.9									
23	9544F	LW2-G200	8	5	22.8									
33	9549F	LW2-G393	8	5	22.8									
42	9552F	LW2-G380	8	5	22.8									
56	9556F	LW2-G401	8	5	22.7									
66	9546F	LW2-G206	8	5	22.7									
70	9561F	LW2-G282	8	5	22.9									
82	9553F	LW2-G430	8	5	22.9									
108	9558F	LW2-G371	8	5	22.7									
109	9547F	LW2-G362-1	8	5	22.7									
110	9534F	Control	8	5	22.9									
126	9545F	LW2-G093	8	5	22.9									
129	9554F	LW2-G437	8	5	22.9									
130	9557F	LW2-G377	8	5	22.9									
133	9551F	LW2-G415	8	5	22.8									
136	9550F	LW2-G417	8	5	22.8									
142	9548F	LW2-G413	8	5	22.7									
152	9555F	LW2-G403	8	5	22.7									
155	9559F	LW2-G366	8	5	22.9									
161	9543F	LW2-G213	8	5	22.8									
9	9560F	LW2-G351	8	6	22.9	6.2		6.6						
21	9542F	LW2-G210	8	6	23.0	5.8		6.5						
23	9544F	LW2-G200	8	6	22.9	6.0		6.3						
33	9549F	LW2-G393	8	6	22.9	5.8		6.4						
42	9552F	LW2-G380	8	6	23.0	6.1		6.4						
56	9556F	LW2-G401	8	6	22.9	6.4		6.5						
66	9546F	LW2-G206	8	6	22.9	6.3		6.5						
70	9561F	LW2-G282	8	6	23.2	5.8		6.5						
82	9553F	LW2-G430	8	6	22.8	6.0		6.5						
108	9558F	LW2-G371	8	6	22.8	6.4		6.7						
109	9547F	LW2-G362-1	8	6	23.0	6.3		6.7						
110	9534F	Control	8	6	23.2	6.2		6.7						
126	9545F	LW2-G093	8	6	23.0	6.0		6.7						
129	9554F	LW2-G437	8	6	23.0	6.0		6.7						
130	9557F	LW2-G377	8	6	23.1	6.2		6.5						
133	9551F	LW2-G415	8	6	22.8	6.0		6.6						
136	9550F	LW2-G417	8	6	22.9	5.8		6.6						
142	9548F	LW2-G413	8	6	22.8	6.0		6.6						
152	9555F	LW2-G403	8	6	22.7	6.1		6.6						

					Overlying water									
			REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3			
155	9559F	LW2-G366	8	6	23.0	6.6		6.7						
161	9543F	LW2-G213	8	6	22.9	6.4		6.7						
9	9560F	LW2-G351	8	7	22.9									
21	9542F	LW2-G210	8	7	22.9									
23	9544F	LW2-G200	8	7	22.9									
33	9549F	LW2-G393	8	7	22.9									
42	9552F	LW2-G380	8	7	22.9									
56	9556F	LW2-G401	8	7	22.9									
66	9546F	LW2-G206	8	7	22.9									
70	9561F	LW2-G282	8	7	23.2									
82	9553F	LW2-G430	8	7	22.9									
108	9558F	LW2-G371	8	7	22.9									
109	9547F	LW2-G362-1	8	7	22.9									
110	9534F	Control	8	7	23.0									
126	9545F	LW2-G093	8	7	22.9									
129	9554F	LW2-G437	8	7	22.9									
130	9557F	LW2-G377	8	7	22.9									
133	9551F	LW2-G415	8	7	23.0									
136	9550F	LW2-G417	8	7	22.8									
142	9548F	LW2-G413	8	7	22.8									
152	9555F	LW2-G403	8	7	22.7									
155	9559F	LW2-G366	8	7	22.7									
161	9543F	LW2-G213	8	7	22.9									
9	9560F	LW2-G351	8	8	23.1	6.5	170	6.5						
21	9542F	LW2-G210	8	8	23.1	6.5	150	6.4						
23	9544F	LW2-G200	8	8	22.9	6.2	155	6.4						
33	9549F	LW2-G393	8	8	23.0	6.5	155	6.5						
42	9552F	LW2-G380	8	8	23.0	6.6	155	6.5						
56	9556F	LW2-G401	8	8	23.0	6.6	155	6.6						
66	9546F	LW2-G206	8	8	23.0	6.6	155	6.6						
70	9561F	LW2-G282	8	8	23.0	6.5	150	6.6						
82	9553F	LW2-G430	8	8	23.2	6.6	565	6.6						
108	9558F	LW2-G371	8	8	22.9	6.6	250	6.9						
109	9547F	LW2-G362-1	8	8	23.1	6.4	110	6.8						
110	9534F	Control	8	8	23.3	6.5	165	6.8						
126	9545F	LW2-G093	8	8	23.3	6.5	155	6.7						
129	9554F	LW2-G437	8	8	23.0	6.2	155	6.7						
130	9557F	LW2-G377	8	8	22.9	6.6	165	6.7						
133	9551F	LW2-G415	8	8	22.8	6.1	150	6.6						
136	9550F	LW2-G417	8	8	22.9	6.4	150	6.7						
142	9548F	LW2-G413	8	8	22.9	6.4	155	6.7						
152	9555F	LW2-G403	8	8	22.8	6.6	155	6.7						
155	9559F	LW2-G366	8	8	22.8	7.2	745	6.7						
161	9543F	LW2-G213	8	8	23.0	6.8	160	6.8						
9	9560F	LW2-G351	8	9	22.4									
21	9542F	LW2-G210	8	9	22.5									
23	9544F	LW2-G200	8	9	22.4									
33	9549F	LW2-G393	8	9	22.4									
42	9552F	LW2-G380	8	9	22.5									
56	9556F	LW2-G401	8	9	22.5									
66	9546F	LW2-G206	8	9	22.4									
70	9561F	LW2-G282	8	9	22.8									
82	9553F	LW2-G430	8	9	22.5									
108	9558F	LW2-G371	8	9	22.4									
109	9547F	LW2-G362-1	8	9	22.5									
110	9534F	Control	8	9	22.8									
126	9545F	LW2-G093	8	9	22.5									

					Overlying water									
			REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3			
129	9554F	LW2-G437	8	9	22.4									
130	9557F	LW2-G377	8	9	22.6									
133	9551F	LW2-G415	8	9	22.5									
136	9550F	LW2-G417	8	9	22.4									
142	9548F	LW2-G413	8	9	22.3									
152	9555F	LW2-G403	8	9	22.2									
155	9559F	LW2-G366	8	9	22.6									
161	9543F	LW2-G213	8	9	22.4									
9	9560F	LW2-G351	8	10	22.7	6.4		6.8						
21	9542F	LW2-G210	8	10	22.7	6.2		6.8						
23	9544F	LW2-G200	8	10	22.7	5.8		6.7						
33	9549F	LW2-G393	8	10	22.7	5.8		6.7						
42	9552F	LW2-G380	8	10	22.7	6.4		6.7						
56	9556F	LW2-G401	8	10	22.7	6.1		6.8						
66	9546F	LW2-G206	8	10	22.6	6.2		6.7						
70	9561F	LW2-G282	8	10	22.9	6.2		6.7						
82	9553F	LW2-G430	8	10	22.5	6.2		6.7						
108	9558F	LW2-G371	8	10	22.4	6.4		6.9						
109	9547F	LW2-G362-1	8	10	22.5	6.4		6.9						
110	9534F	Control	8	10	22.9	6.2		6.7						
126	9545F	LW2-G093	8	10	22.6	5.4		6.7						
129	9554F	LW2-G437	8	10	22.6	5.6		6.7						
130	9557F	LW2-G377	8	10	22.5	6.4		6.7						
133	9551F	LW2-G415	8	10	22.5	5.2		6.6						
136	9550F	LW2-G417	8	10	22.4	5.6		6.6						
142	9548F	LW2-G413	8	10	22.4	5.9		6.6						
152	9555F	LW2-G403	8	10	22.3	5.8		6.6						
155	9559F	LW2-G366	8	10	22.5	6.4		6.7						
161	9543F	LW2-G213	8	10	22.5	6.0		6.7						
9	9560F	LW2-G351	8	11	22.7									
21	9542F	LW2-G210	8	11	22.7									
23	9544F	LW2-G200	8	11	22.7									
33	9549F	LW2-G393	8	11	22.8									
42	9552F	LW2-G380	8	11	22.8									
56	9556F	LW2-G401	8	11	22.8									
66	9546F	LW2-G206	8	11	22.7									
70	9561F	LW2-G282	8	11	22.9									
82	9553F	LW2-G430	8	11	22.8									
108	9558F	LW2-G371	8	11	22.7									
109	9547F	LW2-G362-1	8	11	22.7									
110	9534F	Control	8	11	22.9									
126	9545F	LW2-G093	8	11	22.8									
129	9554F	LW2-G437	8	11	22.7									
130	9557F	LW2-G377	8	11	22.9									
133	9551F	LW2-G415	8	11	22.7									
136	9550F	LW2-G417	8	11	22.7									
142	9548F	LW2-G413	8	11	22.7									
152	9555F	LW2-G403	8	11	22.6									
155	9559F	LW2-G366	8	11	22.8									
161	9543F	LW2-G213	8	11	22.8									
9	9560F	LW2-G351	8	12	22.8									
21	9542F	LW2-G210	8	12	22.7									
23	9544F	LW2-G200	8	12	22.7									
33	9549F	LW2-G393	8	12	22.7									
42	9552F	LW2-G380	8	12	22.7									
56	9556F	LW2-G401	8	12	22.8									
66	9546F	LW2-G206	8	12	22.8									

					Overlying water									
			REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3			
70	9561F	LW2-G282	8	12	23.2									
82	9553F	LW2-G430	8	12	22.7									
108	9558F	LW2-G371	8	12	22.8									
109	9547F	LW2-G362-1	8	12	22.9									
110	9534F	Control	8	12	23.1									
126	9545F	LW2-G093	8	12	22.9									
129	9554F	LW2-G437	8	12	22.9									
130	9557F	LW2-G377	8	12	23.1									
133	9551F	LW2-G415	8	12	22.8									
136	9550F	LW2-G417	8	12	22.9									
142	9548F	LW2-G413	8	12	22.8									
152	9555F	LW2-G403	8	12	22.8									
155	9559F	LW2-G366	8	12	23.2									
161	9543F	LW2-G213	8	12	22.9									
9	9560F	LW2-G351	8	13	22.6	5.8		6.8						
21	9542F	LW2-G210	8	13	22.5	5.4		6.6						
23	9544F	LW2-G200	8	13	22.4	6.0		6.6						
33	9549F	LW2-G393	8	13	22.5	5.8		6.6						
42	9552F	LW2-G380	8	13	22.5	5.9		6.6						
56	9556F	LW2-G401	8	13	22.6	5.5		6.6						
66	9546F	LW2-G206	8	13	22.6	5.9		6.6						
70	9561F	LW2-G282	8	13	22.9	6.0		6.6						
82	9553F	LW2-G430	8	13	22.5	6.4		6.6						
108	9558F	LW2-G371	8	13	22.6	5.9		6.8						
109	9547F	LW2-G362-1	8	13	22.6	5.9		6.7						
110	9534F	Control	8	13	22.9	6.2		6.6						
126	9545F	LW2-G093	8	13	22.7	5.9		6.6						
129	9554F	LW2-G437	8	13	22.7	5.8		6.6						
130	9557F	LW2-G377	8	13	22.9	6.2		6.7						
133	9551F	LW2-G415	8	13	22.9	5.8		6.6						
136	9550F	LW2-G417	8	13	22.7	5.9		6.6						
142	9548F	LW2-G413	8	13	22.6	6.0		6.6						
152	9555F	LW2-G403	8	13	22.6	6.0		6.6						
155	9559F	LW2-G366	8	13	23.0	6.4		6.8						
161	9543F	LW2-G213	8	13	22.7	6.0		6.6						
9	9560F	LW2-G351	8	14	22.6									
21	9542F	LW2-G210	8	14	22.6									
23	9544F	LW2-G200	8	14	22.5									
33	9549F	LW2-G393	8	14	22.5									
42	9552F	LW2-G380	8	14	22.5									
56	9556F	LW2-G401	8	14	22.6									
66	9546F	LW2-G206	8	14	22.6									
70	9561F	LW2-G282	8	14	22.8									
82	9553F	LW2-G430	8	14	22.5									
108	9558F	LW2-G371	8	14	22.5									
109	9547F	LW2-G362-1	8	14	22.6									
110	9534F	Control	8	14	22.8									
126	9545F	LW2-G093	8	14	22.7									
129	9554F	LW2-G437	8	14	22.7									
130	9557F	LW2-G377	8	14	22.9									
133	9551F	LW2-G415	8	14	22.7									
136	9550F	LW2-G417	8	14	22.6									
142	9548F	LW2-G413	8	14	22.7									
152	9555F	LW2-G403	8	14	22.6									
155	9559F	LW2-G366	8	14	22.9									
161	9543F	LW2-G213	8	14	22.7									
9	9560F	LW2-G351	8	15	22.7	5.9	160	6.7						

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					Overlying water								
			REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		
21	9542F	LW2-G210	8	15	22.7	5.5	150	6.5					
23	9544F	LW2-G200	8	15	22.6	6.0	150	6.5					
33	9549F	LW2-G393	8	15	22.7	5.4	155	6.5					
42	9552F	LW2-G380	8	15	22.7	5.8	155	6.5					
56	9556F	LW2-G401	8	15	22.7	5.4	160	6.6					
66	9546F	LW2-G206	8	15	22.8	6.0	150	6.6					
70	9561F	LW2-G282	8	15	23.0	6.3	155	6.5					
82	9553F	LW2-G430	8	15	22.7	6.3	155	6.7					
108	9558F	LW2-G371	8	15	22.7	6.3	245	6.6					
109	9547F	LW2-G362-1	8	15	22.8	5.8	165	6.7					
110	9534F	Control	8	15	22.9	6.0	160	6.6					
126	9545F	LW2-G093	8	15	22.7	5.6	155	6.5					
129	9554F	LW2-G437	8	15	22.8	6.0	155	6.6					
130	9557F	LW2-G377	8	15	22.9	6.1	160	6.6					
133	9551F	LW2-G415	8	15	22.7	5.6	150	6.6					
136	9550F	LW2-G417	8	15	22.8	5.9	150	6.6					
142	9548F	LW2-G413	8	15	22.7	6.2	155	6.7					
152	9555F	LW2-G403	8	15	22.7	6.0	155	6.5					
155	9559F	LW2-G366	8	15	22.9	6.6	260	6.7					
161	9543F	LW2-G213	8	15	22.8	6.0	155	6.6					
9	9560F	LW2-G351	8	16	22.6								
21	9542F	LW2-G210	8	16	22.6								
23	9544F	LW2-G200	8	16	22.6								
33	9549F	LW2-G393	8	16	22.5								
42	9552F	LW2-G380	8	16	22.5								
56	9556F	LW2-G401	8	16	22.5								
66	9546F	LW2-G206	8	16	22.6								
70	9561F	LW2-G282	8	16	22.6								
82	9553F	LW2-G430	8	16	22.6								
108	9558F	LW2-G371	8	16	22.6								
109	9547F	LW2-G362-1	8	16	22.6								
110	9534F	Control	8	16	22.7								
126	9545F	LW2-G093	8	16	22.9								
129	9554F	LW2-G437	8	16	22.8								
130	9557F	LW2-G377	8	16	22.7								
133	9551F	LW2-G415	8	16	22.8								
136	9550F	LW2-G417	8	16	22.8								
142	9548F	LW2-G413	8	16	22.7								
152	9555F	LW2-G403	8	16	22.7								
155	9559F	LW2-G366	8	16	22.6								
161	9543F	LW2-G213	8	16	22.6								
9	9560F	LW2-G351	8	17	22.4	6.4		6.5					
21	9542F	LW2-G210	8	17	22.4	6.6		6.5					
23	9544F	LW2-G200	8	17	22.3	6.6		6.5					
33	9549F	LW2-G393	8	17	22.3	6.7		6.5					
42	9552F	LW2-G380	8	17	22.3	6.9		6.5					
56	9556F	LW2-G401	8	17	22.5	6.4		6.6					
66	9546F	LW2-G206	8	17	22.5	6.8		6.5					
70	9561F	LW2-G282	8	17	22.8	6.8		6.5					
82	9553F	LW2-G430	8	17	22.4	7.0		6.5					
108	9558F	LW2-G371	8	17	22.5	7.0		6.6					
109	9547F	LW2-G362-1	8	17	22.6	6.4		6.6					
110	9534F	Control	8	17	22.8	6.7		6.6					
126	9545F	LW2-G093	8	17	22.7	6.5		6.5					
129	9554F	LW2-G437	8	17	22.6	6.6		6.5					
130	9557F	LW2-G377	8	17	22.8	7.0		6.5					
133	9551F	LW2-G415	8	17	22.6	6.4		6.5					

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					Overlying water								
			REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		
136	9550F	LW2-G417	8	17	22.7	6.6		6.5					
142	9548F	LW2-G413	8	17	22.6	6.8		6.5					
152	9555F	LW2-G403	8	17	22.5	7.0		6.5					
155	9559F	LW2-G366	8	17	23.0	6.9		6.6					
161	9543F	LW2-G213	8	17	22.7	6.7		6.5					
9	9560F	LW2-G351	8	18	22.4								
21	9542F	LW2-G210	8	18	22.4								
23	9544F	LW2-G200	8	18	22.4								
33	9549F	LW2-G393	8	18	22.4								
42	9552F	LW2-G380	8	18	22.4								
56	9556F	LW2-G401	8	18	22.4								
66	9546F	LW2-G206	8	18	22.5								
70	9561F	LW2-G282	8	18	22.7								
82	9553F	LW2-G430	8	18	22.4								
108	9558F	LW2-G371	8	18	22.4								
109	9547F	LW2-G362-1	8	18	22.5								
110	9534F	Control	8	18	22.5								
126	9545F	LW2-G093	8	18	22.6								
129	9554F	LW2-G437	8	18	22.5								
130	9557F	LW2-G377	8	18	22.5								
133	9551F	LW2-G415	8	18	22.5								
136	9550F	LW2-G417	8	18	22.7								
142	9548F	LW2-G413	8	18	22.5								
152	9555F	LW2-G403	8	18	22.5								
155	9559F	LW2-G366	8	18	22.5								
161	9543F	LW2-G213	8	18	22.6								
9	9560F	LW2-G351	8	19	22.8								
21	9542F	LW2-G210	8	19	22.7								
23	9544F	LW2-G200	8	19	22.6								
33	9549F	LW2-G393	8	19	22.6								
42	9552F	LW2-G380	8	19	22.6								
56	9556F	LW2-G401	8	19	22.7								
66	9546F	LW2-G206	8	19	22.7								
70	9561F	LW2-G282	8	19	23.1								
82	9553F	LW2-G430	8	19	22.7								
108	9558F	LW2-G371	8	19	22.7								
109	9547F	LW2-G362-1	8	19	22.8								
110	9534F	Control	8	19	22.9								
126	9545F	LW2-G093	8	19	22.8								
129	9554F	LW2-G437	8	19	22.8								
130	9557F	LW2-G377	8	19	22.9								
133	9551F	LW2-G415	8	19	22.7								
136	9550F	LW2-G417	8	19	22.8								
142	9548F	LW2-G413	8	19	22.7								
152	9555F	LW2-G403	8	19	22.7								
155	9559F	LW2-G366	8	19	23.1								
161	9543F	LW2-G213	8	19	22.8								
9	9560F	LW2-G351	8	20	22.7	4.8		6.6					
21	9542F	LW2-G210	8	20	22.7	5.2		6.6					
23	9544F	LW2-G200	8	20	22.6	5.4		6.5					
33	9549F	LW2-G393	8	20	22.6	5.2		6.6					
42	9552F	LW2-G380	8	20	22.6	5.5		6.6					
56	9556F	LW2-G401	8	20	22.7	5.4		6.6					
66	9546F	LW2-G206	8	20	22.7	5.7		6.6					
70	9561F	LW2-G282	8	20	22.7	5.6		6.6					
82	9553F	LW2-G430	8	20	22.6	5.8		6.6					
108	9558F	LW2-G371	8	20	22.6	5.6		6.7					

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					Overlying water								
			REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		
109	9547F	LW2-G362-1	8	20	22.6	5.0		6.7					
110	9534F	Control	8	20	23.0	5.6		6.8					
126	9545F	LW2-G093	8	20	22.7	5.6		6.6					
129	9554F	LW2-G437	8	20	22.7	5.4		6.6					
130	9557F	LW2-G377	8	20	22.9	5.9		6.7					
133	9551F	LW2-G415	8	20	22.9	5.3		6.7					
136	9550F	LW2-G417	8	20	22.7	5.6		6.6					
142	9548F	LW2-G413	8	20	22.6	5.6		6.6					
152	9555F	LW2-G403	8	20	22.6	5.4		6.6					
155	9559F	LW2-G366	8	20	23.0	5.4		6.7					
161	9543F	LW2-G213	8	20	22.7	5.8		6.6					
9	9560F	LW2-G351	8	21	22.4								
21	9542F	LW2-G210	8	21	22.3								
23	9544F	LW2-G200	8	21	22.3								
33	9549F	LW2-G393	8	21	22.3								
42	9552F	LW2-G380	8	21	22.3								
56	9556F	LW2-G401	8	21	22.3								
66	9546F	LW2-G206	8	21	22.4								
70	9561F	LW2-G282	8	21	22.6								
82	9553F	LW2-G430	8	21	22.4								
108	9558F	LW2-G371	8	21	22.3								
109	9547F	LW2-G362-1	8	21	22.3								
110	9534F	Control	8	21	22.4								
126	9545F	LW2-G093	8	21	22.5								
129	9554F	LW2-G437	8	21	22.5								
130	9557F	LW2-G377	8	21	22.5								
133	9551F	LW2-G415	8	21	22.4								
136	9550F	LW2-G417	8	21	22.5								
142	9548F	LW2-G413	8	21	22.4								
152	9555F	LW2-G403	8	21	22.4								
155	9559F	LW2-G366	8	21	22.8								
161	9543F	LW2-G213	8	21	22.5								
9	9560F	LW2-G351	8	22	22.0	5.6	160	6.4					
21	9542F	LW2-G210	8	22	22.0	5.8	155	6.4					
23	9544F	LW2-G200	8	22	22.0	5.5	160	6.4					
33	9549F	LW2-G393	8	22	22.1	5.4	155	6.4					
42	9552F	LW2-G380	8	22	22.0	5.7	160	6.3					
56	9556F	LW2-G401	8	22	22.1	6.0	155	6.4					
66	9546F	LW2-G206	8	22	22.1	6.0	155	6.3					
70	9561F	LW2-G282	8	22	22.3	6.1	155	6.3					
82	9553F	LW2-G430	8	22	22.0	6.1	155	6.3					
108	9558F	LW2-G371	8	22	22.0	5.8	200	6.5					
109	9547F	LW2-G362-1	8	22	22.0	5.6	165	6.5					
110	9534F	Control	8	22	22.2	5.7	165	6.5					
126	9545F	LW2-G093	8	22	22.0	5.8	155	6.4					
129	9554F	LW2-G437	8	22	22.0	5.7	160	6.5					
130	9557F	LW2-G377	8	22	22.1	6.2	160	6.4					
133	9551F	LW2-G415	8	22	22.0	5.6	155	6.3					
136	9550F	LW2-G417	8	22	22.0	6.2	155	6.3					
142	9548F	LW2-G413	8	22	22.1	6.3	155	6.4					
152	9555F	LW2-G403	8	22	22.1	5.8	155	6.5					
155	9559F	LW2-G366	8	22	22.4	5.6	175	6.5					
161	9543F	LW2-G213	8	22	22.1	5.9	155	6.4					
9	9560F	LW2-G351	8	23	22.7								
21	9542F	LW2-G210	8	23	22.7								
23	9544F	LW2-G200	8	23	22.6								
33	9549F	LW2-G393	8	23	22.7								

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					Overlying water									
			REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3			
42	9552F	LW2-G380	8	23	22.7									
56	9556F	LW2-G401	8	23	22.6									
66	9546F	LW2-G206	8	23	22.8									
70	9561F	LW2-G282	8	23	23.1									
82	9553F	LW2-G430	8	23	22.7									
108	9558F	LW2-G371	8	23	22.7									
109	9547F	LW2-G362-1	8	23	22.8									
110	9534F	Control	8	23	22.8									
126	9545F	LW2-G093	8	23	23.0									
129	9554F	LW2-G437	8	23	22.9									
130	9557F	LW2-G377	8	23	22.9									
133	9551F	LW2-G415	8	23	23.1									
136	9550F	LW2-G417	8	23	22.9									
142	9548F	LW2-G413	8	23	22.8									
152	9555F	LW2-G403	8	23	22.7									
155	9559F	LW2-G366	8	23	22.9									
161	9543F	LW2-G213	8	23	22.9									
9	9560F	LW2-G351	8	24	22.5	5.8		6.7						
21	9542F	LW2-G210	8	24	22.4	6.3		6.6						
23	9544F	LW2-G200	8	24	22.4	6.2		6.6						
33	9549F	LW2-G393	8	24	22.4	5.7		6.6						
42	9552F	LW2-G380	8	24	22.4	6.4		6.6						
56	9556F	LW2-G401	8	24	22.4	6.1		6.6						
66	9546F	LW2-G206	8	24	22.5	6.4		6.6						
70	9561F	LW2-G282	8	24	22.6	6.4		6.7						
82	9553F	LW2-G430	8	24	22.4	6.4		6.7						
108	9558F	LW2-G371	8	24	22.5	6.0		6.7						
109	9547F	LW2-G362-1	8	24	22.6	5.6		6.7						
110	9534F	Control	8	24	22.9	6.0		6.6						
126	9545F	LW2-G093	8	24	22.7	6.0		6.6						
129	9554F	LW2-G437	8	24	22.6	6.0		6.6						
130	9557F	LW2-G377	8	24	22.9	7.0		6.7						
133	9551F	LW2-G415	8	24	22.6	5.8		6.6						
136	9550F	LW2-G417	8	24	22.7	6.5		6.7						
142	9548F	LW2-G413	8	24	22.6	6.2		6.6						
152	9555F	LW2-G403	8	24	22.5	6.1		6.6						
155	9559F	LW2-G366	8	24	22.9	6.2		6.6						
161	9543F	LW2-G213	8	24	22.7	6.1		6.6						
9	9560F	LW2-G351	8	25	22.3									
21	9542F	LW2-G210	8	25	22.3									
23	9544F	LW2-G200	8	25	22.3									
33	9549F	LW2-G393	8	25	22.3									
42	9552F	LW2-G380	8	25	22.3									
56	9556F	LW2-G401	8	25	22.6									
66	9546F	LW2-G206	8	25	22.4									
70	9561F	LW2-G282	8	25	22.4									
82	9553F	LW2-G430	8	25	22.3									
108	9558F	LW2-G371	8	25	22.3									
109	9547F	LW2-G362-1	8	25	22.4									
110	9534F	Control	8	25	22.7									
126	9545F	LW2-G093	8	25	22.6									
129	9554F	LW2-G437	8	25	22.6									
130	9557F	LW2-G377	8	25	22.6									
133	9551F	LW2-G415	8	25	22.7									
136	9550F	LW2-G417	8	25	22.5									
142	9548F	LW2-G413	8	25	22.5									
152	9555F	LW2-G403	8	25	22.4									

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					Overlying water								
			REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		
155	9559F	LW2-G366	8	25	22.5								
161	9543F	LW2-G213	8	25	22.5								
9	9560F	LW2-G351	8	26	22.1								
21	9542F	LW2-G210	8	26	22.1								
23	9544F	LW2-G200	8	26	22.0								
33	9549F	LW2-G393	8	26	22.1								
42	9552F	LW2-G380	8	26	22.2								
56	9556F	LW2-G401	8	26	22.2								
66	9546F	LW2-G206	8	26	22.1								
70	9561F	LW2-G282	8	26	22.0								
82	9553F	LW2-G430	8	26	22.0								
108	9558F	LW2-G371	8	26	22.1								
109	9547F	LW2-G362-1	8	26	22.3								
110	9534F	Control	8	26	22.3								
126	9545F	LW2-G093	8	26	22.2								
129	9554F	LW2-G437	8	26	22.3								
130	9557F	LW2-G377	8	26	22.4								
133	9551F	LW2-G415	8	26	22.3								
136	9550F	LW2-G417	8	26	22.2								
142	9548F	LW2-G413	8	26	22.1								
152	9555F	LW2-G403	8	26	22.3								
155	9559F	LW2-G366	8	26	22.5								
161	9543F	LW2-G213	8	26	22.3								
9	9560F	LW2-G351	8	27	22.5	6.7		6.7					
21	9542F	LW2-G210	8	27	22.4	7.1		6.5					
23	9544F	LW2-G200	8	27	22.3	7.0		6.5					
33	9549F	LW2-G393	8	27	22.3	6.8		6.6					
42	9552F	LW2-G380	8	27	22.3	7.2		6.6					
56	9556F	LW2-G401	8	27	22.3	7.2		6.7					
66	9546F	LW2-G206	8	27	22.4	7.6		6.7					
70	9561F	LW2-G282	8	27	22.7	7.5		6.6					
82	9553F	LW2-G430	8	27	22.3	7.4		6.6					
108	9558F	LW2-G371	8	27	22.4	7.3		6.8					
109	9547F	LW2-G362-1	8	27	22.5	6.7		6.7					
110	9534F	Control	8	27	22.9	7.2		6.8					
126	9545F	LW2-G093	8	27	22.6	6.8		6.6					
129	9554F	LW2-G437	8	27	22.5	7.1		6.7					
130	9557F	LW2-G377	8	27	22.5	8.2		6.8					
133	9551F	LW2-G415	8	27	22.7	6.9		6.7					
136	9550F	LW2-G417	8	27	22.6	7.8		6.8					
142	9548F	LW2-G413	8	27	22.5	7.2		6.7					
152	9555F	LW2-G403	8	27	22.4	7.2		6.7					
155	9559F	LW2-G366	8	27	22.4	7.3		6.7					
161	9543F	LW2-G213	8	27	22.6	7.2		6.7					
9	9560F	LW2-G351	8	28	22.6	6.8	150	6.6	43	40	<0.1		
21	9542F	LW2-G210	8	28	22.6	7.0	145	6.5	43	40	0.1		
23	9544F	LW2-G200	8	28	22.4	7.0	145	6.4	43	40	<0.1		
33	9549F	LW2-G393	8	28	22.4	6.7	150	6.5	51	40	0.2		
42	9552F	LW2-G380	8	28	22.3	6.8	150	6.5	43	40	<0.1		
56	9556F	LW2-G401	8	28	22.4	7.2	150	6.6	51	40	<0.1		
66	9546F	LW2-G206	8	28	22.5	7.5	150	6.8	51	40	0.1		
70	9561F	LW2-G282	8	28	23.0	7.2	150	6.6	43	40	<0.1		
82	9553F	LW2-G430	8	28	22.5	7.1	150	6.7	43	40	0.1		
108	9558F	LW2-G371	8	28	22.6	7.2	165	6.8	34	40	0.1		
109	9547F	LW2-G362-1	8	28	22.7	6.8	155	6.7	43	40	<0.1		
110	9534F	Control	8	28	22.9	7.2	160	6.8	43	40	<0.1		
126	9545F	LW2-G093	8	28	22.8	7.2	150	6.8	51	40	0.1		

					Overlying water								
			REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		
129	9554F	LW2-G437	8	28	22.7	7.2	150	6.7	51	40	<0.1		
130	9557F	LW2-G377	8	28	22.7	7.8	150	6.7	43	40	<0.1		
133	9551F	LW2-G415	8	28	22.7	7.2	150	6.8	51	40	0.1		
136	9550F	LW2-G417	8	28	22.5	7.6	150	6.8	34	40	0.1		
142	9548F	LW2-G413	8	28	22.6	7.5	150	6.8	43	40	0.2		
152	9555F	LW2-G403	8	28	22.6	7.2	150	6.8	43	40	0.1		
155	9559F	LW2-G366	8	28	23.0	7.3	160	6.8	34	40	0.1		
161	9543F	LW2-G213	8	28	23.2	7.3	150	6.7	34	40	0.1		
												Interstitial water	
												NH3	pH
				Mean	22.6	6.5	238	6.6	43	43	---	6.9	6.2
				SD	0.3	0.7	346	0.1	7	6	---	8.3	0.5
				n	609	294	126	294	42	42	42	19	19
				Min	22.0	4.8	110	6.3	34	40	<0.1	0.9	5.7
				Max	23.4	8.2	2530	7.0	60	60	1.5	27.1	7.5
	Data entry verified against laboratory												
	bench sheets - MSR 12/14/04												

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Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

ASHED DRY WT= weight of ashed pan + weight of ashed test organisms recovered at test termination
TAFDW=DRY WT - ASHED DRY WT= total ash-free organism weight for given replicate
AFDW=average individual ash-free biomass=TAFDW/WT COUNT

INITIAL WEIGHT

pan #	tare wt (mg)	final wt (mg)	wt count	avg. wt/ organism
1	108.46	111.10	20	0.13
2	94.85	97.58	20	0.14
3	100.69	103.61	20	0.15

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)
1	29	9534F	Control	1		10	10	0	100.0	0.0	100.05	10	112.98	103.10	12.93	1.29	9.88	0.99
2	52	9534F	Control	2		10	10	0	100.0	0.0	101.43	10	115.08	104.16	13.65	1.37	10.92	1.09
3	37	9534F	Control	3		10	10	0	100.0	0.0	88.75	10	102.06	91.11	13.31	1.33	10.95	1.10
4	157	9534F	Control	4		10	9	1	90.0	10.0	92.96	9	107.64	97.31	14.68	1.63	10.33	1.15
5	30	9534F	Control	5		10	9	1	90.0	10.0	104.79	9	116.93	107.50	12.14	1.35	9.43	1.05
6	102	9534F	Control	6		10	10	0	100.0	0.0	82.93	10	96.95	86.58	14.02	1.40	10.37	1.04
7	24	9534F	Control	7		10	9	1	90.0	10.0	97.90	9	109.94	100.00	12.04	1.34	9.94	1.10
8	19	9534F	Control	8	wq replicate	10	9	1	90.0	10.0	103.20	9	116.40	106.56	13.20	1.47	9.84	1.09
9	88	9542F	LW2-G210	1		10	6	4	60.0	40.0	83.46	6	91.83	85.87	8.37	1.40	5.96	0.99
10	145	9542F	LW2-G210	2		10	8	2	80.0	20.0	106.47	8	119.83	110.91	13.36	1.67	8.92	1.12
11	33	9542F	LW2-G210	3		10	7	3	70.0	30.0	98.95	7	107.35	100.68	8.40	1.20	6.67	0.95
12	66	9542F	LW2-G210	4		10	8	2	80.0	20.0	98.93	8	105.23	100.59	6.30	0.79	4.64	0.58
13	119	9542F	LW2-G210	5		10	7	3	70.0	30.0	92.10	7	100.11	94.27	8.01	1.14	5.84	0.83
14	31	9542F	LW2-G210	6		10	6	4	60.0	40.0	87.69	6	96.38	89.86	8.69	1.45	6.52	1.09
15	134	9542F	LW2-G210	7		10	6	4	60.0	40.0	82.95	6	93.98	86.58	11.03	1.84	7.40	1.23
16	2	9542F	LW2-G210	8	wq replicate	10	5	5	50.0	50.0	105.58	5	112.28	107.69	6.70	1.34	4.59	0.92
17	63	9543F	LW2-G213	1		10	10	0	100.0	0.0	103.20	10	116.93	108.05	13.73	1.37	8.88	0.89
18	62	9543F	LW2-G213	2		10	10	0	100.0	0.0	98.90	10	113.48	104.51	14.58	1.46	8.97	0.90
19	46	9543F	LW2-G213	3		10	9	1	90.0	10.0	99.20	9	113.69	105.22	14.49	1.61	8.47	0.94
20	93	9543F	LW2-G213	4		10	8	2	80.0	20.0	100.68	8	115.14	106.08	14.46	1.81	9.06	1.13
21	67	9543F	LW2-G213	5		10	10	0	100.0	0.0	91.68	10	105.02	96.28	13.34	1.33	8.74	0.87
22	21	9543F	LW2-G213	6		10	10	0	100.0	0.0	100.21	10	111.32	103.54	11.11	1.11	7.78	0.78
23	13	9543F	LW2-G213	7		10	10	0	100.0	0.0	97.01	10	110.17	101.49	13.16	1.32	8.68	0.87
24	6	9543F	LW2-G213	8	wq replicate	10	9	1	90.0	10.0	105.94	9	118.73	110.83	12.79	1.42	7.90	0.88
25	144	9544F	LW2-G200	1		10	10	0	100.0	0.0	84.12	10	103.48	91.66	19.36	1.94	11.82	1.18
26	75	9544F	LW2-G200	2		10	10	0	100.0	0.0	98.92	10	114.80	104.56	15.88	1.59	10.24	1.02
27	14	9544F	LW2-G200	3		10	10	0	100.0	0.0	96.00	10	110.82	100.81	14.82	1.48	10.01	1.00
28	130	9544F	LW2-G200	4		10	9	1	90.0	10.0	80.80	9	98.04	87.93	17.24	1.92	10.11	1.12
29	77	9544F	LW2-G200	5		10	9	1	90.0	10.0	97.88	9	112.90	103.78	15.02	1.67	9.12	1.01
30	87	9544F	LW2-G200	6		10	7	3	70.0	30.0	85.16	7	98.10	89.22	12.94	1.85	8.88	1.27
31	140	9544F	LW2-G200	7		10	9	1	90.0	10.0	85.76	9	101.84	92.12	16.08	1.79	9.72	1.08
32	167	9544F	LW2-G200	8	wq replicate	10	8	2	80.0	20.0	87.16	8	103.12	93.85	15.96	2.00	9.27	1.16
33	18	9545F	LW2-G093	1		10	9	1	90.0	10.0	109.47	9	119.84	111.91	10.37	1.15	7.93	0.88
34	5	9545F	LW2-G093	2		10	9	1	90.0	10.0	99.69	9	108.10	102.00	8.41	0.93	6.10	0.68
35	83	9545F	LW2-G093	3		10	10	0	100.0	0.0	101.74	10	112.72	104.84	10.98	1.10	7.88	0.79
36	54	9545F	LW2-G093	4		10	10	0	100.0	0.0	91.82	10	105.56	95.88	13.74	1.37	9.68	0.97
37	42	9545F	LW2-G093	5		10	10	0	100.0	0.0	91.34	10	103.88	95.21	12.54	1.25	8.67	0.87
38	100	9545F	LW2-G093	6		10	8	2	80.0	20.0	81.75	8	95.55	86.74	13.80	1.73	8.81	1.10
39	61	9545F	LW2-G093	7		10	10	0	100.0	0.0	93.26	10	104.78	96.84	11.52	1.15	7.94	0.79
40	165	9545F	LW2-G093	8	wq replicate	10	9	1	90.0	10.0	81.57	9	91.05	84.24	9.48	1.05	6.81	0.76

	SURV	MORT	PSURV	PMORT	WT	AFDW
Mean	9.5	0.5	95.0	5.0	1.40	1.08
SD	0.5	0.5	5.3	5.3	0.11	0.05
n	8	8	8	8	8	8
Mean	6.6	3.4	66.3	33.8	1.35	0.96
SD	1.1	1.1	10.6	10.6	0.32	0.20
n	8	8	8	8	8	8
Mean	9.5	0.5	95.0	5.0	1.43	0.91
SD	0.8	0.8	7.6	7.6	0.21	0.10
n	8	8	8	8	8	8
Mean	9.0	1.0	90.0	10.0	1.78	1.11
SD	1.1	1.1	10.7	10.7	0.18	0.09
n	8	8	8	8	8	8
Mean	9.4	0.6	93.8	6.3	1.22	0.85
SD	0.7	0.7	7.4	7.4	0.24	0.13
n	8	8	8	8	8	8

ANC07593
BZTO104(e)007593

Test Number: 686-20

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)							
41	72	9546F	LW2-G206	1		10	10	0	100.0	0.0	103.02	10	117.37	107.24	14.35	1.44	10.13	1.01							
42	59	9546F	LW2-G206	2		10	10	0	100.0	0.0	95.52	10	110.51	101.23	14.99	1.50	9.28	0.93							
43	152	9546F	LW2-G206	3		10	10	0	100.0	0.0	81.20	10	98.71	88.85	17.51	1.75	9.86	0.99							
44	9	9546F	LW2-G206	4		10	8	2	80.0	20.0	102.03	8	116.33	107.41	14.30	1.79	8.92	1.12							
45	168	9546F	LW2-G206	5		10	10	0	100.0	0.0	88.25	10	104.94	95.18	16.69	1.67	9.76	0.98	Mean	9.4	0.6	93.8	6.3	1.62	1.00
46	141	9546F	LW2-G206	6		10	8	2	80.0	20.0	87.80	8	101.39	93.03	13.59	1.70	8.36	1.05	SD	0.9	0.9	9.2	9.2	0.15	0.06
47	27	9546F	LW2-G206	7		10	10	0	100.0	0.0	96.43	10	110.38	101.00	13.95	1.40	9.38	0.94	n	8	8	8	8	8	8
48	8	9546F	LW2-G206	8	wq replicate	10	9	1	90.0	10.0	87.24	9	102.90	93.71	15.66	1.74	9.19	1.02							
49	36	9547F	LW2-G362-1	1		10	10	0	100.0	0.0	100.60	10	113.68	104.43	13.08	1.31	9.25	0.93							
50	156	9547F	LW2-G362-1	2		10	10	0	100.0	0.0	89.74	10	108.89	97.89	19.15	1.92	11.00	1.10							
51	147	9547F	LW2-G362-1	3		10	9	1	90.0	10.0	91.16	9	107.91	97.67	16.75	1.86	10.24	1.14							
52	57	9547F	LW2-G362-1	4		10	8	2	80.0	20.0	107.82	8	118.28	110.80	10.46	1.31	7.48	0.94							
53	11	9547F	LW2-G362-1	5		10	8	2	80.0	20.0	101.42	8	110.56	103.57	9.14	1.14	6.99	0.87	Mean	8.8	1.3	87.5	12.5	1.52	1.03
54	64	9547F	LW2-G362-1	6		10	9	1	90.0	10.0	100.54	9	110.83	103.37	10.29	1.14	7.46	0.83	SD	1.0	1.0	10.4	10.4	0.33	0.17
55	38	9547F	LW2-G362-1	7		10	7	3	70.0	30.0	100.49	7	113.13	103.91	12.64	1.81	9.22	1.32	n	8	8	8	8	8	8
56	39	9547F	LW2-G362-1	8	wq replicate	10	9	1	90.0	10.0	97.71	9	112.74	102.68	15.03	1.67	10.06	1.12							
57	117	9548F	LW2-G413	1		10	10	0	100.0	0.0	86.68	10	104.67	93.25	17.99	1.80	11.42	1.14							
58	94	9548F	LW2-G413	2		10	10	0	100.0	0.0	92.75	10	110.69	99.35	17.94	1.79	11.34	1.13							
59	166	9548F	LW2-G413	3		10	10	0	100.0	0.0	81.51	10	100.18	88.78	18.67	1.87	11.40	1.14							
60	150	9548F	LW2-G413	4		10	8	2	80.0	20.0	91.58	8	107.17	97.29	15.59	1.95	9.88	1.24							
61	48	9548F	LW2-G413	5		10	10	0	100.0	0.0	106.90	10	122.36	111.54	15.46	1.55	10.82	1.08	Mean	9.4	0.6	93.8	6.3	1.76	1.15
62	56	9548F	LW2-G413	6		10	10	0	100.0	0.0	96.78	10	112.84	101.91	16.06	1.61	10.93	1.09	SD	0.9	0.9	9.2	9.2	0.13	0.05
63	47	9548F	LW2-G413	7		10	8	2	80.0	20.0	81.95	8	95.79	86.21	13.84	1.73	9.58	1.20	n	8	8	8	8	8	8
64	45	9548F	LW2-G413	8	wq replicate	10	9	1	90.0	10.0	101.92	9	117.98	107.62	16.06	1.78	10.36	1.15							
65	70	9549F	LW2-G393	1		10	8	2	80.0	20.0	94.78	8	106.70	98.41	11.92	1.49	8.29	1.04							
66	74	9549F	LW2-G393	2		10	10	0	100.0	0.0	92.58	10	106.39	96.70	13.81	1.38	9.69	0.97							
67	99	9549F	LW2-G393	3		10	9	1	90.0	10.0	101.58	9	115.88	106.30	14.30	1.59	9.58	1.06							
68	120	9549F	LW2-G393	4		10	8	2	80.0	20.0	99.06	8	111.00	103.04	11.94	1.49	7.96	0.99							
69	26	9549F	LW2-G393	5		10	10	0	100.0	0.0	95.67	10	109.48	99.74	13.81	1.38	9.74	0.97	Mean	9.4	0.6	93.8	6.3	1.44	0.99
70	108	9549F	LW2-G393	6		10	10	0	100.0	0.0	79.86	10	95.94	85.71	16.08	1.61	10.23	1.02	SD	0.9	0.9	9.2	9.2	0.13	0.06
71	50	9549F	LW2-G393	7		10	10	0	100.0	0.0	99.12	10	112.23	102.73	13.11	1.31	9.50	0.95	n	8	8	8	8	8	8
72	73	9549F	LW2-G393	8	wq replicate	10	10	0	100.0	0.0	104.09	10	116.70	107.99	12.61	1.26	8.71	0.87							
73	15	9550F	LW2-G417	1		10	10	0	100.0	0.0	96.60	10	109.61	100.31	13.01	1.30	9.30	0.93							
74	10	9550F	LW2-G417	2		10	10	0	100.0	0.0	90.48	10	103.68	94.36	13.20	1.32	9.32	0.93							
75	161	9550F	LW2-G417	3		10	10	0	100.0	0.0	85.51	10	101.42	91.45	15.91	1.59	9.97	1.00							
76	96	9550F	LW2-G417	4		10	9	1	90.0	10.0	84.99	9	102.52	91.42	17.53	1.95	11.10	1.23							
77	138	9550F	LW2-G417	5		10	10	0	100.0	0.0	83.32	10	101.45	90.22	18.13	1.81	11.23	1.12	Mean	9.6	0.4	96.3	3.8	1.66	1.08
78	106	9550F	LW2-G417	6		10	9	1	90.0	10.0	98.32	9	115.78	105.58	17.46	1.94	10.20	1.13	SD	0.5	0.5	5.2	5.2	0.25	0.12
79	68	9550F	LW2-G417	7		10	9	1	90.0	10.0	96.05	9	111.30	100.48	15.25	1.69	10.82	1.20	n	8	8	8	8	8	8
80	97	9550F	LW2-G417	8	wq replicate	10	10	0	100.0	0.0	85.30	10	102.20	90.95	16.90	1.69	11.25	1.13							
81	112	9551F	LW2-G415	1		10	9	1	90.0	10.0	90.40	9	102.93	94.20	12.53	1.39	8.73	0.97							
82	153	9551F	LW2-G415	2		10	10	0	100.0	0.0	102.37	10	117.60	107.32	15.23	1.52	9.78	0.98							
83	69	9551F	LW2-G415	3		10	10	0	100.0	0.0	86.59	10	99.26	90.25	12.67	1.27	9.01	0.90							
84	101	9551F	LW2-G415	4		10	10	0	100.0	0.0	80.09	10	94.13	85.04	14.04	1.40	9.09	0.91							
85	55	9551F	LW2-G415	5		10	10	0	100.0	0.0	95.91	10	109.97	99.90	14.06	1.41	10.07	1.01	Mean	9.8	0.3	97.5	2.5	1.39	0.95
86	132	9551F	LW2-G415	6		10	9	1	90.0	10.0	84.58	9	97.82	89.09	13.24	1.47	8.73	0.97	SD	0.5	0.5	4.6	4.6	0.12	0.05
87	151	9551F	LW2-G415	7		10	10	0	100.0	0.0	85.78	10	100.62	90.81	14.84	1.48	9.81	0.98	n	8	8	8	8	8	8
88	65	9551F	LW2-G415	8	wq replicate	10	10	0	100.0	0.0	98.13	10	109.89	101.09	11.76	1.18	8.80	0.88							
89	51	9552F	LW2-G380	1		10	8	2	80.0	20.0	94.87	8	110.77	99.68	15.90	1.99	11.09	1.39							
90	53	9552F	LW2-G380	2		10	10	0	100.0	0.0	94.19	10	109.14	97.85	14.95	1.50	11.29	1.13							
91	1	9552F	LW2-G380	3		10	9	1	90.0	10.0	117.39	9	130.81	120.82	13.42	1.49	9.99	1.11							
92	23	9552F	LW2-G380	4		10	7	3	70.0	30.0	95.36	7	106.20	97.70	10.84	1.55	8.50	1.21							
93	44	9552F	LW2-G380	5		10	9	1	90.0	10.0	108.97	9	123.37	112.67	14.40	1.60	10.70	1.19	Mean	9.0	1.0	90.0	10.0	1.63	1.18
94	105	9552F	LW2-G380	6		10	9	1	90.0	10.0	85.98	9	102.02	90.69	16.04	1.78	11.33	1.26	SD	1.1	1.1	10.7	10.7	0.17	0.10
95	32	9552F	LW2-G380	7		10	10	0	100.0	0.0	90.89	10	106.25	95.15	15.36	1.54	11.10	1.11	n	8	8	8	8	8	8
96	155	9552F	LW2-G380	8	wq replicate	10	10	0	100.0	0.0	85.85	10	101.60	90.99	15.75	1.58	10.61	1.06							

ANC07594
BZTO104(e)007594

Test Number: 686-20

Freshwater Sediment Test
10-Day Chironomus tentans

		NAS	CLIENT								TARE	WT	DRY	ASHED	TWT	WT	TAFDW	AFDW							
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	WT (mg)	COUNT	WT (mg)	DRY WT (mg)	(mg)	(mg)	(mg)	(mg)		SURV	MORT	PSURV	PMORT	WT	AFDW
97	115	9553F	LW2-G430	1		10	9	1	90.0	10.0	79.89	9	93.48	83.45	13.59	1.51	10.03	1.11							
98	40	9553F	LW2-G430	2		10	7	3	70.0	30.0	102.28	7	115.29	105.09	13.01	1.86	10.20	1.46							
99	121	9553F	LW2-G430	3		10	10	0	100.0	0.0	83.52	10	99.33	87.76	15.81	1.58	11.57	1.16							
100	85	9553F	LW2-G430	4		10	10	0	100.0	0.0	100.69	10	115.75	105.13	15.06	1.51	10.62	1.06							
101	4	9553F	LW2-G430	5		10	10	0	100.0	0.0	89.22	10	101.07	91.72	11.85	1.19	9.35	0.93	Mean	9.3	0.8	92.5	7.5	1.56	1.15
102	133	9553F	LW2-G430	6		10	10	0	100.0	0.0	87.29	10	103.74	92.24	16.45	1.65	11.50	1.15	SD	1.2	1.2	11.6	11.6	0.21	0.16
103	135	9553F	LW2-G430	7		10	10	0	100.0	0.0	89.94	10	104.13	93.93	14.19	1.42	10.20	1.02	n	8	8	8	8	8	8
104	110	9553F	LW2-G430	8	wq replicate	10	8	2	80.0	20.0	85.80	8	100.15	90.00	14.35	1.79	10.15	1.27							
105	81	9554F	LW2-G437	1		10	10	0	100.0	0.0	109.89	10	125.99	116.72	16.10	1.61	9.27	0.93							
106	139	9554F	LW2-G437	2		10	10	0	100.0	0.0	86.32	10	104.52	94.78	18.20	1.82	9.74	0.97							
107	58	9554F	LW2-G437	3		10	10	0	100.0	0.0	94.64	10	109.14	100.62	14.50	1.45	8.52	0.85							
108	114	9554F	LW2-G437	4		10	10	0	100.0	0.0	107.25	10	125.99	115.44	18.74	1.87	10.55	1.06							
109	159	9554F	LW2-G437	5		10	9	1	90.0	10.0	93.13	9	111.33	101.25	18.20	2.02	10.08	1.12	Mean	9.8	0.3	97.5	2.5	1.79	1.00
110	95	9554F	LW2-G437	6		10	10	0	100.0	0.0	80.33	10	98.00	87.98	17.67	1.77	10.02	1.00	SD	0.5	0.5	4.6	4.6	0.18	0.09
111	148	9554F	LW2-G437	7		10	10	0	100.0	0.0	89.56	10	107.76	97.40	18.20	1.82	10.36	1.04	n	8	8	8	8	8	8
112	109	9554F	LW2-G437	8	wq replicate	10	9	1	90.0	10.0	80.90	9	98.40	88.75	17.50	1.94	9.65	1.07							
113	12	9555F	LW2-G403	1		10	10	0	100.0	0.0	99.30	10	113.06	103.18	13.76	1.38	9.88	0.99							
114	160	9555F	LW2-G403	2		10	8	2	80.0	20.0	89.51	8	103.71	94.69	14.20	1.78	9.02	1.13							
115	17	9555F	LW2-G403	3		10	9	1	90.0	10.0	98.85	9	112.83	103.59	13.98	1.55	9.24	1.03							
116	124	9555F	LW2-G403	4		10	10	0	100.0	0.0	96.94	9	113.68	103.16	16.74	1.86	10.52	1.17							
117	137	9555F	LW2-G403	5		10	10	0	100.0	0.0	87.21	10	101.20	91.97	13.99	1.40	9.23	0.92	Mean	9.1	0.9	91.3	8.8	1.63	1.07
118	149	9555F	LW2-G403	6		10	9	1	90.0	10.0	90.61	9	106.28	96.52	15.67	1.74	9.76	1.08	SD	0.8	0.8	8.3	8.3	0.18	0.08
119	91	9555F	LW2-G403	7		10	9	1	90.0	10.0	81.42	9	96.73	86.53	15.31	1.70	10.20	1.13	n	8	8	8	8	8	8
120	79	9555F	LW2-G403	8	wq replicate	10	8	2	80.0	20.0	90.02	8	103.21	94.47	13.19	1.65	8.74	1.09							
121	20	9556F	LW2-G401	1		10	9	1	90.0	10.0	103.11	9	116.61	107.31	13.50	1.50	9.30	1.03							
122	125	9556F	LW2-G401	2		10	10	0	100.0	0.0	87.99	10	106.20	96.31	18.21	1.82	9.89	0.99							
123	80	9556F	LW2-G401	3		10	10	0	100.0	0.0	94.00	10	108.69	99.42	14.69	1.47	9.27	0.93							
124	90	9556F	LW2-G401	4		10	9	1	90.0	10.0	80.98	9	98.49	88.10	17.51	1.95	10.39	1.15							
125	122	9556F	LW2-G401	5		10	9	1	90.0	10.0	83.96	9	102.10	92.20	18.14	2.02	9.90	1.10	Mean	9.4	0.6	93.8	6.3	1.69	1.01
126	116	9556F	LW2-G401	6		10	10	0	100.0	0.0	97.11	10	113.72	104.07	16.61	1.66	9.65	0.97	SD	0.5	0.5	5.2	5.2	0.21	0.08
127	22	9556F	LW2-G401	7		10	9	1	90.0	10.0	97.05	9	110.66	101.97	13.61	1.51	8.69	0.97	n	8	8	8	8	8	8
128	142	9556F	LW2-G401	8	wq replicate	10	9	1	90.0	10.0	85.40	9	99.81	91.28	14.41	1.60	8.53	0.95							
129	128	9557F	LW2-G377	1		10	9	1	90.0	10.0	98.76	9	117.15	105.90	18.39	2.04	11.25	1.25							
130	89	9557F	LW2-G377	2		10	9	1	90.0	10.0	89.20	9	106.32	95.90	17.12	1.90	10.42	1.16							
131	76	9557F	LW2-G377	3		10	9	1	90.0	10.0	100.72	9	117.24	107.64	16.52	1.84	9.60	1.07							
132	162	9557F	LW2-G377	4		10	9	1	90.0	10.0	90.25	9	105.87	95.46	15.62	1.74	10.41	1.16							
133	71	9557F	LW2-G377	5		10	10	0	100.0	0.0	93.45	10	108.84	98.35	15.39	1.54	10.49	1.05	Mean	9.4	0.6	93.8	6.3	1.81	1.12
134	113	9557F	LW2-G377	6		10	9	1	90.0	10.0	80.80	9	96.71	86.51	15.91	1.77	10.20	1.13	SD	0.5	0.5	5.2	5.2	0.17	0.07
135	111	9557F	LW2-G377	7		10	10	0	100.0	0.0	103.77	10	120.65	110.20	16.88	1.69	10.45	1.05	n	8	8	8	8	8	8
136	127	9557F	LW2-G377	8	wq replicate	10	10	0	100.0	0.0	100.25	10	120.16	108.88	19.91	1.99	11.28	1.13							
137	123	9558F	LW2-G371	1		10	5	5	50.0	50.0	101.94	5	111.60	105.83	9.66	1.93	5.77	1.15							
138	28	9558F	LW2-G371	2		10	3	7	30.0	70.0	98.27	3	103.09	99.52	4.82	1.61	3.57	1.19							
139	131	9558F	LW2-G371	3		10	3	7	30.0	70.0	86.88	3	92.81	89.43	5.93	1.98	3.38	1.13							
140	126	9558F	LW2-G371	4		10	5	5	50.0	50.0	104.48	5	115.47	109.30	10.99	2.20	6.17	1.23							
141	43	9558F	LW2-G371	5		10	3	7	30.0	70.0	96.79	3	101.66	98.02	4.87	1.62	3.64	1.21	Mean	4.0	6.0	40.0	60.0	1.79	1.15
142	7	9558F	LW2-G371	6		10	0	10	0.0	100.0	93.88	0							SD	2.3	2.3	23.3	23.3	0.25	0.07
143	35	9558F	LW2-G371	7		10	5	5	50.0	50.0	100.08	5	107.98	102.41	7.90	1.58	5.57	1.11	n	8	8	8	8	7	7
144	143	9558F	LW2-G371	8	wq replicate	10	8	2	80.0	20.0	87.51	8	100.37	92.10	12.86	1.61	8.27	1.03							
145	118	9559F	LW2-G366	1		10	0	10	0.0	100.0	83.48	0													
146	34	9559F	LW2-G366	2		10	0	10	0.0	100.0	99.97	0													
147	98	9559F	LW2-G366	3		10	0	10	0.0	100.0	84.16	0													
148	84	9559F	LW2-G366	4		10	0	10	0.0	100.0	98.49	0													
149	25	9559F	LW2-G366	5		10	0	10	0.0	100.0	103.49	0							Mean	0.0	10.0	0.0	100.0		
150	3	9559F	LW2-G366	6		10	0	10	0.0	100.0	95.72	0							SD	0.0	0.0	0.0	0.0		
151	104	9559F	LW2-G366	7		10	0	10	0.0	100.0	102.60	0							n	8	8	8	8	0	0
152	86	9559F	LW2-G366	8	wq replicate	10	0	10	0.0	100.0	98.15	0													

ANC07595
BZTO104(e)007595

Test Number: 686-20

Freshwater Sediment Test
10-Day Chironomus tentans

		NAS	CLIENT								TARE	WT	DRY	ASHED	TWT	WT	TAFDW	AFDW							
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	WT (mg)	COUNT	WT (mg)	DRY WT (mg)	(mg)	(mg)	(mg)	(mg)		SURV	MORT	PSURV	PMORT	WT	AFDW
153	41	9560F	LW2-G351	1		10	8	2	80.0	20.0	92.16	8	105.32	96.45	13.16	1.65	8.87	1.11							
154	49	9560F	LW2-G351	2		10	10	0	100.0	0.0	100.65	10	114.68	105.68	14.03	1.40	9.00	0.90							
155	136	9560F	LW2-G351	3		10	9	1	90.0	10.0	88.04	9	103.62	94.81	15.58	1.73	8.81	0.98							
156	129	9560F	LW2-G351	4		10	10	0	100.0	0.0	88.47	10	105.74	96.30	17.27	1.73	9.44	0.94							
157	164	9560F	LW2-G351	5		10	10	0	100.0	0.0	83.51	10	99.24	89.78	15.73	1.57	9.46	0.95	Mean	9.6	0.4	96.3	3.8	1.58	0.97
158	103	9560F	LW2-G351	6		10	10	0	100.0	0.0	95.60	10	111.58	101.41	15.98	1.60	10.17	1.02	SD	0.7	0.7	7.4	7.4	0.13	0.07
159	163	9560F	LW2-G351	7		10	10	0	100.0	0.0	94.04	10	108.20	99.01	14.16	1.42	9.19	0.92	n	8	8	8	8	8	8
160	146	9560F	LW2-G351	8	wq replicate	10	10	0	100.0	0.0	82.72	10	98.02	88.76	15.30	1.53	9.26	0.93							
161	82	9561F	LW2-G282	1		10	10	0	100.0	0.0	91.13	10	106.50	96.35	15.37	1.54	10.15	1.02							
162	154	9561F	LW2-G282	2		10	10	0	100.0	0.0	83.62	10	99.92	89.59	16.30	1.63	10.33	1.03							
163	158	9561F	LW2-G282	3		10	9	1	90.0	10.0	101.78	9	116.54	106.75	14.76	1.64	9.79	1.09							
164	78	9561F	LW2-G282	4		10	5	5	50.0	50.0	87.56	5	95.82	90.00	8.26	1.65	5.82	1.16							
165	16	9561F	LW2-G282	5		10	10	0	100.0	0.0	100.15	10	113.12	103.66	12.97	1.30	9.46	0.95	Mean	9.0	1.0	90.0	10.0	1.52	1.03
166	92	9561F	LW2-G282	6		10	9	1	90.0	10.0	88.58	9	102.19	93.12	13.61	1.51	9.07	1.01	SD	1.7	1.7	16.9	16.9	0.13	0.07
167	60	9561F	LW2-G282	7		10	10	0	100.0	0.0	97.95	10	111.89	101.81	13.94	1.39	10.08	1.01	n	8	8	8	8	8	8
168	107	9561F	LW2-G282	8	wq replicate	10	9	1	90.0	10.0	82.97	9	96.39	87.66	13.42	1.49	8.73	0.97							
		Beaker #124 one animal was lost or damaged in transfering to weighing pan.																							

ANC07596
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Water Quality Data

	NAS	CLIENT			Bulk Sediment Interstitial water	
	SMPL	DESCRIP			NH3	pH
	9542F	LW2-G210			26.2	6.4
	9543F	LW2-G213			1.8	5.8
	9544F	LW2-G200			2.6	5.8
	9545F	LW2-G093			6.4	5.9
	9546F	LW2-G206			3.6	5.8
	9547F	LW2-G362-1			19.5	5.7
	9548F	LW2-G413			1.0	5.9
	9549F	LW2-G393			7.4	6.9
	9550F	LW2-G417			4.5	6.0
	9551F	LW2-G415			3.3	6.0
	9552F	LW2-G380			1.0	6.1
	9553F	LW2-G430			---	---
	9554F	LW2-G437			1.3	6.0
	9555F	LW2-G403			1.0	6.0
	9556F	LW2-G401			5.1	6.6
	9557F	LW2-G377			0.9	6.7
	9558F	LW2-G371			27.1	6.2
	9559F	LW2-G366			6.4	6.3
	9560F	LW2-G351			10.8	7.5
	9561F	LW2-G282			1.0	6.8

	NAS	CLIENT			Overlying water						
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	NH3	HARD	ALK
2	9542F	LW2-G210	8	0	22.2	7.4	150	6.6	0.9	34	40
6	9543F	LW2-G213	8	0	22.2	7.4	150	6.6	0.4	43	40
8	9546F	LW2-G206	8	0	22.0	7.5	160	6.3	0.7	43	40
19	9434F	Control	8	0	22.0	7.6	220	6.4	0.2	34	40
39	9547F	LW2-G362-1	8	0	22.0	7.6	785	6.4	1.8	51	50
45	9548F	LW2-G413	8	0	22.0	7.4	170	6.7	0.3	34	40
65	9551F	LW2-G415	8	0	22.2	7.2	160	6.6	0.6	34	40
73	9549F	LW2-G393	8	0	22.1	7.3	165	6.7	0.9	43	50
79	9555F	LW2-G403	8	0	22.1	7.2	160	6.7	0.2	51	50
86	9559F	LW2-G366	8	0	22.1	6.6	2670	6.7	0.4	34	60
97	9550F	LW2-G417	8	0	22.0	7.5	175	6.8	0.8	51	50
107	9561F	LW2-G282	8	0	22.0	7.4	160	6.7	0.4	34	40
109	9554F	LW2-G437	8	0	22.1	7.2	160	6.6	0.4	43	40
110	9553F	LW2-G430	8	0	22.2	7.3	150	6.6	0.1	34	40
127	9557F	LW2-G377	8	0	22.1	7.4	330	6.7	0.3	34	60
142	9556F	LW2-G401	8	0	22.2	7.4	190	6.7	0.6	51	50
143	9558F	LW2-G371	8	0	22.2	7.3	1890	6.6	1.0	51	50
146	9560F	LW2-G351	8	0	22.2	7.2	280	6.9	0.1	51	60
155	9552F	LW2-G380	8	0	22.3	7.0	165	6.9	0.2	43	40
165	9545F	LW2-G093	8	0	22.4	7.0	170	6.8	0.8	51	40
167	9544F	LW2-G200	8	0	22.4	7.1	155	6.8	0.5	43	40
2	9542F	LW2-G210	8	1	22.6	7.2					
6	9543F	LW2-G213	8	1	22.6	7.4					
8	9546F	LW2-G206	8	1	22.6	7.4					
19	9434F	Control	8	1	22.6	7.2					
39	9547F	LW2-G362-1	8	1	22.6	7.4					
45	9548F	LW2-G413	8	1	22.9	7.0					
65	9551F	LW2-G415	8	1	22.6	7.2					
73	9549F	LW2-G393	8	1	22.6	7.2					
79	9555F	LW2-G403	8	1	22.6	7.2					
86	9559F	LW2-G366	8	1	22.5	7.2					
97	9550F	LW2-G417	8	1	22.5	6.7					
107	9561F	LW2-G282	8	1	22.5	6.8					
109	9554F	LW2-G437	8	1	22.5	6.6					
110	9553F	LW2-G430	8	1	22.8	7.0					
127	9557F	LW2-G377	8	1	22.9	7.3					
142	9556F	LW2-G401	8	1	22.9	7.1					
143	9558F	LW2-G371	8	1	22.5	7.0					
146	9560F	LW2-G351	8	1	23.1	7.1					
155	9552F	LW2-G380	8	1	23.1	7.0					
165	9545F	LW2-G093	8	1	23.3	7.4					
167	9544F	LW2-G200	8	1	23.2	7.3					
2	9542F	LW2-G210	8	2	23.0	6.2					
6	9543F	LW2-G213	8	2	22.9	6.2					
8	9546F	LW2-G206	8	2	23.0	5.6					
19	9434F	Control	8	2	23.0	5.9					
39	9547F	LW2-G362-1	8	2	23.0	5.8					
45	9548F	LW2-G413	8	2	23.0	5.8					
65	9551F	LW2-G415	8	2	23.2	5.8					

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73	9549F	LW2-G393	8	2	23.0	5.7								
79	9555F	LW2-G403	8	2	23.1	5.8								
86	9559F	LW2-G366	8	2	23.0	6.5								
97	9550F	LW2-G417	8	2	23.0	5.6								
107	9561F	LW2-G282	8	2	22.9	5.6								
109	9554F	LW2-G437	8	2	22.9	5.6								
110	9553F	LW2-G430	8	2	23.0	5.8								
127	9557F	LW2-G377	8	2	23.1	5.9								
142	9556F	LW2-G401	8	2	23.1	6.1								
143	9558F	LW2-G371	8	2	23.2	6.2								
146	9560F	LW2-G351	8	2	23.1	6.1								
155	9552F	LW2-G380	8	2	23.3	6.1								
165	9545F	LW2-G093	8	2	23.5	6.4								
167	9544F	LW2-G200	8	2	23.3	6.5								
2	9542F	LW2-G210	8	3	22.7	6.2								
6	9543F	LW2-G213	8	3	22.7	6.2								
8	9546F	LW2-G206	8	3	22.7	6.4								
19	9434F	Control	8	3	22.7	6.2								
39	9547F	LW2-G362-1	8	3	22.7	6.2								
45	9548F	LW2-G413	8	3	22.8	6.2								
65	9551F	LW2-G415	8	3	22.8	6.4								
73	9549F	LW2-G393	8	3	22.9	6.1								
79	9555F	LW2-G403	8	3	22.8	6.1								
86	9559F	LW2-G366	8	3	22.8	6.4								
97	9550F	LW2-G417	8	3	22.7	6.4								
107	9561F	LW2-G282	8	3	22.7	6.1								
109	9554F	LW2-G437	8	3	22.7	6.0								
110	9553F	LW2-G430	8	3	22.8	6.4								
127	9557F	LW2-G377	8	3	22.8	6.5								
142	9556F	LW2-G401	8	3	22.8	6.3								
143	9558F	LW2-G371	8	3	22.8	6.2								
146	9560F	LW2-G351	8	3	22.9	6.4								
155	9552F	LW2-G380	8	3	22.9	6.4								
165	9545F	LW2-G093	8	3	22.9	6.5								
167	9544F	LW2-G200	8	3	22.9	6.8								
2	9542F	LW2-G210	8	4	22.5	6.1								
6	9543F	LW2-G213	8	4	22.5	6.4								
8	9546F	LW2-G206	8	4	22.5	6.2								
19	9434F	Control	8	4	22.5	5.8								
39	9547F	LW2-G362-1	8	4	22.6	6.2								
45	9548F	LW2-G413	8	4	22.8	6.3								
65	9551F	LW2-G415	8	4	22.8	6.2								
73	9549F	LW2-G393	8	4	22.6	6.0								
79	9555F	LW2-G403	8	4	22.6	5.9								
86	9559F	LW2-G366	8	4	22.5	6.1								
97	9550F	LW2-G417	8	4	22.4	6.3								
107	9561F	LW2-G282	8	4	22.4	6.5								
109	9554F	LW2-G437	8	4	22.4	6.5								
110	9553F	LW2-G430	8	4	22.4	6.6								
127	9557F	LW2-G377	8	4	22.6	6.1								
142	9556F	LW2-G401	8	4	22.7	6.0								
143	9558F	LW2-G371	8	4	22.7	6.2								
146	9560F	LW2-G351	8	4	22.8	6.0								
155	9552F	LW2-G380	8	4	22.8	6.0								
165	9545F	LW2-G093	8	4	22.9	5.8								
167	9544F	LW2-G200	8	4	23.0	5.9								
2	9542F	LW2-G210	8	5	22.6	6.6								
6	9543F	LW2-G213	8	5	22.5	7.0								
8	9546F	LW2-G206	8	5	22.5	6.8								
19	9434F	Control	8	5	22.6	6.7								
39	9547F	LW2-G362-1	8	5	22.6	6.9								
45	9548F	LW2-G413	8	5	22.7	6.6								
65	9551F	LW2-G415	8	5	22.8	6.8								
73	9549F	LW2-G393	8	5	22.7	6.4								
79	9555F	LW2-G403	8	5	22.6	6.5								
86	9559F	LW2-G366	8	5	22.4	6.9								
97	9550F	LW2-G417	8	5	22.4	6.8								
107	9561F	LW2-G282	8	5	22.4	6.2								
109	9554F	LW2-G437	8	5	22.4	6.5								
110	9553F	LW2-G430	8	5	22.6	6.8								
127	9557F	LW2-G377	8	5	22.6	6.7								
142	9556F	LW2-G401	8	5	22.6	6.5								
143	9558F	LW2-G371	8	5	22.6	6.4								
146	9560F	LW2-G351	8	5	22.7	6.6								
155	9552F	LW2-G380	8	5	22.7	6.8								
165	9545F	LW2-G093	8	5	22.8	6.2								
167	9544F	LW2-G200	8	5	22.8	6.4								
2	9542F	LW2-G210	8	6	22.7	5.2								
6	9543F	LW2-G213	8	6	22.7	5.3								

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8	9546F	LW2-G206	8	6	22.7	5.0								
19	9434F	Control	8	6	22.8	4.8								
39	9547F	LW2-G362-1	8	6	22.8	4.9								
45	9548F	LW2-G413	8	6	22.9	5.0								
65	9551F	LW2-G415	8	6	22.9	5.0								
73	9549F	LW2-G393	8	6	22.7	4.8								
79	9555F	LW2-G403	8	6	22.7	4.8								
86	9559F	LW2-G366	8	6	22.7	5.6								
97	9550F	LW2-G417	8	6	22.6	5.0								
107	9561F	LW2-G282	8	6	22.6	4.8								
109	9554F	LW2-G437	8	6	22.7	5.3								
110	9553F	LW2-G430	8	6	22.8	4.6								
127	9557F	LW2-G377	8	6	22.8	4.8								
142	9556F	LW2-G401	8	6	22.8	5.2								
143	9558F	LW2-G371	8	6	22.8	5.2								
146	9560F	LW2-G351	8	6	22.9	5.2								
155	9552F	LW2-G380	8	6	22.9	5.4								
165	9545F	LW2-G093	8	6	22.9	5.5								
167	9544F	LW2-G200	8	6	23.0	6.0								
2	9542F	LW2-G210	8	7	22.8	5.0								
6	9543F	LW2-G213	8	7	22.8	5.3								
8	9546F	LW2-G206	8	7	22.8	5.4								
19	9434F	Control	8	7	22.8	4.8								
39	9547F	LW2-G362-1	8	7	22.9	5.0								
45	9548F	LW2-G413	8	7	23.1	5.0								
65	9551F	LW2-G415	8	7	23.0	5.2								
73	9549F	LW2-G393	8	7	22.8	5.0								
79	9555F	LW2-G403	8	7	22.8	5.2								
86	9559F	LW2-G366	8	7	22.7	6.2								
97	9550F	LW2-G417	8	7	22.7	5.0								
107	9561F	LW2-G282	8	7	22.8	4.4								
109	9554F	LW2-G437	8	7	22.8	4.9								
110	9553F	LW2-G430	8	7	22.9	5.2								
127	9557F	LW2-G377	8	7	22.9	5.6								
142	9556F	LW2-G401	8	7	23.0	5.2								
143	9558F	LW2-G371	8	7	22.9	5.2								
146	9560F	LW2-G351	8	7	22.9	5.0								
155	9552F	LW2-G380	8	7	23.1	4.8								
165	9545F	LW2-G093	8	7	23.1	4.9								
167	9544F	LW2-G200	8	7	23.1	5.6								
2	9542F	LW2-G210	8	8	22.8	5.4								
6	9543F	LW2-G213	8	8	22.8	5.4								
8	9546F	LW2-G206	8	8	22.8	5.4								
19	9434F	Control	8	8	22.8	4.9								
39	9547F	LW2-G362-1	8	8	22.9	5.0								
45	9548F	LW2-G413	8	8	22.8	4.8								
65	9551F	LW2-G415	8	8	22.9	5.0								
73	9549F	LW2-G393	8	8	23.0	5.0								
79	9555F	LW2-G403	8	8	22.8	5.2								
86	9559F	LW2-G366	8	8	22.7	6.6								
97	9550F	LW2-G417	8	8	22.7	5.0								
107	9561F	LW2-G282	8	8	22.7	5.2								
109	9554F	LW2-G437	8	8	22.7	5.2								
110	9553F	LW2-G430	8	8	22.7	5.5								
127	9557F	LW2-G377	8	8	22.7	5.7								
142	9556F	LW2-G401	8	8	22.9	5.6								
143	9558F	LW2-G371	8	8	22.9	5.3								
146	9560F	LW2-G351	8	8	23.0	5.4								
155	9552F	LW2-G380	8	8	23.1	5.5								
165	9545F	LW2-G093	8	8	23.1	5.3								
167	9544F	LW2-G200	8	8	23.1	5.7								
2	9542F	LW2-G210	8	9	22.2	5.9								
6	9543F	LW2-G213	8	9	22.2	6.0								
8	9546F	LW2-G206	8	9	22.2	6.1								
19	9434F	Control	8	9	22.3	5.4								
39	9547F	LW2-G362-1	8	9	22.3	5.4								
45	9548F	LW2-G413	8	9	22.3	6.0								
65	9551F	LW2-G415	8	9	22.5	6.0								
73	9549F	LW2-G393	8	9	22.5	5.8								
79	9555F	LW2-G403	8	9	22.3	5.9								
86	9559F	LW2-G366	8	9	22.3	6.6								
97	9550F	LW2-G417	8	9	22.1	5.6								
107	9561F	LW2-G282	8	9	22.2	5.5								
109	9554F	LW2-G437	8	9	22.2	5.6								
110	9553F	LW2-G430	8	9	22.2	5.8								
127	9557F	LW2-G377	8	9	22.4	6.6								
142	9556F	LW2-G401	8	9	22.4	5.8								
143	9558F	LW2-G371	8	9	22.4	6.0								
146	9560F	LW2-G351	8	9	22.6	6.0								

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155	9552F	LW2-G380	8	9	22.6	5.9								
165	9545F	LW2-G093	8	9	22.7	6.1								
167	9544F	LW2-G200	8	9	22.7	6.4								
2	9542F	LW2-G210	8	10	22.3	6.0	150	6.5	0.4	34	30			
6	9543F	LW2-G213	8	10	22.4	6.2	145	6.5	0.4	34	40			
8	9546F	LW2-G206	8	10	22.4	5.3	150	6.4	0.5	34	30			
19	9434F	Control	8	10	22.5	5.2	160	6.5	0.5	34	40			
39	9547F	LW2-G362-1	8	10	22.3	5.1	190	6.5	0.6	34	40			
45	9548F	LW2-G413	8	10	22.5	5.3	150	6.4	0.2	34	40			
65	9551F	LW2-G415	8	10	22.4	5.0	150	6.3	0.5	34	30			
73	9549F	LW2-G393	8	10	22.1	4.8	155	6.4	0.7	43	40			
79	9555F	LW2-G403	8	10	22.2	5.4	150	6.4	0.7	34	40			
86	9559F	LW2-G366	8	10	22.1	6.4	590	6.5	0.3	34	40			
97	9550F	LW2-G417	8	10	22.1	4.7	160	6.4	0.5	34	40			
107	9561F	LW2-G282	8	10	22.2	4.5	150	6.3	0.4	43	40			
109	9554F	LW2-G437	8	10	22.2	5.0	150	6.3	0.4	34	40			
110	9553F	LW2-G430	8	10	22.5	6.1	150	6.4	0.2	34	40			
127	9557F	LW2-G377	8	10	22.5	6.1	160	6.5	0.3	34	40			
142	9556F	LW2-G401	8	10	22.5	5.4	155	6.3	0.6	34	40			
143	9558F	LW2-G371	8	10	22.4	5.4	450	6.6	0.5	34	40			
146	9560F	LW2-G351	8	10	22.8	5.1	250	6.7	1.0	51	40			
155	9552F	LW2-G380	8	10	22.6	5.4	150	6.4	0.2	34	40			
165	9545F	LW2-G093	8	10	22.8	5.4	155	6.5	0.4	34	40			
167	9544F	LW2-G200	8	10	22.7	5.8	150	6.6	0.3	34	30			
				Mean	22.7	6.0	302	6.6	0.5	39	42		6.9	6.2
				SD	0.3	0.8	473	0.2	0.3	7	7		8.3	0.5
				n	231	231	42	42	42	42	42		20	20
				Min	22.0	4.4	145	6.3	0.1	34	30		0.9	5.7
				Max	23.5	7.6	2670	6.9	1.8	51	60		27.1	7.5

ANC07600
BZTO104(e)007600

Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or
dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

INITIAL WEIGHT

pan #	tare wt (mg)	final wt (mg)	wt count	avg. wt/ organism
1	29.658	30.259	20	0.030
2	30.696	31.259	20	0.028
3	30.758	31.348	20	0.030
4	28.205	28.805	20	0.030
5	29.569	30.138	20	0.028

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
1	50	9574F	Control	1		10	10	0	100.0	0.0	29.360	10	33.437	4.08	0.41						
2	43	9574F	Control	2		10	8	2	80.0	20.0	27.057	8	30.393	3.34	0.42						
3	33	9574F	Control	3		10	9	1	90.0	10.0	29.636	9	34.247	4.61	0.51						
4	15	9574F	Control	4		10	10	0	100.0	0.0	29.725	10	34.054	4.33	0.43						
5	72	9574F	Control	5		10	10	0	100.0	0.0	29.121	10	32.992	3.87	0.39	Mean	9.5	0.5	95.0	5.0	0.43
6	92	9574F	Control	6		10	10	0	100.0	0.0	26.571	10	30.906	4.34	0.43	SD	0.8	0.8	7.6	7.6	0.04
7	93	9574F	Control	7		10	9	1	90.0	10.0	32.321	9	36.388	4.07	0.45	n	8	8	8	8	8
8	13	9574F	Control	8	wq replicate	10	10	0	100.0	0.0	29.111	10	33.296	4.19	0.42						
9	79	9577F	LW2-G360	1		10	6	4	60.0	40.0	28.437	6	30.191	1.75	0.29						
10	107	9577F	LW2-G360	2		10	5	5	50.0	50.0	28.716	5	30.901	2.19	0.44						
11	76	9577F	LW2-G360	3		10	7	3	70.0	30.0	27.921	7	30.780	2.86	0.41						
12	66	9577F	LW2-G360	4		10	3	7	30.0	70.0	27.892	3	29.661	1.77	0.59						
13	9	9577F	LW2-G360	5		10	5	5	50.0	50.0	30.066	5	32.295	2.23	0.45	Mean	5.6	4.4	56.3	43.8	0.42
14	51	9577F	LW2-G360	6		10	9	1	90.0	10.0	27.090	9	30.154	3.06	0.34	SD	2.1	2.1	20.7	20.7	0.09
15	105	9577F	LW2-G360	7		10	3	7	30.0	70.0	30.178	3	31.455	1.28	0.43	n	8	8	8	8	8
16	3	9577F	LW2-G360	8	wq replicate	10	7	3	70.0	30.0	29.216	7	32.015	2.80	0.40						
17	69	9578F	LW2-G212	1		10	9	1	90.0	10.0	29.036	9	32.111	3.08	0.34						
18	100	9578F	LW2-G212	2		10	9	1	90.0	10.0	29.586	8	30.631	1.05	0.13						
19	88	9578F	LW2-G212	3		10	10	0	100.0	0.0	28.723	10	32.966	4.24	0.42						
20	45	9578F	LW2-G212	4		10	10	0	100.0	0.0	29.376	10	32.367	2.99	0.30						
21	99	9578F	LW2-G212	5		10	8	2	80.0	20.0	27.529	8	30.713	3.18	0.40	Mean	9.5	0.5	95.0	5.0	0.32
22	103	9578F	LW2-G212	6		10	10	0	100.0	0.0	27.712	10	31.417	3.71	0.37	SD	0.8	0.8	7.6	7.6	0.09
23	49	9578F	LW2-G212	7		10	10	0	100.0	0.0	27.628	10	30.634	3.01	0.30	n	8	8	8	8	8
24	32	9578F	LW2-G212	8	wq replicate	10	10	0	100.0	0.0	30.131	10	33.310	3.18	0.32						
25	96	9579F	LW2-G296	1		10	10	0	100.0	0.0	29.270	10	31.742	2.47	0.25						
26	35	9579F	LW2-G296	2		10	10	0	100.0	0.0	27.175	10	29.635	2.46	0.25						
27	29	9579F	LW2-G296	3		10	10	0	100.0	0.0	28.088	10	30.405	2.32	0.23						
28	111	9579F	LW2-G296	4		10	10	0	100.0	0.0	27.710	10	29.976	2.27	0.23						
29	18	9579F	LW2-G296	5		10	9	1	90.0	10.0	30.665	9	32.887	2.22	0.25	Mean	9.4	0.6	93.8	6.3	0.24
30	41	9579F	LW2-G296	6		10	9	1	90.0	10.0	29.271	9	31.674	2.40	0.27	SD	0.7	0.7	7.4	7.4	0.09
31	12	9579F	LW2-G296	7		10	9	1	90.0	10.0	27.753	9	28.202	0.45	0.05	n	8	8	8	8	8
32	65	9579F	LW2-G296	8	wq replicate	10	8	2	80.0	20.0	28.579	8	31.583	3.00	0.38						

ANC07601
BZTO104(e)007601

Test Number: P686-21

Freshwater Sediment Test
28-day Hyalella azteca

		NAS	CLIENT								TARE	WT	DRY	TWT	WT						
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	WT (mg)	COUNT	WT (mg)	(mg)	(mg)		SURV	MORT	PSURV	PMORT	WT
33	89	9580F	LW2-G205	1		10	10	0	100.0	0.0	30.625	10	33.355	2.73	0.27						
34	7	9580F	LW2-G205	2		10	10	0	100.0	0.0	27.836	10	30.821	2.99	0.30						
35	108	9580F	LW2-G205	3		10	9	1	90.0	10.0	28.563	9	31.756	3.19	0.35						
36	58	9580F	LW2-G205	4		10	9	1	90.0	10.0	28.485	9	31.970	3.49	0.39						
37	87	9580F	LW2-G205	5		10	10	0	100.0	0.0	28.526	10	30.665	2.14	0.21	Mean	9.6	0.4	96.3	3.8	0.31
38	4	9580F	LW2-G205	6		10	9	1	90.0	10.0	29.051	9	30.586	1.54	0.17	SD	0.5	0.5	5.2	5.2	0.08
39	81	9580F	LW2-G205	7		10	10	0	100.0	0.0	31.031	10	34.754	3.72	0.37	n	8	8	8	8	8
40	19	9580F	LW2-G205	8	wq replicate	10	10	0	100.0	0.0	29.220	10	32.935	3.72	0.37						
41	42	9581F	LW2-G274	1		10	1	9	10.0	90.0	29.664	1	30.279	0.61	0.61						
42	95	9581F	LW2-G274	2		10	6	4	60.0	40.0	28.472	6	30.929	2.46	0.41						
43	109	9581F	LW2-G274	3		10	0	10	0.0	100.0	28.746	0									
44	82	9581F	LW2-G274	4		10	4	6	40.0	60.0	27.316	4	29.102	1.79	0.45						
45	62	9581F	LW2-G274	5		10	0	10	0.0	100.0	27.043	0				Mean	1.6	8.4	16.3	83.8	0.40
46	59	9581F	LW2-G274	6		10	1	9	10.0	90.0	27.966	1	28.306	0.34	0.34	SD	2.2	2.2	22.0	22.0	0.16
47	61	9581F	LW2-G274	7		10	1	9	10.0	90.0	27.113	1	27.297	0.18	0.18	n	8	8	8	8	5
48	101	9581F	LW2-G274	8	wq replicate	10	0	10	0.0	100.0	27.678	0									
49	97	9582F	LW2-G303	1		10	9	1	90.0	10.0	27.167	9	29.815	2.65	0.29						
50	14	9582F	LW2-G303	2		10	10	0	100.0	0.0	29.117	10	32.619	3.50	0.35						
51	10	9582F	LW2-G303	3		10	10	0	100.0	0.0	30.476	10	33.115	2.64	0.26						
52	112	9582F	LW2-G303	4		10	9	1	90.0	10.0	27.980	9	30.330	2.35	0.26						
53	36	9582F	LW2-G303	5		10	9	1	90.0	10.0	28.233	9	30.947	2.71	0.30	Mean	9.1	1.1	88.8	11.3	0.29
54	78	9582F	LW2-G303	6		10	8	2	80.0	20.0	28.336	8	30.764	2.43	0.30	SD	0.8	0.8	8.3	8.3	0.03
55	46	9582F	LW2-G303	7		10	8	2	80.0	20.0	27.598	8	30.204	2.61	0.33	n	8	8	8	8	8
56	34	9582F	LW2-G303	8	wq replicate	10	10	2	80.0	20.0	28.755	10	31.319	2.56	0.26						
57	91	9583F	LW2-G376	1		10	9	1	90.0	10.0	28.569	9	31.046	2.48	0.28						
58	5	9583F	LW2-G376	2		10	9	1	90.0	10.0	28.768	9	31.453	2.69	0.30						
59	68	9583F	LW2-G376	3		10	10	0	100.0	0.0	29.072	10	32.443	3.37	0.34						
60	104	9583F	LW2-G376	4		10	10	0	100.0	0.0	27.594	10	30.202	2.61	0.26						
61	39	9583F	LW2-G376	5		10	10	0	100.0	0.0	29.502	10	32.022	2.52	0.25	Mean	9.6	0.4	96.3	3.8	0.31
62	106	9583F	LW2-G376	6		10	9	1	90.0	10.0	27.497	9	30.692	3.20	0.36	SD	0.5	0.5	5.2	5.2	0.05
63	37	9583F	LW2-G376	7		10	10	0	100.0	0.0	29.473	10	32.405	2.93	0.29	n	8	8	8	8	8
64	84	9583F	LW2-G376	8	wq replicate	10	10	0	100.0	0.0	30.696	10	34.703	4.01	0.40						
65	71	9584F	LW2-G385	1		11	11	0	100.0	0.0	27.521	11	31.316	3.80	0.35						
66	56	9584F	LW2-G385	2		10	9	1	90.0	10.0	28.044	9	30.986	2.94	0.33						
67	2	9584F	LW2-G385	3		10	9	1	90.0	10.0	28.587	9	31.114	2.53	0.28						
68	67	9584F	LW2-G385	4		10	10	0	100.0	0.0	28.731	10	32.488	3.76	0.38						
69	90	9584F	LW2-G385	5		10	9	1	90.0	10.0	28.086	9	31.021	2.94	0.33	Mean	9.4	0.8	92.5	7.5	0.35
70	11	9584F	LW2-G385	6		10	10	0	100.0	0.0	28.251	10	31.613	3.36	0.34	SD	0.9	0.7	7.1	7.1	0.04
71	30	9584F	LW2-G385	7		10	9	1	90.0	10.0	27.981	9	31.476	3.50	0.39	n	8	8	8	8	8
72	86	9584F	LW2-G385	8	wq replicate	10	8	2	80.0	20.0	28.193	8	31.489	3.30	0.41						

ANC07602
BZTO104(e)007602

Test Number: P686-21

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
73	24	9585F	LW2-G367	1		10	8	2	80.0	20.0	28.207	8	31.118	2.91	0.36						
74	25	9585F	LW2-G367	2		10	10	0	100.0	0.0	28.236	10	31.961	3.73	0.37						
75	40	9585F	LW2-G367	3		10	10	0	100.0	0.0	28.379	10	32.181	3.80	0.38						
76	57	9585F	LW2-G367	4		10	10	0	100.0	0.0	28.638	10	32.159	3.52	0.35						
77	16	9585F	LW2-G367	5		10	10	0	100.0	0.0	27.804	10	30.751	2.95	0.29	Mean	9.6	0.4	96.3	3.8	0.36
78	52	9585F	LW2-G376	6		10	9	1	90.0	10.0	29.283	9	32.986	3.70	0.41	SD	0.7	0.7	7.4	7.4	0.03
79	23	9585F	LW2-G367	7		10	10	0	100.0	0.0	27.657	10	31.220	3.56	0.36	n	8	8	8	8	8
80	77	9585F	LW2-G367	8	wq replicate	10	10	0	100.0	0.0	29.620	10	33.430	3.81	0.38						
81	21	9586F	LW2-G408	1		10	10	0	100.0	0.0	27.874	10	30.345	2.47	0.25						
82	83	9586F	LW2-G408	2		10	9	1	90.0	10.0	31.803	9	34.945	3.14	0.35						
83	94	9586F	LW2-G408	3		10	10	0	100.0	0.0	27.484	10	31.495	4.01	0.40						
84	63	9586F	LW2-G408	4		10	8	2	80.0	20.0	28.922	8	32.469	3.55	0.44						
85	60	9586F	LW2-G408	5		10	8	2	80.0	20.0	28.658	8	31.832	3.17	0.40	Mean	8.8	1.3	87.5	12.5	0.37
86	8	9586F	LW2-G408	6		10	10	0	100.0	0.0	28.642	10	31.431	2.79	0.28	SD	1.4	1.4	13.9	13.9	0.07
87	38	9586F	LW2-G408	7		10	9	1	90.0	10.0	27.211	9	30.859	3.65	0.41	n	8	8	8	8	8
88	70	9586F	LW2-G408	8	wq replicate	10	6	4	60.0	40.0	28.127	6	30.856	2.73	0.45						
89	80	9587F	LW2-G416	1		10	9	1	90.0	10.0	28.096	9	30.123	2.03	0.23						
90	22	9587F	LW2-G416	2		10	10	0	100.0	0.0	29.628	10	30.788	1.16	0.12						
91	73	9587F	LW2-G416	3		10	7	3	70.0	30.0	29.572	7	31.768	2.20	0.31						
92	74	9587F	LW2-G416	4		10	10	0	100.0	0.0	28.091	10	31.365	3.27	0.33						
93	53	9587F	LW2-G416	5		10	10	0	100.0	0.0	28.052	10	31.182	3.13	0.31	Mean	9.5	0.5	95.0	5.0	0.27
94	85	9587F	LW2-G416	6		10	10	0	100.0	0.0	27.618	10	30.904	3.29	0.33	SD	1.1	1.1	10.7	10.7	0.07
95	44	9587F	LW2-G416	7		10	10	0	100.0	0.0	28.493	10	31.126	2.63	0.26	n	8	8	8	8	8
96	48	9587F	LW2-G416	8	wq replicate	10	10	0	100.0	0.0	29.288	10	32.270	2.98	0.30						
97	26	9588F	LW2-G355	1		10	10	0	100.0	0.0	28.312	10	31.891	3.58	0.36						
98	6	9588F	LW2-G355	2		10	10	0	100.0	0.0	28.131	10	32.625	4.49	0.45						
99	17	9588F	LW2-G355	3		10	10	0	100.0	0.0	27.294	10	30.763	3.47	0.35						
100	102	9588F	LW2-G355	4		10	10	0	100.0	0.0	30.868	10	33.058	2.19	0.22						
101	1	9588F	LW2-G355	5		10	9	1	90.0	10.0	30.473	9	33.224	2.75	0.31	Mean	9.6	0.4	96.3	3.8	0.36
102	55	9588F	LW2-G355	6		10	9	1	90.0	10.0	29.334	9	32.913	3.58	0.40	SD	0.5	0.5	5.2	5.2	0.07
103	28	9588F	LW2-G355	7		10	9	1	90.0	10.0	29.560	9	33.213	3.65	0.41	n	8	8	8	8	8
104	64	9588F	LW2-G355	8	wq replicate	10	10	0	100.0	0.0	28.224	10	32.164	3.94	0.39						
105	75	9589F	LW2-G389	1		10	10	0	100.0	0.0	30.448	10	33.622	3.17	0.32						
106	31	9589F	LW2-G389	2		10	8	2	80.0	20.0	29.613	8	32.023	2.41	0.30						
107	27	9589F	LW2-G389	3		10	10	0	100.0	0.0	28.606	10	32.217	3.61	0.36						
108	54	9589F	LW2-G389	4		10	8	2	80.0	20.0	28.801	8	32.314	3.51	0.44						
109	110	9589F	LW2-G389	5		10	5	5	50.0	50.0	27.882	5	30.304	2.42	0.48	Mean	8.5	1.5	85.0	15.0	0.37
110	20	9589F	LW2-G389	6		10	7	3	70.0	30.0	29.818	7	32.367	2.55	0.36	SD	1.9	1.9	18.5	18.5	0.06
111	47	9589F	LW2-G389	7		10	10	0	100.0	0.0	31.184	10	34.475	3.29	0.33	n	8	8	8	8	8
112	98	9589F	LW2-G389	8	wq replicate	10	10	0	100.0	0.0	31.192	10	34.629	3.44	0.34						

Beaker #100: one animal lost/damaged in transfer to weighing pan

ANC07603
BZTO104(e)007603

Test Number: P686-21

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
BULK SEDIMENT POREWATER													
	9574F	Control										2.4	6.5
	9577F	LW2-G360										26.2	6.7
	9578F	LW2-G212										6.7	5.9
	9579F	LW2-G296										1.2	7.0
	9580F	LW2-G205										2.7	6.6
	9581F	LW2-G274										2.2	6.5
	9582F	LW2-G303										1.5	6.6
	9583F	LW2-G376										3.5	6.6
	9584F	LW2-G385										9.5	7.0
	9585F	LW2-G367										2.1	5.9
	9586F	LW2-G408										8.5	6.2
	9587F	LW2-G416										4.6	6.2
	9588F	LW2-G355										9.5	6.6
	9589F	LW2-G389										1.6	6.6
TEST OVERLYING WATER													
3	9577F	LW2-G360	8	0	22.7	6.8	3010	6.6	111	70	2.8		
13	9574F	Control	8	0	22.7	7.1	540	7.0	51	40	<0.1		
19	9580F	LW2-G205	8	0	22.8	7.2	190	6.8	43	40	0.5		
32	9578F	LW2-G212	8	0	22.9	7.5	155	6.9	34	40	0.5		
34	9582F	LW2-G303	8	0	22.8	7.5	150	6.8	34	40	0.2		
48	9587F	LW2-G416	8	0	22.7	7.3	150	6.8	43	40	1.0		
64	9588F	LW2-G355	8	0	22.7	7.2	200	6.9	43	40	0.8		
65	9579F	LW2-G296	8	0	22.9	7.0	155	6.8	43	40	0.3		
70	9586F	LW2-G408	8	0	22.9	7.0	155	6.8	34	40	0.8		
77	9585F	LW2-G367	8	0	22.7	7.0	150	6.6	34	40	0.3		
84	9583F	LW2-G376	8	0	22.6	7.1	155	6.7	34	40	0.7		
86	9584F	LW2-G385	8	0	22.8	7.1	165	6.8	51	40	1.3		
98	9589F	LW2-G389	8	0	22.5	5.4	145	6.7	43	40	0.3		
101	9581F	LW2-G274	8	0	22.7	6.2	160	6.7	43	40	0.3		
3	9577F	LW2-G360	8	1	22.8	6.4	1580	6.7					
13	9574F	Control	8	1	22.6	6.6	385	6.9					
19	9580F	LW2-G205	8	1	22.7	6.8	165	6.8					
32	9578F	LW2-G212	8	1	22.9	6.9	155	6.8					
34	9582F	LW2-G303	8	1	22.8	7.0	155	6.8					
48	9587F	LW2-G416	8	1	22.8	7.0	155	6.8					
64	9588F	LW2-G355	8	1	22.8	7.0	175	6.9					
65	9579F	LW2-G296	8	1	22.9	7.0	155	6.8					
70	9586F	LW2-G408	8	1	23.0	6.8	155	6.8					
77	9585F	LW2-G367	8	1	23.0	7.0	155	6.8					
84	9583F	LW2-G376	8	1	22.7	7.0	155	6.7					
86	9584F	LW2-G385	8	1	22.8	6.7	165	6.7					
98	9589F	LW2-G389	8	1	22.8	6.2	150	6.7					
101	9581F	LW2-G274	8	1	22.7	6.4	165	6.6					

Test Number: P686-21

Freshwater Sediment Test
28-Day Hyalella azteca

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
3	9577F	LW2-G360	8	2	22.3									
13	9574F	Control	8	2	22.1									
19	9580F	LW2-G205	8	2	22.2									
32	9578F	LW2-G212	8	2	22.2									
34	9582F	LW2-G303	8	2	22.2									
48	9587F	LW2-G416	8	2	22.2									
64	9588F	LW2-G355	8	2	22.2									
65	9579F	LW2-G296	8	2	22.3									
70	9586F	LW2-G408	8	2	22.3									
77	9585F	LW2-G367	8	2	22.1									
84	9583F	LW2-G376	8	2	22.0									
86	9584F	LW2-G385	8	2	22.2									
98	9589F	LW2-G389	8	2	22.1									
101	9581F	LW2-G274	8	2	22.1									
3	9577F	LW2-G360	8	3	22.3	6.7		6.8						
13	9574F	Control	8	3	22.2	6.9		6.8						
19	9580F	LW2-G205	8	3	22.2	7.0		6.8						
32	9578F	LW2-G212	8	3	22.2	7.2		6.8						
34	9582F	LW2-G303	8	3	22.2	7.2		6.8						
48	9587F	LW2-G416	8	3	22.3	7.3		6.8						
64	9588F	LW2-G355	8	3	22.2	7.0		6.9						
65	9579F	LW2-G296	8	3	22.2	6.4		6.8						
70	9586F	LW2-G408	8	3	22.4	6.8		6.8						
77	9585F	LW2-G367	8	3	22.1	7.0		6.7						
84	9583F	LW2-G376	8	3	22.1	7.0		6.7						
86	9584F	LW2-G385	8	3	22.2	7.0		6.7						
98	9589F	LW2-G389	8	3	22.2	6.6		6.7						
101	9581F	LW2-G274	8	3	22.1	6.6		6.7						
3	9577F	LW2-G360	8	4	22.4									
13	9574F	Control	8	4	22.4									
19	9580F	LW2-G205	8	4	22.4									
32	9578F	LW2-G212	8	4	22.4									
34	9582F	LW2-G303	8	4	22.5									
48	9587F	LW2-G416	8	4	22.4									
64	9588F	LW2-G355	8	4	22.3									
65	9579F	LW2-G296	8	4	22.3									
70	9586F	LW2-G408	8	4	22.3									
77	9585F	LW2-G367	8	4	22.5									
84	9583F	LW2-G376	8	4	22.4									
86	9584F	LW2-G385	8	4	22.5									
98	9589F	LW2-G389	8	4	22.3									
101	9581F	LW2-G274	8	4	22.3									
3	9577F	LW2-G360	8	5	22.3									
13	9574F	Control	8	5	22.4									
19	9580F	LW2-G205	8	5	22.4									
32	9578F	LW2-G212	8	5	22.5									
34	9582F	LW2-G303	8	5	22.3									
48	9587F	LW2-G416	8	5	22.4									
64	9588F	LW2-G355	8	5	22.4									
65	9579F	LW2-G296	8	5	22.5									
70	9586F	LW2-G408	8	5	22.5									
77	9585F	LW2-G367	8	5	22.3									
84	9583F	LW2-G376	8	5	22.4									
86	9584F	LW2-G385	8	5	22.4									
98	9589F	LW2-G389	8	5	22.1									
101	9581F	LW2-G274	8	5	22.3									

Test Number: P686-21

Freshwater Sediment Test
28-Day Hyalella azteca

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
3	9577F	LW2-G360	8	6	22.5	6.8		6.7						
13	9574F	Control	8	6	22.4	7.0		6.8						
19	9580F	LW2-G205	8	6	22.4	6.8		6.8						
32	9578F	LW2-G212	8	6	22.4	6.8		6.7						
34	9582F	LW2-G303	8	6	22.3	6.8		6.7						
48	9587F	LW2-G416	8	6	22.3	6.8		6.8						
64	9588F	LW2-G355	8	6	22.4	6.8		6.8						
65	9579F	LW2-G296	8	6	22.5	6.5		6.7						
70	9586F	LW2-G408	8	6	22.5	6.7		6.7						
77	9585F	LW2-G367	8	6	22.3	6.9		6.7						
84	9583F	LW2-G376	8	6	22.3	6.9		6.7						
86	9584F	LW2-G385	8	6	22.3	6.9		6.8						
98	9589F	LW2-G389	8	6	22.3	6.9		6.7						
101	9581F	LW2-G274	8	6	22.3	6.8		6.7						
3	9577F	LW2-G360	8	7	22.6									
13	9574F	Control	8	7	22.6									
19	9580F	LW2-G205	8	7	22.5									
32	9578F	LW2-G212	8	7	22.4									
34	9582F	LW2-G303	8	7	22.4									
48	9587F	LW2-G416	8	7	22.4									
64	9588F	LW2-G355	8	7	22.4									
65	9579F	LW2-G296	8	7	22.5									
70	9586F	LW2-G408	8	7	22.5									
77	9585F	LW2-G367	8	7	22.3									
84	9583F	LW2-G376	8	7	22.3									
86	9584F	LW2-G385	8	7	22.4									
98	9589F	LW2-G389	8	7	22.4									
101	9581F	LW2-G274	8	7	22.3									
3	9577F	LW2-G360	8	8	22.8	6.3	315	6.7						
13	9574F	Control	8	8	22.7	6.5	180	6.8						
19	9580F	LW2-G205	8	8	22.6	6.1	150	6.6						
32	9578F	LW2-G212	8	8	22.7	5.7	150	6.6						
34	9582F	LW2-G303	8	8	22.6	6.0	150	6.6						
48	9587F	LW2-G416	8	8	22.6	6.0	150	6.7						
64	9588F	LW2-G355	8	8	22.7	5.7	150	6.6						
65	9579F	LW2-G296	8	8	22.8	5.7	150	6.5						
70	9586F	LW2-G408	8	8	22.8	5.6	150	6.5						
77	9585F	LW2-G367	8	8	22.6	5.9	150	6.5						
84	9583F	LW2-G376	8	8	22.6	5.9	150	6.5						
86	9584F	LW2-G385	8	8	22.6	5.7	150	6.5						
98	9589F	LW2-G389	8	8	22.4	6.6	145	6.6						
101	9581F	LW2-G274	8	8	22.5	6.1	150	6.6						
3	9577F	LW2-G360	8	9	22.7									
13	9574F	Control	8	9	22.7									
19	9580F	LW2-G205	8	9	22.7									
32	9578F	LW2-G212	8	9	22.5									
34	9582F	LW2-G303	8	9	22.5									
48	9587F	LW2-G416	8	9	22.5									
64	9588F	LW2-G355	8	9	22.5									
65	9579F	LW2-G296	8	9	22.5									
70	9586F	LW2-G408	8	9	22.7									
77	9585F	LW2-G367	8	9	22.4									
84	9583F	LW2-G376	8	9	22.4									
86	9584F	LW2-G385	8	9	22.5									
98	9589F	LW2-G389	8	9	22.3									
101	9581F	LW2-G274	8	9	22.4									

Test Number: P686-21

Freshwater Sediment Test
28-Day Hyalella azteca

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
3	9577F	LW2-G360	8	10	22.5	6.8		6.8						
13	9574F	Control	8	10	22.2	6.2		6.6						
19	9580F	LW2-G205	8	10	22.2	6.2		6.6						
32	9578F	LW2-G212	8	10	22.2	6.8		6.5						
34	9582F	LW2-G303	8	10	22.2	6.4		6.5						
48	9587F	LW2-G416	8	10	22.2	6.2		6.5						
64	9588F	LW2-G355	8	10	22.2	6.6		6.6						
65	9579F	LW2-G296	8	10	22.4	6.0		6.5						
70	9586F	LW2-G408	8	10	22.4	6.3		6.6						
77	9585F	LW2-G367	8	10	22.2	6.4		6.5						
84	9583F	LW2-G376	8	10	22.2	6.0		6.5						
86	9584F	LW2-G385	8	10	22.1	6.4		6.6						
98	9589F	LW2-G389	8	10	22.0	6.6		6.5						
101	9581F	LW2-G274	8	10	22.1	6.4		6.6						
3	9577F	LW2-G360	8	11	22.5									
13	9574F	Control	8	11	22.5									
19	9580F	LW2-G205	8	11	22.5									
32	9578F	LW2-G212	8	11	22.3									
34	9582F	LW2-G303	8	11	22.3									
48	9587F	LW2-G416	8	11	22.3									
64	9588F	LW2-G355	8	11	22.3									
65	9579F	LW2-G296	8	11	22.3									
70	9586F	LW2-G408	8	11	22.3									
77	9585F	LW2-G367	8	11	22.4									
84	9583F	LW2-G376	8	11	22.3									
86	9584F	LW2-G385	8	11	22.3									
98	9589F	LW2-G389	8	11	22.3									
101	9581F	LW2-G274	8	11	22.3									
3	9577F	LW2-G360	8	12	22.8									
13	9574F	Control	8	12	22.6									
19	9580F	LW2-G205	8	12	22.6									
32	9578F	LW2-G212	8	12	22.6									
34	9582F	LW2-G303	8	12	22.5									
48	9587F	LW2-G416	8	12	22.5									
64	9588F	LW2-G355	8	12	22.6									
65	9579F	LW2-G296	8	12	22.7									
70	9586F	LW2-G408	8	12	22.7									
77	9585F	LW2-G367	8	12	22.5									
84	9583F	LW2-G376	8	12	22.5									
86	9584F	LW2-G385	8	12	22.5									
98	9589F	LW2-G389	8	12	22.3									
101	9581F	LW2-G274	8	12	22.5									
3	9577F	LW2-G360	8	13	22.7	5.4		6.7						
13	9574F	Control	8	13	22.5	5.4		6.7						
19	9580F	LW2-G205	8	13	22.5	5.2		6.6						
32	9578F	LW2-G212	8	13	22.5	5.5		6.6						
34	9582F	LW2-G303	8	13	22.4	5.4		6.6						
48	9587F	LW2-G416	8	13	22.4	5.2		6.6						
64	9588F	LW2-G355	8	13	22.5	5.3		6.5						
65	9579F	LW2-G296	8	13	22.6	5.0		6.5						
70	9586F	LW2-G408	8	13	22.6	5.1		6.5						
77	9585F	LW2-G367	8	13	22.6	5.3		6.5						
84	9583F	LW2-G376	8	13	22.4	5.4		6.5						
86	9584F	LW2-G385	8	13	22.5	5.6		6.5						
98	9589F	LW2-G389	8	13	22.3	5.3		6.5						
101	9581F	LW2-G274	8	13	22.4	5.4		6.5						

Test Number: P686-21

Freshwater Sediment Test
28-Day Hyalella azteca

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
3	9577F	LW2-G360	8	14	22.6									
13	9574F	Control	8	14	22.4									
19	9580F	LW2-G205	8	14	22.4									
32	9578F	LW2-G212	8	14	22.3									
34	9582F	LW2-G303	8	14	22.2									
48	9587F	LW2-G416	8	14	22.2									
64	9588F	LW2-G355	8	14	22.2									
65	9579F	LW2-G296	8	14	22.4									
70	9586F	LW2-G408	8	14	22.4									
77	9585F	LW2-G367	8	14	22.3									
84	9583F	LW2-G376	8	14	22.2									
86	9584F	LW2-G385	8	14	22.3									
98	9589F	LW2-G389	8	14	22.1									
101	9581F	LW2-G274	8	14	22.2									
3	9577F	LW2-G360	8	15	22.1	6.2	220	6.4						
13	9574F	Control	8	15	22.2	6.0	170	6.3						
19	9580F	LW2-G205	8	15	22.1	5.8	155	6.3						
32	9578F	LW2-G212	8	15	22.1	5.8	155	6.2						
34	9582F	LW2-G303	8	15	22.0	5.8	155	6.2						
48	9587F	LW2-G416	8	15	22.0	5.8	150	6.2						
64	9588F	LW2-G355	8	15	22.0	5.8	155	6.2						
65	9579F	LW2-G296	8	15	22.1	5.5	155	6.2						
70	9586F	LW2-G408	8	15	22.2	5.3	160	6.2						
77	9585F	LW2-G367	8	15	22.1	5.9	150	6.2						
84	9583F	LW2-G376	8	15	22.1	5.7	150	6.2						
86	9584F	LW2-G385	8	15	22.1	5.8	155	6.2						
98	9589F	LW2-G389	8	15	22.0	5.9	150	6.2						
101	9581F	LW2-G274	8	15	22.0	5.8	155	6.2						
3	9577F	LW2-G360	8	16	22.9									
13	9574F	Control	8	16	22.7									
19	9580F	LW2-G205	8	16	22.7									
32	9578F	LW2-G212	8	16	22.7									
34	9582F	LW2-G303	8	16	22.7									
48	9587F	LW2-G416	8	16	22.6									
64	9588F	LW2-G355	8	16	22.6									
65	9579F	LW2-G296	8	16	22.8									
70	9586F	LW2-G408	8	16	22.8									
77	9585F	LW2-G367	8	16	22.6									
84	9583F	LW2-G376	8	16	22.6									
86	9584F	LW2-G385	8	16	22.6									
98	9589F	LW2-G389	8	16	22.4									
101	9581F	LW2-G274	8	16	22.5									
3	9577F	LW2-G360	8	17	22.6	6.6		6.7						
13	9574F	Control	8	17	22.4	6.6		6.6						
19	9580F	LW2-G205	8	17	22.4	6.4		6.6						
32	9578F	LW2-G212	8	17	22.5	6.6		6.5						
34	9582F	LW2-G303	8	17	22.3	6.4		6.5						
48	9587F	LW2-G416	8	17	22.3	6.8		6.5						
64	9588F	LW2-G355	8	17	22.4	6.2		6.5						
65	9579F	LW2-G296	8	17	22.5	6.1		6.5						
70	9586F	LW2-G408	8	17	22.5	5.8		6.5						
77	9585F	LW2-G367	8	17	22.4	6.2		6.5						
84	9583F	LW2-G376	8	17	22.3	6.3		6.5						
86	9584F	LW2-G385	8	17	22.4	6.4		6.5						
98	9589F	LW2-G389	8	17	22.2	6.5		6.6						
101	9581F	LW2-G274	8	17	22.3	6.2		6.5						

Test Number: P686-21

Freshwater Sediment Test
28-Day Hyalella azteca

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
3	9577F	LW2-G360	8	18	22.5									
13	9574F	Control	8	18	22.4									
19	9580F	LW2-G205	8	18	22.4									
32	9578F	LW2-G212	8	18	22.4									
34	9582F	LW2-G303	8	18	22.4									
48	9587F	LW2-G416	8	18	22.3									
64	9588F	LW2-G355	8	18	22.2									
65	9579F	LW2-G296	8	18	22.3									
70	9586F	LW2-G408	8	18	22.3									
77	9585F	LW2-G367	8	18	22.3									
84	9583F	LW2-G376	8	18	22.2									
86	9584F	LW2-G385	8	18	22.3									
98	9589F	LW2-G389	8	18	22.2									
101	9581F	LW2-G274	8	18	22.2									
3	9577F	LW2-G360	8	19	22.1									
13	9574F	Control	8	19	22.1									
19	9580F	LW2-G205	8	19	22.0									
32	9578F	LW2-G212	8	19	22.2									
34	9582F	LW2-G303	8	19	22.1									
48	9587F	LW2-G416	8	19	22.1									
64	9588F	LW2-G355	8	19	22.1									
65	9579F	LW2-G296	8	19	22.0									
70	9586F	LW2-G408	8	19	22.0									
77	9585F	LW2-G367	8	19	22.1									
84	9583F	LW2-G376	8	19	22.1									
86	9584F	LW2-G385	8	19	22.2									
98	9589F	LW2-G389	8	19	22.2									
101	9581F	LW2-G274	8	19	22.2									
3	9577F	LW2-G360	8	20	22.2	5.9		6.4						
13	9574F	Control	8	20	22.2	5.7		6.4						
19	9580F	LW2-G205	8	20	22.1	5.9		6.4						
32	9578F	LW2-G212	8	20	22.1	6.1		6.4						
34	9582F	LW2-G303	8	20	22.1	6.3		6.4						
48	9587F	LW2-G416	8	20	22.1	6.1		6.4						
64	9588F	LW2-G355	8	20	22.1	5.9		6.3						
65	9579F	LW2-G296	8	20	22.2	5.9		6.4						
70	9586F	LW2-G408	8	20	22.2	5.9		6.4						
77	9585F	LW2-G367	8	20	22.1	5.9		6.3						
84	9583F	LW2-G376	8	20	22.1	5.9		6.3						
86	9584F	LW2-G385	8	20	22.1	5.9		6.4						
98	9589F	LW2-G389	8	20	22.1	5.3		6.3						
101	9581F	LW2-G274	8	20	22.1	5.8		6.3						
3	9577F	LW2-G360	8	21	22.6									
13	9574F	Control	8	21	22.6									
19	9580F	LW2-G205	8	21	22.5									
32	9578F	LW2-G212	8	21	22.5									
34	9582F	LW2-G303	8	21	22.5									
48	9587F	LW2-G416	8	21	22.5									
64	9588F	LW2-G355	8	21	22.6									
65	9579F	LW2-G296	8	21	22.7									
70	9586F	LW2-G408	8	21	22.7									
77	9585F	LW2-G367	8	21	22.6									
84	9583F	LW2-G376	8	21	22.4									
86	9584F	LW2-G385	8	21	22.4									
98	9589F	LW2-G389	8	21	22.4									
101	9581F	LW2-G274	8	21	22.4									

Test Number: P686-21

Freshwater Sediment Test
28-Day Hyalella azteca

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
3	9577F	LW2-G360	8	22	22.4	6.7	160							
13	9574F	Control	8	22	22.4	6.6	155							
19	9580F	LW2-G205	8	22	22.3	6.6	150							
32	9578F	LW2-G212	8	22	22.3	6.8	150							
34	9582F	LW2-G303	8	22	22.3	7.0	150							
48	9587F	LW2-G416	8	22	22.3	6.8	150							
64	9588F	LW2-G355	8	22	22.3	6.6	150							
65	9579F	LW2-G296	8	22	22.3	6.5	150							
70	9586F	LW2-G408	8	22	22.3	6.4	150							
77	9585F	LW2-G367	8	22	22.3	6.4	145							
84	9583F	LW2-G376	8	22	22.3	6.6	145							
86	9584F	LW2-G385	8	22	22.3	6.6	150							
98	9589F	LW2-G389	8	22	22.1	6.8	145							
101	9581F	LW2-G274	8	22	22.1	6.8	150							
3	9577F	LW2-G360	8	23	22.8									
13	9574F	Control	8	23	22.8									
19	9580F	LW2-G205	8	23	22.8									
32	9578F	LW2-G212	8	23	22.8									
34	9582F	LW2-G303	8	23	22.8									
48	9587F	LW2-G416	8	23	22.8									
64	9588F	LW2-G355	8	23	22.8									
65	9579F	LW2-G296	8	23	22.8									
70	9586F	LW2-G408	8	23	22.9									
77	9585F	LW2-G367	8	23	22.8									
84	9583F	LW2-G376	8	23	22.8									
86	9584F	LW2-G385	8	23	22.8									
98	9589F	LW2-G389	8	23	22.7									
101	9581F	LW2-G274	8	23	22.8									
3	9577F	LW2-G360	8	24	22.6	5.7		6.5						
13	9574F	Control	8	24	22.6	5.4		6.5						
19	9580F	LW2-G205	8	24	22.6	5.8		6.2						
32	9578F	LW2-G212	8	24	22.6	6.2		6.4						
34	9582F	LW2-G303	8	24	22.6	5.9		6.4						
48	9587F	LW2-G416	8	24	22.5	6.0		6.4						
64	9588F	LW2-G355	8	24	22.5	5.7		6.4						
65	9579F	LW2-G296	8	24	22.7	5.7		6.4						
70	9586F	LW2-G408	8	24	22.8	5.7		6.2						
77	9585F	LW2-G367	8	24	22.5	5.8		6.3						
84	9583F	LW2-G376	8	24	22.5	5.6		6.3						
86	9584F	LW2-G385	8	24	22.6	5.4		6.4						
98	9589F	LW2-G389	8	24	22.5	5.9		6.4						
101	9581F	LW2-G274	8	24	22.4	6.1		6.4						
3	9577F	LW2-G360	8	25	22.2									
13	9574F	Control	8	25	22.2									
19	9580F	LW2-G205	8	25	22.2									
32	9578F	LW2-G212	8	25	22.2									
34	9582F	LW2-G303	8	25	22.2									
48	9587F	LW2-G416	8	25	22.1									
64	9588F	LW2-G355	8	25	22.1									
65	9579F	LW2-G296	8	25	22.2									
70	9586F	LW2-G408	8	25	22.2									
77	9585F	LW2-G367	8	25	22.2									
84	9583F	LW2-G376	8	25	22.2									
86	9584F	LW2-G385	8	25	22.2									
98	9589F	LW2-G389	8	25	22.3									
101	9581F	LW2-G274	8	25	22.3									

Test Number: P686-21

Freshwater Sediment Test
28-Day Hyalella azteca

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
3	9577F	LW2-G360	8	26	22.1								
13	9574F	Control	8	26	22.0								
19	9580F	LW2-G205	8	26	22.0								
32	9578F	LW2-G212	8	26	22.1								
34	9582F	LW2-G303	8	26	22.1								
48	9587F	LW2-G416	8	26	22.0								
64	9588F	LW2-G355	8	26	22.0								
65	9579F	LW2-G296	8	26	22.2								
70	9586F	LW2-G408	8	26	22.2								
77	9585F	LW2-G367	8	26	22.0								
84	9583F	LW2-G376	8	26	22.0								
86	9584F	LW2-G385	8	26	22.1								
98	9589F	LW2-G389	8	26	22.0								
101	9581F	LW2-G274	8	26	22.1								
3	9577F	LW2-G360	8	27	22.0	5.8		6.7					
13	9574F	Control	8	27	22.1	6.0		6.6					
19	9580F	LW2-G205	8	27	22.0	6.2		6.6					
32	9578F	LW2-G212	8	27	22.0	6.1		6.6					
34	9582F	LW2-G303	8	27	22.0	6.2		6.5					
48	9587F	LW2-G416	8	27	22.0	5.6		6.5					
64	9588F	LW2-G355	8	27	22.0	6.0		6.5					
65	9579F	LW2-G296	8	27	22.1	5.9		6.5					
70	9586F	LW2-G408	8	27	22.2	6.1		6.6					
77	9585F	LW2-G367	8	27	22.0	6.2		6.5					
84	9583F	LW2-G376	8	27	22.0	6.2		6.5					
86	9584F	LW2-G385	8	27	22.0	5.5		6.5					
98	9589F	LW2-G389	8	27	22.2	6.0		6.5					
101	9581F	LW2-G274	8	27	22.1	6.3		6.5					
3	9577F	LW2-G360	8	28	22.4	6.9	165	6.9	26	40	0.2		
13	9574F	Control	8	28	22.4	7.0	160	6.9	34	40	0.2		
19	9580F	LW2-G205	8	28	22.3	7.2	155	6.8	43	40	0.1		
32	9578F	LW2-G212	8	28	22.4	7.4	155	6.8	34	40	0.2		
34	9582F	LW2-G303	8	28	22.4	7.4	155	6.8	43	40	<0.1		
48	9587F	LW2-G416	8	28	22.4	7.3	155	6.9	43	40	<0.1		
64	9588F	LW2-G355	8	28	22.4	7.1	155	6.8	34	40	<0.1		
65	9579F	LW2-G296	8	28	22.4	7.2	155	6.8	34	30	0.1		
70	9586F	LW2-G408	8	28	22.4	7.2	155	6.8	34	40	<0.1		
77	9585F	LW2-G367	8	28	22.4	7.2	150	6.7	43	40	<0.1		
84	9583F	LW2-G376	8	28	22.4	7.3	150	6.7	34	40	<0.1		
86	9584F	LW2-G385	8	28	22.3	7.1	155	6.7	34	40	0.1		
98	9589F	LW2-G389	8	28	22.3	7.4	150	6.8	34	40	<0.1		
101	9581F	LW2-G274	8	28	22.4	7.4	150	6.7	51	40	<0.1		
				Mean	22.4	6.3	216	6.6	42	41	---	5.9	6.5
				SD	0.2	0.6	349	0.2	15	6	---	6.6	0.3
				n	406	196	84	182	28	28	28	14	14
				Min	22.0	5.0	145	6.2	26	30	<0.1	1.2	5.9
				Max	23.0	7.5	3010	7.0	111	70	2.8	26.2	7.0
	Data Entry Verified												

Test Number: 686-22

Freshwater Sediment Test
10-Day Chironomus tentans

Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or
dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

ASHED DRY WT= weight of ashed pan + weight of ashed test organisms recovered
at test termination
TAFDW=DRY WT - ASHED DRY WT= total ash-free organism weight for given replicate
AFDW=average individual ash-free biomass=TAFDW/WT COUNT

INITIAL WEIGHT

pan #	tare wt (mg)	final wt (mg)	wt count	avg. wt/ organism
1	97.72	100.57	20	0.14
2	90.08	93.05	20	0.15
3	93.72	96.98	20	0.16

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)
1	100	9574F	Control	1		10	9	1	90.0	10.0	83.00	9	97.15	86.76	14.15	1.57	10.39	1.15
2	60	9574F	Control	2		10	10	0	100.0	0.0	90.34	10	104.64	93.85	14.30	1.43	10.79	1.08
3	8	9574F	Control	3		10	9	1	90.0	10.0	87.33	9	100.07	90.13	12.74	1.42	9.94	1.10
4	23	9574F	Control	4		10	9	1	90.0	10.0	88.65	9	99.28	90.63	10.63	1.18	8.65	0.96
5	68	9574F	Control	5		10	10	0	100.0	0.0	79.44	10	89.72	81.69	10.28	1.03	8.03	0.80
6	96	9574F	Control	6		10	9	1	90.0	10.0	83.39	9	98.44	86.91	15.05	1.67	11.53	1.28
7	71	9574F	Control	7		10	10	0	100.0	0.0	82.47	10	95.68	85.73	13.21	1.32	9.95	1.00
8	85	9574F	Control	8	wq replicate	10	9	1	90.0	10.0	86.57	9	98.53	89.80	11.96	1.33	8.73	0.97
9	65	9577F	LW2-G360	1		10	5	5	50.0	50.0	80.56	5	90.08	83.16	9.52	1.90	6.92	1.38
10	63	9577F	LW2-G360	2		10	1	9	10.0	90.0	86.01	1	87.25	86.40	1.24	1.24	0.85	0.85
11	49	9577F	LW2-G360	3		10	4	6	40.0	60.0	83.34	4	87.57	84.38	4.23	1.06	3.19	0.80
12	24	9577F	LW2-G360	4		10	4	6	40.0	60.0	79.91	4	82.54	80.38	2.63	0.66	2.16	0.54
13	10	9577F	LW2-G360	5		10	7	3	70.0	30.0	87.62	7	94.90	89.61	7.28	1.04	5.29	0.76
14	32	9577F	LW2-G360	6		10	4	6	40.0	60.0	86.49	4	91.78	87.77	5.29	1.32	4.01	1.00
15	56	9577F	LW2-G360	7		10	8	2	80.0	20.0	86.64	8	94.02	88.27	7.38	0.92	5.75	0.72
16	17	9577F	LW2-G360	8	wq replicate	10	5	5	50.0	50.0	87.55	5	95.12	89.56	7.57	1.51	5.56	1.11
17	59	9578F	LW2-G212	1		10	10	0	100.0	0.0	77.51	10	95.20	84.60	17.69	1.77	10.60	1.06
18	37	9578F	LW2-G212	2		10	9	1	90.0	10.0	84.00	9	98.96	89.20	14.96	1.66	9.76	1.08
19	91	9578F	LW2-G212	3		10	8	2	80.0	20.0	84.59	8	101.17	91.10	16.58	2.07	10.07	1.26
20	28	9578F	LW2-G212	4		10	8	2	80.0	20.0	84.84	8	101.35	90.26	16.51	2.06	11.09	1.39
21	47	9578F	LW2-G212	5		10	8	2	80.0	20.0	84.66	8	98.15	89.37	13.49	1.69	8.78	1.10
22	55	9578F	LW2-G212	6		10	7	3	70.0	30.0	79.19	7	90.38	82.60	11.19	1.60	7.78	1.11
23	64	9578F	LW2-G212	7		10	10	0	100.0	0.0	87.92	10	103.48	93.34	15.56	1.56	10.14	1.01
24	94	9578F	LW2-G212	8	wq replicate	10	9	1	90.0	10.0	82.34	9	98.86	88.75	16.52	1.84	10.11	1.12
25	108	9579F	LW2-G296	1		10	9	1	90.0	10.0	83.29	9	102.26	91.39	18.97	2.11	10.87	1.21
26	78	9579F	LW2-G296	2		10	9	1	90.0	10.0	84.37	9	101.99	91.56	17.62	1.96	10.43	1.16
27	88	9579F	LW2-G296	3		10	10	0	100.0	0.0	86.82	10	104.00	93.97	17.18	1.72	10.03	1.00
28	16	9579F	LW2-G296	4		10	10	0	100.0	0.0	90.51	10	104.42	95.82	13.91	1.39	8.60	0.86
29	12	9579F	LW2-G296	5		10	8	2	80.0	20.0	86.40	8	101.56	91.71	15.16	1.90	9.85	1.23
30	69	9579F	LW2-G296	6		10	9	1	90.0	10.0	83.96	9	98.93	89.46	14.97	1.66	9.47	1.05
31	93	9579F	LW2-G296	7		10	10	0	100.0	0.0	90.88	10	108.92	98.56	18.04	1.80	10.36	1.04
32	72	9579F	LW2-G296	8	wq replicate	10	9	1	90.0	10.0	80.33	9	96.68	85.91	16.35	1.82	10.77	1.20
33	43	9580F	LW2-G205	1		10	10	0	100.0	0.0	79.75	10	96.85	84.41	17.10	1.71	12.44	1.24
34	5	9580F	LW2-G205	2		10	9	1	90.0	10.0	81.35	9	98.22	86.84	16.87	1.87	11.38	1.26
35	4	9580F	LW2-G205	3		10	8	2	80.0	20.0	80.78	8	96.38	85.32	15.60	1.95	11.06	1.38
36	104	9580F	LW2-G205	4		10	9	1	90.0	10.0	86.05	9	104.10	91.92	18.05	2.01	12.18	1.35
37	101	9580F	LW2-G205	5		10	9	1	90.0	10.0	80.25	9	97.67	85.71	17.42	1.94	11.96	1.33
38	102	9580F	LW2-G205	6		10	8	2	80.0	20.0	79.86	8	96.98	84.96	17.12	2.14	12.02	1.50
39	40	9580F	LW2-G205	7		10	9	1	90.0	10.0	84.18	9	99.59	88.19	15.41	1.71	11.40	1.27
40	9	9580F	LW2-G205	8	wq replicate	10	9	1	90.0	10.0	81.60	9	98.04	86.54	16.44	1.83	11.50	1.28

	SURV	MORT	PSURV	PMORT	WT	AFDW
Mean	9.4	0.6	93.8	6.3	1.37	1.04
SD	0.5	0.5	5.2	5.2	0.21	0.14
n	8	8	8	8	8	8
Mean	4.8	5.3	47.5	52.5	1.21	0.90
SD	2.1	2.1	21.2	21.2	0.38	0.26
n	8	8	8	8	8	8
Mean	8.6	1.4	86.3	13.8	1.78	1.14
SD	1.1	1.1	10.6	10.6	0.20	0.12
n	8	8	8	8	8	8
Mean	9.3	0.8	92.5	7.5	1.79	1.09
SD	0.7	0.7	7.1	7.1	0.21	0.13
n	8	8	8	8	8	8
Mean	8.9	1.1	88.8	11.3	1.89	1.33
SD	0.6	0.6	6.4	6.4	0.15	0.09
n	8	8	8	8	8	8

ANC07612
BZTO104(e)007612

Test Number: 686-22

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)		SURV	MORT	PSURV	PMORT	WT	AFDW
41	54	9581F	LW2-G274	1		10	7	3	70.0	30.0	86.82	7	95.13	88.12	8.31	1.19	7.01	1.00							
42	92	9581F	LW2-G274	2		10	5	5	50.0	50.0	86.32	5	89.37	86.78	3.05	0.61	2.59	0.52							
43	103	9581F	LW2-G274	3		10	6	4	60.0	40.0	88.85	6	91.08	89.24	2.23	0.37	1.84	0.31							
44	106	9581F	LW2-G274	4		10	7	3	70.0	30.0	89.85	7	94.26	90.69	4.41	0.63	3.57	0.51							
45	75	9581F	LW2-G274	5		10	7	3	70.0	30.0	89.20	7	97.92	91.22	8.72	1.25	6.70	0.96	Mean	6.8	3.3	67.5	32.5	0.73	0.59
46	48	9581F	LW2-G274	6		10	4	6	40.0	60.0	81.40	4	82.24	81.48	0.84	0.21	0.76	0.19	SD	1.8	1.8	17.5	17.5	0.37	0.29
47	46	9581F	LW2-G274	7		10	9	1	90.0	10.0	88.94	9	94.39	89.80	5.45	0.61	4.59	0.51	n	8	8	8	8	8	8
48	97	9581F	LW2-G274	8	wq replicate	10	9	1	90.0	10.0	85.16	9	93.79	86.89	8.63	0.96	6.90	0.77							
49	2	9582F	LW2-G303	1		10	10	0	100.0	0.0	89.96	10	106.02	95.94	16.06	1.61	10.08	1.01							
50	30	9582F	LW2-G303	2		10	9	1	90.0	10.0	82.41	9	97.82	87.62	15.41	1.71	10.20	1.13							
51	110	9582F	LW2-G303	3		10	8	2	80.0	20.0	98.81	8	118.63	107.50	19.82	2.48	11.13	1.39							
52	67	9582F	LW2-G303	4		10	9	1	90.0	10.0	83.59	9	97.84	88.55	14.25	1.58	9.29	1.03							
53	11	9582F	LW2-G303	5		10	9	1	90.0	10.0	87.69	9	102.16	92.64	14.47	1.61	9.52	1.06	Mean	8.9	1.1	88.8	11.3	1.86	1.16
54	107	9582F	LW2-G303	6		10	10	0	100.0	0.0	88.89	10	108.30	97.20	19.41	1.94	11.10	1.11	SD	0.8	0.8	8.3	8.3	0.30	0.14
55	6	9582F	LW2-G303	7		10	8	2	80.0	20.0	87.65	8	102.82	93.08	15.17	1.90	9.74	1.22	n	8	8	8	8	8	8
56	19	9582F	LW2-G303	8	wq replicate	10	8	2	80.0	20.0	87.74	8	104.09	93.37	16.35	2.04	10.72	1.34							
57	81	9583F	LW2-G376	1		10	10	0	100.0	0.0	84.40	10	100.62	90.33	16.22	1.62	10.29	1.03							
58	26	9583F	LW2-G376	2		10	8	2	80.0	20.0	94.60	8	108.19	98.64	13.59	1.70	9.55	1.19							
59	39	9583F	LW2-G376	3		10	8	2	80.0	20.0	87.81	8	102.06	92.32	14.25	1.78	9.74	1.22							
60	36	9583F	LW2-G376	4		10	8	2	80.0	20.0	82.58	8	96.36	86.84	13.78	1.72	9.52	1.19							
61	79	9583F	LW2-G376	5		10	10	0	100.0	0.0	79.21	10	95.16	85.05	15.95	1.60	10.11	1.01	Mean	9.1	0.9	91.3	8.8	1.64	1.08
62	58	9583F	LW2-G376	6		10	10	0	100.0	0.0	81.75	10	95.95	85.97	14.20	1.42	9.98	1.00	SD	1.0	1.0	9.9	9.9	0.12	0.12
63	84	9583F	LW2-G376	7		10	9	1	90.0	10.0	79.60	9	95.11	85.25	15.51	1.72	9.86	1.10	n	8	8	8	8	8	8
64	111	9583F	LW2-G376	8	wq replicate	10	10	0	100.0	0.0	84.31	10	99.61	90.79	15.30	1.53	8.82	0.88							
65	53	9584F	LW2-G385	1		10	10	0	100.0	0.0	86.04	10	97.02	89.03	10.98	1.10	7.99	0.80							
66	29	9584F	LW2-G385	2		10	8	2	80.0	20.0	88.46	8	101.69	92.25	13.23	1.65	9.44	1.18							
67	73	9584F	LW2-G385	3		10	10	0	100.0	0.0	84.49	10	101.69	90.40	17.20	1.72	11.29	1.13							
68	44	9584F	LW2-G385	4		10	8	2	80.0	20.0	79.64	8	92.86	83.10	13.22	1.65	9.76	1.22							
69	82	9584F	LW2-G385	5		10	10	0	100.0	0.0	88.85	10	103.74	93.88	14.89	1.49	9.86	0.99	Mean	9.0	1.0	90.0	10.0	1.59	1.10
70	109	9584F	LW2-G385	6		10	7	3	70.0	30.0	83.58	7	97.35	88.02	13.77	1.97	9.33	1.33	SD	1.2	1.2	12.0	12.0	0.25	0.16
71	7	9584F	LW2-G385	7		10	9	1	90.0	10.0	89.65	9	103.68	93.73	14.03	1.56	9.95	1.11	n	8	8	8	8	8	8
72	74	9584F	LW2-G385	8	wq replicate	10	10	0	100.0	0.0	80.54	10	96.60	86.23	16.06	1.61	10.37	1.04							
73	27	9585F	LW2-G367	1		10	9	1	90.0	10.0	84.83	9	99.89	89.12	15.06	1.67	10.77	1.20							
74	18	9585F	LW2-G367	2		10	9	1	90.0	10.0	75.29	9	87.09	78.66	11.80	1.31	8.43	0.94							
75	25	9585F	LW2-G367	3		10	10	0	100.0	0.0	83.74	10	99.34	88.26	15.60	1.56	11.08	1.11							
76	45	9585F	LW2-G367	4		10	10	0	100.0	0.0	85.63	10	100.02	90.10	14.39	1.44	9.92	0.99							
77	41	9585F	LW2-G367	5		10	10	0	100.0	0.0	84.59	10	98.99	89.01	14.40	1.44	9.98	1.00	Mean	9.5	0.5	95.0	5.0	1.45	1.04
78	38	9585F	LW2-G367	6		10	9	1	90.0	10.0	80.17	9	94.41	83.54	14.24	1.58	10.87	1.21	SD	0.5	0.5	5.3	5.3	0.14	0.12
79	77	9585F	LW2-G367	7		10	10	0	100.0	0.0	85.50	10	98.79	89.90	13.29	1.33	8.89	0.89	n	8	8	8	8	8	8
80	31	9585F	LW2-G367	8	wq replicate	10	9	1	90.0	10.0	81.00	9	92.61	83.70	11.61	1.29	8.91	0.99							
81	20	9586F	LW2-G408	1		10	8	2	80.0	20.0	87.70	8	99.62	90.72	11.92	1.49	8.90	1.11							
82	62	9586F	LW2-G408	2		10	10	0	100.0	0.0	84.29	10	98.60	88.08	14.31	1.43	10.52	1.05							
83	13	9586F	LW2-G408	3		10	8	2	80.0	20.0	89.61	8	102.81	92.49	13.20	1.65	10.32	1.29							
84	98	9586F	LW2-G408	4		10	8	2	80.0	20.0	89.23	8	104.63	93.99	15.40	1.93	10.64	1.33							
85	95	9586F	LW2-G408	5		10	9	1	90.0	10.0	81.64	9	95.71	85.86	14.07	1.56	9.85	1.09	Mean	8.8	1.3	87.5	12.5	1.62	1.18
86	105	9586F	LW2-G408	6		10	9	1	90.0	10.0	84.88	9	100.48	89.45	15.60	1.73	11.03	1.23	SD	0.7	0.7	7.1	7.1	0.16	0.10
87	15	9586F	LW2-G408	7		10	9	1	90.0	10.0	84.71	9	99.58	88.82	14.87	1.65	10.76	1.20	n	8	8	8	8	8	8
88	14	9586F	LW2-G408	8	wq replicate	10	9	1	90.0	10.0	86.41	9	100.06	89.66	13.65	1.52	10.40	1.16							
89	83	9587F	LW2-G416	1		10	10	0	100.0	0.0	84.92	10	97.94	88.95	13.02	1.30	8.99	0.90							
90	1	9587F	LW2-G416	2		10	9	1	90.0	10.0	82.27	9	95.51	86.40	13.24	1.47	9.11	1.01							
91	21	9587F	LW2-G416	3		10	8	2	80.0	20.0	89.50	8	104.37	94.70	14.87	1.86	9.67	1.21							
92	66	9587F	LW2-G416	4		10	9	1	90.0	10.0	78.93	9	90.93	82.56	12.00	1.33	8.37	0.93							
93	80	9587F	LW2-G416	5		10	9	1	90.0	10.0	83.28	9	97.53	88.74	14.25	1.58	8.79	0.98	Mean	9.4	0.6	93.8	6.3	1.46	0.98
94	34	9587F	LW2-G416	6		10	10	0	100.0	0.0	86.02	10	99.20	89.76	13.18	1.32	9.44	0.94	SD	0.7	0.7	7.4	7.4	0.19	0.10
95	70	9587F	LW2-G416	7		10	10	0	100.0	0.0	81.54	10	95.23	85.86	13.69	1.37	9.37	0.94	n	8	8	8	8	8	8
96	90	9587F	LW2-G416	8	wq replicate	10	10	0	100.0	0.0	94.34	10	108.62	99.59	14.28	1.43	9.03	0.90							

ANC07613
BZTO104(e)007613

Test Number: 686-22

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)		SURV	MORT	PSURV	PMORT	WT	AFDW
97	89	9588F	LW2-G355	1		10	10	0	100.0	0.0	86.76	10	101.43	92.34	14.67	1.47	9.09	0.91							
98	61	9588F	LW2-G355	2		10	8	2	80.0	20.0	78.48	8	91.53	83.22	13.05	1.63	8.31	1.04							
99	42	9588F	LW2-G355	3		10	8	2	80.0	20.0	84.49	8	100.37	90.05	15.88	1.99	10.32	1.29							
100	22	9588F	LW2-G355	4		10	9	1	90.0	10.0	75.90	9	88.28	80.38	12.38	1.38	7.90	0.88							
101	86	9588F	LW2-G355	5		10	10	0	100.0	0.0	90.37	10	105.21	96.06	14.84	1.48	9.15	0.91	Mean	8.8	1.3	87.5	12.5	1.54	0.98
102	35	9588F	LW2-G355	6		10	8	2	80.0	20.0	86.49	8	99.59	91.34	13.10	1.64	8.25	1.03	SD	0.9	0.9	8.9	8.9	0.21	0.15
103	57	9588F	LW2-G355	7		10	9	1	90.0	10.0	84.88	9	97.79	89.02	12.91	1.43	8.77	0.97	n	8	8	8	8	8	8
104	52	9588F	LW2-G355	8	wq replicate	10	8	2	80.0	20.0	86.29	8	96.83	90.50	10.54	1.32	6.33	0.79							
105	33	9589F	LW2-G389	1		10	9	1	90.0	10.0	87.63	9	102.89	93.57	15.26	1.70	9.32	1.04							
106	51	9589F	LW2-G389	2		10	8	2	80.0	20.0	83.47	8	101.25	90.93	17.78	2.22	10.32	1.29							
107	76	9589F	LW2-G389	3		10	7	3	70.0	30.0	82.93	7	97.52	89.18	14.59	2.08	8.34	1.19							
108	99	9589F	LW2-G389	4		10	7	3	70.0	30.0	89.02	7	103.57	94.12	14.55	2.08	9.45	1.35							
109	87	9589F	LW2-G389	5		10	9	1	90.0	10.0	89.58	9	106.59	97.38	17.01	1.89	9.21	1.02	Mean	7.9	2.1	78.8	21.3	2.03	1.19
110	112	9589F	LW2-G389	6		10	9	1	90.0	10.0	81.36	9	98.23	89.20	16.87	1.87	9.03	1.00	SD	1.1	1.1	11.3	11.3	0.28	0.20
111	3	9589F	LW2-G389	7		10	6	4	60.0	40.0	83.71	6	99.21	89.72	15.50	2.58	9.49	1.58	n	8	8	8	8	8	8
112	50	9589F	LW2-G389	8	wq replicate	10	8	2	80.0	20.0	81.30	8	96.09	87.51	14.79	1.85	8.58	1.07							

ANC07614
BZTO104(e)007614

Water Quality Data

	NAS	CLIENT			Bulk Sediment Interstitial water	
	SMPL	DESCRIP			NH3	pH
	9574F	Control			2.4	6.5
	9577F	LW2-G360			26.2	6.7
	9578F	LW2-G212			6.7	5.9
	9579F	LW2-G296			1.2	7.0
	9580F	LW2-G205			2.7	6.6
	9581F	LW2-G274			2.2	6.5
	9582F	LW2-G303			1.5	6.6
	9583F	LW2-G376			3.5	6.6
	9584F	LW2-G385			9.5	7.0
	9585F	LW2-G367			2.1	5.9
	9586F	LW2-G408			8.5	6.2
	9587F	LW2-G416			4.6	6.2
	9588F	LW2-G355			9.5	6.6
	9589F	LW2-G389			1.6	6.6

	NAS	CLIENT			Overlying water						
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	NH3	HARD	ALK
9	9580F	LW2-G205	8	0	23.0	7.6	150	7.0	0.6	43	40
14	9586F	LW2-G408	8	0	22.9	7.4	150	7.0	0.5	34	40
17	9577F	LW2-G360	8	0	22.8	7.4	2250	6.7	1.3	77	60
19	9582F	LW2-G303	8	0	22.9	7.4	175	6.9	0.3	34	40
31	9585F	LW2-G367	8	0	22.9	7.4	150	6.7	0.3	43	40
50	9589F	LW2-G389	8	0	23.1	7.0	140	6.8	0.2	34	40
52	9588F	LW2-G355	8	0	22.8	7.2	195	7.0	0.6	43	40
72	9579F	LW2-G296	8	0	22.7	7.1	150	7.0	0.3	34	40
74	9584F	LW2-G385	8	0	22.8	6.9	165	6.9	0.2	43	40
85	9574F	Control	8	0	23.1	7.3	500	7.0	0.2	51	40
90	9587F	LW2-G416	8	0	23.2	7.3	150	6.9	0.2	43	40
94	9578F	LW2-G212	8	0	22.9	7.3	145	6.9	0.3	34	40
97	9581F	LW2-G274	8	0	22.8	6.0	165	6.6	0.3	34	40
111	9583F	LW2-G376	8	0	23.2	6.8	170	6.6	0.7	43	40
9	9580F	LW2-G205	8	1	23.2	7.0					
14	9586F	LW2-G408	8	1	23.2	6.8					
17	9577F	LW2-G360	8	1	23.1	6.8					
19	9582F	LW2-G303	8	1	23.1	6.8					
31	9585F	LW2-G367	8	1	23.0	6.9					
50	9589F	LW2-G389	8	1	23.0	6.6					
52	9588F	LW2-G355	8	1	23.2	6.7					
72	9579F	LW2-G296	8	1	22.8	6.7					
74	9584F	LW2-G385	8	1	22.8	6.8					
85	9574F	Control	8	1	23.1	6.8					
90	9587F	LW2-G416	8	1	23.2	6.8					
94	9578F	LW2-G212	8	1	23.2	6.8					
97	9581F	LW2-G274	8	1	22.9	6.4					
111	9583F	LW2-G376	8	1	22.8	6.6					
9	9580F	LW2-G205	8	2	22.6	6.6					
14	9586F	LW2-G408	8	2	22.5	6.5					
17	9577F	LW2-G360	8	2	22.4	7.4					
19	9582F	LW2-G303	8	2	22.3	6.6					
31	9585F	LW2-G367	8	2	22.4	6.8					
50	9589F	LW2-G389	8	2	22.4	6.9					
52	9588F	LW2-G355	8	2	22.1	6.6					
72	9579F	LW2-G296	8	2	22.2	6.6					
74	9584F	LW2-G385	8	2	22.4	6.6					
85	9574F	Control	8	2	22.7	6.6					
90	9587F	LW2-G416	8	2	22.7	6.6					
94	9578F	LW2-G212	8	2	22.3	6.7					
97	9581F	LW2-G274	8	2	22.3	6.8					
111	9583F	LW2-G376	8	2	22.5	6.8					
9	9580F	LW2-G205	8	3	22.7	5.8					
14	9586F	LW2-G408	8	3	22.7	5.4					
17	9577F	LW2-G360	8	3	22.7	5.6					
19	9582F	LW2-G303	8	3	22.6	5.2					
31	9585F	LW2-G367	8	3	22.6	5.4					
50	9589F	LW2-G389	8	3	22.8	5.4					
52	9588F	LW2-G355	8	3	22.4	5.4					
72	9579F	LW2-G296	8	3	22.3	5.4					
74	9584F	LW2-G385	8	3	22.3	4.8					
85	9574F	Control	8	3	22.5	5.8					
90	9587F	LW2-G416	8	3	22.8	5.2					
94	9578F	LW2-G212	8	3	22.8	5.6					
97	9581F	LW2-G274	8	3	22.6	5.2					

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111	9583F	LW2-G376	8	3	22.5	5.2								
9	9580F	LW2-G205	8	4	22.9	5.9								
14	9586F	LW2-G408	8	4	22.8	5.8								
17	9577F	LW2-G360	8	4	22.8	5.4								
19	9582F	LW2-G303	8	4	22.8	5.3								
31	9585F	LW2-G367	8	4	22.7	4.9								
50	9589F	LW2-G389	8	4	22.6	5.1								
52	9588F	LW2-G355	8	4	22.7	5.5								
72	9579F	LW2-G296	8	4	22.6	5.2								
74	9584F	LW2-G385	8	4	22.6	5.2								
85	9574F	Control	8	4	22.7	5.3								
90	9587F	LW2-G416	8	4	22.6	5.4								
94	9578F	LW2-G212	8	4	22.6	5.2								
97	9581F	LW2-G274	8	4	22.6	5.6								
111	9583F	LW2-G376	8	4	22.5	5.7								
9	9580F	LW2-G205	8	5	22.8	4.4								
14	9586F	LW2-G408	8	5	22.7	3.8								
17	9577F	LW2-G360	8	5	22.7	5.2								
19	9582F	LW2-G303	8	5	22.6	4.2								
31	9585F	LW2-G367	8	5	22.9	4.4								
50	9589F	LW2-G389	8	5	22.9	4.6								
52	9588F	LW2-G355	8	5	22.7	4.7								
72	9579F	LW2-G296	8	5	22.7	4.0								
74	9584F	LW2-G385	8	5	22.7	4.2								
85	9574F	Control	8	5	22.9	5.4								
90	9587F	LW2-G416	8	5	23.0	5.1								
94	9578F	LW2-G212	8	5	22.8	4.5								
97	9581F	LW2-G274	8	5	22.8	4.7								
111	9583F	LW2-G376	8	5	22.9	4.3								
9	9580F	LW2-G205	8	6	22.6	4.6								
14	9586F	LW2-G408	8	6	22.5	4.0								
17	9577F	LW2-G360	8	6	22.6	4.6								
19	9582F	LW2-G303	8	6	22.4	4.3								
31	9585F	LW2-G367	8	6	22.6	4.3								
50	9589F	LW2-G389	8	6	22.7	4.5								
52	9588F	LW2-G355	8	6	22.6	4.6								
72	9579F	LW2-G296	8	6	22.5	4.3								
74	9584F	LW2-G385	8	6	22.6	4.5								
85	9574F	Control	8	6	22.7	4.6								
90	9587F	LW2-G416	8	6	22.7	4.8								
94	9578F	LW2-G212	8	6	22.6	4.8								
97	9581F	LW2-G274	8	6	22.5	4.7								
111	9583F	LW2-G376	8	6	22.7	4.4								
9	9580F	LW2-G205	8	7	22.6	4.6								
14	9586F	LW2-G408	8	7	22.6	4.8								
17	9577F	LW2-G360	8	7	22.5	5.2								
19	9582F	LW2-G303	8	7	22.6	5.0								
31	9585F	LW2-G367	8	7	22.5	5.0								
50	9589F	LW2-G389	8	7	22.7	5.0								
52	9588F	LW2-G355	8	7	22.6	5.2								
72	9579F	LW2-G296	8	7	22.6	5.1								
74	9584F	LW2-G385	8	7	22.6	4.9								
85	9574F	Control	8	7	22.8	5.0								
90	9587F	LW2-G416	8	7	22.8	4.9								
94	9578F	LW2-G212	8	7	22.6	5.0								
97	9581F	LW2-G274	8	7	22.6	4.8								
111	9583F	LW2-G376	8	7	22.8	4.6								
9	9580F	LW2-G205	8	8	22.6	5.0								
14	9586F	LW2-G408	8	8	22.6	4.0								
17	9577F	LW2-G360	8	8	22.5	4.9								
19	9582F	LW2-G303	8	8	22.5	5.2								
31	9585F	LW2-G367	8	8	22.5	5.2								
50	9589F	LW2-G389	8	8	22.6	5.5								
52	9588F	LW2-G355	8	8	22.6	4.7								
72	9579F	LW2-G296	8	8	22.5	4.8								
74	9584F	LW2-G385	8	8	22.5	4.1								
85	9574F	Control	8	8	22.6	4.8								
90	9587F	LW2-G416	8	8	22.7	4.8								
94	9578F	LW2-G212	8	8	22.6	4.5								
97	9581F	LW2-G274	8	8	22.5	4.5								
111	9583F	LW2-G376	8	8	22.6	4.9								
9	9580F	LW2-G205	8	9	22.7	4.8								
14	9586F	LW2-G408	8	9	22.6	4.6								
17	9577F	LW2-G360	8	9	22.6	4.7								
19	9582F	LW2-G303	8	9	22.6	4.6								
31	9585F	LW2-G367	8	9	22.6	4.6								
50	9589F	LW2-G389	8	9	22.8	4.8								
52	9588F	LW2-G355	8	9	22.8	4.8								
72	9579F	LW2-G296	8	9	22.6	4.6								

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74	9584F	LW2-G385	8	9	22.6	4.7								
85	9574F	Control	8	9	22.6	3.8								
90	9587F	LW2-G416	8	9	22.7	4.4								
94	9578F	LW2-G212	8	9	22.8	4.7								
97	9581F	LW2-G274	8	9	22.7	4.0								
111	9583F	LW2-G376	8	9	22.7	4.7								
9	9580F	LW2-G205	8	10	22.3	6.6	150	6.5	0.1	34	40			
14	9586F	LW2-G408	8	10	22.2	6.0	150	6.3	0.3	34	40			
17	9577F	LW2-G360	8	10	22.2	6.1	260	6.3	0.3	34	50			
19	9582F	LW2-G303	8	10	22.3	6.4	165	6.2	0.1	34	40			
31	9585F	LW2-G367	8	10	22.2	6.3	160	6.2	0.3	34	40			
50	9589F	LW2-G389	8	10	22.2	5.9	155	6.2	0.2	34	40			
52	9588F	LW2-G355	8	10	22.2	6.2	160	6.1	0.3	34	40			
72	9579F	LW2-G296	8	10	22.2	6.4	160	6.2	0.2	43	40			
74	9584F	LW2-G385	8	10	22.1	6.4	160	6.1	0.4	34	40			
85	9574F	Control	8	10	22.3	6.3	360	6.2	0.3	34	40			
90	9587F	LW2-G416	8	10	22.3	6.1	170	6.3	0.2	51	40			
94	9578F	LW2-G212	8	10	22.3	5.9	160	6.1	0.2	34	40			
97	9581F	LW2-G274	8	10	22.2	5.8	160	6.4	0.2	43	40			
111	9583F	LW2-G376	8	10	22.1	6.0	155	6.3	0.3	34	40			
				Mean	22.6	5.5	256	6.6	0.3	39	41		5.9	6.5
				SD	0.2	1.0	398	0.3	0.2	9	4		6.6	0.3
				n	154	154	28	28	28	28	28		14	14
				Min	22.1	3.8	140	6.1	0.1	34	40		1.2	5.9
				Max	23.2	7.6	2250	7.0	1.3	77	60		26.2	7.0

ANC07617
BZTO104(e)007617

Test Number: P686-23

Freshwater Sediment Test
28-day Hyalella azteca

Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or
dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

INITIAL WEIGHT

pan #	tare wt (mg)	final wt (mg)	wt count	avg. wt/ organism
1	28.846	29.519	20	0.034
2	28.497	29.178	20	0.034
3	28.418	29.063	20	0.032
4	30.138	30.759	20	0.031
5	29.376	30.118	20	0.037

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)
1	57	9574F	Control	1		10	10	0	100.0	0.0	29.876	10	34.098	4.22	0.42
2	142	9574F	Control	2		10	10	0	100.0	0.0	29.773	10	33.608	3.84	0.38
3	44	9574F	Control	3		10	10	0	100.0	0.0	29.068	10	32.309	3.24	0.32
4	165	9574F	Control	4		10	9	1	90.0	10.0	28.593	9	32.196	3.60	0.40
5	118	9574F	Control	5		10	8	2	80.0	20.0	27.009	8	30.481	3.47	0.43
6	46	9574F	Control	6		10	10	0	100.0	0.0	28.899	10	32.688	3.79	0.38
7	100	9574F	Control	7		10	10	0	100.0	0.0	26.099	10	29.865	3.77	0.38
8	19	9574F	Control	8	wq replicate	10	10	0	100.0	0.0	28.937	10	33.102	4.17	0.42
9	131	9594F	LW2-U5Q-1	1		10	10	0	100.0	0.0	27.707	10	31.789	4.08	0.41
10	155	9594F	LW2-U5Q-1	2		10	10	0	100.0	0.0	27.119	10	30.131	3.01	0.30
11	107	9594F	LW2-U5Q-1	3		10	8	2	80.0	20.0	28.472	8	31.591	3.12	0.39
12	66	9594F	LW2-U5Q-1	4		10	10	0	100.0	0.0	30.381	10	34.134	3.75	0.38
13	114	9594F	LW2-U5Q-1	5		10	10	0	100.0	0.0	27.184	10	30.075	2.89	0.29
14	85	9594F	LW2-U5Q-1	6		10	10	0	100.0	0.0	28.765	10	31.709	2.94	0.29
15	47	9594F	LW2-U5Q-1	7		10	10	0	100.0	0.0	29.413	10	32.222	2.81	0.28
16	7	9594F	LW2-U5Q-1	8	wq replicate	10	10	0	100.0	0.0	28.028	10	32.573	4.55	0.45
17	8	9595F	LW2-U5Q-2	1		10	10	0	100.0	0.0	29.371	10	32.876	3.51	0.35
18	43	9595F	LW2-U5Q-2	2		10	10	0	100.0	0.0	28.766	10	33.616	4.85	0.49
19	14	9595F	LW2-U5Q-2	3		10	10	0	100.0	0.0	28.617				
20	84	9595F	LW2-U5Q-2	4		10	10	0	100.0	0.0	28.665	10	32.549	3.88	0.39
21	91	9595F	LW2-U5Q-2	5		10	10	0	100.0	0.0	30.448	10	34.880	4.43	0.44
22	20	9595F	LW2-U5Q-2	6		10	9	1	90.0	10.0	28.508	9	32.566	4.06	0.45
23	38	9595F	LW2-U5Q-2	7		10	10	0	100.0	0.0	27.873	10	31.795	3.92	0.39
24	126	9595F	LW2-U5Q-2	8	wq replicate	10	10	0	100.0	0.0	29.089	10	33.323	4.23	0.42
25	120	9596F	LW2-U5Q-3	1		10	9	1	90.0	10.0	30.716	9	33.961	3.25	0.36
26	37	9596F	LW2-U5Q-3	2		10	10	0	100.0	0.0	30.427	10	33.777	3.35	0.34
27	125	9596F	LW2-U5Q-3	3		10	9	1	90.0	10.0	27.992	9	31.730	3.74	0.42
28	167	9596F	LW2-U5Q-3	4		10	9	1	90.0	10.0	28.600	9	32.618	4.02	0.45
29	39	9596F	LW2-U5Q-3	5		10	10	0	100.0	0.0	30.983	10	34.144	3.16	0.32
30	36	9596F	LW2-U5Q-3	6		10	10	0	100.0	0.0	28.972	10	31.660	2.69	0.27
31	24	9596F	LW2-U5Q-3	7		10	10	0	100.0	0.0	29.664	10	33.069	3.41	0.34
32	88	9596F	LW2-U5Q-3	8	wq replicate	10	9	1	90.0	10.0	29.981	9	33.596	3.61	0.40

	SURV	MORT	PSURV	PMORT	WT
Mean	9.6	0.4	96.3	3.8	0.39
SD	0.7	0.7	7.4	7.4	0.03
n	8	8	8	8	8
Mean	9.8	0.3	97.5	2.5	0.35
SD	0.7	0.7	7.1	7.1	0.07
n	8	8	8	8	8
Mean	9.9	0.1	98.8	1.3	0.42
SD	0.4	0.4	3.5	3.5	0.05
n	8	8	8	8	7
Mean	9.5	0.5	95.0	5.0	0.36
SD	0.5	0.5	5.3	5.3	0.06
n	8	8	8	8	8

ANC07618
BZTO104(e)007618

Test Number: P686-23

Freshwater Sediment Test
28-day Hyalella azteca

		NAS	CLIENT								TARE	WT	DRY	TWT	WT							
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	WT (mg)	COUNT	WT (mg)	(mg)	(mg)			SURV	MORT	PSURV	PMORT	WT
33	25	9597F	LW2-U6TOC-1	1		10	10	0	100.0	0.0	28.274	10	30.716	2.44	0.24							
34	33	9597F	LW2-U6TOC-1	2		10	10	0	100.0	0.0	27.721	10	29.872	2.15	0.22							
35	73	9597F	LW2-U6TOC-1	3		10	10	0	100.0	0.0	29.851	10	32.433	2.58	0.26							
36	41	9597F	LW2-U6TOC-1	4		10	10	0	100.0	0.0	27.832	10	30.663	2.83	0.28							
37	59	9597F	LW2-U6TOC-1	5		10	9	1	90.0	10.0	28.232	9	30.803	2.57	0.29	Mean		9.9	0.1	98.8	1.3	0.26
38	129	9597F	LW2-U6TOC-1	6		10	10	0	100.0	0.0	28.335	10	31.524	3.19	0.32	SD		0.4	0.4	3.5	3.5	0.04
39	121	9597F	LW2-U6TOC-1	7		10	10	0	100.0	0.0	28.722	10	30.986	2.26	0.23	n		8	8	8	8	8
40	21	9597F	LW2-U6TOC-1	8	wq replicate	10	10	0	100.0	0.0	28.524	10	30.707	2.18	0.22							
41	29	9598F	LW2-U6TOC-2	1		10	10	0	100.0	0.0	30.742	10	34.077	3.34	0.33							
42	42	9598F	LW2-U6TOC-2	2		10	9	1	90.0	10.0	26.393	9	30.179	3.79	0.42							
43	61	9598F	LW2-U6TOC-2	3		10	10	0	100.0	0.0	29.255	10	33.294	4.04	0.40							
44	143	9598F	LW2-U6TOC-2	4		10	10	0	100.0	0.0	28.883	10	32.115	3.23	0.32							
45	148	9598F	LW2-U6TOC-2	5		10	9	1	90.0	10.0	27.658	9	31.196	3.54	0.39	Mean		9.4	0.6	93.8	6.3	0.33
46	22	9598F	LW2-U6TOC-2	6		10	9	1	90.0	10.0	28.229	9	31.447	3.22	0.36	SD		0.7	0.7	7.4	7.4	0.08
47	60	9598F	LW2-U6TOC-2	7		10	10	0	100.0	0.0	28.391	10	31.065	2.67	0.27	n		8	8	8	8	8
48	103	9598F	LW2-U6TOC-2	8	wq replicate	10	8	2	80.0	20.0	27.912	8	29.278	1.37	0.17							
49	86	9599F	LW2-U6TOC-3	1		10	9	1	90.0	10.0	29.498	9	30.713	1.22	0.14							
50	64	9599F	LW2-U6TOC-3	2		10	10	0	100.0	0.0	27.546	10	30.808	3.26	0.33							
51	156	9599F	LW2-U6TOC-3	3		10	9	1	90.0	10.0	28.514	9	30.117	1.60	0.18							
52	28	9599F	LW2-U6TOC-3	4		10	10	0	100.0	0.0	28.233	10	30.534	2.30	0.23							
53	71	9599F	LW2-U6TOC-3	5		10	10	0	100.0	0.0	28.883	10	30.576	1.69	0.17	Mean		9.5	0.5	95.0	5.0	0.21
54	119	9599F	LW2-U6TOC-3	6		10	10	0	100.0	0.0	28.292	10	30.350	2.06	0.21	SD		0.5	0.5	5.3	5.3	0.06
55	26	9599F	LW2-U6TOC-3	7		10	9	1	90.0	10.0	29.292	9	31.604	2.31	0.26	n		8	8	8	8	8
56	158	9599F	LW2-U6TOC-3	8	wq replicate	10	9	1	90.0	10.0	30.794	9	32.231	1.44	0.16							
57	17	9600F	LW2-U4Q-1	1		10	9	1	90.0	10.0	29.778	9	32.419	2.64	0.29							
58	106	9600F	LW2-U4Q-1	2		10	10	0	100.0	0.0	27.396	10	30.852	3.46	0.35							
59	2	9600F	LW2-U4Q-1	3		10	10	0	100.0	0.0	29.600	10	31.963	2.36	0.24							
60	97	9600F	LW2-U4Q-1	4		10	9	1	90.0	10.0	27.695	9	29.947	2.25	0.25							
61	112	9600F	LW2-U4Q-1	5		10	10	0	100.0	0.0	27.552	10	31.067	3.52	0.35	Mean		9.5	0.5	95.0	5.0	0.29
62	166	9600F	LW2-U4Q-1	6		10	10	0	100.0	0.0	28.372	10	31.743	3.37	0.34	SD		0.5	0.5	5.3	5.3	0.05
63	139	9600F	LW2-U4Q-1	7		10	9	1	90.0	10.0	28.958	9	31.174	2.22	0.25	n		8	8	8	8	8
64	4	9600F	LW2-U4Q-1	8	wq replicate	10	9	1	90.0	10.0	28.226	9	30.790	2.56	0.28							
65	30	9601F	LW2-U4Q-2	1		10	10	0	100.0	0.0	28.848	10	30.717	1.87	0.19							
66	81	9601F	LW2-U4Q-2	2		10	10	0	100.0	0.0	26.991	10	30.314	3.32	0.33							
67	115	9601F	LW2-U4Q-2	3		10	10	0	100.0	0.0	28.458	10	31.656	3.20	0.32							
68	78	9601F	LW2-U4Q-2	4		10	9	1	90.0	10.0	26.984	9	29.582	2.60	0.29							
69	104	9601F	LW2-U4Q-2	5		10	10	0	100.0	0.0	27.436	10	30.246	2.81	0.28	Mean		9.6	0.4	96.3	3.8	0.29
70	92	9601F	LW2-U4Q-2	6		10	9	1	90.0	10.0	28.702	9	31.559	2.86	0.32	SD		0.5	0.5	5.2	5.2	0.05
71	138	9601F	LW2-U4Q-2	7		10	10	0	100.0	0.0	29.847	10	32.908	3.06	0.31	n		8	8	8	8	8
72	40	9601F	LW2-U4Q-2	8	wq replicate	10	9	1	90.0	10.0	27.140	9	29.509	2.37	0.26							

ANC07619
BZTO104(e)007619

Test Number: P686-23

Freshwater Sediment Test
28-day Hyalella azteca

		NAS	CLIENT								TARE	WT	DRY	TWT	WT							
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	WT (mg)	COUNT	WT (mg)	(mg)	(mg)			SURV	MORT	PSURV	PMORT	WT
73	18	9602F	LW2-U4Q-3	1		10	9	1	90.0	10.0	28.411	9	31.736	3.33	0.37							
74	109	9602F	LW2-U4Q-3	2		10	10	0	100.0	0.0	28.689	10	31.657	2.97	0.30							
75	127	9602F	LW2-U4Q-3	3		10	9	1	90.0	10.0	25.776	9	27.479	1.70	0.19							
76	67	9602F	LW2-U4Q-3	4		10	10	0	100.0	0.0	29.309	10	32.000	2.69	0.27							
77	77	9602F	LW2-U4Q-3	5		10	10	0	100.0	0.0	28.230	10	31.234	3.00	0.30		Mean	9.6	0.4	96.3	3.8	0.30
78	117	9602F	LW2-U4Q-3	6		10	10	0	100.0	0.0	27.500	10	30.382	2.88	0.29		SD	0.5	0.5	5.2	5.2	0.05
79	133	9602F	LW2-U4Q-3	7		10	9	1	90.0	10.0	28.590	9	31.364	2.77	0.31		n	8	8	8	8	8
80	35	9602F	LW2-U4Q-3	8	wq replicate	10	10	0	100.0	0.0	28.637	10	32.043	3.41	0.34							
81	111	9603F	LW2-U3C-1	1		10	10	0	100.0	0.0	27.611	10	31.211	3.60	0.36							
82	83	9603F	LW2-U3C-1	2		10	10	0	100.0	0.0	29.567	10	33.464	3.90	0.39							
83	10	9603F	LW2-U3C-1	3		10	10	0	100.0	0.0	30.302	10	33.723	3.42	0.34							
84	144	9603F	LW2-U3C-1	4		10	10	0	100.0	0.0	29.619	10	32.462	2.84	0.28							
85	153	9603F	LW2-U3C-1	5		10	8	2	80.0	20.0	29.193	8	31.955	2.76	0.35		Mean	9.8	0.3	97.5	2.5	0.34
86	54	9603F	LW2-U3C-1	6		10	10	0	100.0	0.0	27.990	10	32.011	4.02	0.40		SD	0.7	0.7	7.1	7.1	0.04
87	135	9603F	LW2-U3C-1	7		10	10	0	100.0	0.0	31.127	10	34.424	3.30	0.33		n	8	8	8	8	8
88	79	9603F	LW2-U3C-1	8	wq replicate	10	10	0	100.0	0.0	27.971	10	30.941	2.97	0.30							
89	128	9604F	LW2-U3C-2	1		10	10	0	100.0	0.0	28.576	10	31.990	3.41	0.34							
90	110	9604F	LW2-U3C-2	2		10	10	0	100.0	0.0	28.471	10	31.964	3.49	0.35							
91	11	9604F	LW2-U3C-2	3		10	10	0	100.0	0.0	29.587	10	33.055	3.47	0.35							
92	162	9604F	LW2-U3C-2	4		10	10	0	100.0	0.0	29.665	10	32.959	3.29	0.33							
93	58	9604F	LW2-U3C-2	5		10	10	0	100.0	0.0	30.782	10	34.496	3.71	0.37		Mean	9.8	0.3	97.5	2.5	0.35
94	5	9604F	LW2-U3C-2	6		10	10	0	100.0	0.0	30.060	10	33.021	2.96	0.30		SD	0.7	0.7	7.1	7.1	0.03
95	96	9604F	LW2-U3C-2	7		10	8	2	80.0	20.0	27.669	8	30.921	3.25	0.41		n	8	8	8	8	8
96	141	9604F	LW2-U3C-2	8	wq replicate	10	10	0	100.0	0.0	27.917	10	31.304	3.39	0.34							
97	53	9605F	LW2-U3C-3	1		10	9	1	90.0	10.0	29.339	9	33.010	3.67	0.41							
98	140	9605F	LW2-U3C-3	2		10	10	0	100.0	0.0	26.989	10	30.496	3.51	0.35							
99	51	9605F	LW2-U3C-3	3		10	10	0	100.0	0.0	28.708	10	32.361	3.65	0.37							
100	75	9605F	LW2-U3C-3	4		10	10	0	100.0	0.0	28.579	10	31.504	2.93	0.29							
101	137	9605F	LW2-U3C-3	5		10	10	0	100.0	0.0	28.704	10	30.984	2.28	0.23		Mean	9.8	0.3	97.5	2.5	0.34
102	34	9605F	LW2-U3C-3	6		10	9	1	90.0	10.0	29.520	9	32.885	3.37	0.37		SD	0.5	0.5	4.6	4.6	0.06
103	102	9605F	LW2-U3C-3	7		10	10	0	100.0	0.0	28.546	10	32.005	3.46	0.35		n	8	8	8	8	8
104	72	9605F	LW2-U3C-3	8	wq replicate	10	10	0	100.0	0.0	28.371	10	32.007	3.64	0.36							
105	49	9606F	LW2-U2C-1	1		10	10	0	100.0	0.0	27.621	10	31.220	3.60	0.36							
106	9	9606F	LW2-U2C-1	2		10	10	0	100.0	0.0	26.390	10	30.217	3.83	0.38							
107	1	9606F	LW2-U2C-1	3		10	9	1	90.0	10.0	29.199	9	32.573	3.37	0.37							
108	3	9606F	LW2-U2C-1	4		10	10	0	100.0	0.0	29.708	10	33.579	3.87	0.39							
109	152	9606F	LW2-U2C-1	5		10	9	1	90.0	10.0	27.984	9	32.226	4.24	0.47		Mean	9.6	0.4	96.3	3.8	0.40
110	50	9606F	LW2-U2C-1	6		10	9	1	90.0	10.0	28.997	9	32.738	3.74	0.42		SD	0.5	0.5	5.2	5.2	0.04
111	160	9606F	LW2-U2C-1	7		10	10	0	100.0	0.0	29.290	10	33.463	4.17	0.42		n	8	8	8	8	8
112	98	9606F	LW2-U2C-1	8	wq replicate	10	10	0	100.0	0.0	28.980	10	32.686	3.71	0.37							

ANC07620
BZTO104(e)007620

Test Number: P686-23

Freshwater Sediment Test
28-day Hyalella azteca

		NAS	CLIENT								TARE	WT	DRY	TWT	WT							
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	WT (mg)	COUNT	WT (mg)	(mg)	(mg)			SURV	MORT	PSURV	PMORT	WT
113	124	9607F	LW2-U2C-2	1		10	9	1	90.0	10.0	26.148	9	29.395	3.25	0.36							
114	164	9607F	LW2-U2C-2	2		10	8	2	80.0	20.0	28.691	8	32.198	3.51	0.44							
115	65	9607F	LW2-U2C-2	3		10	10	0	100.0	0.0	27.306	10	31.679	4.37	0.44							
116	63	9607F	LW2-U2C-2	4		10	10	0	100.0	0.0	29.735	10	33.582	3.85	0.38							
117	82	9607F	LW2-U2C-2	5		10	10	0	100.0	0.0	30.156	10	33.867	3.71	0.37		Mean	9.6	0.4	96.3	3.8	0.40
118	151	9607F	LW2-U2C-2	6		10	10	0	100.0	0.0	29.765	10	34.007	4.24	0.42		SD	0.7	0.7	7.4	7.4	0.04
119	93	9607F	LW2-U2C-2	7		10	10	0	100.0	0.0	29.529	10	32.848	3.32	0.33		n	8	8	8	8	8
120	116	9607F	LW2-U2C-2	8	wq replicate	10	10	0	100.0	0.0	29.039	10	33.610	4.57	0.46							
121	130	9608F	LW2-U2C-3	1		10	10	0	100.0	0.0	27.096	10	32.117	5.02	0.50							
122	90	9608F	LW2-U2C-3	2		12	12	0	100.0	0.0	29.236	12	34.716	5.48	0.46							
123	56	9608F	LW2-U2C-3	3		10	10	0	100.0	0.0	25.999	10	30.686	4.69	0.47							
124	122	9608F	LW2-U2C-3	4		10	10	0	100.0	0.0	28.594	10	32.750	4.16	0.42							
125	68	9608F	LW2-U2C-3	5		10	9	1	90.0	10.0	28.467	9	32.355	3.89	0.43		Mean	9.8	0.5	95.0	5.0	0.45
126	154	9608F	LW2-U2C-3	6		10	8	2	80.0	20.0	29.920	8	33.802	3.88	0.49		SD	1.2	0.8	7.6	7.6	0.04
127	31	9608F	LW2-U2C-3	7		10	9	1	90.0	10.0	27.211	9	31.438	4.23	0.47		n	8	8	8	8	8
128	95	9608F	LW2-U2C-3	8	wq replicate	10	10	0	100.0	0.0	29.515	9	33.010	3.50	0.39							
129	13	9609F	LW2-U1C-1	1		10	10	0	100.0	0.0	29.082	9	32.823	3.74	0.42							
130	108	9609F	LW2-U1C-1	2		10	10	0	100.0	0.0	27.163	10	32.011	4.85	0.48							
131	74	9609F	LW2-U1C-1	3		10	10	0	100.0	0.0	28.064	10	31.134	3.07	0.31							
132	70	9609F	LW2-U1C-1	4		10	10	0	100.0	0.0	28.964	10	33.442	4.48	0.45							
133	123	9609F	LW2-U1C-1	5		10	8	2	80.0	20.0	28.760	8	32.706	3.95	0.49		Mean	9.3	0.8	92.5	7.5	0.44
134	76	9609F	LW2-U1C-1	6		10	8	2	80.0	20.0	29.301	8	33.053	3.75	0.47		SD	1.0	1.0	10.4	10.4	0.06
135	16	9609F	LW2-U1C-1	7		10	8	2	80.0	20.0	28.502	8	32.063	3.56	0.45		n	8	8	8	8	8
136	89	9609F	LW2-U1C-1	8	wq replicate	10	10	0	100.0	0.0	29.772	10	34.174	4.40	0.44							
137	150	9610F	LW2-U1C-2	1		10	9	1	90.0	10.0	27.841	9	31.585	3.74	0.42							
138	105	9610F	LW2-U1C-2	2		10	10	0	100.0	0.0	28.783	10	32.039	3.26	0.33							
139	113	9610F	LW2-U1C-2	3		10	9	1	90.0	10.0	28.025	9	30.916	2.89	0.32							
140	55	9610F	LW2-U1C-2	4		10	10	0	100.0	0.0	27.950	10	32.038	4.09	0.41							
141	101	9610F	LW2-U1C-2	5		10	10	0	100.0	0.0	29.563	10	33.356	3.79	0.38		Mean	9.6	0.4	96.3	3.8	0.39
142	159	9610F	LW2-U1C-2	6		10	10	0	100.0	0.0	28.765	10	33.291	4.53	0.45		SD	0.5	0.5	5.2	5.2	0.05
143	87	9610F	LW2-U1C-2	7		10	9	1	90.0	10.0	29.521	9	32.756	3.24	0.36		n	8	8	8	8	8
144	157	9610F	LW2-U1C-2	8	wq replicate	10	10	0	100.0	0.0	29.718	10	34.084	4.37	0.44							
145	62	9611F	LW2-U1C-3	1		10	8	2	80.0	20.0	30.826	8	34.628	3.80	0.48							
146	99	9611F	LW2-U1C-3	2		10	9	1	90.0	10.0	27.804	9	31.140	3.34	0.37							
147	94	9611F	LW2-U1C-3	3		10	10	0	100.0	0.0	29.739	10	33.585	3.85	0.38							
148	52	9611F	LW2-U1C-3	4		10	9	1	90.0	10.0	28.465	9	32.577	4.11	0.46							
149	45	9611F	LW2-U1C-3	5		10	10	0	100.0	0.0	28.418	10	32.340	3.92	0.39		Mean	9.3	0.8	92.5	7.5	0.42
150	132	9611F	LW2-U1C-3	6		10	10	0	100.0	0.0	31.584	10	35.928	4.34	0.43		SD	0.9	0.9	8.9	8.9	0.05
151	32	9611F	LW2-U1C-3	7		10	10	0	100.0	0.0	28.225	10	31.910	3.69	0.37		n	8	8	8	8	8
152	23	9611F	LW2-U1C-3	8	wq replicate	10	8	2	80.0	20.0	29.980	8	34.050	4.07	0.51							

ANC07621
BZTO104(e)007621

Test Number: P686-23

Freshwater Sediment Test
28-day Hyalella azteca

		NAS	CLIENT								TARE	WT	DRY	TWT	WT							
INDEX	BKR	SMPL	DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	WT (mg)	COUNT	WT (mg)	(mg)	(mg)			SURV	MORT	PSURV	PMORT	WT
153	147	9612F	LW2-D1-1	1		10	10	0	100.0	0.0	28.490	10	30.115	1.63	0.16							
154	146	9612F	LW2-D1-1	2		10	10	0	100.0	0.0	30.281	10	32.996	2.72	0.27							
155	69	9612F	LW2-D1-1	3		10	10	0	100.0	0.0	28.476	10	30.951	2.48	0.25							
156	149	9612F	LW2-D1-1	4		10	10	0	100.0	0.0	27.748	10	30.269	2.52	0.25							
157	80	9612F	LW2-D1-1	5		10	10	0	100.0	0.0	29.185	10	31.906	2.72	0.27		Mean	10.0	0.0	100.0	0.0	0.25
158	163	9612F	LW2-D1-1	6		10	10	0	100.0	0.0	28.676	10	31.883	3.21	0.32		SD	0.0	0.0	0.0	0.0	0.05
159	145	9612F	LW2-D1-1	7		10	10	0	100.0	0.0	29.672	10	32.205	2.53	0.25		n	8	8	8	8	8
160	134	9612F	LW2-D1-1	8	wq replicate	10	10	0	100.0	0.0	27.760	10	29.954	2.19	0.22							
161	136	9613F	LW2-D2	1		10	10	0	100.0	0.0	27.429	10	31.048	3.62	0.36							
162	168	9613F	LW2-D2	2		10	10	0	100.0	0.0	26.633	10	29.891	3.26	0.33							
163	12	9613F	LW2-D2	3		10	10	0	100.0	0.0	29.017	10	32.256	3.24	0.32							
164	27	9613F	LW2-D2	4		10	10	0	100.0	0.0	26.099	10	28.967	2.87	0.29							
165	6	9613F	LW2-D2	5		10	9	1	90.0	10.0	27.912	9	30.833	2.92	0.32		Mean	9.6	0.4	96.3	3.8	0.34
166	15	9613F	LW2-D2	6		10	10	0	100.0	0.0	29.498	10	32.736	3.24	0.32		SD	0.5	0.5	5.2	5.2	0.03
167	161	9613F	LW2-D2	7		10	9	1	90.0	10.0	29.555	9	32.757	3.20	0.36		n	8	8	8	8	8
168	48	9613F	LW2-D2	8	wq replicate	10	9	1	90.0	10.0	27.887	9	31.365	3.48	0.39							
		Beakers #13 and #95 each lost one animal in transfering to weighing pa				Beaker #14 gained one animal from an unknown beaker during transfering to weighing pan and was therefore removed																

ANC07622
BZTO104(e)007622

Test Number: P686-23

Freshwater Sediment Test
28-day Hyalella azteca

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Freshwater Sediment Test
28-day Hyalella azteca

Freshwater Sediment Test
28-day Hyalella azteca

ANC07625
BZTO104(e)007625

Test Number: P686-23

Freshwater Sediment Test
28-day Hyalella azteca

Test Number: P686-23

Freshwater Sediment Test
28-day Hyalella azteca

from weight assessmen			

ANC07627
BZTO104(e)007627

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
BULK SEDIMENT POREWATER														
	9574F	Control											2.3	6.6
	9594F	LW2-U5Q-1											<0.5	6.8
	9595F	LW2-U5Q-2											<0.5	6.5
	9596F	LW2-U5Q-3											0.5	6.5
	9597F	LW2-U6TOC-1											1.5	6.4
	9598F	LW2-U6TOC-2											2.6	6.0
	9599F	LW2-U6TOC-3											1.9	5.8
	9600F	LW2-U4Q-1											2.0	6.0
	9601F	LW2-U4Q-2											2.2	6.1
	9602F	LW2-U4Q-3											1.9	6.2
	9603F	LW2-U3C-1											3.5	6.5
	9604F	LW2-U3C-2											2.2	6.7
	9605F	LW2-U3C-3											1.3	6.7
	9606F	LW2-U2C-1											1.4	6.6
	9607F	LW2-U2C-2											1.1	6.3
	9608F	LW2-U2C-3											0.6	6.2
	9609F	LW2-U1C-1											1.3	6.3
	9610F	LW2-U1C-2											1.1	6.1
	9611F	LW2-U1C-3											0.5	6.0
	9612F	LW2-D1-1											1.7	6.2
	9613F	LW2-D2											1.1	6.3

Test Number: P686-23

Freshwater Sediment Test
28-Day Hyalella azteca

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
TEST OVERLYING WATER														
4	9600F	LW2-U4Q-1	8	0	22.5	7.2	225	6.6	34	40	0.2			
7	9594F	LW2-U5Q-1	8	0	22.5	7.4	180	6.5	43	40	<0.1			
19	9574F	Control	8	0	22.6	7.7	440	6.5	51	40	0.1			
21	9597F	LW2-U6TOC-1	8	0	22.5	7.0	170	6.6	34	40	0.2			
23	9611F	LW2-U1C-3	8	0	22.5	7.4	155	6.5	34	40	<0.1			
35	9602F	LW2-U4Q-3	8	0	22.6	7.4	150	6.5	34	40	0.5			
40	9601F	LW2-U4Q-2	8	0	22.7	7.3	155	6.5	34	40	0.3			
48	9613F	LW2-D2	8	0	22.5	7.3	150	6.5	34	40	0.1			
72	9605F	LW2-U3C-3	8	0	22.5	7.4	155	6.4	43	40	0.2			
79	9603F	LW2-U3C-1	8	0	22.5	7.6	165	6.5	43	50	0.2			
88	9596F	LW2-U5Q-3	8	0	22.5	7.5	155	6.6	51	50	<0.1			
89	9609F	LW2-U1C-1	8	0	22.7	7.7	145	6.6	34	40	0.1			
95	9608F	LW2-U2C-3	8	0	22.5	7.8	150	6.6	43	40	<0.1			
98	9606F	LW2-U2C-1	8	0	22.5	7.4	150	6.6	34	40	0.3			
103	9598F	LW2-U6TOC-2	8	0	22.5	7.5	145	6.5	34	40	0.3			
116	9607F	LW2-U2C-2	8	0	22.5	7.5	150	6.5	43	40	0.1			
126	9595F	LW2-U5Q-2	8	0	22.5	7.2	150	6.5	43	40	<0.1			
134	9612F	LW2-D1-1	8	0	22.5	7.8	150	6.5	34	40	0.2			
141	9604F	LW2-U3C-2	8	0	22.7	7.4	165	6.5	43	40	0.5			
157	9610F	LW2-U1C-2	8	0	22.6	7.4	140	6.5	34	40	0.2			
158	9599F	LW2-U6TOC-3	8	0	22.6	7.6	145	6.5	34	40	0.3			
4	9600F	LW2-U4Q-1	8	1	22.6	7.1	155	6.7						
7	9594F	LW2-U5Q-1	8	1	22.7	7.6	150	6.7						
19	9574F	Control	8	1	22.7	7.2	290	6.7						
21	9597F	LW2-U6TOC-1	8	1	22.7	7.1	155	6.7						
23	9611F	LW2-U1C-3	8	1	22.7	7.1	150	6.7						
35	9602F	LW2-U4Q-3	8	1	22.9	7.2	155	6.7						
40	9601F	LW2-U4Q-2	8	1	22.7	7.2	155	6.6						
48	9613F	LW2-D2	8	1	22.7	7.2	155	6.6						
72	9605F	LW2-U3C-3	8	1	22.7	7.0	155	6.6						
79	9603F	LW2-U3C-1	8	1	22.9	7.1	160	6.6						
88	9596F	LW2-U5Q-3	8	1	22.7	7.3	155	6.6						
89	9609F	LW2-U1C-1	8	1	22.8	7.2	150	6.6						
95	9608F	LW2-U2C-3	8	1	22.9	7.2	155	6.6						
98	9606F	LW2-U2C-1	8	1	22.8	7.3	155	6.6						
103	9598F	LW2-U6TOC-2	8	1	22.8	7.2	150	6.6						
116	9607F	LW2-U2C-2	8	1	22.8	7.1	155	6.6						
126	9595F	LW2-U5Q-2	8	1	22.8	7.5	155	6.7						
134	9612F	LW2-D1-1	8	1	22.9	7.3	155	6.7						
141	9604F	LW2-U3C-2	8	1	22.9	7.2	160	6.7						
157	9610F	LW2-U1C-2	8	1	22.9	7.1	150	6.7						
158	9599F	LW2-U6TOC-3	8	1	23.0	7.3	150	6.7						

Test Number: P686-23

Freshwater Sediment Test
28-Day Hyalella azteca

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
4	9600F	LW2-U4Q-1	8	2	22.3									
7	9594F	LW2-U5Q-1	8	2	22.3									
19	9574F	Control	8	2	22.4									
21	9597F	LW2-U6TOC-1	8	2	22.5									
23	9611F	LW2-U1C-3	8	2	22.5									
35	9602F	LW2-U4Q-3	8	2	22.5									
40	9601F	LW2-U4Q-2	8	2	22.6									
48	9613F	LW2-D2	8	2	22.6									
72	9605F	LW2-U3C-3	8	2	22.5									
79	9603F	LW2-U3C-1	8	2	22.4									
88	9596F	LW2-U5Q-3	8	2	22.4									
89	9609F	LW2-U1C-1	8	2	22.6									
95	9608F	LW2-U2C-3	8	2	22.7									
98	9606F	LW2-U2C-1	8	2	22.8									
103	9598F	LW2-U6TOC-2	8	2	22.7									
116	9607F	LW2-U2C-2	8	2	22.6									
126	9595F	LW2-U5Q-2	8	2	22.7									
134	9612F	LW2-D1-1	8	2	22.7									
141	9604F	LW2-U3C-2	8	2	22.8									
157	9610F	LW2-U1C-2	8	2	22.8									
158	9599F	LW2-U6TOC-3	8	2	22.7									
4	9600F	LW2-U4Q-1	8	3	22.4	7.4		6.3						
7	9594F	LW2-U5Q-1	8	3	22.1	7.7		6.4						
19	9574F	Control	8	3	22.1	7.6		6.4						
21	9597F	LW2-U6TOC-1	8	3	22.2	7.4		6.4						
23	9611F	LW2-U1C-3	8	3	22.0	7.5		6.3						
35	9602F	LW2-U4Q-3	8	3	22.3	7.6		6.4						
40	9601F	LW2-U4Q-2	8	3	22.5	7.6		6.3						
48	9613F	LW2-D2	8	3	22.2	7.6		6.4						
72	9605F	LW2-U3C-3	8	3	22.2	7.3		6.4						
79	9603F	LW2-U3C-1	8	3	22.5	7.5		6.4						
88	9596F	LW2-U5Q-3	8	3	22.3	7.7		6.4						
89	9609F	LW2-U1C-1	8	3	22.5	7.6		6.4						
95	9608F	LW2-U2C-3	8	3	22.6	7.8		6.4						
98	9606F	LW2-U2C-1	8	3	22.4	7.3		6.4						
103	9598F	LW2-U6TOC-2	8	3	22.4	7.4		6.4						
116	9607F	LW2-U2C-2	8	3	22.4	7.8		6.4						
126	9595F	LW2-U5Q-2	8	3	22.4	7.9		6.5						
134	9612F	LW2-D1-1	8	3	22.6	7.6		6.5						
141	9604F	LW2-U3C-2	8	3	22.4	7.4		6.6						
157	9610F	LW2-U1C-2	8	3	22.4	7.4		6.6						
158	9599F	LW2-U6TOC-3	8	3	22.5	7.6		6.6						

Test Number: P686-23

Freshwater Sediment Test
28-Day Hyalella azteca

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
4	9600F	LW2-U4Q-1	8	4	22.4									
7	9594F	LW2-U5Q-1	8	4	22.3									
19	9574F	Control	8	4	22.3									
21	9597F	LW2-U6TOC-1	8	4	22.3									
23	9611F	LW2-U1C-3	8	4	22.3									
35	9602F	LW2-U4Q-3	8	4	22.3									
40	9601F	LW2-U4Q-2	8	4	22.4									
48	9613F	LW2-D2	8	4	22.3									
72	9605F	LW2-U3C-3	8	4	22.2									
79	9603F	LW2-U3C-1	8	4	22.2									
88	9596F	LW2-U5Q-3	8	4	22.3									
89	9609F	LW2-U1C-1	8	4	22.3									
95	9608F	LW2-U2C-3	8	4	22.4									
98	9606F	LW2-U2C-1	8	4	22.3									
103	9598F	LW2-U6TOC-2	8	4	22.3									
116	9607F	LW2-U2C-2	8	4	22.3									
126	9595F	LW2-U5Q-2	8	4	22.3									
134	9612F	LW2-D1-1	8	4	22.4									
141	9604F	LW2-U3C-2	8	4	22.4									
157	9610F	LW2-U1C-2	8	4	22.4									
158	9599F	LW2-U6TOC-3	8	4	22.4									
4	9600F	LW2-U4Q-1	8	5	23.0									
7	9594F	LW2-U5Q-1	8	5	22.6									
19	9574F	Control	8	5	22.7									
21	9597F	LW2-U6TOC-1	8	5	22.7									
23	9611F	LW2-U1C-3	8	5	22.5									
35	9602F	LW2-U4Q-3	8	5	22.9									
40	9601F	LW2-U4Q-2	8	5	23.0									
48	9613F	LW2-D2	8	5	22.7									
72	9605F	LW2-U3C-3	8	5	22.6									
79	9603F	LW2-U3C-1	8	5	22.9									
88	9596F	LW2-U5Q-3	8	5	22.7									
89	9609F	LW2-U1C-1	8	5	22.9									
95	9608F	LW2-U2C-3	8	5	22.9									
98	9606F	LW2-U2C-1	8	5	22.8									
103	9598F	LW2-U6TOC-2	8	5	22.8									
116	9607F	LW2-U2C-2	8	5	22.8									
126	9595F	LW2-U5Q-2	8	5	22.9									
134	9612F	LW2-D1-1	8	5	23.1									
141	9604F	LW2-U3C-2	8	5	22.8									
157	9610F	LW2-U1C-2	8	5	22.9									
158	9599F	LW2-U6TOC-3	8	5	22.9									

Test Number: P686-23

Freshwater Sediment Test
28-Day Hyalella azteca

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
4	9600F	LW2-U4Q-1	8	6	22.8	6.1		6.6						
7	9594F	LW2-U5Q-1	8	6	22.6	6.6		6.6						
19	9574F	Control	8	6	22.5	6.4		6.7						
21	9597F	LW2-U6TOC-1	8	6	22.5	6.5		6.7						
23	9611F	LW2-U1C-3	8	6	22.5	6.6		6.7						
35	9602F	LW2-U4Q-3	8	6	22.6	6.3		6.7						
40	9601F	LW2-U4Q-2	8	6	22.6	6.3		6.7						
48	9613F	LW2-D2	8	6	22.4	6.2		6.7						
72	9605F	LW2-U3C-3	8	6	22.4	6.0		6.7						
79	9603F	LW2-U3C-1	8	6	22.6	6.3		6.8						
88	9596F	LW2-U5Q-3	8	6	22.5	6.6		6.8						
89	9609F	LW2-U1C-1	8	6	22.6	6.4		6.7						
95	9608F	LW2-U2C-3	8	6	22.7	6.6		6.7						
98	9606F	LW2-U2C-1	8	6	22.6	6.2		6.7						
103	9598F	LW2-U6TOC-2	8	6	22.5	6.2		6.7						
116	9607F	LW2-U2C-2	8	6	22.6	6.4		6.7						
126	9595F	LW2-U5Q-2	8	6	22.6	6.7		6.7						
134	9612F	LW2-D1-1	8	6	22.6	7.0		6.7						
141	9604F	LW2-U3C-2	8	6	22.6	6.2		6.7						
157	9610F	LW2-U1C-2	8	6	22.6	6.2		6.7						
158	9599F	LW2-U6TOC-3	8	6	22.7	6.4		6.7						
4	9600F	LW2-U4Q-1	8	7	22.3									
7	9594F	LW2-U5Q-1	8	7	22.1									
19	9574F	Control	8	7	22.1									
21	9597F	LW2-U6TOC-1	8	7	22.2									
23	9611F	LW2-U1C-3	8	7	22.1									
35	9602F	LW2-U4Q-3	8	7	22.1									
40	9601F	LW2-U4Q-2	8	7	22.4									
48	9613F	LW2-D2	8	7	22.1									
72	9605F	LW2-U3C-3	8	7	22.4									
79	9603F	LW2-U3C-1	8	7	22.4									
88	9596F	LW2-U5Q-3	8	7	22.4									
89	9609F	LW2-U1C-1	8	7	22.3									
95	9608F	LW2-U2C-3	8	7	22.4									
98	9606F	LW2-U2C-1	8	7	22.4									
103	9598F	LW2-U6TOC-2	8	7	22.3									
116	9607F	LW2-U2C-2	8	7	22.3									
126	9595F	LW2-U5Q-2	8	7	22.3									
134	9612F	LW2-D1-1	8	7	22.4									
141	9604F	LW2-U3C-2	8	7	22.4									
157	9610F	LW2-U1C-2	8	7	22.5									
158	9599F	LW2-U6TOC-3	8	7	22.5									

ANC07632
BZTO104(e)007632

Test Number: P686-23

Freshwater Sediment Test
28-Day Hyalella azteca

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
4	9600F	LW2-U4Q-1	8	8	22.4	6.4	160	6.2						
7	9594F	LW2-U5Q-1	8	8	22.2	6.6	160	6.2						
19	9574F	Control	8	8	22.2	6.7	155	6.2						
21	9597F	LW2-U6TOC-1	8	8	22.2	6.7	170	6.2						
23	9611F	LW2-U1C-3	8	8	22.1	6.7	150	6.2						
35	9602F	LW2-U4Q-3	8	8	22.2	6.8	150	6.1						
40	9601F	LW2-U4Q-2	8	8	22.3	6.5	150	6.1						
48	9613F	LW2-D2	8	8	22.1	6.4	150	6.1						
72	9605F	LW2-U3C-3	8	8	22.1	6.0	155	6.1						
79	9603F	LW2-U3C-1	8	8	22.1	6.0	160	6.1						
88	9596F	LW2-U5Q-3	8	8	22.1	6.4	160	6.2						
89	9609F	LW2-U1C-1	8	8	22.1	6.4	155	6.2						
95	9608F	LW2-U2C-3	8	8	22.2	6.6	155	6.2						
98	9606F	LW2-U2C-1	8	8	22.1	6.2	155	6.1						
103	9598F	LW2-U6TOC-2	8	8	22.1	6.1	160	6.2						
116	9607F	LW2-U2C-2	8	8	22.1	6.2	155	6.2						
126	9595F	LW2-U5Q-2	8	8	22.2	6.6	155	6.2						
134	9612F	LW2-D1-1	8	8	22.2	6.6	160	6.2						
141	9604F	LW2-U3C-2	8	8	22.3	6.3	160	6.2						
157	9610F	LW2-U1C-2	8	8	22.4	6.5	155	6.2						
158	9599F	LW2-U6TOC-3	8	8	22.7	6.5	155	6.2						
4	9600F	LW2-U4Q-1	8	9	22.7									
7	9594F	LW2-U5Q-1	8	9	22.6									
19	9574F	Control	8	9	22.7									
21	9597F	LW2-U6TOC-1	8	9	22.7									
23	9611F	LW2-U1C-3	8	9	22.6									
35	9602F	LW2-U4Q-3	8	9	22.8									
40	9601F	LW2-U4Q-2	8	9	23.0									
48	9613F	LW2-D2	8	9	22.7									
72	9605F	LW2-U3C-3	8	9	22.6									
79	9603F	LW2-U3C-1	8	9	22.9									
88	9596F	LW2-U5Q-3	8	9	22.9									
89	9609F	LW2-U1C-1	8	9	22.9									
95	9608F	LW2-U2C-3	8	9	23.1									
98	9606F	LW2-U2C-1	8	9	22.9									
103	9598F	LW2-U6TOC-2	8	9	22.8									
116	9607F	LW2-U2C-2	8	9	22.9									
126	9595F	LW2-U5Q-2	8	9	22.9									
134	9612F	LW2-D1-1	8	9	23.0									
141	9604F	LW2-U3C-2	8	9	23.0									
157	9610F	LW2-U1C-2	8	9	23.2									
158	9599F	LW2-U6TOC-3	8	9	23.2									

ANC07633
BZTO104(e)007633

Test Number: P686-23

Freshwater Sediment Test
28-Day Hyalella azteca

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
4	9600F	LW2-U4Q-1	8	10	22.6	6.4		6.5						
7	9594F	LW2-U5Q-1	8	10	22.4	7.0		6.4						
19	9574F	Control	8	10	22.4	6.8		6.5						
21	9597F	LW2-U6TOC-1	8	10	22.4	6.8		6.4						
23	9611F	LW2-U1C-3	8	10	22.3	6.7		6.4						
35	9602F	LW2-U4Q-3	8	10	22.4	6.7		6.4						
40	9601F	LW2-U4Q-2	8	10	22.6	6.8		6.4						
48	9613F	LW2-D2	8	10	22.3	6.6		6.4						
72	9605F	LW2-U3C-3	8	10	22.3	6.6		6.5						
79	9603F	LW2-U3C-1	8	10	22.5	6.3		6.5						
88	9596F	LW2-U5Q-3	8	10	22.4	6.8		6.5						
89	9609F	LW2-U1C-1	8	10	22.5	6.8		6.5						
95	9608F	LW2-U2C-3	8	10	22.6	6.8		6.5						
98	9606F	LW2-U2C-1	8	10	22.4	6.8		6.5						
103	9598F	LW2-U6TOC-2	8	10	22.4	6.6		6.5						
116	9607F	LW2-U2C-2	8	10	22.5	6.7		6.5						
126	9595F	LW2-U5Q-2	8	10	22.5	6.8		6.5						
134	9612F	LW2-D1-1	8	10	22.6	7.0		6.6						
141	9604F	LW2-U3C-2	8	10	22.5	6.8		6.6						
157	9610F	LW2-U1C-2	8	10	22.7	6.8		6.5						
158	9599F	LW2-U6TOC-3	8	10	23.0	6.8		6.5						
4	9600F	LW2-U4Q-1	8	11	22.5									
7	9594F	LW2-U5Q-1	8	11	22.5									
19	9574F	Control	8	11	22.3									
21	9597F	LW2-U6TOC-1	8	11	22.3									
23	9611F	LW2-U1C-3	8	11	22.3									
35	9602F	LW2-U4Q-3	8	11	22.3									
40	9601F	LW2-U4Q-2	8	11	22.4									
48	9613F	LW2-D2	8	11	22.3									
72	9605F	LW2-U3C-3	8	11	22.2									
79	9603F	LW2-U3C-1	8	11	22.2									
88	9596F	LW2-U5Q-3	8	11	22.3									
89	9609F	LW2-U1C-1	8	11	22.3									
95	9608F	LW2-U2C-3	8	11	22.5									
98	9606F	LW2-U2C-1	8	11	22.5									
103	9598F	LW2-U6TOC-2	8	11	22.3									
116	9607F	LW2-U2C-2	8	11	22.4									
126	9595F	LW2-U5Q-2	8	11	22.4									
134	9612F	LW2-D1-1	8	11	22.4									
141	9604F	LW2-U3C-2	8	11	22.5									
157	9610F	LW2-U1C-2	8	11	22.5									
158	9599F	LW2-U6TOC-3	8	11	22.7									

Test Number: P686-23

Freshwater Sediment Test
28-Day Hyalella azteca

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
4	9600F	LW2-U4Q-1	8	12	22.1									
7	9594F	LW2-U5Q-1	8	12	22.1									
19	9574F	Control	8	12	22.2									
21	9597F	LW2-U6TOC-1	8	12	22.2									
23	9611F	LW2-U1C-3	8	12	22.2									
35	9602F	LW2-U4Q-3	8	12	22.1									
40	9601F	LW2-U4Q-2	8	12	22.1									
48	9613F	LW2-D2	8	12	22.2									
72	9605F	LW2-U3C-3	8	12	22.3									
79	9603F	LW2-U3C-1	8	12	22.2									
88	9596F	LW2-U5Q-3	8	12	22.2									
89	9609F	LW2-U1C-1	8	12	22.2									
95	9608F	LW2-U2C-3	8	12	22.0									
98	9606F	LW2-U2C-1	8	12	22.1									
103	9598F	LW2-U6TOC-2	8	12	22.2									
116	9607F	LW2-U2C-2	8	12	22.3									
126	9595F	LW2-U5Q-2	8	12	22.3									
134	9612F	LW2-D1-1	8	12	22.2									
141	9604F	LW2-U3C-2	8	12	22.2									
157	9610F	LW2-U1C-2	8	12	22.3									
158	9599F	LW2-U6TOC-3	8	12	22.3									
4	9600F	LW2-U4Q-1	8	13	22.5	6.0		6.4						
7	9594F	LW2-U5Q-1	8	13	22.3	5.8		6.4						
19	9574F	Control	8	13	22.2	5.9		6.4						
21	9597F	LW2-U6TOC-1	8	13	22.3	6.1		6.3						
23	9611F	LW2-U1C-3	8	13	22.3	5.4		6.3						
35	9602F	LW2-U4Q-3	8	13	22.3	5.9		6.3						
40	9601F	LW2-U4Q-2	8	13	22.4	5.9		6.3						
48	9613F	LW2-D2	8	13	22.5	5.9		6.3						
72	9605F	LW2-U3C-3	8	13	22.3	5.2		6.4						
79	9603F	LW2-U3C-1	8	13	22.5	5.4		6.4						
88	9596F	LW2-U5Q-3	8	13	22.4	5.8		6.4						
89	9609F	LW2-U1C-1	8	13	22.4	5.7		6.3						
95	9608F	LW2-U2C-3	8	13	22.5	6.1		6.3						
98	9606F	LW2-U2C-1	8	13	22.5	5.8		6.4						
103	9598F	LW2-U6TOC-2	8	13	22.4	5.7		6.5						
116	9607F	LW2-U2C-2	8	13	22.4	5.7		6.4						
126	9595F	LW2-U5Q-2	8	13	22.5	6.2		6.4						
134	9612F	LW2-D1-1	8	13	22.5	6.2		6.4						
141	9604F	LW2-U3C-2	8	13	22.4	6.1		6.5						
157	9610F	LW2-U1C-2	8	13	22.4	5.9		6.4						
158	9599F	LW2-U6TOC-3	8	13	22.5	5.9		6.4						

Test Number: P686-23

Freshwater Sediment Test
28-Day Hyalella azteca

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
4	9600F	LW2-U4Q-1	8	14	22.5									
7	9594F	LW2-U5Q-1	8	14	22.6									
19	9574F	Control	8	14	22.3									
21	9597F	LW2-U6TOC-1	8	14	22.4									
23	9611F	LW2-U1C-3	8	14	22.4									
35	9602F	LW2-U4Q-3	8	14	22.4									
40	9601F	LW2-U4Q-2	8	14	22.8									
48	9613F	LW2-D2	8	14	22.3									
72	9605F	LW2-U3C-3	8	14	22.3									
79	9603F	LW2-U3C-1	8	14	22.3									
88	9596F	LW2-U5Q-3	8	14	22.4									
89	9609F	LW2-U1C-1	8	14	22.6									
95	9608F	LW2-U2C-3	8	14	22.8									
98	9606F	LW2-U2C-1	8	14	22.5									
103	9598F	LW2-U6TOC-2	8	14	22.5									
116	9607F	LW2-U2C-2	8	14	22.5									
126	9595F	LW2-U5Q-2	8	14	22.8									
134	9612F	LW2-D1-1	8	14	22.6									
141	9604F	LW2-U3C-2	8	14	22.6									
157	9610F	LW2-U1C-2	8	14	22.8									
158	9599F	LW2-U6TOC-3	8	14	22.8									
4	9600F	LW2-U4Q-1	8	15	23.2	6.6	150	6.3						
7	9594F	LW2-U5Q-1	8	15	22.9	6.8	150	6.1						
19	9574F	Control	8	15	22.8	6.8	150	6.1						
21	9597F	LW2-U6TOC-1	8	15	22.6	6.8	150	6.5						
23	9611F	LW2-U1C-3	8	15	22.8	6.8	150	6.5						
35	9602F	LW2-U4Q-3	8	15	22.9	6.7	150	6.5						
40	9601F	LW2-U4Q-2	8	15	22.7	6.8	150	6.5						
48	9613F	LW2-D2	8	15	22.6	6.7	150	6.6						
72	9605F	LW2-U3C-3	8	15	22.6	6.0	150	6.6						
79	9603F	LW2-U3C-1	8	15	22.8	6.3	160	6.6						
88	9596F	LW2-U5Q-3	8	15	22.7	6.8	160	6.6						
89	9609F	LW2-U1C-1	8	15	22.9	6.5	150	6.6						
95	9608F	LW2-U2C-3	8	15	22.9	7.1	150	6.6						
98	9606F	LW2-U2C-1	8	15	22.7	6.9	155	6.6						
103	9598F	LW2-U6TOC-2	8	15	22.7	6.7	155	6.6						
116	9607F	LW2-U2C-2	8	15	22.7	6.5	155	6.6						
126	9595F	LW2-U5Q-2	8	15	22.8	7.0	155	6.6						
134	9612F	LW2-D1-1	8	15	22.9	6.9	155	6.6						
141	9604F	LW2-U3C-2	8	15	22.8	6.6	155	6.6						
157	9610F	LW2-U1C-2	8	15	22.8	6.6	150	6.6						
158	9599F	LW2-U6TOC-3	8	15	22.9	6.7	155	6.6						

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Freshwater Sediment Test
28-Day Hyalella azteca

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
4	9600F	LW2-U4Q-1	8	16	22.9									
7	9594F	LW2-U5Q-1	8	16	22.8									
19	9574F	Control	8	16	22.8									
21	9597F	LW2-U6TOC-1	8	16	22.8									
23	9611F	LW2-U1C-3	8	16	22.7									
35	9602F	LW2-U4Q-3	8	16	22.7									
40	9601F	LW2-U4Q-2	8	16	22.8									
48	9613F	LW2-D2	8	16	22.4									
72	9605F	LW2-U3C-3	8	16	22.7									
79	9603F	LW2-U3C-1	8	16	22.8									
88	9596F	LW2-U5Q-3	8	16	22.8									
89	9609F	LW2-U1C-1	8	16	22.8									
95	9608F	LW2-U2C-3	8	16	22.8									
98	9606F	LW2-U2C-1	8	16	22.8									
103	9598F	LW2-U6TOC-2	8	16	22.7									
116	9607F	LW2-U2C-2	8	16	22.9									
126	9595F	LW2-U5Q-2	8	16	22.9									
134	9612F	LW2-D1-1	8	16	22.9									
141	9604F	LW2-U3C-2	8	16	22.9									
157	9610F	LW2-U1C-2	8	16	22.9									
158	9599F	LW2-U6TOC-3	8	16	22.9									
4	9600F	LW2-U4Q-1	8	17	22.9	5.9		6.3						
7	9594F	LW2-U5Q-1	8	17	22.7	6.2		6.3						
19	9574F	Control	8	17	22.6	5.8		6.2						
21	9597F	LW2-U6TOC-1	8	17	22.7	6.4		6.6						
23	9611F	LW2-U1C-3	8	17	22.5	6.1		6.4						
35	9602F	LW2-U4Q-3	8	17	22.8	6.1		6.5						
40	9601F	LW2-U4Q-2	8	17	22.9	6.2		6.4						
48	9613F	LW2-D2	8	17	22.6	6.2		6.4						
72	9605F	LW2-U3C-3	8	17	22.6	5.8		6.5						
79	9603F	LW2-U3C-1	8	17	22.8	6.0		6.5						
88	9596F	LW2-U5Q-3	8	17	22.7	6.0		6.4						
89	9609F	LW2-U1C-1	8	17	22.7	5.9		6.4						
95	9608F	LW2-U2C-3	8	17	22.8	6.3		6.4						
98	9606F	LW2-U2C-1	8	17	22.7	6.0		6.5						
103	9598F	LW2-U6TOC-2	8	17	22.7	6.0		6.4						
116	9607F	LW2-U2C-2	8	17	22.7	5.9		6.5						
126	9595F	LW2-U5Q-2	8	17	22.8	6.4		6.5						
134	9612F	LW2-D1-1	8	17	22.9	6.2		6.5						
141	9604F	LW2-U3C-2	8	17	22.8	6.1		6.5						
157	9610F	LW2-U1C-2	8	17	22.7	6.1		6.4						
158	9599F	LW2-U6TOC-3	8	17	22.9	6.3		6.4						

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Freshwater Sediment Test
28-Day Hyalella azteca

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
4	9600F	LW2-U4Q-1	8	18	22.6									
7	9594F	LW2-U5Q-1	8	18	22.4									
19	9574F	Control	8	18	22.4									
21	9597F	LW2-U6TOC-1	8	18	22.3									
23	9611F	LW2-U1C-3	8	18	22.3									
35	9602F	LW2-U4Q-3	8	18	22.2									
40	9601F	LW2-U4Q-2	8	18	22.4									
48	9613F	LW2-D2	8	18	22.3									
72	9605F	LW2-U3C-3	8	18	22.2									
79	9603F	LW2-U3C-1	8	18	22.3									
88	9596F	LW2-U5Q-3	8	18	22.2									
89	9609F	LW2-U1C-1	8	18	22.2									
95	9608F	LW2-U2C-3	8	18	22.2									
98	9606F	LW2-U2C-1	8	18	22.2									
103	9598F	LW2-U6TOC-2	8	18	22.2									
116	9607F	LW2-U2C-2	8	18	22.3									
126	9595F	LW2-U5Q-2	8	18	22.2									
134	9612F	LW2-D1-1	8	18	22.2									
141	9604F	LW2-U3C-2	8	18	22.2									
157	9610F	LW2-U1C-2	8	18	22.2									
158	9599F	LW2-U6TOC-3	8	18	22.3									
4	9600F	LW2-U4Q-1	8	19	22.5									
7	9594F	LW2-U5Q-1	8	19	22.2									
19	9574F	Control	8	19	22.1									
21	9597F	LW2-U6TOC-1	8	19	22.1									
23	9611F	LW2-U1C-3	8	19	22.0									
35	9602F	LW2-U4Q-3	8	19	22.1									
40	9601F	LW2-U4Q-2	8	19	22.3									
48	9613F	LW2-D2	8	19	22.1									
72	9605F	LW2-U3C-3	8	19	22.1									
79	9603F	LW2-U3C-1	8	19	22.2									
88	9596F	LW2-U5Q-3	8	19	22.1									
89	9609F	LW2-U1C-1	8	19	22.2									
95	9608F	LW2-U2C-3	8	19	22.3									
98	9606F	LW2-U2C-1	8	19	22.2									
103	9598F	LW2-U6TOC-2	8	19	22.1									
116	9607F	LW2-U2C-2	8	19	22.1									
126	9595F	LW2-U5Q-2	8	19	22.2									
134	9612F	LW2-D1-1	8	19	22.4									
141	9604F	LW2-U3C-2	8	19	22.2									
157	9610F	LW2-U1C-2	8	19	22.3									
158	9599F	LW2-U6TOC-3	8	19	22.4									

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Freshwater Sediment Test
28-Day Hyalella azteca

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
4	9600F	LW2-U4Q-1	8	20	22.2	6.2		6.5						
7	9594F	LW2-U5Q-1	8	20	22.0	6.2		6.5						
19	9574F	Control	8	20	22.0	5.8		6.4						
21	9597F	LW2-U6TOC-1	8	20	22.0	6.2		6.4						
23	9611F	LW2-U1C-3	8	20	22.0	6.0		6.4						
35	9602F	LW2-U4Q-3	8	20	22.1	6.2		6.3						
40	9601F	LW2-U4Q-2	8	20	22.1	6.4		6.4						
48	9613F	LW2-D2	8	20	22.0	6.6		6.7						
72	9605F	LW2-U3C-3	8	20	22.3	5.7		6.7						
79	9603F	LW2-U3C-1	8	20	22.3	5.8		6.6						
88	9596F	LW2-U5Q-3	8	20	22.0	6.0		6.4						
89	9609F	LW2-U1C-1	8	20	22.1	6.0		6.4						
95	9608F	LW2-U2C-3	8	20	22.3	6.3		6.5						
98	9606F	LW2-U2C-1	8	20	22.1	6.0		6.5						
103	9598F	LW2-U6TOC-2	8	20	22.0	5.8		6.6						
116	9607F	LW2-U2C-2	8	20	22.1	6.0		6.6						
126	9595F	LW2-U5Q-2	8	20	22.2	6.4		6.6						
134	9612F	LW2-D1-1	8	20	22.3	6.4		6.6						
141	9604F	LW2-U3C-2	8	20	22.2	6.2		6.6						
157	9610F	LW2-U1C-2	8	20	22.3	6.2		6.5						
158	9599F	LW2-U6TOC-3	8	20	22.4	6.5		6.6						
4	9600F	LW2-U4Q-1	8	21	22.8									
7	9594F	LW2-U5Q-1	8	21	22.7									
19	9574F	Control	8	21	22.6									
21	9597F	LW2-U6TOC-1	8	21	22.7									
23	9611F	LW2-U1C-3	8	21	22.6									
35	9602F	LW2-U4Q-3	8	21	22.7									
40	9601F	LW2-U4Q-2	8	21	22.8									
48	9613F	LW2-D2	8	21	22.7									
72	9605F	LW2-U3C-3	8	21	22.6									
79	9603F	LW2-U3C-1	8	21	22.6									
88	9596F	LW2-U5Q-3	8	21	22.8									
89	9609F	LW2-U1C-1	8	21	22.8									
95	9608F	LW2-U2C-3	8	21	22.8									
98	9606F	LW2-U2C-1	8	21	22.9									
103	9598F	LW2-U6TOC-2	8	21	22.8									
116	9607F	LW2-U2C-2	8	21	22.8									
126	9595F	LW2-U5Q-2	8	21	22.9									
134	9612F	LW2-D1-1	8	21	23.0									
141	9604F	LW2-U3C-2	8	21	22.9									
157	9610F	LW2-U1C-2	8	21	22.9									
158	9599F	LW2-U6TOC-3	8	21	22.9									

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Freshwater Sediment Test
28-Day Hyalella azteca

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
4	9600F	LW2-U4Q-1	8	22	23.1	5.2	155	6.6						
7	9594F	LW2-U5Q-1	8	22	22.9	5.6	150	6.6						
19	9574F	Control	8	22	22.8	5.1	150	6.6						
21	9597F	LW2-U6TOC-1	8	22	22.9	5.8	155	6.6						
23	9611F	LW2-U1C-3	8	22	22.7	5.4	150	6.6						
35	9602F	LW2-U4Q-3	8	22	22.9	5.6	150	6.5						
40	9601F	LW2-U4Q-2	8	22	23.0	5.9	150	6.5						
48	9613F	LW2-D2	8	22	22.8	6.0	150	6.5						
72	9605F	LW2-U3C-3	8	22	22.8	5.2	155	6.6						
79	9603F	LW2-U3C-1	8	22	23.0	5.2	165	6.6						
88	9596F	LW2-U5Q-3	8	22	22.9	5.6	155	6.6						
89	9609F	LW2-U1C-1	8	22	23.0	5.8	155	6.6						
95	9608F	LW2-U2C-3	8	22	23.1	6.2	155	6.6						
98	9606F	LW2-U2C-1	8	22	23.0	5.7	155	6.6						
103	9598F	LW2-U6TOC-2	8	22	23.0	5.6	160	6.6						
116	9607F	LW2-U2C-2	8	22	23.0	6.0	155	6.7						
126	9595F	LW2-U5Q-2	8	22	23.1	6.4	150	6.7						
134	9612F	LW2-D1-1	8	22	23.1	6.2	155	6.7						
141	9604F	LW2-U3C-2	8	22	23.1	5.8	155	6.7						
157	9610F	LW2-U1C-2	8	22	23.2	5.7	150	6.7						
158	9599F	LW2-U6TOC-3	8	22	23.3	6.0	155	6.6						
4	9600F	LW2-U4Q-1	8	23	22.5									
7	9594F	LW2-U5Q-1	8	23	22.3									
19	9574F	Control	8	23	22.3									
21	9597F	LW2-U6TOC-1	8	23	22.3									
23	9611F	LW2-U1C-3	8	23	22.3									
35	9602F	LW2-U4Q-3	8	23	22.3									
40	9601F	LW2-U4Q-2	8	23	22.4									
48	9613F	LW2-D2	8	23	22.2									
72	9605F	LW2-U3C-3	8	23	22.2									
79	9603F	LW2-U3C-1	8	23	22.4									
88	9596F	LW2-U5Q-3	8	23	22.4									
89	9609F	LW2-U1C-1	8	23	22.3									
95	9608F	LW2-U2C-3	8	23	22.5									
98	9606F	LW2-U2C-1	8	23	22.5									
103	9598F	LW2-U6TOC-2	8	23	22.4									
116	9607F	LW2-U2C-2	8	23	22.4									
126	9595F	LW2-U5Q-2	8	23	22.4									
134	9612F	LW2-D1-1	8	23	22.5									
141	9604F	LW2-U3C-2	8	23	22.6									
157	9610F	LW2-U1C-2	8	23	22.8									
158	9599F	LW2-U6TOC-3	8	23	22.9									

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Freshwater Sediment Test
28-Day Hyalella azteca

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
4	9600F	LW2-U4Q-1	8	24	22.5	5.3		6.6						
7	9594F	LW2-U5Q-1	8	24	22.3	5.8		6.6						
19	9574F	Control	8	24	22.3	5.4		6.6						
21	9597F	LW2-U6TOC-1	8	24	22.4	5.7		6.6						
23	9611F	LW2-U1C-3	8	24	22.2	5.8		6.6						
35	9602F	LW2-U4Q-3	8	24	22.4	5.6		6.6						
40	9601F	LW2-U4Q-2	8	24	22.5	5.8		6.6						
48	9613F	LW2-D2	8	24	22.2	5.8		6.5						
72	9605F	LW2-U3C-3	8	24	22.3	5.4		6.6						
79	9603F	LW2-U3C-1	8	24	22.8	5.6		6.6						
88	9596F	LW2-U5Q-3	8	24	22.5	6.1		6.7						
89	9609F	LW2-U1C-1	8	24	22.7	5.6		6.6						
95	9608F	LW2-U2C-3	8	24	22.9	6.4		6.8						
98	9606F	LW2-U2C-1	8	24	22.7	5.8		6.8						
103	9598F	LW2-U6TOC-2	8	24	22.6	5.4		6.9						
116	9607F	LW2-U2C-2	8	24	22.7	5.8		6.8						
126	9595F	LW2-U5Q-2	8	24	22.8	6.2		6.8						
134	9612F	LW2-D1-1	8	24	23.0	5.8		6.9						
141	9604F	LW2-U3C-2	8	24	22.8	5.8		7.0						
157	9610F	LW2-U1C-2	8	24	23.2	5.2		6.8						
158	9599F	LW2-U6TOC-3	8	24	23.6	5.6		6.7						
4	9600F	LW2-U4Q-1	8	25	22.2									
7	9594F	LW2-U5Q-1	8	25	22.2									
19	9574F	Control	8	25	22.2									
21	9597F	LW2-U6TOC-1	8	25	22.2									
23	9611F	LW2-U1C-3	8	25	22.2									
35	9602F	LW2-U4Q-3	8	25	22.1									
40	9601F	LW2-U4Q-2	8	25	22.1									
48	9613F	LW2-D2	8	25	22.2									
72	9605F	LW2-U3C-3	8	25	22.2									
79	9603F	LW2-U3C-1	8	25	22.2									
88	9596F	LW2-U5Q-3	8	25	22.2									
89	9609F	LW2-U1C-1	8	25	22.2									
95	9608F	LW2-U2C-3	8	25	22.3									
98	9606F	LW2-U2C-1	8	25	22.1									
103	9598F	LW2-U6TOC-2	8	25	22.2									
116	9607F	LW2-U2C-2	8	25	22.1									
126	9595F	LW2-U5Q-2	8	25	22.2									
134	9612F	LW2-D1-1	8	25	22.3									
141	9604F	LW2-U3C-2	8	25	22.4									
157	9610F	LW2-U1C-2	8	25	22.3									
158	9599F	LW2-U6TOC-3	8	25	22.4									

Test Number: P686-23

Freshwater Sediment Test
28-Day Hyalella azteca

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
4	9600F	LW2-U4Q-1	8	26	22.2									
7	9594F	LW2-U5Q-1	8	26	22.1									
19	9574F	Control	8	26	22.1									
21	9597F	LW2-U6TOC-1	8	26	22.1									
23	9611F	LW2-U1C-3	8	26	22.1									
35	9602F	LW2-U4Q-3	8	26	22.1									
40	9601F	LW2-U4Q-2	8	26	22.1									
48	9613F	LW2-D2	8	26	22.0									
72	9605F	LW2-U3C-3	8	26	22.0									
79	9603F	LW2-U3C-1	8	26	22.1									
88	9596F	LW2-U5Q-3	8	26	22.1									
89	9609F	LW2-U1C-1	8	26	22.1									
95	9608F	LW2-U2C-3	8	26	22.2									
98	9606F	LW2-U2C-1	8	26	22.1									
103	9598F	LW2-U6TOC-2	8	26	22.1									
116	9607F	LW2-U2C-2	8	26	22.1									
126	9595F	LW2-U5Q-2	8	26	22.3									
134	9612F	LW2-D1-1	8	26	22.3									
141	9604F	LW2-U3C-2	8	26	22.3									
157	9610F	LW2-U1C-2	8	26	22.6									
158	9599F	LW2-U6TOC-3	8	26	22.8									
4	9600F	LW2-U4Q-1	8	27	22.2	5.8		6.7						
7	9594F	LW2-U5Q-1	8	27	22.0	6.4		6.6						
19	9574F	Control	8	27	22.0	6.2		6.7						
21	9597F	LW2-U6TOC-1	8	27	22.1	6.4		6.7						
23	9611F	LW2-U1C-3	8	27	22.0	6.4		6.7						
35	9602F	LW2-U4Q-3	8	27	22.1	6.4		6.5						
40	9601F	LW2-U4Q-2	8	27	22.3	6.5		6.6						
48	9613F	LW2-D2	8	27	22.0	6.6		6.6						
72	9605F	LW2-U3C-3	8	27	22.0	6.0		6.7						
79	9603F	LW2-U3C-1	8	27	22.3	6.2		6.7						
88	9596F	LW2-U5Q-3	8	27	22.1	6.3		6.6						
89	9609F	LW2-U1C-1	8	27	22.2	6.0		6.6						
95	9608F	LW2-U2C-3	8	27	22.4	6.9		6.6						
98	9606F	LW2-U2C-1	8	27	22.3	6.4		6.7						
103	9598F	LW2-U6TOC-2	8	27	22.2	6.0		6.7						
116	9607F	LW2-U2C-2	8	27	22.3	6.6		6.8						
126	9595F	LW2-U5Q-2	8	27	22.4	7.0		6.8						
134	9612F	LW2-D1-1	8	27	22.7	6.3		6.6						
141	9604F	LW2-U3C-2	8	27	22.5	6.5		6.9						
157	9610F	LW2-U1C-2	8	27	22.9	6.1		6.7						
158	9599F	LW2-U6TOC-3	8	27	23.2	6.2		6.7						

Test Number: P686-23

Freshwater Sediment Test
28-Day Hyalella azteca

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
4	9600F	LW2-U4Q-1	8	28	22.5	6.5	150	6.7	43	40	0.1			
7	9594F	LW2-U5Q-1	8	28	22.3	7.2	150	6.8	43	40	<0.1			
19	9574F	Control	8	28	22.3	6.7	150	6.7	34	40	<0.1			
21	9597F	LW2-U6TOC-1	8	28	22.2	7.0	150	6.7	43	40	<0.1			
23	9611F	LW2-U1C-3	8	28	22.1	7.1	145	6.7	43	40	<0.1			
35	9602F	LW2-U4Q-3	8	28	22.1	7.2	150	6.6	34	40	1.9			
40	9601F	LW2-U4Q-2	8	28	22.3	7.3	150	6.7	43	30	<0.1			
48	9613F	LW2-D2	8	28	22.1	7.2	145	6.7	51	40	<0.1			
72	9605F	LW2-U3C-3	8	28	22.1	6.8	150	6.7	51	40	<0.1			
79	9603F	LW2-U3C-1	8	28	22.1	7.1	150	6.7	43	40	<0.1			
88	9596F	LW2-U5Q-3	8	28	22.1	7.6	145	6.7	43	40	<0.1			
89	9609F	LW2-U1C-1	8	28	22.1	7.2	145	6.7	34	40	<0.1			
95	9608F	LW2-U2C-3	8	28	22.2	7.6	145	6.7	43	40	<0.1			
98	9606F	LW2-U2C-1	8	28	22.3	7.1	150	6.6	51	40	<0.1			
103	9598F	LW2-U6TOC-2	8	28	22.1	6.8	150	6.6	51	40	<0.1			
116	9607F	LW2-U2C-2	8	28	22.0	6.7	150	6.7	43	40	<0.1			
126	9595F	LW2-U5Q-2	8	28	22.0	7.9	145	6.7	51	40	<0.1			
134	9612F	LW2-D1-1	8	28	22.2	7.2	150	6.7	43	40	<0.1			
141	9604F	LW2-U3C-2	8	28	22.2	7.4	150	6.7	51	40	<0.1			
157	9610F	LW2-U1C-2	8	28	22.2	7.1	150	6.7	43	40	<0.1			
158	9599F	LW2-U6TOC-3	8	28	22.5	6.9	150	6.7	43	40	<0.1			
				Mean	22.5	6.5	157	6.5	41	40	---		---	6.3
				SD	0.3	0.6	29	0.2	6	3	---		---	0.3
				n	609	294	126	294	42	42	42		21	21
				Min	22.0	5.1	140	6.1	34	30	<0.1		<0.5	5.8
				Max	23.6	7.9	440	7.0	51	50	1.9		3.5	6.8
	Data Entry Verified													

ANC07643
BZTO104(e)007643

Test Number: 686-24

Freshwater Sediment Test
10-Day Chironomus tentans

Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

ASHED DRY WT= weight of ashed pan + weight of ashed test organisms recovered at test termination
TAFDW=DRY WT - ASHED DRY WT= total ash-free organism weight for given replicate
AFDW=average individual ash-free biomass=TAFDW/WT COUNT

INITIAL WEIGHT

pan #	tare wt (mg)	final wt (mg)	wt count	avg. wt/ organism
1	108.45	110.68	20	0.11
2	98.40	100.72	20	0.12
3	101.82	104.21	20	0.12

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)		SURV	MORT	PSURV	PMORT	WT	AFDW
1	68	9574F	Control	1		10	8	2	80.0	20.0	82.86	8	92.96	84.78	10.10	1.26	8.18	1.02							
2	109	9574F	Control	2		10	6	4	60.0	40.0	89.58	6	96.49	90.88	6.91	1.15	5.61	0.94							
3	120	9574F	Control	3		10	8	2	80.0	20.0	89.42	8	101.43	92.26	12.01	1.50	9.17	1.15							
4	79	9574F	Control	4		10	8	2	80.0	20.0	80.24	8	92.45	83.64	12.21	1.53	8.81	1.10							
5	19	9574F	Control	5		10	9	1	90.0	10.0	91.96	9	106.49	95.71	14.53	1.61	10.78	1.20	Mean	8.5	1.5	85.0	15.0	1.37	1.05
6	30	9574F	Control	6		10	10	0	100.0	0.0	79.11	10	91.14	81.81	12.03	1.20	9.33	0.93	SD	1.3	1.3	13.1	13.1	0.18	0.10
7	23	9574F	Control	7		10	10	0	100.0	0.0	79.88	10	94.60	83.88	14.72	1.47	10.72	1.07	n	8	8	8	8	8	8
8	69	9574F	Control	8	wq replicate	10	9	1	90.0	10.0	87.00	9	97.70	88.99	10.70	1.19	8.71	0.97							
9	63	9594F	LW2-U5Q-1	1		10	8	2	80.0	20.0	86.99	8	98.55	89.74	11.56	1.45	8.81	1.10							
10	167	9594F	LW2-U5Q-1	2		10	9	1	90.0	10.0	89.00	9	106.14	95.65	17.14	1.90	10.49	1.17							
11	164	9594F	LW2-U5Q-1	3		10	9	1	90.0	10.0	87.39	9	105.82	94.52	18.43	2.05	11.30	1.26							
12	58	9594F	LW2-U5Q-1	4		10	9	1	90.0	10.0	91.52	9	104.97	95.42	13.45	1.49	9.55	1.06							
13	53	9594F	LW2-U5Q-1	5		10	9	1	90.0	10.0	89.17	9	102.97	93.35	13.80	1.53	9.62	1.07	Mean	8.8	1.3	87.5	12.5	1.69	1.14
14	112	9594F	LW2-U5Q-1	6		10	8	2	80.0	20.0	89.43	8	101.26	92.17	11.83	1.48	9.09	1.14	SD	0.5	0.5	4.6	4.6	0.25	0.10
15	160	9594F	LW2-U5Q-1	7		10	9	1	90.0	10.0	85.72	9	103.78	91.91	18.06	2.01	11.87	1.32	n	8	8	8	8	8	8
16	46	9594F	LW2-U5Q-1	8	wq replicate	10	9	1	90.0	10.0	81.56	9	96.03	86.62	14.47	1.61	9.41	1.05							
17	118	9595F	LW2-U5Q-2	1		10	6	4	60.0	40.0	91.00	6	102.78	95.15	11.78	1.96	7.63	1.27							
18	10	9595F	LW2-U5Q-2	2		10	4	6	40.0	60.0	94.31	4	103.67	97.18	9.36	2.34	6.49	1.62							
19	3	9595F	LW2-U5Q-2	3		10	8	2	80.0	20.0	82.39	8	96.73	87.63	14.34	1.79	9.10	1.14							
20	16	9595F	LW2-U5Q-2	4		10	9	1	90.0	10.0	79.56	9	94.17	84.95	14.61	1.62	9.22	1.02							
21	163	9595F	LW2-U5Q-2	5		10	8	2	80.0	20.0	81.95	8	98.51	88.41	16.56	2.07	10.10	1.26	Mean	7.8	2.3	77.5	22.5	1.86	1.20
22	131	9595F	LW2-U5Q-2	6		10	10	0	100.0	0.0	83.02	10	99.99	89.93	16.97	1.70	10.06	1.01	SD	2.1	2.1	20.5	20.5	0.28	0.21
23	62	9595F	LW2-U5Q-2	7		10	10	0	100.0	0.0	77.85	10	92.32	82.27	14.47	1.45	10.05	1.01	n	8	8	8	8	8	8
24	6	9595F	LW2-U5Q-2	8	wq replicate	10	7	3	70.0	30.0	84.95	7	98.47	89.63	13.52	1.93	8.84	1.26							
25	152	9596F	LW2-U5Q-3	1		10	10	0	100.0	0.0	85.50	10	103.82	92.53	18.32	1.83	11.29	1.13							
26	100	9596F	LW2-U5Q-3	2		10	8	2	80.0	20.0	98.36	8	114.64	104.57	16.28	2.04	10.07	1.26							
27	12	9596F	LW2-U5Q-3	3		10	9	1	90.0	10.0	79.66	9	97.73	86.85	18.07	2.01	10.88	1.21							
28	129	9596F	LW2-U5Q-3	4		10	9	1	90.0	10.0	86.79	9	105.74	94.07	18.95	2.11	11.67	1.30							
29	84	9596F	LW2-U5Q-3	5		10	9	1	90.0	10.0	86.77	9	102.28	92.21	15.51	1.72	10.07	1.12	Mean	9.4	0.6	93.8	6.3	1.82	1.14
30	115	9596F	LW2-U5Q-3	6		10	10	0	100.0	0.0	86.88	10	101.24	91.16	14.36	1.44	10.08	1.01	SD	0.7	0.7	7.4	7.4	0.24	0.12
31	132	9596F	LW2-U5Q-3	7		10	10	0	100.0	0.0	96.71	10	115.60	104.46	18.89	1.89	11.14	1.11	n	8	8	8	8	8	8
32	57	9596F	LW2-U5Q-3	8	wq replicate	10	10	0	100.0	0.0	88.58	10	103.74	94.20	15.16	1.52	9.54	0.95							
33	77	9597F	LW2-U6TOC-1	1		10	10	0	100.0	0.0	91.93	10	109.11	98.87	17.18	1.72	10.24	1.02							
34	102	9597F	LW2-U6TOC-1	2		10	9	1	90.0	10.0	83.73	9	98.77	88.61	15.04	1.67	10.16	1.13							
35	85	9597F	LW2-U6TOC-1	3		10	10	0	100.0	0.0	88.92	10	103.67	94.94	14.75	1.48	8.73	0.87							
36	158	9597F	LW2-U6TOC-1	4		10	10	0	100.0	0.0	86.50	10	105.92	94.84	19.42	1.94	11.08	1.11							
37	94	9597F	LW2-U6TOC-1	5		10	10	0	100.0	0.0	96.02	10	113.43	102.59	17.41	1.74	10.84	1.08	Mean	9.5	0.5	95.0	5.0	1.73	1.09
38	15	9597F	LW2-U6TOC-1	6		10	8	2	80.0	20.0	84.99	8	99.69	90.11	14.70	1.84	9.58	1.20	SD	0.8	0.8	7.6	7.6	0.15	0.11
39	128	9597F	LW2-U6TOC-1	7		10	10	0	100.0	0.0	82.94	10	98.96	88.19	16.02	1.60	10.77	1.08	n	8	8	8	8	8	8
40	103	9597F	LW2-U6TOC-1	8	wq replicate	10	9	1	90.0	10.0	85.65	9	102.08	91.19	16.43	1.83	10.89	1.21							

ANC07644
BZTO104(e)007644

Test Number: 686-24

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)		SURV	MORT	PSURV	PMORT	WT	AFDW
41	2	9598F	LW2-U6TOC-2	1		10	8	2	80.0	20.0	85.84	8	98.93	89.57	13.09	1.64	9.36	1.17							
42	73	9598F	LW2-U6TOC-2	2		10	9	1	90.0	10.0	93.02	9	112.33	100.53	19.31	2.15	11.80	1.31							
43	31	9598F	LW2-U6TOC-2	3		10	6	4	60.0	40.0	95.90	6	109.06	99.39	13.16	2.19	9.67	1.61							
44	133	9598F	LW2-U6TOC-2	4		10	10	0	100.0	0.0	88.89	10	105.44	94.41	16.55	1.66	11.03	1.10							
45	43	9598F	LW2-U6TOC-2	5		10	8	2	80.0	20.0	86.48	8	100.37	90.65	13.89	1.74	9.72	1.22	Mean	8.8	1.3	87.5	12.5	1.82	1.23
46	49	9598F	LW2-U6TOC-2	6		10	9	1	90.0	10.0	85.22	9	99.62	89.49	14.40	1.60	10.13	1.13	SD	1.4	1.4	13.9	13.9	0.23	0.17
47	143	9598F	LW2-U6TOC-2	7		10	10	0	100.0	0.0	92.32	10	110.45	98.48	18.13	1.81	11.97	1.20	n	8	8	8	8	8	8
48	155	9598F	LW2-U6TOC-2	8	wq replicate	10	10	0	100.0	0.0	88.54	10	106.73	95.65	18.19	1.82	11.08	1.11							
49	14	9599F	LW2-U6TOC-3	1		10	10	0	100.0	0.0	82.30	10	96.74	87.20	14.44	1.44	9.54	0.95							
50	90	9599F	LW2-U6TOC-3	2		10	6	4	60.0	40.0	85.15	6	98.57	89.66	13.42	2.24	8.91	1.49							
51	95	9599F	LW2-U6TOC-3	3		10	10	0	100.0	0.0	96.32	10	112.32	101.91	16.00	1.60	10.41	1.04							
52	8	9599F	LW2-U6TOC-3	4		10	9	1	90.0	10.0	88.82	9	102.87	93.44	14.05	1.56	9.43	1.05							
53	48	9599F	LW2-U6TOC-3	5		10	9	1	90.0	10.0	96.06	9	111.91	101.25	15.85	1.76	10.66	1.18	Mean	8.9	1.1	88.8	11.3	1.69	1.12
54	156	9599F	LW2-U6TOC-3	6		10	10	0	100.0	0.0	87.56	10	105.96	95.23	18.40	1.84	10.73	1.07	SD	1.4	1.4	13.6	13.6	0.25	0.16
55	56	9599F	LW2-U6TOC-3	7		10	9	1	90.0	10.0	87.94	9	101.85	92.09	13.91	1.55	9.76	1.08	n	8	8	8	8	8	8
56	47	9599F	LW2-U6TOC-3	8	wq replicate	10	8	2	80.0	20.0	85.47	8	97.83	89.26	12.36	1.55	8.57	1.07							
57	78	9600F	LW2-U4Q-1	1		10	10	0	100.0	0.0	89.27	10	107.90	96.56	18.63	1.86	11.34	1.13							
58	125	9600F	LW2-U4Q-1	2		10	10	0	100.0	0.0	77.82	10	93.73	83.58	15.91	1.59	10.15	1.02							
59	55	9600F	LW2-U4Q-1	3		10	9	1	90.0	10.0	82.74	9	97.93	87.75	15.19	1.69	10.18	1.13							
60	21	9600F	LW2-U4Q-1	4		10	9	1	90.0	10.0	89.36	9	104.45	94.95	15.09	1.68	9.50	1.06							
61	7	9600F	LW2-U4Q-1	5		10	8	2	80.0	20.0	82.31	8	97.05	88.16	14.74	1.84	8.89	1.11	Mean	9.4	0.6	93.8	6.3	1.78	1.09
62	134	9600F	LW2-U4Q-1	6		10	10	0	100.0	0.0	92.30	10	112.63	101.30	20.33	2.03	11.33	1.13	SD	0.7	0.7	7.4	7.4	0.16	0.05
63	168	9600F	LW2-U4Q-1	7		10	10	0	100.0	0.0	90.00	10	109.46	98.76	19.46	1.95	10.70	1.07	n	8	8	8	8	8	8
64	40	9600F	LW2-U4Q-1	8	wq replicate	10	9	1	90.0	10.0	78.97	9	93.58	84.25	14.61	1.62	9.33	1.04							
65	75	9601F	LW2-U4Q-2	1		10	9	1	90.0	10.0	97.45	9	117.43	97.01	19.98	2.22	20.42	2.27							
66	161	9601F	LW2-U4Q-2	2		10	9	1	90.0	10.0	90.85	9	111.24	100.40	20.39	2.27	10.84	1.20							
67	26	9601F	LW2-U4Q-2	3		10	8	2	80.0	20.0	80.55	8	98.60	88.17	18.05	2.26	10.43	1.30							
68	142	9601F	LW2-U4Q-2	4		10	10	0	100.0	0.0	89.83	10	109.81	98.88	19.98	2.00	10.93	1.09							
69	138	9601F	LW2-U4Q-2	5		10	10	0	100.0	0.0	87.96	9	106.46	95.24	18.50	2.06	11.22	1.25	Mean	9.4	0.6	93.8	6.3	1.94	1.25
70	64	9601F	LW2-U4Q-2	6		10	10	0	100.0	0.0	84.34	10	98.72	88.90	14.38	1.44	9.82	0.98	SD	0.7	0.7	7.4	7.4	0.33	0.44
71	17	9601F	LW2-U4Q-2	7		10	9	1	90.0	10.0	85.64	9	102.32	92.46	16.68	1.85	9.86	1.10	n	8	8	8	8	8	8
72	82	9601F	LW2-U4Q-2	8	wq replicate	10	10	0	100.0	0.0	92.42	10	107.09	98.77	14.67	1.47	8.32	0.83							
73	25	9602F	LW2-U4Q-3	1		10	7	3	70.0	30.0	90.34	7	104.10	95.40	13.76	1.97	8.70	1.24							
74	32	9602F	LW2-U4Q-3	2		10	10	0	100.0	0.0	81.08	10	98.04	87.57	16.96	1.70	10.47	1.05							
75	136	9602F	LW2-U4Q-3	3		10	9	1	90.0	10.0	86.01	9	103.60	93.02	17.59	1.95	10.58	1.18							
76	122	9602F	LW2-U4Q-3	4		10	10	0	100.0	0.0	86.81	10	102.85	92.51	16.04	1.60	10.34	1.03							
77	107	9602F	LW2-U4Q-3	5		10	10	0	100.0	0.0	85.91	10	103.79	93.30	17.88	1.79	10.49	1.05	Mean	9.1	0.9	91.3	8.8	1.78	1.11
78	113	9602F	LW2-U4Q-3	6		10	10	0	100.0	0.0	87.17	10	102.62	92.43	15.45	1.55	10.19	1.02	SD	1.1	1.1	11.3	11.3	0.17	0.09
79	13	9602F	LW2-U4Q-3	7		10	8	2	80.0	20.0	84.07	8	99.80	90.15	15.73	1.97	9.65	1.21	n	8	8	8	8	8	8
80	27	9602F	LW2-U4Q-3	8	wq replicate	10	9	1	90.0	10.0	92.46	9	107.99	98.39	15.53	1.73	9.60	1.07							
81	9	9603F	LW2-U3C-1	1		10	6	4	60.0	40.0	87.95	6	100.66	91.57	12.71	2.12	9.09	1.52							
82	123	9603F	LW2-U3C-1	2		10	10	0	100.0	0.0	87.56	10	103.58	91.63	16.02	1.60	11.95	1.20							
83	148	9603F	LW2-U3C-1	3		10	8	2	80.0	20.0	89.18	8	104.60	93.40	15.42	1.93	11.20	1.40							
84	67	9603F	LW2-U3C-1	4		10	10	0	100.0	0.0	88.13	10	105.07	93.88	16.94	1.69	11.19	1.12							
85	137	9603F	LW2-U3C-1	5		10	10	0	100.0	0.0	92.60	10	111.86	98.60	19.26	1.93	13.26	1.33	Mean	9.0	1.0	90.0	10.0	1.86	1.29
86	80	9603F	LW2-U3C-1	6		10	9	1	90.0	10.0	78.22	9	97.41	85.17	19.19	2.13	12.24	1.36	SD	1.4	1.4	14.1	14.1	0.20	0.13
87	92	9603F	LW2-U3C-1	7		10	10	0	100.0	0.0	82.30	10	99.59	87.79	17.29	1.73	11.80	1.18	n	8	8	8	8	8	8
88	114	9603F	LW2-U3C-1	8	wq replicate	10	9	1	90.0	10.0	89.84	9	105.45	94.13	15.61	1.73	11.32	1.26							
89	105	9604F	LW2-U3C-2	1		10	8	2	80.0	20.0	87.31	8	104.23	92.62	16.92	2.12	11.61	1.45							
90	93	9604F	LW2-U3C-2	2		10	9	1	90.0	10.0	89.98	9	106.51	95.09	16.53	1.84	11.42	1.27							
91	140	9604F	LW2-U3C-2	3		10	8	2	80.0	20.0	88.34	8	106.03	94.12	17.69	2.21	11.91	1.49							
92	108	9604F	LW2-U3C-2	4		10	10	0	100.0	0.0	92.12	10	109.22	96.49	17.10	1.71	12.73	1.27							
93	99	9604F	LW2-U3C-2	5		10	9	1	90.0	10.0	88.71	9	105.92	94.12	17.21	1.91	11.80	1.31	Mean	8.9	1.1	88.8	11.3	1.88	1.31
94	52	9604F	LW2-U3C-2	6		10	10	0	100.0	0.0	87.48	10	102.32	91.78	14.84	1.48	10.54	1.05	SD	1.1	1.1	11.3	11.3	0.26	0.16
95	106	9604F	LW2-U3C-2	7		10	7	3	70.0	30.0	95.60	7	110.59	100.07	14.99	2.14	10.52	1.50	n	8	8	8	8	8	8
96	24	9604F	LW2-U3C-2	8	wq replicate	10	10	0	100.0	0.0	84.30	10	100.86	89.37	16.56	1.66	11.49	1.15							

ANC07645
BZTO104(e)007645

Test Number: 686-24

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)		SURV	MORT	PSURV	PMORT	WT	AFDW
97	91	9605F	LW2-U3C-3	1		10	9	1	90.0	10.0	92.23	9	111.83	98.67	19.60	2.18	13.16	1.46							
98	22	9605F	LW2-U3C-3	2		10	10	0	100.0	0.0	85.77	10	102.61	91.44	16.84	1.68	11.17	1.12							
99	98	9605F	LW2-U3C-3	3		10	9	1	90.0	10.0	96.85	9	113.97	102.12	17.12	1.90	11.85	1.32							
100	96	9605F	LW2-U3C-3	4		10	9	1	90.0	10.0	84.10	9	101.19	89.71	17.09	1.90	11.48	1.28							
101	89	9605F	LW2-U3C-3	5		10	10	0	100.0	0.0	95.01	10	111.92	101.07	16.91	1.69	10.85	1.09	Mean	9.6	0.4	96.3	3.8	1.89	1.26
102	157	9605F	LW2-U3C-3	6		10	10	0	100.0	0.0	80.34	10	99.72	87.52	19.38	1.94	12.20	1.22	SD	0.5	0.5	5.2	5.2	0.16	0.12
103	116	9605F	LW2-U3C-3	7		10	10	0	100.0	0.0	87.36	10	105.95	93.49	18.59	1.86	12.46	1.25	n	8	8	8	8	8	8
104	146	9605F	LW2-U3C-3	8	wq replicate	10	10	0	100.0	0.0	91.95	10	111.78	98.59	19.83	1.98	13.19	1.32							
105	127	9606F	LW2-U2C-1	1		10	10	0	100.0	0.0	86.15	10	105.49	93.41	19.34	1.93	12.08	1.21							
106	165	9606F	LW2-U2C-1	2		10	9	1	90.0	10.0	90.27	9	112.21	99.99	21.94	2.44	12.22	1.36							
107	162	9606F	LW2-U2C-1	3		10	9	1	90.0	10.0	81.88	9	104.33	90.96	22.45	2.49	13.37	1.49							
108	144	9606F	LW2-U2C-1	4		10	10	0	100.0	0.0	88.40	10	108.11	94.47	19.71	1.97	13.64	1.36							
109	18	9606F	LW2-U2C-1	5		10	8	2	80.0	20.0	91.99	8	109.46	97.72	17.47	2.18	11.74	1.47	Mean	8.9	1.1	88.8	11.3	2.13	1.35
110	117	9606F	LW2-U2C-1	6		10	6	4	60.0	40.0	93.92	6	109.11	99.29	15.19	2.53	9.82	1.64	SD	1.4	1.4	13.6	13.6	0.33	0.18
111	126	9606F	LW2-U2C-1	7		10	10	0	100.0	0.0	85.43	10	104.59	92.62	19.16	1.92	11.97	1.20	n	8	8	8	8	8	8
112	60	9606F	LW2-U2C-1	8	wq replicate	10	9	1	90.0	10.0	86.65	9	101.06	91.16	14.41	1.60	9.90	1.10							
113	130	9607F	LW2-U2C-2	1		10	8	2	80.0	20.0	84.33	8	102.90	90.75	18.57	2.32	12.15	1.52							
114	76	9607F	LW2-U2C-2	2		10	10	0	100.0	0.0	88.44	10	109.76	106.77	21.32	2.13	2.99	0.30							
115	36	9607F	LW2-U2C-2	3		10	10	0	100.0	0.0	83.86	10	102.40	90.20	18.54	1.85	12.20	1.22							
116	20	9607F	LW2-U2C-2	4		10	7	3	70.0	30.0	83.51	7	100.15	89.20	16.64	2.38	10.95	1.56							
117	101	9607F	LW2-U2C-2	5		10	9	1	90.0	10.0	79.56	9	96.12	85.25	16.56	1.84	10.87	1.21	Mean	9.0	1.0	90.0	10.0	2.02	1.18
118	147	9607F	LW2-U2C-2	6		10	10	0	100.0	0.0	97.32	10	116.32	104.36	19.00	1.90	11.96	1.20	SD	1.1	1.1	10.7	10.7	0.24	0.39
119	153	9607F	LW2-U2C-2	7		10	9	1	90.0	10.0	94.15	9	112.49	100.14	18.34	2.04	12.35	1.37	n	8	8	8	8	8	8
120	1	9607F	LW2-U2C-2	8	wq replicate	10	9	1	90.0	10.0	88.93	9	104.17	94.55	15.24	1.69	9.62	1.07							
121	39	9608F	LW2-U2C-3	1		10	7	3	70.0	30.0	90.44	7	104.40	95.32	13.96	1.99	9.08	1.30							
122	74	9608F	LW2-U2C-3	2		10	9	1	90.0	10.0	83.70	9	102.53	91.89	18.83	2.09	10.64	1.18							
123	124	9608F	LW2-U2C-3	3		10	8	2	80.0	20.0	87.66	8	101.72	91.75	14.06	1.76	9.97	1.25							
124	51	9608F	LW2-U2C-3	4		10	10	0	100.0	0.0	87.96	10	105.16	95.11	17.20	1.72	10.05	1.01							
125	66	9608F	LW2-U2C-3	5		10	9	1	90.0	10.0	81.01	9	96.62	86.45	15.61	1.73	10.17	1.13	Mean	8.9	1.1	88.8	11.3	1.87	1.19
126	141	9608F	LW2-U2C-3	6		10	10	0	100.0	0.0	95.12	10	114.73	102.40	19.61	1.96	12.33	1.23	SD	1.0	1.0	9.9	9.9	0.14	0.09
127	139	9608F	LW2-U2C-3	7		10	9	1	90.0	10.0	96.36	9	113.52	102.34	17.16	1.91	11.18	1.24	n	8	8	8	8	8	8
128	33	9608F	LW2-U2C-3	8	wq replicate	10	9	1	90.0	10.0	82.64	9	98.58	88.24	15.94	1.77	10.34	1.15							
129	88	9609F	LW2-U1C-1	1		10	10	0	100.0	0.0	92.60	10	109.58	98.65	16.98	1.70	10.93	1.09							
130	151	9609F	LW2-U1C-1	2		10	10	0	100.0	0.0	87.31	10	102.32	91.01	15.01	1.50	11.31	1.13							
131	65	9609F	LW2-U1C-1	3		10	10	0	100.0	0.0	86.30	10	100.54	89.68	14.24	1.42	10.86	1.09							
132	59	9609F	LW2-U1C-1	4		10	9	1	90.0	10.0	91.70	9	105.82	95.61	14.12	1.57	10.21	1.13							
133	35	9609F	LW2-U1C-1	5		10	8	2	80.0	20.0	84.80	8	101.17	90.12	16.37	2.05	11.05	1.38	Mean	9.5	0.5	95.0	5.0	1.68	1.19
134	135	9609F	LW2-U1C-1	6		10	10	0	100.0	0.0	89.82	10	106.25	94.71	16.43	1.64	11.54	1.15	SD	0.8	0.8	7.6	7.6	0.20	0.12
135	104	9609F	LW2-U1C-1	7		10	9	1	90.0	10.0	94.67	9	111.51	99.30	16.84	1.87	12.21	1.36	n	8	8	8	8	8	8
136	28	9609F	LW2-U1C-1	8	wq replicate	10	10	0	100.0	0.0	84.00	10	100.72	89.28	16.72	1.67	11.44	1.14							
137	61	9610F	LW2-U1C-2	1		10	10	0	100.0	0.0	81.42	10	96.67	86.04	15.25	1.53	10.63	1.06							
138	111	9610F	LW2-U1C-2	2		10	10	0	100.0	0.0	84.99	10	99.21	88.80	14.22	1.42	10.41	1.04							
139	44	9610F	LW2-U1C-2	3		10	7	3	70.0	30.0	87.46	7	97.34	89.92	9.88	1.41	7.42	1.06							
140	5	9610F	LW2-U1C-2	4		10	9	1	90.0	10.0	84.53	9	98.89	89.05	14.36	1.60	9.84	1.09							
141	72	9610F	LW2-U1C-2	5		10	9	1	90.0	10.0	92.26	9	109.63	97.77	17.37	1.93	11.86	1.32	Mean	8.9	1.1	88.8	11.3	1.72	1.20
142	149	9610F	LW2-U1C-2	6		10	9	1	90.0	10.0	83.13	9	99.88	87.79	16.75	1.86	12.09	1.34	SD	1.0	1.0	9.9	9.9	0.30	0.17
143	41	9610F	LW2-U1C-2	7		10	9	1	90.0	10.0	91.50	9	106.83	96.23	15.33	1.70	10.60	1.18	n	8	8	8	8	8	8
144	154	9610F	LW2-U1C-2	8	wq replicate	10	8	2	80.0	20.0	91.66	8	109.88	97.86	18.22	2.28	12.02	1.50							
145	37	9611F	LW2-U1C-3	1		10	10	0	100.0	0.0	96.81	10	115.16	104.13	18.35	1.84	11.03	1.10							
146	45	9611F	LW2-U1C-3	2		10	9	1	90.0	10.0	92.08	9	107.87	98.19	15.79	1.75	9.68	1.08							
147	38	9611F	LW2-U1C-3	3		10	9	1	90.0	10.0	92.10	9	107.18	97.35	15.08	1.68	9.83	1.09							
148	87	9611F	LW2-U1C-3	4		10	10	0	100.0	0.0	94.53	10	112.28	101.63	17.75	1.78	10.65	1.07							
149	4	9611F	LW2-U1C-3	5		10	10	0	100.0	0.0	88.26	10	103.08	93.35	14.82	1.48	9.73	0.97	Mean	9.4	0.6	93.8	6.3	1.80	1.12
150	34	9611F	LW2-U1C-3	6		10	9	1	90.0	10.0	81.37	9	97.42	86.84	16.05	1.78	10.58	1.18	SD	0.5	0.5	5.2	5.2	0.18	0.10
151	119	9611F	LW2-U1C-3	7		10	9	1	90.0	10.0	90.00	9	108.02	96.51	18.02	2.00	11.51	1.28	n	8	8	8	8	8	8
152	159	9611F	LW2-U1C-3	8	wq replicate	10	9	1	90.0	10.0	84.55	9	103.23	92.21	18.68	2.08	11.02	1.22							

ANC07646
BZTO104(e)007646

Test Number: 686-24

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)		SURV	MORT	PSURV	PMORT	WT	AFDW
153	11	9612F	LW2-D1-1	1		10	10	0	100.0	0.0	83.30	10	98.54	89.13	15.24	1.52	9.41	0.94							
154	150	9612F	LW2-D1-1	2		10	5	5	50.0	50.0	87.67	5	98.17	90.62	10.50	2.10	7.55	1.51							
155	81	9612F	LW2-D1-1	3		10	10	0	100.0	0.0	91.44	10	107.77	98.06	16.33	1.63	9.71	0.97							
156	110	9612F	LW2-D1-1	4		10	1	9	10.0	90.0	89.50	1	90.44	89.79	0.94	0.94	0.65	0.65							
157	42	9612F	LW2-D1-1	5		10	10	0	100.0	0.0	92.91	10	108.66	98.79	15.75	1.58	9.87	0.99	Mean	7.9	2.1	78.8	21.3	1.60	1.04
158	83	9612F	LW2-D1-1	6		10	10	0	100.0	0.0	91.34	10	107.79	97.91	16.45	1.65	9.88	0.99	SD	3.3	3.3	32.7	32.7	0.34	0.24
159	71	9612F	LW2-D1-1	7		10	8	2	80.0	20.0	89.93	8	102.09	93.43	12.16	1.52	8.66	1.08	n	8	8	8	8	8	8
160	97	9612F	LW2-D1-1	8	wq replicate	10	9	1	90.0	10.0	82.17	9	99.26	88.66	17.09	1.90	10.60	1.18							
161	166	9613F	LW2-D2	1		10	10	0	100.0	0.0	94.68	10	117.04	106.17	22.36	2.24	10.87	1.09							
162	29	9613F	LW2-D2	2		10	10	0	100.0	0.0	87.09	10	105.52	95.86	18.43	1.84	9.66	0.97							
163	50	9613F	LW2-D2	3		10	10	0	100.0	0.0	89.21	10	106.57	96.98	17.36	1.74	9.59	0.96							
164	70	9613F	LW2-D2	4		10	10	0	100.0	0.0	92.24	10	108.95	98.88	16.71	1.67	10.07	1.01							
165	121	9613F	LW2-D2	5		10	10	0	100.0	0.0	91.17	10	107.36	97.18	16.19	1.62	10.18	1.02	Mean	9.1	0.9	91.3	8.8	1.94	1.10
166	54	9613F	LW2-D2	6		10	7	3	70.0	30.0	84.14	7	99.16	89.01	15.02	2.15	10.15	1.45	SD	1.6	1.6	16.4	16.4	0.25	0.16
167	145	9613F	LW2-D2	7		10	10	0	100.0	0.0	83.71	10	104.30	92.78	20.59	2.06	11.52	1.15	n	8	8	8	8	8	8
168	86	9613F	LW2-D2	8	wq replicate	10	6	4	60.0	40.0	86.77	6	100.10	92.90	13.33	2.22	7.20	1.20							
		Beaker #138 one animal was lost or damaged in transfering to weighing pan.																							

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BZTO104(e)007647

Test Number: 686-24

Freshwater Sediment Test
10-Day Chironomus tentans

Water Quality Data

NAS SMPL	CLIENT DESCRIP	Bulk Sediment Interstitial water NH3	pH
9574F	Control	2.3	6.6
9594F	LW2-U5Q-1	<0.5	6.8
9595F	LW2-U5Q-2	<0.5	6.5
9596F	LW2-U5Q-3	0.5	6.5
9597F	LW2-U6TOC-1	1.5	6.4
9598F	LW2-U6TOC-2	2.6	6.0
9599F	LW2-U6TOC-3	1.9	5.8
9600F	LW2-U4Q-1	2.0	6.0
9601F	LW2-U4Q-2	2.2	6.1
9602F	LW2-U4Q-3	1.9	6.2
9603F	LW2-U3C-1	3.5	6.5
9604F	LW2-U3C-2	2.2	6.7
9605F	LW2-U3C-3	1.3	6.7
9606F	LW2-U2C-1	1.4	6.6
9607F	LW2-U2C-2	1.1	6.3
9608F	LW2-U2C-3	0.6	6.2
9609F	LW2-U1C-1	1.3	6.3
9610F	LW2-U1C-2	1.1	6.1
9611F	LW2-U1C-3	0.5	6.0
9612F	LW2-D1-1	1.7	6.2
9613F	LW2-D2	1.1	6.3

BKR	NAS SMPL	CLIENT DESCRIP	REPL	DAY	Overlying water TEMP	DO	COND	pH	NH3	HARD	ALK
1	9607F	LW2-U2C-2	8	0	22.9	7.4	185	6.8	<0.1	34	40
6	9595F	LW2-U5Q-2	8	0	22.8	7.8	155	6.7	<0.1	43	40
24	9604F	LW2-U3C-2	8	0	22.8	7.6	160	6.7	0.3	34	40
27	9602F	LW2-U4Q-3	8	0	22.8	7.4	150	6.6	0.2	43	40
28	9609F	LW2-U1C-1	8	0	22.7	7.2	140	6.6	<0.1	34	40
33	9608F	LW2-U2C-3	8	0	22.7	7.4	150	6.5	<0.1	34	40
40	9600F	LW2-U4Q-1	8	0	22.9	7.3	150	6.6	0.2	34	40
46	9594F	LW2-U5Q-1	8	0	22.8	7.6	150	6.6	<0.1	34	40
47	9599F	LW2-U6TOC-3	8	0	22.6	7.5	150	6.6	0.2	34	40
57	9596F	LW2-U5Q-3	8	0	22.6	7.9	150	6.6	<0.1	43	40
60	9606F	LW2-U2C-1	8	0	22.6	7.7	150	6.6	0.1	43	40
69	9547F	Control	8	0	22.8	7.7	425	6.5	0.1	43	40
82	9601F	LW2-U4Q-2	8	0	22.7	7.6	150	6.7	0.2	34	40
86	9613F	LW2-D2	8	0	22.6	7.4	150	6.6	0.1	34	40
97	9612F	LW2-D1-1	8	0	22.6	7.8	155	6.6	0.2	34	40
103	9597F	LW2-U6TOC-1	8	0	22.5	7.6	150	6.6	0.1	43	40
114	9603F	LW2-U3C-1	8	0	22.5	7.4	160	6.5	<0.1	43	50
146	9605F	LW2-U3C-3	8	0	22.6	7.4	155	6.6	<0.1	34	40
154	9610F	LW2-U1C-2	8	0	22.6	7.6	140	6.5	<0.1	34	40
155	9598F	LW2-U6TOC-2	8	0	22.6	7.7	145	6.5	0.3	34	40
159	9611F	LW2-U1C-3	8	0	22.7	7.2	145	6.5	<0.1	43	40
1	9607F	LW2-U2C-2	8	1	22.8	5.0					
6	9595F	LW2-U5Q-2	8	1	22.8	6.5					
24	9604F	LW2-U3C-2	8	1	22.7	6.2					
27	9602F	LW2-U4Q-3	8	1	22.8	6.3					
28	9609F	LW2-U1C-1	8	1	22.6	6.3					
33	9608F	LW2-U2C-3	8	1	22.5	6.5					
40	9600F	LW2-U4Q-1	8	1	22.9	6.7					
46	9594F	LW2-U5Q-1	8	1	22.7	6.7					
47	9599F	LW2-U6TOC-3	8	1	22.5	6.5					
57	9596F	LW2-U5Q-3	8	1	22.5	6.3					
60	9606F	LW2-U2C-1	8	1	22.8	6.4					
69	9547F	Control	8	1	22.6	6.6					
82	9601F	LW2-U4Q-2	8	1	22.6	6.9					
86	9613F	LW2-D2	8	1	22.7	6.2					
97	9612F	LW2-D1-1	8	1	22.6	6.2					
103	9597F	LW2-U6TOC-1	8	1	22.5	6.2					
114	9603F	LW2-U3C-1	8	1	22.6	6.2					
146	9605F	LW2-U3C-3	8	1	22.7	6.4					
154	9610F	LW2-U1C-2	8	1	22.7	6.0					
155	9598F	LW2-U6TOC-2	8	1	22.8	6.5					
159	9611F	LW2-U1C-3	8	1	22.7	6.6					
1	9607F	LW2-U2C-2	8	2	22.6	5.6					
6	9595F	LW2-U5Q-2	8	2	22.7	5.6					
24	9604F	LW2-U3C-2	8	2	22.6	5.8					
27	9602F	LW2-U4Q-3	8	2	22.6	5.8					
28	9609F	LW2-U1C-1	8	2	22.6	5.8					
33	9608F	LW2-U2C-3	8	2	22.6	5.9					
40	9600F	LW2-U4Q-1	8	2	22.6	6.0					
46	9594F	LW2-U5Q-1	8	2	22.8	6.0					

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47	9599F	LW2-U6TOC-3	8	2	22.8	6.0								
57	9596F	LW2-U5Q-3	8	2	22.7	6.1								
60	9606F	LW2-U2C-1	8	2	22.6	5.6								
69	9547F	Control	8	2	22.8	6.2								
82	9601F	LW2-U4Q-2	8	2	22.8	6.2								
86	9613F	LW2-D2	8	2	22.7	5.5								
97	9612F	LW2-D1-1	8	2	22.5	5.6								
103	9597F	LW2-U6TOC-1	8	2	22.4	5.7								
114	9603F	LW2-U3C-1	8	2	22.4	5.8								
146	9605F	LW2-U3C-3	8	2	22.6	5.8								
154	9610F	LW2-U1C-2	8	2	22.6	5.7								
155	9598F	LW2-U6TOC-2	8	2	22.6	5.8								
159	9611F	LW2-U1C-3	8	2	22.6	5.8								
1	9607F	LW2-U2C-2	8	3	22.6	5.8								
6	9595F	LW2-U5Q-2	8	3	22.6	6.2								
24	9604F	LW2-U3C-2	8	3	22.6	5.6								
27	9602F	LW2-U4Q-3	8	3	22.6	6.1								
28	9609F	LW2-U1C-1	8	3	22.4	6.2								
33	9608F	LW2-U2C-3	8	3	22.4	6.2								
40	9600F	LW2-U4Q-1	8	3	22.8	6.4								
46	9594F	LW2-U5Q-1	8	3	22.8	6.4								
47	9599F	LW2-U6TOC-3	8	3	22.6	6.2								
57	9596F	LW2-U5Q-3	8	3	22.4	6.4								
60	9606F	LW2-U2C-1	8	3	22.7	5.7								
69	9547F	Control	8	3	22.6	6.4								
82	9601F	LW2-U4Q-2	8	3	22.5	6.4								
86	9613F	LW2-D2	8	3	22.5	6.4								
97	9612F	LW2-D1-1	8	3	22.4	6.3								
103	9597F	LW2-U6TOC-1	8	3	22.4	6.3								
114	9603F	LW2-U3C-1	8	3	22.3	5.6								
146	9605F	LW2-U3C-3	8	3	22.5	6.0								
154	9610F	LW2-U1C-2	8	3	22.5	6.2								
155	9598F	LW2-U6TOC-2	8	3	22.5	6.4								
159	9611F	LW2-U1C-3	8	3	22.7	6.5								
1	9607F	LW2-U2C-2	8	4	22.5	6.1								
6	9595F	LW2-U5Q-2	8	4	22.5	6.1								
24	9604F	LW2-U3C-2	8	4	22.5	6.2								
27	9602F	LW2-U4Q-3	8	4	22.5	6.2								
28	9609F	LW2-U1C-1	8	4	22.4	6.2								
33	9608F	LW2-U2C-3	8	4	22.4	5.9								
40	9600F	LW2-U4Q-1	8	4	22.4	5.9								
46	9594F	LW2-U5Q-1	8	4	22.6	6.2								
47	9599F	LW2-U6TOC-3	8	4	22.5	6.1								
57	9596F	LW2-U5Q-3	8	4	22.4	6.0								
60	9606F	LW2-U2C-1	8	4	22.4	5.8								
69	9547F	Control	8	4	22.6	5.9								
82	9601F	LW2-U4Q-2	8	4	22.5	6.1								
86	9613F	LW2-D2	8	4	22.4	6.3								
97	9612F	LW2-D1-1	8	4	22.4	5.8								
103	9597F	LW2-U6TOC-1	8	4	22.4	6.0								
114	9603F	LW2-U3C-1	8	4	22.4	5.7								
146	9605F	LW2-U3C-3	8	4	22.4	5.5								
154	9610F	LW2-U1C-2	8	4	22.5	5.9								
155	9598F	LW2-U6TOC-2	8	4	22.5	5.9								
159	9611F	LW2-U1C-3	8	4	22.5	6.2								
1	9607F	LW2-U2C-2	8	5	22.9	4.7								
6	9595F	LW2-U5Q-2	8	5	22.9	5.0								
24	9604F	LW2-U3C-2	8	5	23.0	4.4								
27	9602F	LW2-U4Q-3	8	5	22.8	4.8								
28	9609F	LW2-U1C-1	8	5	22.8	5.2								
33	9608F	LW2-U2C-3	8	5	22.7	4.7								
40	9600F	LW2-U4Q-1	8	5	22.8	4.7								
46	9594F	LW2-U5Q-1	8	5	23.0	5.2								
47	9599F	LW2-U6TOC-3	8	5	22.8	4.4								
57	9596F	LW2-U5Q-3	8	5	22.7	4.6								
60	9606F	LW2-U2C-1	8	5	23.0	4.2								
69	9547F	Control	8	5	22.8	4.5								
82	9601F	LW2-U4Q-2	8	5	22.8	5.3								
86	9613F	LW2-D2	8	5	22.7	4.7								
97	9612F	LW2-D1-1	8	5	22.7	4.4								
103	9597F	LW2-U6TOC-1	8	5	22.6	4.0								
114	9603F	LW2-U3C-1	8	5	22.6	3.8								
146	9605F	LW2-U3C-3	8	5	22.8	4.0								
154	9610F	LW2-U1C-2	8	5	22.8	4.0								
155	9598F	LW2-U6TOC-2	8	5	23.0	4.4								
159	9611F	LW2-U1C-3	8	5	23.0	4.7								
1	9607F	LW2-U2C-2	8	6	22.7	4.8								
6	9595F	LW2-U5Q-2	8	6	22.7	5.2								
24	9604F	LW2-U3C-2	8	6	22.7	4.4								
27	9602F	LW2-U4Q-3	8	6	22.7	5.0								

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28	9609F	LW2-U1C-1	8	6	22.6	4.9								
33	9608F	LW2-U2C-3	8	6	22.6	5.0								
40	9600F	LW2-U4Q-1	8	6	22.6	4.9								
46	9594F	LW2-U5Q-1	8	6	22.8	5.4								
47	9599F	LW2-U6TOC-3	8	6	22.6	4.2								
57	9596F	LW2-U5Q-3	8	6	22.6	4.8								
60	9606F	LW2-U2C-1	8	6	22.8	4.6								
69	9547F	Control	8	6	22.7	4.4								
82	9601F	LW2-U4Q-2	8	6	22.6	4.5								
86	9613F	LW2-D2	8	6	22.6	4.6								
97	9612F	LW2-D1-1	8	6	22.6	3.8								
103	9597F	LW2-U6TOC-1	8	6	22.5	3.6								
114	9603F	LW2-U3C-1	8	6	22.5	3.8								
146	9605F	LW2-U3C-3	8	6	22.7	4.6								
154	9610F	LW2-U1C-2	8	6	22.7	4.2								
155	9598F	LW2-U6TOC-2	8	6	22.7	5.0								
159	9611F	LW2-U1C-3	8	6	22.8	5.3								
1	9607F	LW2-U2C-2	8	7	22.5	6.0								
6	9595F	LW2-U5Q-2	8	7	22.4	6.5								
24	9604F	LW2-U3C-2	8	7	22.4	5.6								
27	9602F	LW2-U4Q-3	8	7	22.4	6.0								
28	9609F	LW2-U1C-1	8	7	22.4	6.2								
33	9608F	LW2-U2C-3	8	7	22.4	6.0								
40	9600F	LW2-U4Q-1	8	7	22.4	6.4								
46	9594F	LW2-U5Q-1	8	7	22.5	5.5								
47	9599F	LW2-U6TOC-3	8	7	22.4	5.4								
57	9596F	LW2-U5Q-3	8	7	22.4	6.0								
60	9606F	LW2-U2C-1	8	7	22.6	5.9								
69	9547F	Control	8	7	22.4	5.5								
82	9601F	LW2-U4Q-2	8	7	22.4	5.7								
86	9613F	LW2-D2	8	7	22.4	4.8								
97	9612F	LW2-D1-1	8	7	22.3	5.2								
103	9597F	LW2-U6TOC-1	8	7	22.3	4.8								
114	9603F	LW2-U3C-1	8	7	22.2	4.9								
146	9605F	LW2-U3C-3	8	7	22.4	5.2								
154	9610F	LW2-U1C-2	8	7	22.4	5.2								
155	9598F	LW2-U6TOC-2	8	7	22.5	5.4								
159	9611F	LW2-U1C-3	8	7	22.6	6.2								
1	9607F	LW2-U2C-2	8	8	22.4	4.5								
6	9595F	LW2-U5Q-2	8	8	22.2	5.1								
24	9604F	LW2-U3C-2	8	8	22.1	4.5								
27	9602F	LW2-U4Q-3	8	8	22.3	5.0								
28	9609F	LW2-U1C-1	8	8	22.1	4.8								
33	9608F	LW2-U2C-3	8	8	22.1	5.2								
40	9600F	LW2-U4Q-1	8	8	22.2	5.0								
46	9594F	LW2-U5Q-1	8	8	22.4	5.8								
47	9599F	LW2-U6TOC-3	8	8	22.3	4.4								
57	9596F	LW2-U5Q-3	8	8	22.2	4.7								
60	9606F	LW2-U2C-1	8	8	22.2	5.0								
69	9547F	Control	8	8	22.4	3.8								
82	9601F	LW2-U4Q-2	8	8	22.2	4.6								
86	9613F	LW2-D2	8	8	22.2	4.4								
97	9612F	LW2-D1-1	8	8	22.1	4.0								
103	9597F	LW2-U6TOC-1	8	8	22.1	3.6								
114	9603F	LW2-U3C-1	8	8	22.1	3.8								
146	9605F	LW2-U3C-3	8	8	22.2	4.4								
154	9610F	LW2-U1C-2	8	8	22.3	4.6								
155	9598F	LW2-U6TOC-2	8	8	22.3	4.6								
159	9611F	LW2-U1C-3	8	8	22.4	4.8								
1	9607F	LW2-U2C-2	8	9	22.8	5.6								
6	9595F	LW2-U5Q-2	8	9	22.9	5.8								
24	9604F	LW2-U3C-2	8	9	22.9	5.0								
27	9602F	LW2-U4Q-3	8	9	22.7	5.6								
28	9609F	LW2-U1C-1	8	9	22.7	5.4								
33	9608F	LW2-U2C-3	8	9	22.7	6.0								
40	9600F	LW2-U4Q-1	8	9	23.0	5.6								
46	9594F	LW2-U5Q-1	8	9	22.9	5.8								
47	9599F	LW2-U6TOC-3	8	9	22.9	4.4								
57	9596F	LW2-U5Q-3	8	9	22.8	5.6								
60	9606F	LW2-U2C-1	8	9	22.7	5.6								
69	9547F	Control	8	9	22.8	4.6								
82	9601F	LW2-U4Q-2	8	9	22.8	5.2								
86	9613F	LW2-D2	8	9	22.8	4.9								
97	9612F	LW2-D1-1	8	9	22.7	5.4								
103	9597F	LW2-U6TOC-1	8	9	22.6	4.2								
114	9603F	LW2-U3C-1	8	9	22.6	4.6								
146	9605F	LW2-U3C-3	8	9	22.8	4.8								
154	9610F	LW2-U1C-2	8	9	22.8	5.0								
155	9598F	LW2-U6TOC-2	8	9	23.0	5.0								
159	9611F	LW2-U1C-3	8	9	23.0	6.1								

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Freshwater Sediment Test
10-Day Chironomus tentans

1	9607F	LW2-U2C-2	8	10	22.7	5.5	160	6.1	0.3	34	40		
6	9595F	LW2-U5Q-2	8	10	22.6	6.2	160	6.1	0.1	34	40		
24	9604F	LW2-U3C-2	8	10	22.4	5.3	160	6.0	0.5	43	40		
27	9602F	LW2-U4Q-3	8	10	22.4	6.0	160	6.1	0.5	43	40		
28	9609F	LW2-U1C-1	8	10	22.2	6.0	155	6.0	0.2	34	40		
33	9608F	LW2-U2C-3	8	10	22.2	6.2	155	6.0	0.3	51	40		
40	9600F	LW2-U4Q-1	8	10	22.5	6.2	160	6.0	0.4	34	40		
46	9594F	LW2-U5Q-1	8	10	22.4	6.2	155	6.0	0.2	43	40		
47	9599F	LW2-U6TOC-3	8	10	22.3	5.3	155	6.0	0.4	34	40		
57	9596F	LW2-U5Q-3	8	10	22.2	6.2	160	6.1	0.1	34	40		
60	9606F	LW2-U2C-1	8	10	22.4	6.3	155	6.1	0.2	34	40		
69	9547F	Control	8	10	22.3	5.7	170	6.2	0.4	43	40		
82	9601F	LW2-U4Q-2	8	10	22.3	6.3	155	6.1	0.4	43	40		
86	9613F	LW2-D2	8	10	22.2	6.5	155	6.1	0.3	34	40		
97	9612F	LW2-D1-1	8	10	22.2	5.8	155	6.1	0.2	34	40		
103	9597F	LW2-U6TOC-1	8	10	22.2	5.8	155	6.1	0.4	34	40		
114	9603F	LW2-U3C-1	8	10	22.1	6.1	155	6.1	0.3	34	40		
146	9605F	LW2-U3C-3	8	10	22.2	6.4	160	6.2	0.2	43	40		
154	9610F	LW2-U1C-2	8	10	22.2	6.4	150	6.2	0.2	51	40		
155	9598F	LW2-U6TOC-2	8	10	22.3	6.1	155	6.3	0.4	34	40		
159	9611F	LW2-U1C-3	8	10	22.4	6.6	155	6.2	0.2	34	40		
				Mean	22.6	5.7	161	6.3	0.3	38	40	---	6.3
				SD	0.2	0.9	42	0.3	0.1	5	2	---	0.3
				n	231	231	42	42	42	42	42	21	21
				Min	22.1	3.6	140	6.0	0.1	34	40	<0.5	5.8
				Max	23.0	7.9	425	6.8	0.5	51	50	3.5	6.8

Report

of

Test No. 686-1

Toxicity of Portland Harbor RI/FS Freshwater Test Sediments (Batch 1) using a 28-day Amphipod, *Hyalella azteca*, Sediment Bioassay

Submitted to

Windward Environmental, Inc.
200 West Mercer Street, Suite 401
Seattle, WA 98119

Submitted by

Northwestern Aquatic Sciences
3814 Yaquina Bay Road
P.O. Box 1437
Newport, OR 97365

January 19, 2005

ANC07652
BZTO104(e)007652

TOXICITY TEST REPORT

TEST IDENTIFICATION

Test No.: 686-1

Title: Toxicity of Portland Harbor RI/FS freshwater test sediments (Batch 1) using a 28-day amphipod, *Hyalella azteca*, sediment bioassay.

Protocol No.: NAS-686-HA4c, June 24, 2004. Based on ASTM Method E 1706-00 (ASTM 2003) and EPA Method 100.4 (EPA/600/R-99/064, 2000). This protocol can be found in Appendix B of the Portland Harbor RI/FS Round 2 Quality Assurance Project Plan, June 24, 2004.

STUDY MANAGEMENT

Study Sponsor: Windward Environmental, Inc., 200 West Mercer Street, Suite 401, Seattle, WA 98119.

Sponsor's Study Monitor: Ms. Helle Anderson

Testing Laboratory: Northwestern Aquatic Sciences, P.O. Box 1437, Newport, OR 97365

Test Location: Newport laboratory

Laboratory's Study Personnel: G.J. Irissarri, B.S., Proj. Man./Study Dir.; L.K. Nemeth, M.B.A., QA Officer; R.S. Caldwell, Ph.D., Sr. Toxicol.; M.S. Redmond, M.S., Aq. Toxicol.; G.A. Buhler, B.S., Aq. Toxicol.; W.T. Montgomery, A.A., Sr. Tech.; G. Hayes, B.S., Tech.; S.J. Gage, B.A., Tech.; B.B. Pridgeon, Lab Asst.

Study Schedule:

Test Beginning: 7-27-04, 1440 hrs.

Test Ending: 8-24-04, 1400 hrs.

Disposition of Study Records: All specimens, raw data, reports and other study records are stored according to Good Laboratory Practice regulations at Northwestern Aquatic Sciences, 3814 Yaquina Bay Rd., Newport, OR 97365.

Good Laboratory Practices: The test was conducted following the principles of Good Laboratory Practices (GLP) as defined in the EPA/TSCA Good Laboratory Practice regulations revised August 17, 1989 (40 CFR Part 792).

Statement of Quality Assurance: The test data were reviewed by the Quality Assurance Unit to assure that the study was performed in accordance with the protocol and standard operating procedures. This report is an accurate reflection of the raw data.

TEST MATERIAL

Test Sediments: Portland Harbor RI/FS freshwater test sediments (Batch 1). Details are as follows:

NAS Sample No.	9213F	9214F	9215F	9216F	9217F
Description	LW2-G009	LW2-G010	LW2-G011	LW2-G007-1	LW2-G026
Collection Date	7-19-04	7-19-04	7-19-04	7-20-04	7-20-04
Receipt Date	7-23-04	7-23-04	7-23-04	7-23-04	7-23-04
NAS Sample No.	9218F	9219F	9220F	9221F	9222F
Description	LW2-G060	LW2-G064	LW2-G203-1	LW2-G066	LW2-G015
Collection Date	7-20-04	7-20-04	7-20-04	7-20-04	7-20-04
Receipt Date	7-23-04	7-23-04	7-23-04	7-23-04	7-23-04
NAS Sample No.	9223F	9224F	9225F	9226F	9227F
Description	LW2-G019	LW2-G017	LW2-G294-1	LW2-G270	LW2-G311-1
Collection Date	7-20-04	7-20-04	7-21-04	7-21-04	7-21-04
Receipt Date	7-23-04	7-23-04	7-23-04	7-23-04	7-23-04
NAS Sample No.	9228F	9229F	9230F	9231F	9232F
Description	LW2-G324-1	LW2-G334	LW2-G345-1	LW2-G221	LW2-G220
Collection Date	7-22-04	7-22-04	7-22-04	7-22-04	7-22-04
Receipt Date	7-23-04	7-23-04	7-23-04	7-23-04	7-23-04

ANC07653
BZTO104(e)007653

REFERENCES

ASTM. 2003. Standard Test Methods for Measuring the Toxicity of Sediment-Associated Contaminants with Fresh Water Invertebrates. ASTM Standard Method No. E 1706-00. Am. Soc. Test. Mat., West Conshohocken, PA.

U.S. EPA. 2000. Section 11, Test Method 100.1, *Hyalella azteca* 10-d Survival and Growth Test for Sediments, pp 47-54 In: Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates (Second Edition). EPA/600/R-99/064.

STUDY APPROVAL

Gerald Lissarri 1-20-05
Project Manager/Study Director Date

Linda K. Nemeth 1/14/05
Quality Assurance Unit Date

Richard S. Caldwell 1/20/05
Laboratory Director Date

ANC07654
BZTO104(e)007654

APPENDIX I

RAW DATA

TEST DESCRIPTION, MONITORING, AND RESULTS BENCHSHEETS

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-1 Client Windward Environmental Investigator

STUDY MANAGEMENT

Client: Windward Enviromental, 200 West Mercer Street, Suite 401, Seattle, WA 98119
Client's Study Monitor: Ms. Helle Anderson
Testing Laboratory: Northwestern Aquatic Sciences
Test Location: Newport Laboratory
Laboratory's Study Personnel:
Proj. Man./Study Dir. G.J. Irissarri GJI
QA Officer L.K. Nemeth
1. [illegible] 2. G.C. Hayes GCH
3. William T. Montgomery WTM 4. BB. Pridgeon BBP
Study Schedule: M.S. Redmond MSR R.S. Caldwell RSC Susan Gage [illegible]
Test Beginning: 7-27-04 1440 Test Ending: 8-24-04 1400

TEST MATERIAL

General description (see sample logbook/chain-of-custody for details):

NAS Sample No.:	9213F	9214F	9215F	9216F	9217F
Description:	LW2-G009	LW2-G010	LW2-G011	LW2-G007-1	LW2-G026
Collection Date:	7/19/04	7/19/04	7/19/04	7/20/04	7/20/04
Receipt Date:	7/23/04	7/23/04	7/23/04	7/23/04	7/23/04

NAS Sample No.:	9218F	9219F	9220F	9221F	9222F
Description:	LW2-G060	LW2-G064	LW2-G203-1	LW2-G066	LW2-G015
Collection Date:	7/20/04	7/20/04	7/20/04	7/20/04	7/20/04
Receipt Date:	7/23/04	7/23/04	7/23/04	7/23/04	7/23/04

NAS Sample No.:	9223F	9224F	9225F	9226F	9227F
Description:	LW2-G019	LW2-G017	LW2-G294-1	LW2-G270	LW2-G311-1
Collection Date:	7/20/04	7/20/04	7/21/04	7/21/04	7/21/04
Receipt Date:	7/23/04	7/23/04	7/23/04	7/23/04	7/23/04

NAS Sample No.:	9228F	9229F	9230F	9231F	9232F
Description:	LW2-G324-1	LW2-G334	LW2-G345-1	LW2-G221	LW2-G220
Collection Date:	7/22/04	7/22/04	7/22/04	7/22/04	7/22/04
Receipt Date:	7/23/04	7/23/04	7/23/04	7/23/04	7/23/04

NAS Sample No.:	9208F				
Description:	Control				
Collection Date:	7/20/04				
Receipt Date:	7/20/04				

NAS Sample No.:					
Description:					
Collection Date:					
Receipt Date:					

Error codes: 1) correction of handwriting error
2) written in wrong location; entry deleted
3) wrong date deleted, replaced with corrrect date
4) error found in measurement; measurement repeated

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-1 Client Windward Environmental Investigator _____

SEDIMENT DESCRIPTIONS -- SUPPLEMENTAL NOTES

Sample No.	Description
9208F	BLACK FINE MUD
9213F	Gray Brown Sandy Mud
9214F	Gray brown Fine Mud
9215F	Gray - brown Sandy mud
9216F	Gray brown fine grain mud
9217F	GRAY/GREEN FINE MUD w/ FINE SAND
9218F	Gray brown sandy mud
9219F	Grey brown mud with fine sand.
9220F	DK. Brown Sandy ~~soil~~ mud with sticks
9221F	Gray brown Fine Mud
9222F	Dark brown fine grain mud
9223F	Gray muddy sand
9224F	FINE GRAY/GREEN MUD w/ PLANT DEBRIS
9225F	Gray Brown light sandy mud with strong odor of petroleum
9226F	Gray brown fine grain mud
9227F	Thick Brown Mud
9228F	BROWN MUDDY SAND, CHUNKS OF PLANT DEBRIS
9229F	Gray brown fine Mud with Plant debris
9230F	Dark brown mud
9231F	Gray brown sandy mud
9232F	Brown fluid mud

ANC07658
BZTO104(e)007658

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-1 Client Windward Environmental Investigator _____

Test conducted in (circle one): room 1 (room 2) trailer water bath other:_____

Randomization chart: TOP SHELF

5								165	
4								164	
3	→							163	168
2								162	167
1								161	166

FRONT

Randomization chart:

Randomization chart:

Randomization chart:

ANC07659
BZTO104(e)007659

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-1 Client Windward Environmental Investigator _____

TEST WATER

Source: Dechlorinated Newport, OR tap water

Date of Collection: 7-23-04

pH 7.0

Cond (umhos/cm2) 170 (See Attached Page pg 5)

Hardness (mg/La0 34

Alkalinity (mg/L) 30

Treatments: Aerated ≥ 24 hrs

TEST ORGANISMS

Species: *Hyalella azteca* Age: 7-8 DAYS Date received: 7-26-04

Source: Chesapeake Cultures, Hayes, VA

Acclimation Data:

Date	Temp. (deg.C)	DO (mg/L)	pH	Cond umhos/cm	Feeding amount	Feeding description	Water changes	Hardness (mg/L)	Alkalinity (mg/L)	
7-26-04	23.7	>15.0	7.1	460	10 ML/PAN	YTC	½ REPLACED W/ TAP WATER	119	190	RECEIVING WATER
7-27-04	22.4	8.3	8.3	310	10 ML/PAN	YTC	"	68	70	
Mean	23.1	11.6	7.7	385				94	130	
S.D.	—	—	—	—				—	—	
(N)	2	2	2	2				2	2	

Photoperiod during acclimation: 16:8, L:D

TEST PROCEDURES AND CONDITIONS

Test chambers: 300 ml glass beakers

Test volumes: 100 ml of test sediment; 275 ml total volume

Replicates/treatment: (8) 8 Organisms/treatment: (80) 80 (10/REP)

Test water changes: Twice daily

Aeration: only if DO falls below 2.5 mg/L

Beaker placement: Total randomization

Feeding: everyday beginning with day zero

Photoperiod: 16:8, L:D

Test temperature (deg.C): 23

Control Sediment:

Source: From an area approximately one mile east of the Hwy. 101 bridge at Beaver Creek, approx. 8 miles south of Newport, OR.

Date collected: 7/20/04

Sieved through 0.5 -mm screen NAS# 9208F

Storage: 4°C in the dark in closed containers.

MISCELLANEOUS NOTES

TEST ORGANISMS WERE DELAYED FOR 2 DAYS IN TRANSIT. THEY WERE JUDGED SUITABLE FOR TESTING UPON RECEIPT AT LAB. -GJ2

LIGHT INTENSITY READINGS:

8-3-04 104, 110 FT-CANDLES

8-8-04 38, 71 " "

8-15-04 80, 39 " " -GJ2

ANC07660
BZTO104(e)007660

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4b

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-1 Client Windward Environmental Investigator

Test Dilution Water: Dechlorinated Newport, OR Tap Water

Date of Collection	Total Chlorine (mg/L)	Hardness (mg/L)	Alkalinity (mg/L)	Conductivity (µmhos/cm)	pH
7-23-04	< 0.02	34	30	170	7.0
7-23-04 (Beaker)	< 0.02	34	30	150	7.0
7-27-04	< 0.02	34	30	160	7.3
7-29-04	< 0.02	34	30	160	7.2
8-2-04	< 0.02	34	30	160	7.1
8-3-04	< 0.02	34	30	155	7.1
8-5-04	< 0.02	34	30	155	7.1
8-7-04	< 0.02	34	30	155	7.1
8-9-04	< 0.02	34	30	160	7.0
8-10-04	< 0.02	34	30	155	7.1
8-12-04	< 0.02	34	30	160	7.2
8-14-04	< 0.02	34	40	150	7.2
8-16-04	< 0.02	34	50	160	7.0
8-17-04	< 0.02	34	40	160	7.0
8-18-04	< 0.02	34	50	140	7.2
8-19-04	< 0.02	34	50	160	6.9
8-20-04	< 0.02	34	40	160	7.0
8-23-04	< 0.02	34	30	150	7.1
8-23-04 (Beaker)	< 0.02	34	30	160	7.1
	$\bar{X}$	34	35	157	7.1
	SD	0	6	6	0.1
	N	19	19	19	19

ANC07661
BZTO104(e)007661

NORTHWESTERN AQUATIC SCIENCES — PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 686-1 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 0 (7/27/04) MB/BBP

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond.* (mhos/cm)	pH*	Hardness* (mg/L)	Alkalinity* (mg/L)	S (ppm)	NH3* (ppm)	Comments
17	22.7	7.2	165	7.3	51	40			Each beaker fed 1.0 ml
31	22.4	7.0	170	7.1	43	50			YTC suspension
32	22.6	7.1	160	7.0	51	50			Initials: MB
37	22.7	6.9	160	7.1	51	40			Batch 6-24-04
43	22.8	6.9	170	7.1	51	60			
45	23.0	6.8	160	7.0	51	40			
60	22.9	6.9	170	7.1	43	40			
70	22.9	7.1	165	7.2	43	40			
74	22.9	7.0	160	7.2	43	50			Water changed in all
76	22.8	6.9	155	7.2	34	40			beakers.
94	22.7	6.6	170	7.0	51	40			Time: 0725
98	22.8	6.8	160	7.0	43	40			Initials: MB
124	22.9	6.9	160	7.2	51	40			
125	23.1	7.0	225	7.0	43	40			
139	23.1	6.9	220	7.2	51	~~40~~ 50			
146	23.0	7.1	170	7.3	43	50			BBP 7-27-04
147	22.8	7.0	160	7.2	51	40			Water changed in all
148	22.7	6.9	160	7.1	51	40			beakers.
162	22.8	6.8	170	7.1	51	40			Time: 1830
164	22.9	6.8	160	7.4	43	40			Initials: MB
167	22.9	6.6	170	7.3	43	~~40~~ 50			

*Water quality measurements to be taken. BBP 7-27-04

Day 1 (7/28/04) MB

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond.* (mhos/cm)	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17	22.7	7.3	165	7.3					Each beaker fed 1.0 ml
31	22.8	6.9	165	7.1					YTC suspension
32	22.8	7.0	160	7.0					Initials: MB
37	22.8	7.2	160	7.0					
43	22.9	7.2	165	7.0					
45	23.4	6.0	165	6.9					
60	23.2	6.6	165	6.9					
70	23.2	6.8	165	7.0					
74	23.0	6.8	165	7.1					Water changed in all
76	23.0	7.0	160	7.1					beakers.
94	22.9	7.0	165	7.0					Time: 0720
98	22.9	7.0	160	7.0					Initials: MB
124	23.2	7.0	165	7.1					
125	23.3	7.0	195	7.0					
139	23.3	6.7	190	7.1					
146	23.0	6.6	170	7.1					
147	22.9	6.7	160	7.1					Water changed in all
148	22.9	6.8	160	7.0					beakers.
162	23.0	6.8	170	7.3					Time: 1700
164	23.2	6.8	165	7.1					Initials: MB
167	22.9	7.0	170	7.3					

*Water quality measurements to be taken.

ANC07662
BZTO104(e)007662

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 686-1 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 2 (7/29/04) BBP

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. (mhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17	22.8								Each beaker fed 1.0 ml
31	22.9								YTC suspension
32	22.8								Initials: BBP
37	22.8								
43	22.9								
45	23.1								
60	23.2								
70	23.2								
74	23.0								Water changed in all
76	23.1								beakers.
94	23.0								Time: 0730
98	22.9								Initials: GJ1
124	23.1								
125	23.3								
139	23.2								
146	23.2								
147	23.0								Water changed in all
148	23.0								beakers.
162	23.1								Time: 1725
164	23.4								Initials: BBP
167	23.1								

*Water quality measurements to be taken.

Day 3 (7/30/04) CB/GJ1

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. (mhos/cm)	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17	22.5	6.6		7.0					Each beaker fed 1.0 ml
31	22.5	6.3		7.0					YTC suspension
32	22.5	6.3		7.0					Initials: GJ1
37	22.5	6.4		7.0					
43	22.6	6.4		7.0					
45	22.7	5.5		7.0					
60	22.8	6.0		7.0					
70	22.8	6.4		7.0					
74	22.8	6.2		7.1					Water changed in all
76	22.7	6.5		7.1					beakers.
94	22.7	5.9		7.0					Time: 0720
98	22.7	6.0		7.0					Initials: CB
124	22.7	6.2		7.0					
125	22.9	6.0		7.0					
139	23.0	5.8		7.0					
146	23.1	6.0		7.0					
147	23.0	5.9		7.0					Water changed in all
148	22.9	5.8		7.0					beakers.
162	22.8	6.0		7.2					Time: 1730
164	23.0	5.7		7.0					Initials: KTM
167	23.0	6.0		7.0					

*Water quality measurements to be taken.

ANC07663
BZTO104(e)007663

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 686-1 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 4 (7/31/04) UB/GJ

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17	22.2								Each beaker fed 1.0 ml
31	22.4								YTC suspension
32	22.3								Initials: UB
37	22.3								
43	22.4								
45	22.6								
60	22.6								
70	22.6								
74	22.5								Water changed in all
76	22.6								beakers.
94	22.5								Time: 0655
98	22.5								Initials: UB
124	22.7								
125	22.8								
139	22.8								
146	22.7								
147	22.6								Water changed in all
148	22.6								beakers.
162	22.5								Time: 1705
164	22.7								Initials: [illegible]
167	22.5								

*Water quality measurements to be taken.

Day 5 (8/1/04) WM

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17	22.1								Each beaker fed 1.0 ml
31	22.2								YTC suspension
32	22.2								Initials: WM
37	22.2								
43	22.2								
45	22.4								
60	22.4								
70	22.4								
74	22.4								Water changed in all
76	22.4								beakers.
94	22.4								Time: 0700
98	22.4								Initials: WM
124	22.7								
125	22.9								
139	22.9								
146	22.7								
147	22.7								Water changed in all
148	22.5								beakers.
162	22.6								Time: 17:15
164	22.6								Initials: MR
167	22.4								

*Water quality measurements to be taken.

ANC07664
BZTO104(e)007664

Test No 686-1 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 6 (8/2/04) [illegible]

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. umhos/cm	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17	22.3	6.8		7.2					Each beaker fed 1.0 ml
31	22.4	6.0		7.1					YTC suspension
32	22.4	6.3		7.1					Initials: [illegible]
37	22.3	6.4		7.0					
43	22.4	6.5		7.0					
45	22.5	6.0		6.9					
60	22.6	6.0		7.0					
70	22.6	6.2		7.0					
74	22.5	6.0		7.0					Water changed in all
76	22.5	6.5		7.1					beakers.
94	22.5	5.8		7.0					Time: 0710
98	22.4	6.0		7.0					Initials: [illegible]
124	22.7	6.4		6.9					
125	22.8	6.0		7.0					
139	22.8	6.2		6.9					
146	22.7	6.3		7.0					
147	22.5	6.2		7.0					Water changed in all
148	22.5	6.2		6.9					beakers.
162	22.5	6.3		7.1					Time: 1900
164	22.5	6.3		7.0					Initials: [illegible]
167	22.4	6.4		7.1					

*Water quality measurements to be taken.

Day 7 (8/3/04) [illegible]

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. umhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17	22.7								Each beaker fed 1.0 ml
31	22.8								YTC suspension
32	22.8								Initials: [illegible]
37	22.7								
43	22.7								
45	22.8								
60	22.9								
70	22.9								
74	22.8								Water changed in all
76	22.8								beakers.
94	22.8								Time: 0705
98	22.8								Initials: [illegible]
124	22.9								
125	23.1								
139	22.9								
146	22.9								
147	22.8								Water changed in all
148	22.9								beakers.
162	23.4								Time: 1715
164	23.1								Initials: [illegible]
167	22.9								

*Water quality measurements to be taken.

ANC07665
BZTO104(e)007665

Test No 686-1 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 8 (8/4/04) RTM/CB

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond.* (umhos/cm)	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17	22.6	6.2	165	6.9					Each beaker fed 1.0 ml
31	22.6	5.8	165	6.9					YTC suspension
32	22.7	6.2	165	6.8					Initials: CB
37	22.6	6.2	165	6.8					
43	22.7	5.8	170	6.9					
45	22.9	5.2	170	6.8					
60	22.9	5.1	165	6.7					
70	22.9	6.1	170	6.8					
74	22.9	5.0	170	6.8					Water changed in all
76	22.9	6.0	165	6.8					beakers.
94	22.8	5.6	165	6.8					Time: 0710
98	22.8	6.0	170	6.8					Initials: GJI
124	23.1	5.9	165	6.8					
125	23.2	6.0	175	6.9					
139	23.2	5.8	180	6.8					
146	23.1	5.6	170	6.8					
147	23.0	5.8	165	6.8					Water changed in all
148	22.9	5.8	170	6.8					beakers.
162	23.0	6.0	170	6.9					Time: 1720
164	23.0	6.0	165	6.9					Initials: RTM
167	23.0	6.2	170	6.9					

*Water quality measurements to be taken.

Day 9 (8/5/04) CB

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17	23.0								Each beaker fed 1.0 ml
31	23.0								YTC suspension
32	23.0								Initials: CB
37	23.0								
43	23.0								
45	23.0								
60	23.0								
70	23.1								
74	23.2								Water changed in all
76	23.2								beakers.
94	23.2								Time: 0710
98	23.2								Initials: GJI
124	23.4								
125	23.4								
139	23.4								
146	23.2								
147	23.2								Water changed in all
148	23.2								beakers.
162	23.2								Time: 1845
164	23.2								Initials: BBP
167	23.2								

*Water quality measurements to be taken.

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 686-1 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 10 (8/16/04) GJL/BBP

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. umhos/cm	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17	22.7	6.2		7.2					Each beaker fed 1.0 ml
31	22.8	6.2		7.2					YTC suspension
32	22.8	5.6		7.1					Initials: LAS
37	22.8	5.9		7.0					
43	22.8	5.5		7.1					
45	23.0	4.8		6.9					
60	23.0	4.4		6.8					
70	23.0	5.8		7.0					
74	23.0	4.8		7.0					Water changed in all
76	23.0	5.8		7.0					beakers.
94	22.9	5.2		7.0					Time: 0705
98	22.9	5.9		7.0					Initials: GJL
124	23.1	5.6		7.0					
125	23.2	5.3		7.0					
139	23.2	5.2		7.3					
146	23.0	5.4		7.1					
147	23.0	5.7		7.0					Water changed in all
148	23.0	5.4		7.0					beakers.
162	22.9	5.6		7.1					Time: 1800
164	23.1	5.6		7.1					Initials: BBP
167	22.9	5.7		7.1					

*Water quality measurements to be taken.

Day 11 (8/17/04) GJL

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. umhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17	22.6								Each beaker fed 1.0 ml
31	22.7								YTC suspension
32	22.7								Initials: GJL
37	22.8								
43	22.8								
45	23.0								
60	23.0								
70	23.0								
74	23.0	GJL 8-17-04							Water changed in all
76	~~29.9~~	22.9							beakers.
94	22.9								Time: 0720
98	22.9								Initials: GJL
124	23.2								
125	23.4								
139	23.4								
146	23.1								
147	23.1								Water changed in all
148	23.1								beakers.
162	23.3								Time: 1930
164	23.2								Initials: GJL
167	23.3								

*Water quality measurements to be taken.

ANC07667
BZTO104(e)007667

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-1 Client Windward Environmental Investigator _____

DAILY RECORD SHEET

Day 12 (8/18/04) AB

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. umhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17	22.8								Each beaker fed 1.0 ml
31	22.8								YTC suspension
32	22.9								Initials: AB
37	22.9								
43	22.9								
45	23.0								
60	23.1								
70	23.1								
74	23.2								Water changed in all
76	23.2								beakers.
94	23.2								Time: 0645
98	23.2								Initials: AB
124	23.4								
125	23.4								
139	23.3								
146	23.3								
147	23.2								Water changed in all
148	23.2								beakers.
162	23.2								Time: 1820
164	23.4								Initials: CM
167	23.4								

*Water quality measurements to be taken.

Day 13 (8/19/04) AM/MR

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. umhos/cm	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17	22.5	6.3		7.0					Each beaker fed 1.0 ml
31	22.6	6.0		6.9					YTC suspension
32	22.5	6.2		6.9					Initials: AB
37	22.5	6.5		6.9					
43	22.6	6.0		7.0					
45	22.8	5.2		6.8					
60	22.8	5.2		6.8					
70	22.9	6.1		6.9					
74	22.8	5.7		6.9					Water changed in all
76	22.8	6.4		6.9					beakers.
94	22.8	5.5		6.9					Time: 0700
98	22.7	5.8		7.0					Initials: MR/AM
124	23.1	6.2		6.8					
125	23.3	5.8		6.9					
139	23.1	5.3		7.7					
146	22.9	5.9		7.0					
147	22.8	6.1		7.0					Water changed in all
148	22.8	5.9		7.0					beakers.
162	22.9	5.9 6.1		7.0					Time: 1730
164	23.1	5.9		7.0					Initials: AB
167	23.1	6.1		7.0					

*Water quality measurements to be taken.

ANC07668
BZTO104(e)007668

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 686-1 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 14 (8 / 10/04) JB/GJL

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. (mhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17	22.8								Each beaker fed 1.0 ml
31	22.9								YTC suspension
32	22.9								Initials: CAS
37	22.9								
43	22.9								
45	23.1								
60	23.1								
70	23.2								
74	23.1								Water changed in all
76	23.1								beakers.
94	23.1								Time: 0705
98	23.0								Initials: GJL
124	23.3								
125	23.4								
139	23.3								
146	23.2								
147	23.1								Water changed in all
148	23.1								beakers.
162	23.3								Time: 1750
164	23.1								Initials: GJL
167	23.1								

*Water quality measurements to be taken.

Day 15 (8 / 11 /04) mm/BBP

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond.* (mhos/cm)	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17	29.9	5.0	170	7.1					Each beaker fed 1.0 ml
31	23.0	4.2	165	7.1					YTC suspension
32	23.0	4.4	170	7.0					Initials: GJL
37	23.0	4.6	165	6.9					
43	23.2	4.2	170	7.0					
45	23.3	4.0	165	7.0					
60	23.3	4.4	165	6.9					
70	23.3	5.0	170	7.0					
74	23.4	4.4	170	7.0					Water changed in all
76	23.2	5.0	170	7.0					beakers.
94	23.3	4.0	175	7.1					Time: 0655
98	23.2	4.2	175	7.2					Initials: GJL
124	23.5	4.8	180	7.1					
125	23.6	4.4	180	7.0					
139	23.5	3.6	205	8.6					
146	23.3	4.2	175	7.1					
147	23.3	4.6	170	7.1					Water changed in all
148	23.3	4.6	170	7.1					beakers.
162	23.2	4.8	190	7.1					Time: 1730
164	23.2	4.6	175	7.1					Initials: mm
167	23.2	4.8	175	7.1					

2nd PSC 8/18/04

*Water quality measurements to be taken.

ANC07669
BZTO104(e)007669

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 688-1 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 16 (8/12/04) wm

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. µmhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17	22.8								Each beaker fed 1.0 ml
31	22.9								YTC suspension
32	22.9								Initials: GJL
37	22.9								
43	22.9								
45	23.0								
60	22.9								
70	23.0								
74	23.0								Water changed in all
76	23.0								beakers.
94	23.0								Time: 0715
98	23.0								Initials: GJL
124	23.2								
125	23.2								
139	23.2								
146	23.2								
147	23.1								Water changed in all
148	23.0								beakers.
162	23.0								Time: 1710
164	23.0								Initials: wm/BBP
167	22.9								

*Water quality measurements to be taken.

Day 17 (8/13/04) GJL/wm/BBP

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. µmhos/cm	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17	22.6	5.8		7.2					Each beaker fed 1.0 ml
31	22.7	5.6		7.2					YTC suspension
32	22.7	5.6		7.2					Initials: GJL
37	22.8	5.7		7.1					
43	22.8	5.4		7.1					
45	22.9	4.8		7.1					
60	22.9	5.0		7.0					
70	22.9	5.8		7.0					
74	22.9	5.6		7.0					Water changed in all
76	22.9	5.8		7.1					beakers.
94	22.9	5.0		7.2					Time: 0700
98	22.9	5.2		7.3					Initials: GJL
124	23.1	5.6		7.2					
125	23.2	5.4		7.1					
139	23.3	4.7		8.2					
146	23.0	5.2		7.2					
147	23.0	5.2		7.1					Water changed in all
148	22.9	5.4		7.1					beakers.
162	22.9	5.4		7.2					Time: 1710
164	23.0	5.6		7.3					Initials: BBP/wm
167	22.9	5.8		7.3					

*Water quality measurements to be taken.

ANC07670
BZTO104(e)007670

Test No 686-1 Client Windward Environmental Investigator _____

DAILY RECORD SHEET

Day 18 (8/14/04) UD/GJL

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17	22.8								Each beaker fed 1.0 ml
31	23.0								YTC suspension
32	22.9								Initials: GJL
37	22.9								
43	22.9								
45	23.1								
60	23.0								
70	23.0								
74	23.1								Water changed in all
76	23.1								beakers.
94	23.1								Time: 0740
98	23.1								Initials: UD
124	23.4								
125	23.4								
139	23.4								
146	23.2								
147	23.1								Water changed in all
148	23.1								beakers.
162	23.0								Time: 1830
164	23.2								Initials: BBP
167	23.0								

*Water quality measurements to be taken.

Day 19 (8/15/04) UD/GJL

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17	22.6								Each beaker fed 1.0 ml
31	22.9								YTC suspension
32	22.9								Initials: GJL
37	22.9								
43	22.9								
45	23.1								
60	23.1								
70	23.1								
74	23.1								Water changed in all
76	23.1								beakers.
94	23.1								Time: 0745
98	23.1								Initials: UD
124	23.3								
125	23.4								
139	23.4								
146	23.2								
147	23.2								Water changed in all
148	23.2								beakers.
162	23.1								Time: 1800
164	23.3								Initials: BBP
167	23.1								

*Water quality measurements to be taken.

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 686-1 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 20 (8/16 1040/GJ

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. µmhos/cm	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17	23.0	5.4		7.1					Each beaker fed 1.0 ml
31	23.1	5.1		7.0					YTC suspension
32	23.0	5.2		7.0					Initials: GJ
37	23.0	5.6		7.0					
43	23.1	4.8		7.0					
45	23.2	4.4		7.0					
60	23.2	4.7		6.9					
70	23.2	5.6		7.0					
74	23.2	5.4		7.0					Water changed in all
76	23.2	5.8		7.0					beakers.
94	23.1	4.6		7.0					Time: 0705
98	23.1	5.2		7.1					Initials: GJ
124	23.4	5.4		7.0					
125	23.5	5.0		7.0					
139	23.5	4.4		7.3					
146	23.2	4.8		7.1					
147	23.1	5.0		7.1					Water changed in all
148	23.2	4.8		7.1					beakers.
162	23.1	5.8		7.1					Time: 1735
164	23.2	4.8		7.1					Initials: DJ
167	23.1	5.4		7.1					

*Water quality measurements to be taken.

Day 21 (8/17 1040/GJ

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. µmhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17	23.0								Each beaker fed 1.0 ml
31	23.1								YTC suspension
32	23.0								Initials: GJM
37	23.0								
43	23.0								
45	23.0								
60	23.1								
70	23.0								
74	23.1								Water changed in all
76	23.1								beakers.
94	23.1								Time: 0710
98	23.1								Initials: GJ
124	23.1								
125	23.2								
139	23.3								
146	23.2								
147	23.2								Water changed in all
148	23.2								beakers.
162	23.2								Time: 1735
164	23.1								Initials: DJ
167	23.1								

*Water quality measurements to be taken.

ANC07672
BZTO104(e)007672

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 686-1 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 22 (8/18/04) WTM/AF

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond.* umhos/cm	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17	22.0	5.5	160	6.9					Each beaker fed 1.0 ml
31	22.1	5.2	165	6.9					YTC suspension
32	22.0	5.5	165	6.9					Initials: WTM
37	22.0	5.5	165	6.8					
43	22.0	5.1	165	6.9					
45	22.0	4.6	165	6.8					
60	22.0	5.1	165	6.7					
70	22.1	5.6	165	7.0					
74	22.1	5.5	165	7.0					Water changed in all
76	22.2	6.0	165	6.9					beakers.
94	22.1	4.6	170	7.0					Time: 0700
98	22.1	5.5	170	7.2					Initials: GJ1
124	22.4	5.3	170	6.9					
125	22.4	5.1	165	6.9					
139	22.4	5.0	180	7.1					
146	22.3	5.0	170	7.0					
147	22.2	5.5	165	7.0					Water changed in all
148	22.2	5.2	170	7.1					beakers.
162	22.0	5.8	170	7.0					Time: 1700
164	22.1	5.3	170	7.0					Initials: AF
167	22.0	5.7	165	7.0					

*Water quality measurements to be taken.

Day 23 (8/19/04) AF

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. umhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17	22.6								Each beaker fed 1.0 ml
31	22.7								YTC suspension
32	22.6								Initials: GJ1
37	22.6								
43	22.6								
45	22.8								
60	22.8								
70	22.8								
74	22.7								Water changed in all
76	22.7								beakers.
94	22.6								Time: 0700
98	22.6								Initials: WTM
124	22.5								
125	22.9								
139	22.8								
146	22.8								
147	22.7								Water changed in all
148	22.6								beakers.
162	22.6								Time: 1730
164	22.8								Initials: AF
167	22.6								

*Water quality measurements to be taken.

ANC07673
BZTO104(e)007673

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-1 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 24 (8/20/04 UB/DK

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. umhos/cm	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17	22.9	6.0		6.9					Each beaker fed 1.0 ml
31	23.0	5.8		6.9					YTC suspension
32	22.9	5.9		6.9					Initials: UB
37	22.9	6.2		6.9					
43	22.9	5.4		6.8					
45	23.0	5.0		6.7					
60	23.0	5.3		6.7					
70	23.0	6.2		6.8					
74	23.0	6.0		6.9					Water changed in all
76	23.0	6.4		6.9					beakers.
94	22.9	5.1		6.9					Time: 0715
98	22.9	6.0		7.0					Initials: GJL
124	23.2	5.8		7.0					
125	23.2	5.6		6.9					
139	23.2	5.5		6.9					
146	23.1	5.6		6.9					
147	23.0	5.8		6.9					Water changed in all
148	23.0	5.5		7.0					beakers.
162	23.0	6.1		7.0					Time: 1720
164	23.1	5.6		7.0					Initials: [illegible]
167	23.0	6.1		7.0					

*Water quality measurements to be taken.

Day 25 (8/21 GJL/DK/GJL

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. umhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17	22.6								Each beaker fed 1.0 ml
31	22.7								YTC suspension
32	22.7								Initials: GJL
37	22.7								
43	22.8								
45	22.9								
60	22.9								
70	22.9								
74	22.9								Water changed in all
76	22.9								beakers.
94	22.8								Time: 0730
98	22.8								Initials: UB
124	23.1								
125	23.2								
139	23.2								
146	23.0								
147	23.0								Water changed in all
148	22.9								beakers.
162	22.9								Time: 1800
164	22.9								Initials: GJL
167	22.9								

*Water quality measurements to be taken.

ANC07674
BZTO104(e)007674

Test No 686-1 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 26 (8/22/04) [illegible]

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17	23.1								Each beaker fed 1.0 ml
31	23.1								YTC suspension
32	23.1								Initials: [illegible]
37	23.0								
43	23.1								
45	23.1								
60	23.1								
70	23.1								
74	23.1								Water changed in all
76	23.2								beakers.
94	23.1								Time: 0745
98	23.1								Initials: [illegible]
124	23.1								
125	23.2								
139	23.2								
146	23.2								
147	23.2								Water changed in all
148	23.1								beakers.
162	23.1								Time: 1715
164	23.1								Initials: [illegible]
167	23.1								

*Water quality measurements to be taken.

Day 27 (8/23/04) [illegible]

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. umhos/cm)	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17	23.0	5.7		6.5					Each beaker fed 1.0 ml
31	23.0	5.8		6.4					YTC suspension
32	23.0	5.2		6.4					Initials: [illegible]
37	23.0	5.7		6.4					
43	23.0	4.8		6.4					
45	23.1	4.0		6.2					
60	23.0	5.1		6.3					
70	23.1	5.4		6.4					
74	23.1	5.3		6.4					Water changed in all
76	23.1	6.0		6.4					beakers.
94	23.0	4.8		6.4					Time: 0715
98	23.0	5.1		6.5					Initials: [illegible]
124	23.2	5.2		6.5					
125	23.2	4.7		6.4					
139	23.2	4.9		6.4					
146	23.2	4.6		6.5					
147	23.0	4.9		6.5					Water changed in all
148	23.0	5.0		6.5					beakers.
162	23.0	5.7		6.5					Time: 1715
164	23.0	4.8		6.6					Initials: [illegible]
167	22.9	5.4		6.6					

*Water quality measurements to be taken.

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 686-1 Client Windward Environmental Investigator _____

DAILY RECORD SHEET

Day 28 (8/24/04) WTM/BBP

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond.* µmhos/cm	pH*	Hardness* (mg/L)	Alkalinity* (mg/L)	S (ppm)	NH3* (ppm)	Comments
17	23.2	6.9	150	6.9	43	50			Each beaker fed 1.0 ml
31	23.1	6.6	155	6.6	51	40			YTC suspension
32	23.1	6.7	155	6.6	51	40			Initials: —
37	23.0	6.9	155	6.6	43	40			
43	23.1	6.4	160	6.6	43	40			
45	23.1	6.4	155	6.6	43	50			
60	23.1	6.5	155	6.5	43	40			
70	23.1	6.9	160	6.5	43	40			
74	23.2	6.7	160	6.6	43	50			Water changed in all
76	23.2	7.0	158	6.6	43	40			beakers.
94	23.1	6.5	155	6.6	43	50			Time: 0705
98	23.1	6.7	160	6.6	51	40			Initials: GJ
124	23.1	6.9	160	6.7	43	50			
125	23.3	6.4	160	6.7	43	50			
139	23.3	6.3	160	6.7	43	40			
146	23.2	6.3	160	6.8	43	50			
147	23.2	6.7	158	6.8	43	40			Water changed in all
148	23.2	6.4	160	6.7	43	50			beakers.
162	23.2	7.2	160	6.8	43	40			Time:
164	23.2	6.5	160	6.8	43	50			Initials:
167	23.2	7.0	160	6.8	43	40			

*Water quality measurements to be taken.

Day _____(/ /)

Beaker No.	Temp. (deg.C)	DO (ppm)	Cond. µmhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
17									Each beaker fed 1.0 ml
31									YTC suspension
32									Initials:
37									
43									
45									
60									
70									
74									Water changed in all
76									beakers.
94									Time:
98									Initials:
124									
125									
139									
146									
147									Water changed in all
148									beakers.
162									Time:
164									Initials:
167									

*Water quality measurements to be taken.

ANC07676
BZTO104(e)007676

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-1 Client Windward Environmental Investigator _____

DAY 28 TEST TERMINATION SHEET

Beaker No.	Number of survivors	Initials
1	9	GJL
2	10	GJL
3	10	CAB
4	9	CAB
5	8	GJL
6	10	GJL
7	3	CAB
8	10	GJL
9	8	CAB
10	10	GJL
11	10	CAB
12	9	GJL
13	10	CAB
14	9	CAB
15	10	GJL
16	6	GJL
17	9	CAB
18	10	CAB
19	10	CAB
20	10	GJL
21	10	CAB
22	10	GJL
23	10	CAB
24	~~7~~ 8 GJL	GJL
25	10	CAB
26	10	GJL
27	9	CAB
28	10	GJL
29	6	GJL
30	Ø	CAB
31	9	GJL
32	10	CAB
33	9	GJL
34	10	CAB
35	10	GJL
36	9	CAB
37	9	CAB
38	10	GJL
39	9	GJL
40	9+1 dead	CAB
41	10	GJL
42	9	GJL
43	10	CAB
44	10	CAB
45	Ø	GJL

Beaker No.	Number of survivors	Initials
46	10	CAB
47	9	CAB
48	9	GJL
49	8	CAB
50	10	GJL
51	9	GJL
52	10	CAB
53	10	CAB
54	10	GJL
55	9	CAB
56	10	GJL
57	9	CAB
58	8	CAB
59	10	LATM
60	10	LATM
61	10	GJL
62	9	LATM
63	10	GJL
64	9	GJL
65	9	CAB
66	10	GJL
67	10	LATM
68	10	GJL
69	10	CAB
70	10	GJL
71	10	LATM
72	10	CAB
73	10	GJL
74	10	CAB
75	9	GJL
76	9	CAB
77	10	LATM
78	8	CAB
79	10	GJL
80	9	GJL
81	10	LATM
82	9	CAB
83	10	CAB
84	Ø	GJL
85	10	CAB
86	10	GJL
87	Ø	CAB
88	10	LATM
89	6	GJL
90	10	LATM

ANC07677
BZTO104(e)007677

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686- Client Windward Environmental Investigator

DAY 28 TEST TERMINATION SHEET

Beaker No.	Number of survivors	Initials
91	9	CAB
92	10	GJL
93	10	GJL
94	10	MRM
95	10	CAB
96	10	GJL
97	7	CAB
98	10	MRM
99	10	GJL
100	9	GJL
101	9	CAB
102	9	GJL
103	10	CAB
104	10	GJL
105	9	CAB
106	10	GJL
107	8	MRM
108	8	GJL
109	0	CAB
110	10	CAB
111	10	GJL
112	9	CAB
113	10	MRM
114	8	GJL
115	10	CAB
116	10	MRM
117	10	CAB
118	10	GJL
119	10	CAB
120	8	GJL
121	10	CAB
122	10	MRM
123	10	GJL
124	10	CAB
125	10	MRM
126	10	CAB
127	9	GJL
128	10	CAB
129	10	MRM
130	10	GJL
131	10	CAB
132	10	GJL
133	9	MRM
134	0	GJL
135	10	CAB

Beaker No.	Number of survivors	Initials
136	10	GJL
137	10	CAB
138	9	GJL
139	9	MRM
140	9	CAB
141	10	GJL
142	10	CAB
143	6	GJL
144	3	CAB
145	0	MRM
146	10	GJL
147	10	CAB
148	9	MRM
149	10	GJL
150	9	CAB
151	9	GJL
152	10	CAB
153	10	GJL
154	9	CAB
155	9	CAB
156	6	GJL
157	10	MRM
158	9	CAB
159	9	MRM
160	8	GJL
161	10	CAB
162	10	CAB
163	9	GJL
164	10	MRM
165	9	GJL
166	5	MRM
167	10	GJL
168	7	GJL
169		
170		
171		
172		
173		
174		
175		
176		
177		
178		
179		
180		

Dave Artemis removed dead clam MRM

ANC07678
BZTO104(e)007678

Test No. 686-1 Client Windward Environmental Investigator _____

ZERO-TIME WEIGHING DATA SHEET

Tare: Date 7-27-04 Oven temp (C.) 63 Drying time (hr.) 24 Initials GJL
Standard Weights: 10 mg: 10.001 100mg: 100.018

Final: Date 7-29-04 Oven temp (C.) 62 Drying time (hr.) 24 Initials GJL
Standard Weights: 10 mg: 10.005 100mg: 100.017

Equip. used: Oven: BLUE M Balance: SARTORIUS M3P

(Dry overnight at 60-90 degrees C)

Pan #	Tare wt. (mg)	Total wt. (mg)	#weighed	Comments
1	23.309	24.703	20	
2	29.641	30.837	20	
3	28.849	29.996	20	
4	30.767	31.959	20	
5	27.756	28.949	20	

ANC07679
BZTO104(e)007679

NORTHWESTERN AQUATIC SCIENCES — PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-1 Client Windward Environmental Investigator

WEIGHING DATA SHEET

Tare:	Date 7.29-04	Oven temp (C.) 64	Drying time (hr.) 24	Initials JRF
	Standard Weights:	10 mg: 10.005	100mg: 100.017	
Final #1:	Date 8-26-04	Oven temp (C.) 64	Drying time (hr.) 24	Initials JRF
	Standard Weights:	10 mg: 10007	100mg: 100.019	
Final #2:	Date 9-1-04	Oven temp (C.) 67	Drying time (hr.) 24	Initials JRF
	Standard Weights:	10 mg: 10.001	100mg: 100.000	

Equip. used: Oven Blue M Balance Sartorius M3P

(Dry overnight at 60-90 degrees C)

Bkr. #	Pan #	Tare wt. (mg)	Total wt. (mg) 1	Total wt. (mg) 2	no. weighed	put into pans-initials	Comments
1	1	28.080	29.444	29.467	9		
2	2	28.639	30.311	30.334	10		
3	3	28.464	29.567	29.553	10		
4	4	29.194	30.500	30.522	9		
5	5	29.032	30.508	30.484	8		
6	6	29.081	31.128	31.103	10		
7	7	30.924	31.820	31.819	3		
8	8	28.277	31.039	31.024	10		
9	9	27.369	28.764	28.783	8		
10	10	28.576	30.442	30.467	9		
11	11	30.784	33.378	33.349	10		
12	12	31.042	33.072	33.041	9		
13	13	28.470	30.590	30.631	10		
14	14	28.795	31.642	31.680	9		
15	15	29.933	32.109	32.124	10		
16	16	30.766	32.382	32.433	5		
17	17	27.935	30.715	30.717	9		
18	18	27.778	29.566	29.588	10		
19	19	29.585	31.478	31.507	10		
20	20	28.416	29.890	29.915	10		
21	21	29.302	31.360	31.382	10		
22	22	28.074	30.249	30.248	10		
23	23	28.983	30.327	30.324	9		
24	24	28.630	29.600	29.608	8		
25	25	27.531	29.501	29.530	10		
26	26	27.995	30.530	30.542	10		
27	27	28.937	30.404	30.431	9		
28	28	29.171	31.218	31.268	10		
29	29	26.991	28.558	28.566	6		
30	30	30.218	—	—	∅		
31	31	28.808	30.906	30.940	9		
32	32	27.301	29.563	29.581	10		
33	33	28.196	30.017	30.029	9		

ANC07680
BZTO104(e)007680

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-1 Client WINDWARD ENVIRONMENTAL Investigator _____

WEIGHING DATA SHEET

See page _____ for information on drying times and temperatures, standard weights,etc.

Bkr. #	Pan #	Tare wt. (mg)	Total wt. (mg) 1	Total wt. (mg) 2	no. weighed	put into pans-initials	Comments
34	34	26.524	28.834	28.874	10	AJ	
35	35	34.436	36.188	36.204	10	AJ	
36	36	29.169	31.360	31.350	9	AJ	
37	37	30.268	33.253	33.251	9	AJ	
38	38	27.806	29.957	29.966	10	AJ	
39	39	28.003	29.878	29.901	9	AJ	
40	40	28.090	29.960	29.956	9	AJ	
41	41	29.191	31.456	31.482	10	AJ	
42	42	28.165	30.368	30.396	9	AJ	
43	43	29.526	32.358	32.378	10	AJ	
44	44	28.266	30.775	30.793	10	AJ	
45	46 ~~45~~ GJ	29.066 GJ	—	—	~~10~~ Ø	AJ	
46	45 ~~46~~ GJ	28.698	32.260	32.252	10 GJ	AJ	
47	47	27.843	30.113	30.108	9	AJ	
48	48	28.928	30.429	30.440	9	AJ	
49	49	27.978	30.490	30.501	8	AJ	
50	50	27.732	29.916	29.925	10	AJ	
51	51	29.778	31.013	31.021	8	BBP	
52	52	28.984	30.987	30.989	10	BBP	
53	53	28.531	31.367	31.369	10	BBP	
54	54	28.387	31.058	31.052	10	BBP	
55	55	28.556	30.830	30.857	9	BBP	
56	56	29.660	31.597	31.614	10	BBP	
57	57	27.769	30.155	30.168	9	BBP	
58	58	27.773	30.125	30.168	8	BBP	
59	59	30.430	32.442	32.468	9	BBP	
60	60	27.779	30.902	30.937	10	BBP	
61	61	28.275	31.124	~~31.225~~ 31.143 GJ	10	BBP	
62	62	27.287	31.284	~~31.383~~ 31.268	9	BBP	
63	63	29.792	32.503	~~32.613~~ 32.533	10	BBP	
64	64	27.148	29.443	29.484	9	BBP	
65	65	29.637	31.673	31.728	9	BBP	
66	66	30.367	33.199	33.257	10	BBP	
67	67	31.433	33.673	33.719	10	BBP	
68	68	28.636	30.966	31.002	10	BBP	
69	69	29.218	31.517	31.545	10	BBP	
70	70	30.949	33.070	33.101	10	BBP	
71	71	29.503	31.780	31.815	10	BBP	
72	72	30.874 GJ	~~30.857~~	~~30.894~~	Ø	BBP	
73	73	28.650	30.704	30.709	10	BBP	
74	74	28.709	31.873	31.878	10	BBP	
75	75	27.798	30.032	30.081	~~10~~ 9	BBP	
76	76	27.879	30.546	30.620	~~10~~ 9	BBP	

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-1 Client WINDWARD ENVIRONMENTAL Investigator _____

WEIGHING DATA SHEET

See page _____ for information on drying times and temperatures, standard weights,etc.

Bkr. #	Pan #	Tare wt. (mg)	Total wt. (mg) 1	Total wt. (mg) 2	no. weighed	put into pans-initials	Comments
77	77	29.004	30.946	31.011	10	[illegible]	
78	78	30.285	31.923	31.967	8	[illegible]	
79	79	27.971	30.418	30.442	10	[illegible]	
80	80	29.270	32.274	32.276	9	[illegible]	
81	81	27.094	28.609	28.665	10	[illegible]	
82	82	30.660	32.847	32.899	9	[illegible]	
83	83	26.679	30.495	30.530	10	[illegible]	
84	84	28.993	—	—	0	[illegible]	
85	85	28.742	31.112	31.143	10	[illegible]	
86	86	28.141	30.007	30.057	10	[illegible]	
87	87	29.958	—	—	0	[illegible]	
88	88	28.488	29.898	29.955	10	[illegible]	
89	89	29.169	31.498	31.537	6	[illegible]	
90	90	26.361	29.942	30.006	10	[illegible]	
91	91	28.789	30.474	30.532	9	[illegible]	
92	92	28.972	31.532	31.586	10	[illegible]	
93	93	28.727	31.120	31.170	10	[illegible]	
94	94	28.822	31.295	31.351	10	[illegible]	
95	95	28.851	31.506	31.538	10	[illegible]	
96	96	28.511	31.082	31.109	10	[illegible]	
97	97	26.856	28.943	29.037	7	[illegible]	
98	98	28.326	29.315	29.385	10	[illegible]	
99	99	29.725	31.607	31.653	10	[illegible]	
100	100	29.816	31.871	31.901	9	[illegible]	
101	101	27.616	30.946	30.925	9	BBP	
102	102	30.965	33.917	33.926	9	BBP	
103	103	27.612	29.763	29.803	10	BBP	
104	104	29.617	32.308	32.319	10	BBP	
105	105	26.169	31.411	31.414	9	BBP	
106	106	29.781	31.864	31.902	10	BBP	
107	107	28.067	31.805	31.808	8	BBP	
108	108	28.327	30.275	30.326	8	BBP	
109	109	28.614	—	—	0	BBP	
110	110	27.947	31.280	31.314	10	BBP	
111	111	29.569	31.302	31.369	10	BBP	
112	112	29.829	31.760	31.842	9	BBP	
113	113	28.784	30.560	30.612	10	BBP	
114	114	31.071	33.023	33.042	8	BBP	
115	115	29.433	32.377	32.377	10	BBP	
116	116	29.475	35.397	35.331	10	BBP	
117	117	29.673	30.963	31.003	10	BBP	
118	118	27.865	29.552	29.590	10	BBP	
119	119	27.982	30.240	30.278	10	BBP	

ANC07682
BZTO104(e)007682

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-1 Client WINDWARD ENVIRONMENTAL Investigator

WEIGHING DATA SHEET

See page _____ for information on drying times and temperatures, standard weights,etc.

Bkr. #	Pan #	Tare wt. (mg)	Total wt. (mg) 1	Total wt. (mg) 2	no. weighed	put into pans-initials	Comments
120	120	29.214	31.056	31.101	8	BBP	
121	121	30.448	33.080	33.123	10	AF	
122	122	29.037	31.611	31.648	10	AF	
123	123	26.627	30.877	30.915	10	AF	
124	124	30.603	32.962	33.997	10	AF	
125	125	27.948	29.754	29.771	10	AF	
126	126	27.804	30.434	30.463	10	AF	
127	127	27.349	29.967	29.990	9	AF	
128	128	30.265	32.563	32.594	10	AF	
129	129	29.416	33.464	33.492	10	AF	
130	130	28.904	31.227	31.245	10	AF	
131	131	28.775	31.108	31.149	10	GBA	
132	132	30.758	33.168	33.190	10	GBA	
133	133	27.504	30.541	30.556	9	GBA	
134	134	26.399	—	—	0	GBA	
135	135	29.954	33.971	33.988	10	GBA	
136	136	28.113	~~31.510~~ 32.193	32.182	10	GBA	
137	137	26.674	30.923	30.935	10	GBA	
138	138	29.220	31.510	31.545	9	GBA	
139	139	29.132	30.978	30.996	9	GBA	
140	140	27.827	29.973	29.996	9	GBA	
141	141	27.232	30.659	30.691	10	GBA	
142	142	29.270	32.593	32.608	10	GBA	
143	143	27.208	30.736	30.762	6	GBA	
144	144	28.332	29.389	29.424	3	GBA	
145	145	28.198	—	—	0	GBA	
146	146	30.157	32.759	32.775	10	GBA	
147	147	27.200	30.261	30.291	10	GBA	
148	148	30.130	31.967	31.977	8	GBA	
149	149	30.308	32.228	32.248	10	GBA	
150	150	29.442	31.712	31.745	9	GBA	
151	151	32.089	34.417	34.445	9	AF	
152	152	27.665	30.803	30.831	10	AF	
153	153	28.035	29.475	29.508	10	AF	
154	154	28.510	30.427	30.459	9	AF	
155	155	28.703	30.675	30.698	9	AF	
156	156	29.213	34.106	34.144	6	AF	
157	157	27.798	29.888	29.921	10	AF	
158	158	29.885	31.386	31.419	9	AF	
159	159	27.215	28.994	29.019	9	AF	
160	160	29.886	32.492	32.509	8	AF	
161	161	29.953	33.479	33.494	10	GBA	
162	162	30.143	33.751	33.765	10	GBA	

ANC07683
BZTO104(e)007683

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No: 686-1 Client WINDWARD ENVIRONMENTAL Investigator

WEIGHING DATA SHEET

See page _____ for information on drying times and temperatures, standard weights, etc.

Bkr. #	Pan #	Tare wt. (mg)	Total wt. (mg) 1	Total wt. (mg) 2	no. weighed	put into pans-initials	Comments
163	163	28.752	33.166	33.165	9	[illegible]	
164	164	28.106	29.683	29.708	10	[illegible]	
165	165	29.808	30.955	30.980	9	[illegible]	
166	166	28.892	30.710	30.747	5	[illegible]	
167	167	27.289	29.628	29.687	10	[illegible]	
168	168	30.378	31.783	31.819	7	[illegible]	
169	169						
170	170						
171	171						
172	172						
173	173						
174	174						
175	175						
176	176						
177	177						
178	178						
179	179						
180	180						
181	181						
182	182						
183	183						
184	184						
185	185						
186	186						
187	187						
188	188						
189	189						
190	190						
191	191						
192	192						
193	193						
194	194						
195	195						
196	196						
197	197						
198	198						
199	199						
200	200						
201	201						
202	202						
203	203						
204	204						
205	205						

ANC07684
BZTO104(e)007684

Chesapeake Cultures

P.O. Box 507 Hayes, VA 23072 (804) 693-4046 (804)694-4704 fax
www.c-cultures.com
e-mail growfish@c-cultures.com

NAS

Shipment Information

Species Hyalella azteca Date 7/22/04

Age ~3-4 days 10-15mm P.O. No. verbal

Quanitity 2,500+ Invoice No. 4783

Temperature 23.5°C Salinity — pH 7.94

Notes

Rec 7-26-04
10:10 am

Biologist SG Mauer

Please inspect shipment and report any problem immediately

ANC07685
BZTO104(e)007685

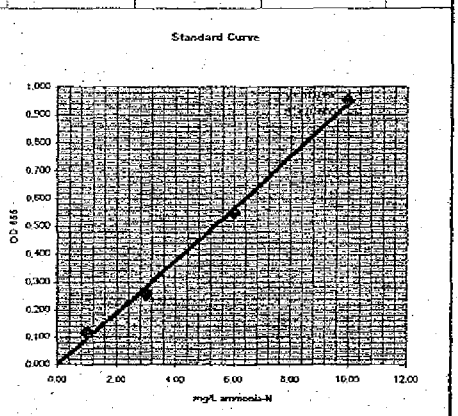
AMMONIA EXPOSURE BENCHSHEETS AND ANALYSIS

Total Ammonia-N in Sediment Pore Water: Computation Worksheet

Salicylate Method (SOP #5492)

Result

	Sample description	Dilution factor	OD_{655}	NH_3-N (mg/L)	pH	Salinity (ppt)
	Blank	----	----	----		
	1.0 mg/L NH_3-N Std.	----	0.118	1.00		
	3.0 mg/L NH_3-N Std.	----	0.259	3.00		
	6.0 mg/L NH_3-N Std.	----	0.550	6.00		
	10.0 mg/L NH_3-N Std.	----	0.950	10.00		
	3.0 mg/L spike	----	0.265	2.82		
	3.0 mg/L spike dupl.	----	0.259	2.76		
1.	9208F	5	0.006	ND		
2.	9213F	5	0.010	0.53		
3.	9214F	5	0.047	2.50		
4.	9215F	5	0.148	7.88		
5.	9216F	5	0.118	6.28		
6.	9217F	5	0.078	4.15		
7.	9218F	5	0.020	1.06		
8.	9219F	5	0.010	0.53		
9.	9220F	5	0.096	5.11		
10.	9221F	5	0.079	4.21		
11.	9222F	5	0.080	4.26		
12.	9223F	5	0.020	1.06		
13.	9224F	5	0.116	6.18		
14.	9225F	5	0.143	7.61		
15.	9226F	5	0.235	12.51		
16.	9227F	5	0.342	18.21		
17.	9228F	5	0.010	0.53		
18.	9229F	5	0.059	3.14		
19.	9230F	5	0.232	12.35		
20.	9231F	5	0.035	1.86		
21.	9232F	5	0.030	1.60		
22.		5				
23.		5				
24.		5				
25.		5				
26.		5				
27.		5				
28.		5				
29.		5				
30.		5				
31.		5				
32.		5				
33.		5				
34.		5				
35.		5				
36.		5				



Reporting limit (mg/L) =	0.5
Recovery (%) =	93.0
Precision (RPD) =	2.29
Sample volume (ml):	0.10
Dilution factor	5

Sample Set Description:

Proj. No.: 686

Bulk sediment porewaters

Analyst: RSC

Date analysed: 7/27/2004

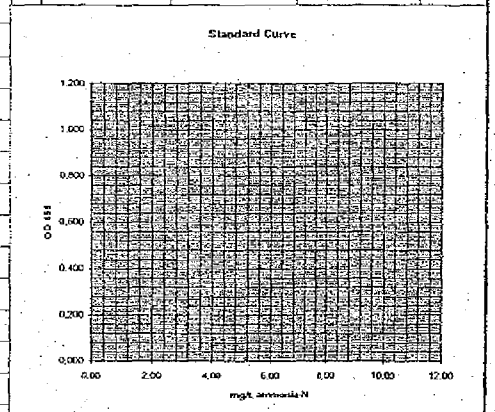
ANC07687
BZTO104(e)007687

Total Ammonia-N in Sediment Pore Water: Computation Worksheet

Salicylate Method (SOP #5492)

Result

	Sample description	Dilution factor	OD655	NH_3-N (mg/L)	pH	Salinity (ppt)
	Blank	----	----	----		
	1.0 mg/L NH_3-N Std.	----	.118	1.00		
	3.0 mg/L NH_3-N Std.	----	.259	3.00		
	6.0 mg/L NH_3-N Std.	----	.550	6.00		
	10.0 mg/L NH_3-N Std.	----	.950	10.00		
	3.0 mg/L spike	----	.265			
	3.0 mg/L spike dupl.	----	.259			
1.	9208F	5	.026		7.2	
2.	9213F	5	.010		7.0	
3.	9214F	5	.047		6.7	
4.	9215F	5	.148		6.8	
5.	9216F	5	.018		6.6	
6.	9217F	5	.028		6.7	
7.	9218F	5	.020		7.1	
8.	9219F	5	.010		7.1	
9.	9220F	5	.096		6.7	
10.	9221F	5	.079		6.8	
11.	9222F	5	.080		6.9	
12.	9223F	5	.020		7.8	
13.	9224F	5	.116		7.0	
14.	9225F	5	.197		6.8	
15.	9226F	5	.235		6.6	
16.	9227F	5	.342		6.8	
17.	9228F	5	.010		7.0	
18.	9229F	5	.059		7.0	
19.	9230F	5	.232		6.5	
20.	9231F	5	.035		7.0	
21.	9232F	5	.030		7.2	
22.		5				
23.		5				
24.		5				
25.		5				
26.		5				
27.		5				
28.		5				
29.		5				
30.		5				
31.		5				
32.		5				
33.		5				
34.		5				
35.		5				
36.		5				



Reporting limit (mg/L) =	0.5
Recovery (%) =	#VALUE!
Precision (RPD) =	#VALUE!
Sample volume (ml):	0.10
Dilution factor	5

Sample Set Description:

Proj. No.: 686

Bulk sediment porewaters

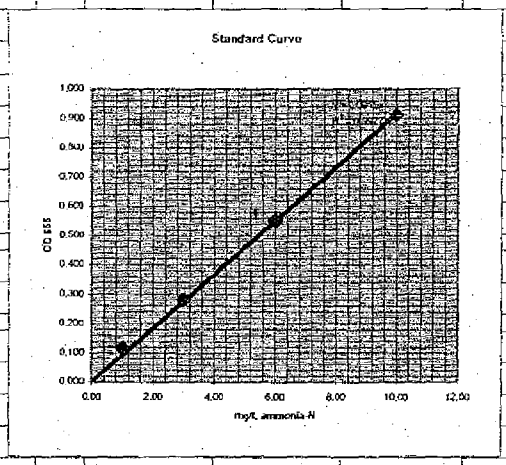
Analyst:	RSC
Date analysed:	7/27/2004

ANC07688
BZTO104(e)007688

Total Ammonia-N in Water: Computation Worksheet
Salicylate Method (SOP #5492)

Result

	Sample description	Dilution factor	OD_{655}	NH_3-N (mg/L)
	Blank	----	----	----
	1.0 mg/L NH_3-N Std.	----	0.119	1.00
	3.0 mg/L NH_3-N Std.	----	0.280	3.00
	6.0 mg/L NH_3-N Std.	----	0.550	6.00
	10.0 mg/L NH_3-N Std.	----	0.910	10.00
	3.0 mg/L spike	----	0.291	3.18
	3.0 mg/L spike dupl.	----	0.295	3.22
1.	17	1	0.015	0.16
2.	31	1	0.051	0.56
3.	32	1	0.047	0.51
4.	37	1	0.021	0.23
5.	43	1	0.051	0.56
6.	45	1	0.060	0.66
7.	60	1	0.151	1.65
8.	70	1	0.020	0.22
9.	74	1	0.037	0.40
10.	76	1	0.011	0.12
11.	94	1	0.080	0.87
12.	98	1	0.022	0.24
13.	124	1	0.030	0.33
14.	125	1	0.073	0.80
15.	139	1	0.035	0.38
16.	146	1	0.046	0.50
17.	147	1	0.040	0.44
18.	148	1	0.043	0.47
19.	162	1	0.017	0.19
20.	164	1	0.032	0.35
21.	167	1	0.017	0.19
22.		1		
23.		1		
24.		1		
25.		1		
26.		1		
27.		1		
28.		1		
29.		1		
30.		1		
31.		1		
32.		1		
33.		1		
34.		1		
35.		1		
36.		1		



Reporting limit (mg/L) =	0.1
Recovery (%) =	106.7
Precision (RPD) =	-1.37
Sample volume (ml):	0.50
Dilution factor	1

Sample Set Description:

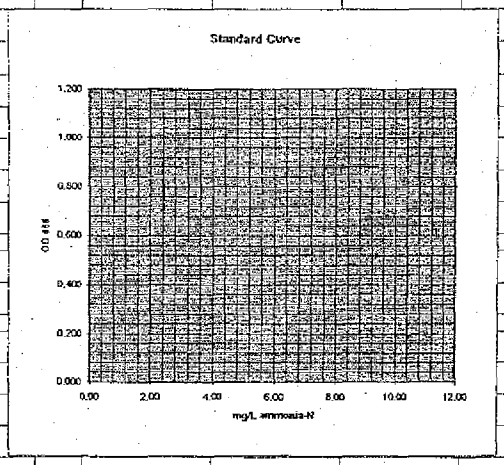
Test No.:	686-1
Test Day:	0 (7-27-04)
Species:	*Hyalella*
Overlying water	
Analyst:	RSC
Date analysed:	7/28/2004

ANC07689
BZTO104(e)007689

Total Ammonia-N in Water: Computation Worksheet
Salicylate Method (SOP #5492)

Result

	Sample description	Dilution factor	OD655	NH_3-N (mg/L)
	Blank	-----	----	----
	1.0 mg/L NH_3-N Std.	-----	.119	1.00
	3.0 mg/L NH_3-N Std.	-----	.280	3.00
	6.0 mg/L NH_3-N Std.	-----	.550	6.00
	10.0 mg/L NH_3-N Std.	-----	.910	10.00
	3.0 mg/L spike	----	.291	
	3.0 mg/L spike dupl.	----	.295	
1.	17	1	.015	
2.	31	1	.051	
3.	32	1	.047	
4.	37	1	.021	
5.	43	1	.051	
6.	45	1	.060	
7.	60	1	.151	
8.	70	1	.020	
9.	74	1	.037	
10.	76	1	.011	
11.	94	1	.080	
12.	98	1	.022	
13.	124	1	.030	
14.	125	1	.073	
15.	139	1	.035	
16.	146	1	.046	
17.	147	1	.040	
18.	148	1	.043	
19.	162	1	.017	
20.	164	1	.032	
21.	167	1	.017	
22.		1		
23.		1		
24.		1		
25.		1		
26.		1		
27.		1		
28.		1		
29.		1		
30.		1		
31.		1		
32.		1		
33.		1		
34.		1		
35.		1		
36.		1		



Reporting limit (mg/L) =	0.1
Recovery (%) =	#VALUE!
Precision (RPD) =	#VALUE!
Sample volume (ml):	0.50
Dilution factor	1

Sample Set Description:

Test No.:	686-1
Test Day:	0 (7-27-04)
Species:	*Hyalella*
Overlying water	
Analyst:	RSC
Date analysed:	7/28/2004

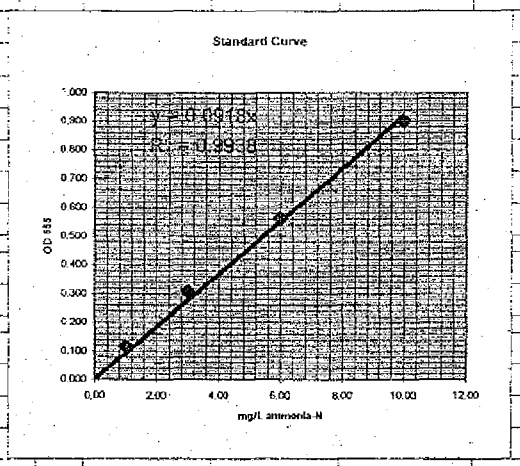
ANC07690
BZTO104(e)007690

Total Ammonia-N in Water: Computation Worksheet

Salicylate Method (SOP #5492)

Result

	Sample description	Dilution factor	OD_{655}	NH_3-N (mg/L)
	Blank	-----	-----	-----
	1.0 mg/L NH_3-N Std.	-----	0.117	1.00
	3.0 mg/L NH_3-N Std.	-----	0.308	3.00
	6.0 mg/L NH_3-N Std.	-----	0.561	6.00
	10.0 mg/L NH_3-N Std.	-----	0.900	10.00
	3.0 mg/L spike	-----	0.307	3.34
	3.0 mg/L spike dupl.	-----	0.301	3.27
1.	17	1	0.000	ND
2.	31	1	0.001	ND
3.	32	1	0.003	ND
4.	37	1	0.018	0.20
5.	43	1	0.010	0.11
6.	45	1	0.007	ND
7.	60	1	0.012	0.13
8.	70	1	0.008	ND
9.	74	1	0.010	0.11
10.	76	1	0.008	ND
11.	94	1	0.003	ND
12.	98	1	0.013	0.14
13.	124	1	0.011	0.12
14.	125	1	0.007	ND
15.	139	1	0.007	ND
16.	146	1	0.004	ND
17.	147	1	0.009	ND
18.	148	1	0.014	0.15
19.	162	1	0.000	ND
20.	164	1	0.009	ND
21.	167	1	0.008	ND
22.		1		
23.		1		
24.		1		
25.		1		
26.		1		
27.		1		
28.		1		
29.		1		
30.		1		
31.		1		
32.		1		
33.		1		
34.		1		
35.		1		
36.		1		



Reporting limit (mg/L) =	0.1
Recovery (%) =	110.2
Precision (RPD) =	1.97
Sample volume (ml):	0.50
Dilution factor	1

Sample Set Description:

Test No.:	686-1
Test Day:	28 (8-24-04)
Species:	*Hyalella*
Overlying water	
Analyst:	RSC
Date analysed:	8/31/2004

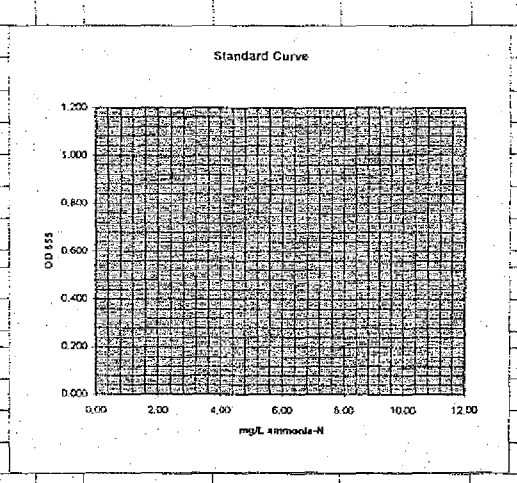
ANC07691
BZTO104(e)007691

Total Ammonia-N in Water: Computation Worksheet

Salicylate Method (SOP #5492)

Result

	Sample description	Dilution factor	OD655	NH_3-N (mg/L)
	Blank	-----	----	----
	1.0 mg/L NH_3-N Std.	-----	.117	1.00
	3.0 mg/L NH_3-N Std.	-----	.308	3.00
	6.0 mg/L NH_3-N Std.	-----	.561	6.00
	10.0 mg/L NH_3-N Std.	-----	.900	10.00
	3.0 mg/L spike	-----	.307	
	3.0 mg/L spike dupl.	-----	.301	
1.	17	1	.000	
2.	31	1	.001	
3.	32	1	.003	
4.	37	1	.018	
5.	43	1	.010	
6.	45	1	.007	
7.	60	1	.012	
8.	70	1	.008	
9.	74	1	.010	
10.	76	1	.008	
11.	94	1	.003	
12.	98	1	.013	
13.	124	1	.011	
14.	125	1	.007	
15.	139	1	.007	
16.	146	1	.004	
17.	147	1	.009	
18.	148	1	.014	
19.	162	1	.000	
20.	164	1	.009	
21.	167	1	.008	
22.		1		
23.		1		
24.		1		
25.		1		
26.		1		
27.		1		
28.		1		
29.		1		
30.		1		
31.		1		
32.		1		
33.		1		
34.		1		
35.		1		
36.		1		



Reporting limit (mg/L) =	0.1
Recovery (%) =	#VALUE!
Precision (RPD) =	#VALUE!
Sample volume (ml):	0.50
Dilution factor	1

Sample Set Description:

Test No.:	686-1
Test Day:	28 (8-24-04)
Species:	*Hyalella*
Overlying water	
Analyst:	RSC
Date analysed:	8/31/2004

ANC07692
BZTO104(e)007692

TEST DATA ANALYSIS RECORDS

Test Number: P686-1

Freshwater Sediment Test
28-day Hyalella azteca

Randomization Key

BKR	NAS SMPL	CLIENT DESCRIP	REPL	
104	9207F	Control	1	
152	9207F	Control	2	
38	9207F	Control	3	
46	9207F	Control	4	
44	9207F	Control	5	
66	9207F	Control	6	
10	9207F	Control	7	
167	9207F	Control	8	wq replicate
110	9213F	LW2-G009	1	
82	9213F	LW2-G009	2	
168	9213F	LW2-G009	3	
107	9213F	LW2-G009	4	
69	9213F	LW2-G009	5	
133	9213F	LW2-G009	6	
71	9213F	LW2-G009	7	
70	9213F	LW2-G009	8	wq replicate
154	9214F	LW2-G010	1	
47	9214F	LW2-G010	2	
73	9214F	LW2-G010	3	
126	9214F	LW2-G010	4	
1	9214F	LW2-G010	5	
137	9214F	LW2-G010	6	
88	9214F	LW2-G010	7	
164	9214F	LW2-G010	8	wq replicate
128	9215F	LW2-G011	1	
142	9215F	LW2-G011	2	
14	9215F	LW2-G011	3	
161	9215F	LW2-G011	4	
67	9215F	LW2-G011	5	
63	9215F	LW2-G011	6	
155	9215F	LW2-G011	7	
74	9215F	LW2-G011	8	wq replicate
27	9216F	LW2-G007-1	1	
83	9216F	LW2-G007-1	2	
23	9216F	LW2-G007-1	3	
165	9216F	LW2-G007-1	4	
149	9216F	LW2-G007-1	5	
157	9216F	LW2-G007-1	6	
19	9216F	LW2-G007-1	7	
32	9216F	LW2-G007-1	8	wq replicate
118	9217F	LW2-G026	1	
153	9217F	LW2-G026	2	
138	9217F	LW2-G026	3	
26	9217F	LW2-G026	4	
130	9217F	LW2-G026	5	
28	9217F	LW2-G026	6	
36	9217F	LW2-G026	7	
148	9217F	LW2-G026	8	wq replicate
52	9218F	LW2-G060	1	
101	9218F	LW2-G060	2	
96	9218F	LW2-G060	3	
8	9218F	LW2-G060	4	
53	9218F	LW2-G060	5	
159	9218F	LW2-G060	6	
123	9218F	LW2-G060	7	
37	9218F	LW2-G060	8	wq replicate
122	9219F	LW2-G064	1	
160	9219F	LW2-G064	2	
140	9219F	LW2-G064	3	
41	9219F	LW2-G064	4	
115	9219F	LW2-G064	5	
22	9219F	LW2-G064	6	
11	9219F	LW2-G064	7	
17	9219F	LW2-G064	8	wq replicate

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Freshwater Sediment Test
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BKR	NAS SMPL	CLIENT DESCRIP	REPL	
13	9220F	LW2-G203-1	1	
57	9220F	LW2-G203-1	2	
113	9220F	LW2-G203-1	3	
25	9220F	LW2-G203-1	4	
48	9220F	LW2-G203-1	5	
4	9220F	LW2-G203-1	6	
40	9220F	LW2-G203-1	7	
31	9220F	LW2-G203-1	8	wq replicate
105	9221F	LW2-G066	1	
156	9221F	LW2-G066	2	
79	9221F	LW2-G066	3	
54	9221F	LW2-G066	4	
6	9221F	LW2-G066	5	
77	9221F	LW2-G066	6	
120	9221F	LW2-G066	7	
147	9221F	LW2-G066	8	wq replicate
3	9222F	LW2-G015	1	
21	9222F	LW2-G015	2	
55	9222F	LW2-G015	3	
59	9222F	LW2-G015	4	
29	9222F	LW2-G015	5	
18	9222F	LW2-G015	6	
81	9222F	LW2-G015	7	
43	9222F	LW2-G015	8	wq replicate
143	9223F	LW2-G019	1	
62	9223F	LW2-G019	2	
116	9223F	LW2-G019	3	
163	9223F	LW2-G019	4	
129	9223F	LW2-G019	5	
135	9223F	LW2-G019	6	
65	9223F	LW2-G019	7	
162	9223F	LW2-G019	8	wq replicate
103	9224F	LW2-G017	1	
132	9224F	LW2-G017	2	
112	9224F	LW2-G017	3	
56	9224F	LW2-G017	4	
117	9224F	LW2-G017	5	
33	9224F	LW2-G017	6	
5	9224F	LW2-G017	7	
146	9224F	LW2-G017	8	wq replicate
84	9225F	LW2-G294-1	1	
134	9225F	LW2-G294-1	2	
72	9225F	LW2-G294-1	3	
87	9225F	LW2-G294-1	4	
30	9225F	LW2-G294-1	5	
145	9225F	LW2-G294-1	6	
109	9225F	LW2-G294-1	7	
45	9225F	LW2-G294-1	8	wq replicate
39	9226F	LW2-G270	1	
93	9226F	LW2-G270	2	
111	9226F	LW2-G270	3	
91	9226F	LW2-G270	4	
158	9226F	LW2-G270	5	
12	9226F	LW2-G270	6	
24	9226F	LW2-G270	7	
94	9226F	LW2-G270	8	wq replicate
114	9227F	LW2-G311-1	1	
49	9227F	LW2-G311-1	2	
144	9227F	LW2-G311-1	3	
16	9227F	LW2-G311-1	4	
89	9227F	LW2-G311-1	5	
166	9227F	LW2-G311-1	6	
7	9227F	LW2-G311-1	7	
60	9227F	LW2-G311-1	8	wq replicate

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28-day Hyalella azteca

BKR	NAS SMPL	CLIENT DESCRIP	REPL	
151	9228F	LW2-G324-1	1	
80	9228F	LW2-G324-1	2	
102	9228F	LW2-G324-1	3	
90	9228F	LW2-G324-1	4	
51	9228F	LW2-G324-1	5	
50	9228F	LW2-G324-1	6	
2	9228F	LW2-G324-1	7	
76	9228F	LW2-G324-1	8	wq replicate
127	9229F	LW2-G334	1	
15	9229F	LW2-G334	2	
95	9229F	LW2-G334	3	
97	9229F	LW2-G334	4	
86	9229F	LW2-G334	5	
92	9229F	LW2-G334	6	
64	9229F	LW2-G334	7	
139	9229F	LW2-G334	8	wq replicate
99	9230F	LW2-G345-1	1	
20	9230F	LW2-G345-1	2	
78	9230F	LW2-G345-1	3	
9	9230F	LW2-G345-1	4	
106	9230F	LW2-G345-1	5	
121	9230F	LW2-G345-1	6	
61	9230F	LW2-G345-1	7	
125	9230F	LW2-G345-1	8	wq replicate
85	9231F	LW2-G221	1	
136	9231F	LW2-G221	2	
141	9231F	LW2-G221	3	
75	9231F	LW2-G221	4	
58	9231F	LW2-G221	5	
131	9231F	LW2-G221	6	
34	9231F	LW2-G221	7	
124	9231F	LW2-G221	8	wq replicate
100	9232F	LW2-G220	1	
150	9232F	LW2-G220	2	
68	9232F	LW2-G220	3	
42	9232F	LW2-G220	4	
119	9232F	LW2-G220	5	
35	9232F	LW2-G220	6	
108	9232F	LW2-G220	7	
98	9232F	LW2-G220	8	wq replicate

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Freshwater Sediment Test
28-day Hyalella azteca

Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or
dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

INITIAL WEIGHT

pan #	tare wt (mg)	final wt (mg)	wt count	avg. wt/ organism
1	23.309	24.703	20	0.070
2	29.641	30.837	20	0.060
3	28.849	29.996	20	0.057
4	30.767	31.959	20	0.060
5	27.756	28.949	20	0.060

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)
1	104	9208F	Control	1		10	10	0	100.0	0.0	29.617	10	32.319	2.70	0.27
2	152	9208F	Control	2		10	10	0	100.0	0.0	27.665	10	30.831	3.17	0.32
3	38	9208F	Control	3		10	10	0	100.0	0.0	27.806	10	29.966	2.16	0.22
4	46	9208F	Control	4		10	10	0	100.0	0.0	29.066	10	32.252	3.19	0.32
5	44	9208F	Control	5		10	10	0	100.0	0.0	28.266	10	30.793	2.53	0.25
6	66	9208F	Control	6		10	10	0	100.0	0.0	30.367	10	33.257	2.89	0.29
7	10	9208F	Control	7		10	10	0	100.0	0.0	28.576	9	30.487	1.91	0.21
8	167	9208F	Control	8	wq replicate	10	10	0	100.0	0.0	27.289	10	29.687	2.40	0.24
9	110	9213F	LW2-G009	1		10	10	0	100.0	0.0	27.947	10	31.314	3.37	0.34
10	82	9213F	LW2-G009	2		10	9	1	90.0	10.0	30.660	9	32.899	2.24	0.25
11	168	9213F	LW2-G009	3		10	7	3	70.0	30.0	30.378	7	31.819	1.44	0.21
12	107	9213F	LW2-G009	4		10	8	2	80.0	20.0	28.067	8	31.808	3.74	0.47
13	69	9213F	LW2-G009	5		10	10	0	100.0	0.0	29.218	10	31.545	2.33	0.23
14	133	9213F	LW2-G009	6		10	9	1	90.0	10.0	27.504	9	30.556	3.05	0.34
15	71	9213F	LW2-G009	7		10	10	0	100.0	0.0	29.503	10	31.815	2.31	0.23
16	70	9213F	LW2-G009	8	wq replicate	10	10	0	100.0	0.0	30.949	10	33.101	2.15	0.22
17	154	9214F	LW2-G010	1		10	9	1	90.0	10.0	28.510	9	30.459	1.95	0.22
18	47	9214F	LW2-G010	2		10	9	1	90.0	10.0	27.843	9	30.108	2.27	0.25
19	73	9214F	LW2-G010	3		10	10	0	100.0	0.0	28.650	10	30.709	2.06	0.21
20	126	9214F	LW2-G010	4		10	10	0	100.0	0.0	27.804	10	30.463	2.66	0.27
21	1	9214F	LW2-G010	5		10	9	1	90.0	10.0	28.080	9	29.467	1.39	0.15
22	137	9214F	LW2-G010	6		10	10	0	100.0	0.0	28.674	10	30.935	2.26	0.23
23	88	9214F	LW2-G010	7		10	10	0	100.0	0.0	28.488	10	29.955	1.47	0.15
24	164	9214F	LW2-G010	8	wq replicate	10	10	0	100.0	0.0	28.106	10	29.708	1.60	0.16
25	128	9215F	LW2-G011	1		10	10	0	100.0	0.0	30.265	10	32.594	2.33	0.23
26	142	9215F	LW2-G011	2		10	10	0	100.0	0.0	29.270	10	32.608	3.34	0.33
27	14	9215F	LW2-G011	3		10	9	1	90.0	10.0	28.795	9	31.680	2.89	0.32
28	161	9215F	LW2-G011	4		10	10	0	100.0	0.0	29.953	10	33.494	3.54	0.35
29	67	9215F	LW2-G011	5		10	10	0	100.0	0.0	31.433	10	33.719	2.29	0.23
30	63	9215F	LW2-G011	6		10	10	0	100.0	0.0	29.792	10	32.533	2.74	0.27
31	155	9215F	LW2-G011	7		10	9	1	90.0	10.0	28.703	9	30.698	2.00	0.22
32	74	9215F	LW2-G011	8	wq replicate	10	10	0	100.0	0.0	28.709	10	31.878	3.17	0.32

	SURV	MORT	PSURV	PMORT	WT
Mean	10.0	0.0	100.0	0.0	0.26
SD	0.0	0.0	0.0	0.0	0.04
n	8	8	8	8	8
Mean	9.1	0.9	91.3	8.8	0.28
SD	1.1	1.1	11.3	11.3	0.09
n	8	8	8	8	8
Mean	9.6	0.4	96.3	3.8	0.20
SD	0.5	0.5	5.2	5.2	0.05
n	8	8	8	8	8
Mean	9.8	0.3	97.5	2.5	0.29
SD	0.5	0.5	4.6	4.6	0.05
n	8	8	8	8	8

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Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)						
33	27	9216F	LW2-G007-1	1		10	9	1	90.0	10.0	28.937	9	30.431	1.49	0.17						
34	83	9216F	LW2-G007-1	2		10	10	0	100.0	0.0	28.679	10	30.530	1.85	0.19						
35	23	9216F	LW2-G007-1	3		10	10	0	100.0	0.0	28.983	9	30.324	1.34	0.15						
36	165	9216F	LW2-G007-1	4		10	9	1	90.0	10.0	29.808	9	30.980	1.17	0.13						
37	149	9216F	LW2-G007-1	5		10	10	0	100.0	0.0	30.308	10	32.248	1.94	0.19	Mean	9.8	0.3	97.5	2.5	0.18
38	157	9216F	LW2-G007-1	6		10	10	0	100.0	0.0	27.798	10	29.921	2.12	0.21	SD	0.5	0.5	4.6	4.6	0.03
39	19	9216F	LW2-G007-1	7		10	10	0	100.0	0.0	29.585	10	31.507	1.92	0.19	n	8	8	8	8	8
40	32	9216F	LW2-G007-1	8	wq replicate	10	10	0	100.0	0.0	27.301	10	29.581	2.28	0.23						
41	118	9217F	LW2-G026	1		10	10	0	100.0	0.0	27.865	10	29.590	1.73	0.17						
42	153	9217F	LW2-G026	2		10	10	0	100.0	0.0	28.035	10	29.508	1.47	0.15						
43	138	9217F	LW2-G026	3		10	9	1	90.0	10.0	29.220	9	31.545	2.33	0.26						
44	26	9217F	LW2-G026	4		10	10	0	100.0	0.0	27.995	10	30.542	2.55	0.25						
45	130	9217F	LW2-G026	5		10	10	0	100.0	0.0	28.904	10	31.245	2.34	0.23	Mean	9.6	0.4	96.3	3.8	0.22
46	28	9217F	LW2-G026	6		10	10	0	100.0	0.0	29.171	10	31.268	2.10	0.21	SD	0.5	0.5	5.2	5.2	0.04
47	36	9217F	LW2-G026	7		10	9	1	90.0	10.0	29.169	9	31.350	2.18	0.24	n	8	8	8	8	8
48	148	9217F	LW2-G026	8	wq replicate	10	9	1	90.0	10.0	30.130	8	31.977	1.85	0.23						
49	52	9218F	LW2-G060	1		10	10	0	100.0	0.0	28.984	10	30.984	2.00	0.20						
50	101	9218F	LW2-G060	2		10	9	1	90.0	10.0	27.616	9	30.925	3.31	0.37						
51	96	9218F	LW2-G060	3		10	10	0	100.0	0.0	28.511	10	31.109	2.60	0.26						
52	8	9218F	LW2-G060	4		10	10	0	100.0	0.0	28.277	10	31.024	2.75	0.27						
53	53	9218F	LW2-G060	5		10	10	0	100.0	0.0	28.531	10	31.369	2.84	0.28	Mean	9.6	0.4	96.3	3.8	0.27
54	159	9218F	LW2-G060	6		10	9	1	90.0	10.0	27.215	9	29.019	1.80	0.20	SD	0.5	0.5	5.2	5.2	0.06
55	123	9218F	LW2-G060	7		10	10	0	100.0	0.0	28.627	10	30.915	2.29	0.23	n	8	8	8	8	8
56	37	9218F	LW2-G060	8	wq replicate	10	9	1	90.0	10.0	30.268	9	33.251	2.98	0.33						
57	122	9219F	LW2-G064	1		10	10	0	100.0	0.0	29.037	10	31.648	2.61	0.26						
58	160	9219F	LW2-G064	2		10	8	2	80.0	20.0	29.886	8	32.509	2.62	0.33						
59	140	9219F	LW2-G064	3		10	9	1	90.0	10.0	27.827	9	29.996	2.17	0.24						
60	41	9219F	LW2-G064	4		10	10	0	100.0	0.0	29.191	10	31.482	2.29	0.23						
61	115	9219F	LW2-G064	5		10	10	0	100.0	0.0	29.433	10	32.377	2.94	0.29	Mean	9.5	0.5	95.0	5.0	0.27
62	22	9219F	LW2-G064	6		10	10	0	100.0	0.0	28.074	10	30.248	2.17	0.22	SD	0.8	0.8	7.6	7.6	0.04
63	11	9219F	LW2-G064	7		10	10	0	100.0	0.0	30.784	10	33.349	2.57	0.26	n	8	8	8	8	8
64	17	9219F	LW2-G064	8	wq replicate	10	9	1	90.0	10.0	27.935	9	30.717	2.78	0.31						
65	13	9220F	LW2-G203-1	1		10	10	0	100.0	0.0	28.470	10	30.631	2.16	0.22						
66	57	9220F	LW2-G203-1	2		10	9	1	90.0	10.0	27.769	9	30.168	2.40	0.27						
67	113	9220F	LW2-G203-1	3		10	10	0	100.0	0.0	28.784	10	30.612	1.83	0.18						
68	25	9220F	LW2-G203-1	4		10	10	0	100.0	0.0	27.531	10	29.530	2.00	0.20						
69	48	9220F	LW2-G203-1	5		10	9	1	90.0	10.0	28.928	9	30.440	1.51	0.17	Mean	9.4	0.6	93.8	6.3	0.20
70	4	9220F	LW2-G203-1	6		10	9	1	90.0	10.0	29.194	9	30.522	1.33	0.15	SD	0.5	0.5	5.2	5.2	0.04
71	40	9220F	LW2-G203-1	7		10	9	1	90.0	10.0	28.090	9	29.956	1.87	0.21	n	8	8	8	8	8
72	31	9220F	LW2-G203-1	8	wq replicate	10	9	1	90.0	10.0	28.808	9	30.940	2.13	0.24						

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Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
73	105	9221F	LW2-G066	1		10	9	1	90.0	10.0	28.169	9	31.414	3.25	0.36						
74	156	9221F	LW2-G066	2		10	6	4	60.0	40.0	29.213	6	34.144	4.93	0.82						
75	79	9221F	LW2-G066	3		10	10	0	100.0	0.0	27.971	10	30.442	2.47	0.25						
76	54	9221F	LW2-G066	4		10	10	0	100.0	0.0	28.387	10	31.052	2.67	0.27						
77	6	9221F	LW2-G066	5		10	10	0	100.0	0.0	29.081	10	31.103	2.02	0.20	Mean	9.1	0.9	91.3	8.8	0.33
78	77	9221F	LW2-G066	6		10	10	0	100.0	0.0	29.004	10	31.011	2.01	0.20	SD	1.5	1.5	14.6	14.6	0.21
79	120	9221F	LW2-G066	7		10	8	2	80.0	20.0	29.214	8	31.101	1.89	0.24	n	8	8	8	8	8
80	147	9221F	LW2-G066	8	wq replicate	10	10	0	100.0	0.0	27.200	10	30.291	3.09	0.31						
81	3	9222F	LW2-G015	1		10	10	0	100.0	0.0	28.464	10	29.553	1.09	0.11						
82	21	9222F	LW2-G015	2		10	10	0	100.0	0.0	29.302	10	31.382	2.08	0.21						
83	55	9222F	LW2-G015	3		10	9	1	90.0	10.0	28.556	9	30.857	2.30	0.26						
84	59	9222F	LW2-G015	4		10	10	0	100.0	0.0	30.430	9	32.468	2.04	0.23						
85	29	9222F	LW2-G015	5		10	6	4	60.0	40.0	26.991	6	28.566	1.58	0.26	Mean	9.4	0.6	93.8	6.3	0.21
86	18	9222F	LW2-G015	6		10	10	0	100.0	0.0	27.778	10	29.588	1.81	0.18	SD	1.4	1.4	14.1	14.1	0.06
87	81	9222F	LW2-G015	7		10	10	0	100.0	0.0	27.094	10	28.665	1.57	0.16	n	8	8	8	8	8
88	43	9222F	LW2-G015	8	wq replicate	10	10	0	100.0	0.0	29.526	10	32.378	2.85	0.29						
89	143	9223F	LW2-G019	1		10	6	4	60.0	40.0	27.208	6	30.762	3.55	0.59						
90	62	9223F	LW2-G019	2		10	9	1	90.0	10.0	27.287	9	31.268	3.98	0.44						
91	116	9223F	LW2-G019	3		10	10	0	100.0	0.0	29.475	10	35.331	5.86	0.59						
92	163	9223F	LW2-G019	4		10	9	1	90.0	10.0	28.752	9	33.165	4.41	0.49						
93	129	9223F	LW2-G019	5		10	10	0	100.0	0.0	29.416	10	33.492	4.08	0.41	Mean	9.1	0.9	91.3	8.8	0.44
94	135	9223F	LW2-G019	6		10	10	0	100.0	0.0	29.954	10	33.988	4.03	0.40	SD	1.4	1.4	13.6	13.6	0.12
95	65	9223F	LW2-G019	7		10	9	1	90.0	10.0	29.637	9	31.728	2.09	0.23	n	8	8	8	8	8
96	162	9223F	LW2-G019	8	wq replicate	10	10	0	100.0	0.0	30.143	10	33.765	3.62	0.36						
97	103	9224F	LW2-G017	1		10	10	0	100.0	0.0	27.612	10	29.803	2.19	0.22						
98	132	9224F	LW2-G017	2		10	10	0	100.0	0.0	30.758	10	33.190	2.43	0.24						
99	112	9224F	LW2-G017	3		10	9	1	90.0	10.0	29.829	9	31.842	2.01	0.22						
100	56	9224F	LW2-G017	4		10	10	0	100.0	0.0	29.660	10	31.614	1.95	0.20						
101	117	9224F	LW2-G017	5		10	10	0	100.0	0.0	29.073	10	31.003	1.93	0.19	Mean	9.5	0.5	95.0	5.0	0.22
102	33	9224F	LW2-G017	6		10	9	1	90.0	10.0	28.196	9	30.029	1.83	0.20	SD	0.8	0.8	7.6	7.6	0.03
103	5	9224F	LW2-G017	7		10	8	2	80.0	20.0	29.032	8	30.484	1.45	0.18	n	8	8	8	8	8
104	146	9224F	LW2-G017	8	wq replicate	10	10	0	100.0	0.0	30.157	10	32.775	2.62	0.26						
105	84	9225F	LW2-G294-1	1		10	0	10	0.0	100.0	28.993	0									
106	134	9225F	LW2-G294-1	2		10	0	10	0.0	100.0	26.399	0									
107	72	9225F	LW2-G294-1	3		10	0	10	0.0	100.0	30.874	0									
108	87	9225F	LW2-G294-1	4		10	0	10	0.0	100.0	29.958	0									
109	30	9225F	LW2-G294-1	5		10	0	10	0.0	100.0	30.218	0				Mean	0.0	10.0	0.0	100.0	
110	145	9225F	LW2-G294-1	6		10	0	10	0.0	100.0	28.198	0				SD	0.0	0.0	0.0	0.0	
111	109	9225F	LW2-G294-1	7		10	0	10	0.0	100.0	28.614	0				n	8	8	8	8	0
112	45	9225F	LW2-G294-1	8	wq replicate	10	0	10	0.0	100.0	28.698	0									

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ANC07699
BZTO104(e)007699

Test Number: P686-1

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
113	39	9226F	LW2-G270	1		10	9	1	90.0	10.0	28.003	9	29.901	1.90	0.21						
114	93	9226F	LW2-G270	2		10	10	0	100.0	0.0	28.727	10	31.170	2.44	0.24						
115	111	9226F	LW2-G270	3		10	10	0	100.0	0.0	29.569	10	31.369	1.80	0.18						
116	91	9226F	LW2-G270	4		10	9	1	90.0	10.0	28.789	9	30.532	1.74	0.19						
117	158	9226F	LW2-G270	5		10	9	1	90.0	10.0	29.885	9	31.419	1.53	0.17	Mean	9.3	0.8	92.5	7.5	0.20
118	12	9226F	LW2-G270	6		10	9	1	90.0	10.0	31.042	9	33.041	2.00	0.22	SD	0.7	0.7	7.1	7.1	0.04
119	24	9226F	LW2-G270	7		10	8	2	80.0	20.0	28.630	8	29.608	0.98	0.12	n	8	8	8	8	8
120	94	9226F	LW2-G270	8	wq replicate	10	10	0	100.0	0.0	28.822	10	31.351	2.53	0.25						
121	114	9227F	LW2-G311-1	1		10	8	2	80.0	20.0	31.071	8	33.042	1.97	0.25						
122	49	9227F	LW2-G311-1	2		10	8	2	80.0	20.0	27.978	8	30.501	2.52	0.32						
123	144	9227F	LW2-G311-1	3		10	3	7	30.0	70.0	28.332	3	29.424	1.09	0.36						
124	16	9227F	LW2-G311-1	4		10	6	4	60.0	40.0	30.766	5	32.433	1.67	0.33						
125	89	9227F	LW2-G311-1	5		10	6	4	60.0	40.0	29.189	6	31.537	2.35	0.39	Mean	6.1	3.9	61.3	38.8	0.33
126	166	9227F	LW2-G311-1	6		10	5	5	50.0	50.0	28.892	5	30.747	1.86	0.37	SD	2.5	2.5	24.7	24.7	0.05
127	7	9227F	LW2-G311-1	7		10	3	7	30.0	70.0	30.924	3	31.819	0.90	0.30	n	8	8	8	8	8
128	60	9227F	LW2-G311-1	8	wq replicate	10	10	0	100.0	0.0	27.779	10	30.937	3.16	0.32						
129	151	9228F	LW2-G324-1	1		10	9	1	90.0	10.0	32.089	9	34.445	2.36	0.26						
130	80	9228F	LW2-G324-1	2		10	9	1	90.0	10.0	29.270	9	32.276	3.01	0.33						
131	102	9228F	LW2-G324-1	3		10	9	1	90.0	10.0	30.965	9	33.926	2.96	0.33						
132	90	9228F	LW2-G324-1	4		10	10	0	100.0	0.0	28.361	10	30.006	1.65	0.16						
133	51	9228F	LW2-G324-1	5		10	9	1	90.0	10.0	29.778	8	31.021	1.24	0.16	Mean	9.4	0.6	93.8	6.3	0.24
134	50	9228F	LW2-G324-1	6		10	10	0	100.0	0.0	27.732	10	29.925	2.19	0.22	SD	0.5	0.5	5.2	5.2	0.08
135	2	9228F	LW2-G324-1	7		10	10	0	100.0	0.0	28.639	10	30.334	1.70	0.17	n	8	8	8	8	8
136	76	9228F	LW2-G324-1	8	wq replicate	10	9	1	90.0	10.0	27.879	9	30.620	2.74	0.30						
137	127	9229F	LW2-G334	1		10	9	1	90.0	10.0	27.349	9	29.990	2.64	0.29						
138	15	9229F	LW2-G334	2		10	10	0	100.0	0.0	29.933	10	32.124	2.19	0.22						
139	95	9229F	LW2-G334	3		10	10	0	100.0	0.0	28.851	10	31.538	2.69	0.27						
140	97	9229F	LW2-G334	4		10	7	3	70.0	30.0	26.856	7	29.037	2.18	0.31						
141	86	9229F	LW2-G334	5		10	10	0	100.0	0.0	28.141	10	30.057	1.92	0.19	Mean	9.3	0.8	92.5	7.5	0.25
142	92	9229F	LW2-G334	6		10	10	0	100.0	0.0	26.972	10	31.586	2.61	0.26	SD	1.0	1.0	10.4	10.4	0.04
143	64	9229F	LW2-G334	7		10	9	1	90.0	10.0	27.148	9	29.484	2.34	0.26	n	8	8	8	8	8
144	139	9229F	LW2-G334	8	wq replicate	10	9	1	90.0	10.0	29.132	9	30.996	1.86	0.21						
145	99	9230F	LW2-G345-1	1		10	10	0	100.0	0.0	29.725	10	31.653	1.93	0.19						
146	20	9230F	LW2-G345-1	2		10	10	0	100.0	0.0	28.416	10	29.915	1.50	0.15						
147	78	9230F	LW2-G345-1	3		10	8	2	80.0	20.0	30.285	8	31.967	1.68	0.21						
148	9	9230F	LW2-G345-1	4		10	8	2	80.0	20.0	27.369	8	28.783	1.41	0.18						
149	106	9230F	LW2-G345-1	5		10	10	0	100.0	0.0	29.781	10	31.902	2.12	0.21	Mean	9.5	0.5	95.0	5.0	0.21
150	121	9230F	LW2-G345-1	6		10	10	0	100.0	0.0	30.448	10	33.123	2.68	0.27	SD	0.9	0.9	9.3	9.3	0.05
151	61	9230F	LW2-G345-1	7		10	10	0	100.0	0.0	28.275	10	31.144	2.87	0.29	n	8	8	8	8	8
152	125	9230F	LW2-G345-1	8	wq replicate	10	10	0	100.0	0.0	27.948	10	29.771	1.82	0.18						

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ANC07700
BZTO104(e)007700

Test Number: P686-1

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)
153	85	9231F	LW2-G221	1		10	10	0	100.0	0.0	28.742	10	31.143	2.40	0.24
154	136	9231F	LW2-G221	2		10	10	0	100.0	0.0	28.113	10	32.182	4.07	0.41
155	141	9231F	LW2-G221	3		10	10	0	100.0	0.0	27.232	10	30.691	3.46	0.35
156	75	9231F	LW2-G221	4		10	9	1	90.0	10.0	27.798	9	30.081	2.28	0.25
157	58	9231F	LW2-G221	5		10	8	2	80.0	20.0	27.773	8	30.168	2.40	0.30
158	131	9231F	LW2-G221	6		10	10	0	100.0	0.0	28.775	10	31.149	2.37	0.24
159	34	9231F	LW2-G221	7		10	10	0	100.0	0.0	26.524	10	28.874	2.35	0.24
160	124	9231F	LW2-G221	8	wq replicate	10	10	0	100.0	0.0	30.603	10	33.997	3.39	0.34
161	100	9232F	LW2-G220	1		10	9	1	90.0	10.0	29.816	9	31.901	2.09	0.23
162	150	9232F	LW2-G220	2		10	9	1	90.0	10.0	29.442	9	31.745	2.30	0.26
163	68	9232F	LW2-G220	3		10	10	0	100.0	0.0	28.636	10	31.002	2.37	0.24
164	42	9232F	LW2-G220	4		10	9	1	90.0	10.0	28.165	9	30.396	2.23	0.25
165	119	9232F	LW2-G220	5		10	10	0	100.0	0.0	27.982	10	30.278	2.30	0.23
166	35	9232F	LW2-G220	6		10	10	0	100.0	0.0	34.438	10	36.204	1.77	0.18
167	108	9232F	LW2-G220	7		10	8	2	80.0	20.0	28.327	8	30.326	2.00	0.25
168	98	9232F	LW2-G220	8	wq replicate	10	10	0	100.0	0.0	28.326	10	29.385	1.06	0.11

	SURV	MORT	PSURV	PMORT	WT
Mean	9.6	0.4	96.3	3.8	0.29
SD	0.7	0.7	7.4	7.4	0.06
n	8	8	8	8	8
Mean	9.4	0.6	93.8	6.3	0.22
SD	0.7	0.7	7.4	7.4	0.05
n	8	8	8	8	8

One animal lost in each of beakers 10, 16, 23, 59 and 148 during transfer into weighing pans

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ANC07701
BZTO104(e)007701

Test Number: 686-1

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
BULK SEDIMENT POREWATER													
	9208F	Control										<0.5	7.2
	9213F	LW2-G009										0.5	7.0
	9214F	LW2-G010										2.5	6.7
	9215F	LW2-G011										7.9	6.8
	9216F	LW2-G007-1										6.3	6.6
	9217F	LW2-G026										4.2	6.7
	9218F	LW2-G060										1.1	7.1
	9219F	LW2-G064										0.5	7.1
	9220F	LW2-G203-1										5.1	6.7
	9221F	LW2-G066										4.2	6.8
	9222F	LW2-G015										4.3	6.9
	9223F	LW2-G019										1.1	7.8
	9224F	LW2-G017										6.2	7.0
	9225F	LW2-G294-1										7.6	6.8
	9226F	LW2-G270										12.5	6.6
	9227F	LW2-G311-1										18.2	6.8
	9228F	LW2-G324-1										0.5	7.0
	9229F	LW2-G334										3.1	7.0
	9230F	LW2-G345-1										12.4	6.5
	9231F	LW2-G221										1.9	7.0
	9232F	LW2-G220										1.6	7.2

ANC07702
BZTO104(e)007702

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
OVERLYING WATER													
17	9219F	LW2-G064	8	0	22.7	7.2	165	7.3	51	40	0.2		
31	9220F	LW2-G203-1	8	0	22.6	7.0	170	7.1	43	50	0.6		
32	9216F	LW2-G007-1	8	0	22.6	7.1	160	7.0	51	50	0.5		
37	9218F	LW2-G060	8	0	22.7	6.9	160	7.1	51	40	0.2		
43	9222F	LW2-G015	8	0	22.8	6.9	170	7.1	51	60	0.6		
45	9225F	LW2-G294-1	8	0	23.0	6.8	160	7.0	51	40	0.7		
60	9227F	LW2-G311-1	8	0	22.9	6.9	170	7.1	43	40	1.7		
70	9213F	LW2-G009	8	0	22.9	7.1	165	7.2	43	40	0.2		
74	9215F	LW2-G011	8	0	22.9	7.0	160	7.2	43	50	0.4		
76	9228F	LW2-G324-1	8	0	22.8	6.9	155	7.2	34	40	0.1		
94	9226F	LW2-G270	8	0	22.7	6.6	170	7.0	51	40	0.9		
98	9232F	LW2-G220	8	0	22.8	6.8	160	7.0	43	40	0.2		
124	9231F	LW2-G221	8	0	22.9	6.9	160	7.2	51	40	0.3		
125	9230F	LW2-G345-1	8	0	23.1	7.0	225	7.0	43	40	0.8		
139	9229F	LW2-G334	8	0	23.1	6.9	220	7.2	51	50	0.4		
146	9224F	LW2-G017	8	0	23.0	7.1	170	7.3	43	50	0.5		
147	9221F	LW2-G066	8	0	22.8	7.0	160	7.2	51	40	0.4		
148	9217F	LW2-G026	8	0	22.7	6.9	160	7.1	51	40	0.5		
162	9223F	LW2-G019	8	0	22.8	6.8	170	7.1	51	40	0.2		
164	9214F	LW2-G010	8	0	22.9	6.8	160	7.4	43	40	0.4		
167	9208F	Control	8	0	22.9	6.6	170	7.3	43	50	0.2		
17	9219F	LW2-G064	8	1	22.7	7.3	165	7.3					
31	9220F	LW2-G203-1	8	1	22.8	6.9	165	7.1					
32	9216F	LW2-G007-1	8	1	22.8	7.0	160	7.0					
37	9218F	LW2-G060	8	1	22.8	7.2	160	7.0					
43	9222F	LW2-G015	8	1	22.9	7.2	165	7.0					
45	9225F	LW2-G294-1	8	1	23.4	6.0	165	6.9					
60	9227F	LW2-G311-1	8	1	23.2	6.6	165	6.9					
70	9213F	LW2-G009	8	1	23.2	6.8	165	7.0					
74	9215F	LW2-G011	8	1	23.0	6.8	165	7.1					
76	9228F	LW2-G324-1	8	1	23.0	7.0	160	7.1					
94	9226F	LW2-G270	8	1	22.9	7.0	165	7.0					
98	9232F	LW2-G220	8	1	22.9	7.0	160	7.0					
124	9231F	LW2-G221	8	1	23.2	7.0	165	7.1					
125	9230F	LW2-G345-1	8	1	23.3	7.0	195	7.0					
139	9229F	LW2-G334	8	1	23.3	6.7	190	7.1					
146	9224F	LW2-G017	8	1	23.0	6.6	170	7.1					
147	9221F	LW2-G066	8	1	22.9	6.7	160	7.1					
148	9217F	LW2-G026	8	1	22.9	6.8	160	7.0					
162	9223F	LW2-G019	8	1	23.0	6.8	170	7.3					
164	9214F	LW2-G010	8	1	23.2	6.8	165	7.1					
167	9208F	Control	8	1	22.9	7.0	170	7.3					

ANC07703
BZTO104(e)007703

Test Number: 686-1

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
17	9219F	LW2-G064	8	2	22.8								
31	9220F	LW2-G203-1	8	2	22.9								
32	9216F	LW2-G007-1	8	2	22.8								
37	9218F	LW2-G060	8	2	22.8								
43	9222F	LW2-G015	8	2	22.9								
45	9225F	LW2-G294-1	8	2	23.1								
60	9227F	LW2-G311-1	8	2	23.2								
70	9213F	LW2-G009	8	2	23.2								
74	9215F	LW2-G011	8	2	23.0								
76	9228F	LW2-G324-1	8	2	23.1								
94	9226F	LW2-G270	8	2	23.0								
98	9232F	LW2-G220	8	2	22.9								
124	9231F	LW2-G221	8	2	23.1								
125	9230F	LW2-G345-1	8	2	23.3								
139	9229F	LW2-G334	8	2	23.2								
146	9224F	LW2-G017	8	2	23.2								
147	9221F	LW2-G066	8	2	23.0								
148	9217F	LW2-G026	8	2	23.0								
162	9223F	LW2-G019	8	2	23.1								
164	9214F	LW2-G010	8	2	23.4								
167	9208F	Control	8	2	23.1								
17	9219F	LW2-G064	8	3	22.5	6.6		7.0					
31	9220F	LW2-G203-1	8	3	22.5	6.3		7.0					
32	9216F	LW2-G007-1	8	3	22.5	6.3		7.0					
37	9218F	LW2-G060	8	3	22.5	6.4		7.0					
43	9222F	LW2-G015	8	3	22.6	6.4		7.0					
45	9225F	LW2-G294-1	8	3	22.7	5.5		7.0					
60	9227F	LW2-G311-1	8	3	22.8	6.0		7.0					
70	9213F	LW2-G009	8	3	22.8	6.4		7.0					
74	9215F	LW2-G011	8	3	22.8	6.2		7.1					
76	9228F	LW2-G324-1	8	3	22.7	6.5		7.1					
94	9226F	LW2-G270	8	3	22.7	5.9		7.0					
98	9232F	LW2-G220	8	3	22.7	6.0		7.0					
124	9231F	LW2-G221	8	3	22.7	6.2		7.0					
125	9230F	LW2-G345-1	8	3	22.9	6.0		7.0					
139	9229F	LW2-G334	8	3	23.0	5.8		7.0					
146	9224F	LW2-G017	8	3	23.1	6.0		7.0					
147	9221F	LW2-G066	8	3	23.0	5.9		7.0					
148	9217F	LW2-G026	8	3	22.9	5.8		7.0					
162	9223F	LW2-G019	8	3	22.8	6.0		7.2					
164	9214F	LW2-G010	8	3	23.0	5.7		7.0					
167	9208F	Control	8	3	23.0	6.0		7.0					

ANC07704
BZTO104(e)007704

Test Number: 686-1

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
17	9219F	LW2-G064	8	4	22.2									
31	9220F	LW2-G203-1	8	4	22.4									
32	9216F	LW2-G007-1	8	4	22.3									
37	9218F	LW2-G060	8	4	22.3									
43	9222F	LW2-G015	8	4	22.4									
45	9225F	LW2-G294-1	8	4	22.6									
60	9227F	LW2-G311-1	8	4	22.6									
70	9213F	LW2-G009	8	4	22.6									
74	9215F	LW2-G011	8	4	22.5									
76	9228F	LW2-G324-1	8	4	22.6									
94	9226F	LW2-G270	8	4	22.5									
98	9232F	LW2-G220	8	4	22.5									
124	9231F	LW2-G221	8	4	22.7									
125	9230F	LW2-G345-1	8	4	22.8									
139	9229F	LW2-G334	8	4	22.8									
146	9224F	LW2-G017	8	4	22.7									
147	9221F	LW2-G066	8	4	22.6									
148	9217F	LW2-G026	8	4	22.6									
162	9223F	LW2-G019	8	4	22.5									
164	9214F	LW2-G010	8	4	22.7									
167	9208F	Control	8	4	22.5									
17	9219F	LW2-G064	8	5	22.1									
31	9220F	LW2-G203-1	8	5	22.2									
32	9216F	LW2-G007-1	8	5	22.2									
37	9218F	LW2-G060	8	5	22.2									
43	9222F	LW2-G015	8	5	22.2									
45	9225F	LW2-G294-1	8	5	22.4									
60	9227F	LW2-G311-1	8	5	22.4									
70	9213F	LW2-G009	8	5	22.4									
74	9215F	LW2-G011	8	5	22.4									
76	9228F	LW2-G324-1	8	5	22.4									
94	9226F	LW2-G270	8	5	22.4									
98	9232F	LW2-G220	8	5	22.4									
124	9231F	LW2-G221	8	5	22.7									
125	9230F	LW2-G345-1	8	5	22.9									
139	9229F	LW2-G334	8	5	22.9									
146	9224F	LW2-G017	8	5	22.7									
147	9221F	LW2-G066	8	5	22.7									
148	9217F	LW2-G026	8	5	22.5									
162	9223F	LW2-G019	8	5	22.6									
164	9214F	LW2-G010	8	5	22.6									
167	9208F	Control	8	5	22.4									

ANC07705
BZTO104(e)007705

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
17	9219F	LW2-G064	8	6	22.3	6.8		7.2					
31	9220F	LW2-G203-1	8	6	22.4	6.0		7.1					
32	9216F	LW2-G007-1	8	6	22.4	6.3		7.1					
37	9218F	LW2-G060	8	6	22.3	6.4		7.0					
43	9222F	LW2-G015	8	6	22.4	6.5		7.0					
45	9225F	LW2-G294-1	8	6	22.5	6.0		6.9					
60	9227F	LW2-G311-1	8	6	22.6	6.0		7.0					
70	9213F	LW2-G009	8	6	22.6	6.2		7.0					
74	9215F	LW2-G011	8	6	22.5	6.0		7.0					
76	9228F	LW2-G324-1	8	6	22.5	6.5		7.1					
94	9226F	LW2-G270	8	6	22.5	5.8		7.0					
98	9232F	LW2-G220	8	6	22.4	6.0		7.0					
124	9231F	LW2-G221	8	6	22.7	6.4		6.9					
125	9230F	LW2-G345-1	8	6	22.8	6.0		7.0					
139	9229F	LW2-G334	8	6	22.8	6.2		6.9					
146	9224F	LW2-G017	8	6	22.7	6.3		7.0					
147	9221F	LW2-G066	8	6	22.5	6.2		7.0					
148	9217F	LW2-G026	8	6	22.5	6.2		6.9					
162	9223F	LW2-G019	8	6	22.5	6.3		7.1					
164	9214F	LW2-G010	8	6	22.5	6.3		7.0					
167	9208F	Control	8	6	22.4	6.4		7.1					
17	9219F	LW2-G064	8	7	22.7								
31	9220F	LW2-G203-1	8	7	22.8								
32	9216F	LW2-G007-1	8	7	22.8								
37	9218F	LW2-G060	8	7	22.7								
43	9222F	LW2-G015	8	7	22.7								
45	9225F	LW2-G294-1	8	7	22.8								
60	9227F	LW2-G311-1	8	7	22.9								
70	9213F	LW2-G009	8	7	22.9								
74	9215F	LW2-G011	8	7	22.8								
76	9228F	LW2-G324-1	8	7	22.8								
94	9226F	LW2-G270	8	7	22.8								
98	9232F	LW2-G220	8	7	22.8								
124	9231F	LW2-G221	8	7	22.9								
125	9230F	LW2-G345-1	8	7	23.1								
139	9229F	LW2-G334	8	7	22.9								
146	9224F	LW2-G017	8	7	22.9								
147	9221F	LW2-G066	8	7	22.8								
148	9217F	LW2-G026	8	7	22.9								
162	9223F	LW2-G019	8	7	23.1								
164	9214F	LW2-G010	8	7	23.1								
167	9208F	Control	8	7	22.9								

ANC07706
BZTO104(e)007706

Test Number: 686-1

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
17	9219F	LW2-G064	8	8	22.6	6.2	165	6.9					
31	9220F	LW2-G203-1	8	8	22.6	5.8	165	6.9					
32	9216F	LW2-G007-1	8	8	22.7	6.2	165	6.8					
37	9218F	LW2-G060	8	8	22.6	6.2	165	6.8					
43	9222F	LW2-G015	8	8	22.7	5.8	170	6.9					
45	9225F	LW2-G294-1	8	8	22.9	5.2	170	6.8					
60	9227F	LW2-G311-1	8	8	22.9	5.1	165	6.7					
70	9213F	LW2-G009	8	8	22.9	6.1	170	6.8					
74	9215F	LW2-G011	8	8	22.9	5.0	170	6.8					
76	9228F	LW2-G324-1	8	8	22.9	6.0	165	6.8					
94	9226F	LW2-G270	8	8	22.8	5.6	165	6.8					
98	9232F	LW2-G220	8	8	22.8	6.0	170	6.8					
124	9231F	LW2-G221	8	8	23.1	5.9	165	6.8					
125	9230F	LW2-G345-1	8	8	23.2	6.0	175	6.9					
139	9229F	LW2-G334	8	8	23.2	5.8	180	6.8					
146	9224F	LW2-G017	8	8	23.1	5.6	170	6.8					
147	9221F	LW2-G066	8	8	23.0	5.8	165	6.8					
148	9217F	LW2-G026	8	8	22.9	5.8	170	6.8					
162	9223F	LW2-G019	8	8	23.0	6.0	170	6.9					
164	9214F	LW2-G010	8	8	23.0	6.0	165	6.9					
167	9208F	Control	8	8	23.0	6.2	170	6.9					
17	9219F	LW2-G064	8	9	23.0								
31	9220F	LW2-G203-1	8	9	23.0								
32	9216F	LW2-G007-1	8	9	23.0								
37	9218F	LW2-G060	8	9	23.0								
43	9222F	LW2-G015	8	9	23.0								
45	9225F	LW2-G294-1	8	9	23.0								
60	9227F	LW2-G311-1	8	9	23.0								
70	9213F	LW2-G009	8	9	23.1								
74	9215F	LW2-G011	8	9	23.2								
76	9228F	LW2-G324-1	8	9	23.2								
94	9226F	LW2-G270	8	9	23.2								
98	9232F	LW2-G220	8	9	23.2								
124	9231F	LW2-G221	8	9	23.4								
125	9230F	LW2-G345-1	8	9	23.4								
139	9229F	LW2-G334	8	9	23.4								
146	9224F	LW2-G017	8	9	23.2								
147	9221F	LW2-G066	8	9	23.2								
148	9217F	LW2-G026	8	9	23.2								
162	9223F	LW2-G019	8	9	23.2								
164	9214F	LW2-G010	8	9	23.2								
167	9208F	Control	8	9	23.2								

ANC07707
BZTO104(e)007707

Water Quality Data

					Overlying water							Interstitial water	
BKR	NAS SMPL	CLIENT DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
17	9219F	LW2-G064	8	10	22.7	6.2		7.2					
31	9220F	LW2-G203-1	8	10	22.8	6.2		7.2					
32	9216F	LW2-G007-1	8	10	22.8	5.6		7.1					
37	9218F	LW2-G060	8	10	22.8	5.9		7.0					
43	9222F	LW2-G015	8	10	22.8	5.5		7.1					
45	9225F	LW2-G294-1	8	10	23.0	4.8		6.9					
60	9227F	LW2-G311-1	8	10	23.0	4.4		6.8					
70	9213F	LW2-G009	8	10	23.0	5.8		7.0					
74	9215F	LW2-G011	8	10	23.0	4.8		7.0					
76	9228F	LW2-G324-1	8	10	23.0	5.8		7.0					
94	9226F	LW2-G270	8	10	22.9	5.2		7.0					
98	9232F	LW2-G220	8	10	22.9	5.4		7.0					
124	9231F	LW2-G221	8	10	23.1	5.6		7.0					
125	9230F	LW2-G345-1	8	10	23.2	5.3		7.0					
139	9229F	LW2-G334	8	10	23.2	5.2		7.3					
146	9224F	LW2-G017	8	10	23.0	5.4		7.1					
147	9221F	LW2-G066	8	10	23.0	5.7		7.0					
148	9217F	LW2-G026	8	10	23.0	5.4		7.0					
162	9223F	LW2-G019	8	10	22.9	5.6		7.1					
164	9214F	LW2-G010	8	10	23.1	5.6		7.1					
167	9208F	Control	8	10	22.9	5.7		7.1					
17	9219F	LW2-G064	8	11	22.6								
31	9220F	LW2-G203-1	8	11	22.7								
32	9216F	LW2-G007-1	8	11	22.7								
37	9218F	LW2-G060	8	11	22.8								
43	9222F	LW2-G015	8	11	22.8								
45	9225F	LW2-G294-1	8	11	23.0								
60	9227F	LW2-G311-1	8	11	23.0								
70	9213F	LW2-G009	8	11	23.0								
74	9215F	LW2-G011	8	11	23.0								
76	9228F	LW2-G324-1	8	11	22.9								
94	9226F	LW2-G270	8	11	22.9								
98	9232F	LW2-G220	8	11	22.9								
124	9231F	LW2-G221	8	11	23.2								
125	9230F	LW2-G345-1	8	11	23.4								
139	9229F	LW2-G334	8	11	23.4								
146	9224F	LW2-G017	8	11	23.1								
147	9221F	LW2-G066	8	11	23.1								
148	9217F	LW2-G026	8	11	23.1								
162	9223F	LW2-G019	8	11	23.3								
164	9214F	LW2-G010	8	11	23.2								
167	9208F	Control	8	11	23.3								

ANC07708
BZTO104(e)007708

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
17	9219F	LW2-G064	8	12	22.8								
31	9220F	LW2-G203-1	8	12	22.8								
32	9216F	LW2-G007-1	8	12	22.9								
37	9218F	LW2-G060	8	12	22.9								
43	9222F	LW2-G015	8	12	22.9								
45	9225F	LW2-G294-1	8	12	23.0								
60	9227F	LW2-G311-1	8	12	23.1								
70	9213F	LW2-G009	8	12	23.1								
74	9215F	LW2-G011	8	12	23.2								
76	9228F	LW2-G324-1	8	12	23.2								
94	9226F	LW2-G270	8	12	23.2								
98	9232F	LW2-G220	8	12	23.2								
124	9231F	LW2-G221	8	12	23.4								
125	9230F	LW2-G345-1	8	12	23.4								
139	9229F	LW2-G334	8	12	23.3								
146	9224F	LW2-G017	8	12	23.3								
147	9221F	LW2-G066	8	12	23.2								
148	9217F	LW2-G026	8	12	23.2								
162	9223F	LW2-G019	8	12	23.2								
164	9214F	LW2-G010	8	12	23.4								
167	9208F	Control	8	12	23.4								
17	9219F	LW2-G064	8	13	22.5	6.3		7.0					
31	9220F	LW2-G203-1	8	13	22.6	6.0		6.9					
32	9216F	LW2-G007-1	8	13	22.5	6.2		6.9					
37	9218F	LW2-G060	8	13	22.5	6.5		6.9					
43	9222F	LW2-G015	8	13	22.6	6.0		7.0					
45	9225F	LW2-G294-1	8	13	22.8	5.2		6.8					
60	9227F	LW2-G311-1	8	13	22.8	5.2		6.8					
70	9213F	LW2-G009	8	13	22.9	6.1		6.9					
74	9215F	LW2-G011	8	13	22.8	5.7		6.9					
76	9228F	LW2-G324-1	8	13	22.8	6.4		6.9					
94	9226F	LW2-G270	8	13	22.8	5.5		6.9					
98	9232F	LW2-G220	8	13	22.7	5.8		7.0					
124	9231F	LW2-G221	8	13	23.1	6.2		6.8					
125	9230F	LW2-G345-1	8	13	23.3	5.8		6.9					
139	9229F	LW2-G334	8	13	23.1	5.3		7.7					
146	9224F	LW2-G017	8	13	22.9	5.9		7.0					
147	9221F	LW2-G066	8	13	22.8	6.1		7.0					
148	9217F	LW2-G026	8	13	22.8	5.9		7.0					
162	9223F	LW2-G019	8	13	22.9	6.1		7.0					
164	9214F	LW2-G010	8	13	23.1	5.9		7.0					
167	9208F	Control	8	13	23.1	6.1		7.0					

ANC07709
BZTO104(e)007709

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
17	9219F	LW2-G064	8	14	22.8								
31	9220F	LW2-G203-1	8	14	22.9								
32	9216F	LW2-G007-1	8	14	22.9								
37	9218F	LW2-G060	8	14	22.9								
43	9222F	LW2-G015	8	14	22.9								
45	9225F	LW2-G294-1	8	14	23.1								
60	9227F	LW2-G311-1	8	14	23.1								
70	9213F	LW2-G009	8	14	23.2								
74	9215F	LW2-G011	8	14	23.1								
76	9228F	LW2-G324-1	8	14	23.1								
94	9226F	LW2-G270	8	14	23.1								
98	9232F	LW2-G220	8	14	23.0								
124	9231F	LW2-G221	8	14	23.3								
125	9230F	LW2-G345-1	8	14	23.4								
139	9229F	LW2-G334	8	14	23.3								
146	9224F	LW2-G017	8	14	23.2								
147	9221F	LW2-G066	8	14	23.1								
148	9217F	LW2-G026	8	14	23.1								
162	9223F	LW2-G019	8	14	23.3								
164	9214F	LW2-G010	8	14	23.1								
167	9208F	Control	8	14	23.1								
17	9219F	LW2-G064	8	15	22.9	5.0	170	7.1					
31	9220F	LW2-G203-1	8	15	23.0	4.2	165	7.1					
32	9216F	LW2-G007-1	8	15	23.0	4.4	170	7.0					
37	9218F	LW2-G060	8	15	23.0	4.6	165	6.9					
43	9222F	LW2-G015	8	15	23.2	4.2	170	7.0					
45	9225F	LW2-G294-1	8	15	23.3	4.0	165	7.0					
60	9227F	LW2-G311-1	8	15	23.3	4.4	165	6.9					
70	9213F	LW2-G009	8	15	23.3	5.0	170	7.0					
74	9215F	LW2-G011	8	15	23.4	4.4	170	7.0					
76	9228F	LW2-G324-1	8	15	23.2	5.0	170	7.0					
94	9226F	LW2-G270	8	15	23.3	4.0	175	7.1					
98	9232F	LW2-G220	8	15	23.2	4.2	175	7.2					
124	9231F	LW2-G221	8	15	23.5	4.8	180	7.1					
125	9230F	LW2-G345-1	8	15	23.6	4.4	180	7.0					
139	9229F	LW2-G334	8	15	23.5	3.6	205	8.6					
146	9224F	LW2-G017	8	15	23.3	4.2	175	7.1					
147	9221F	LW2-G066	8	15	23.3	4.6	170	7.1					
148	9217F	LW2-G026	8	15	23.3	4.6	170	7.1					
162	9223F	LW2-G019	8	15	23.2	4.8	190	7.1					
164	9214F	LW2-G010	8	15	23.2	4.6	175	7.1					
167	9208F	Control	8	15	23.2	4.8	175	7.1					

ANC07710
BZTO104(e)007710

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
17	9219F	LW2-G064	8	16	22.8								
31	9220F	LW2-G203-1	8	16	22.9								
32	9216F	LW2-G007-1	8	16	22.9								
37	9218F	LW2-G060	8	16	22.9								
43	9222F	LW2-G015	8	16	22.9								
45	9225F	LW2-G294-1	8	16	23.0								
60	9227F	LW2-G311-1	8	16	22.9								
70	9213F	LW2-G009	8	16	23.0								
74	9215F	LW2-G011	8	16	23.0								
76	9228F	LW2-G324-1	8	16	23.0								
94	9226F	LW2-G270	8	16	23.0								
98	9232F	LW2-G220	8	16	23.0								
124	9231F	LW2-G221	8	16	23.2								
125	9230F	LW2-G345-1	8	16	23.2								
139	9229F	LW2-G334	8	16	23.2								
146	9224F	LW2-G017	8	16	23.2								
147	9221F	LW2-G066	8	16	23.1								
148	9217F	LW2-G026	8	16	23.0								
162	9223F	LW2-G019	8	16	23.0								
164	9214F	LW2-G010	8	16	23.0								
167	9208F	Control	8	16	22.9								
17	9219F	LW2-G064	8	17	22.6	5.8		7.2					
31	9220F	LW2-G203-1	8	17	22.7	5.6		7.2					
32	9216F	LW2-G007-1	8	17	22.7	5.6		7.2					
37	9218F	LW2-G060	8	17	22.8	5.7		7.1					
43	9222F	LW2-G015	8	17	22.8	5.4		7.1					
45	9225F	LW2-G294-1	8	17	22.9	4.8		7.1					
60	9227F	LW2-G311-1	8	17	22.9	5.0		7.0					
70	9213F	LW2-G009	8	17	22.9	5.8		7.0					
74	9215F	LW2-G011	8	17	22.9	5.6		7.0					
76	9228F	LW2-G324-1	8	17	22.9	5.8		7.1					
94	9226F	LW2-G270	8	17	22.9	5.0		7.2					
98	9232F	LW2-G220	8	17	22.9	5.2		7.3					
124	9231F	LW2-G221	8	17	23.1	5.6		7.2					
125	9230F	LW2-G345-1	8	17	23.2	5.4		7.1					
139	9229F	LW2-G334	8	17	23.3	4.7		8.2					
146	9224F	LW2-G017	8	17	23.0	5.2		7.2					
147	9221F	LW2-G066	8	17	23.0	5.2		7.1					
148	9217F	LW2-G026	8	17	22.9	5.4		7.1					
162	9223F	LW2-G019	8	17	22.9	5.4		7.2					
164	9214F	LW2-G010	8	17	23.0	5.6		7.3					
167	9208F	Control	8	17	22.9	5.8		7.3					

ANC07711
BZTO104(e)007711

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
17	9219F	LW2-G064	8	18	22.8								
31	9220F	LW2-G203-1	8	18	23.0								
32	9216F	LW2-G007-1	8	18	22.9								
37	9218F	LW2-G060	8	18	22.9								
43	9222F	LW2-G015	8	18	22.9								
45	9225F	LW2-G294-1	8	18	23.1								
60	9227F	LW2-G311-1	8	18	23.0								
70	9213F	LW2-G009	8	18	23.0								
74	9215F	LW2-G011	8	18	23.1								
76	9228F	LW2-G324-1	8	18	23.1								
94	9226F	LW2-G270	8	18	23.1								
98	9232F	LW2-G220	8	18	23.1								
124	9231F	LW2-G221	8	18	23.4								
125	9230F	LW2-G345-1	8	18	23.4								
139	9229F	LW2-G334	8	18	23.4								
146	9224F	LW2-G017	8	18	23.2								
147	9221F	LW2-G066	8	18	23.1								
148	9217F	LW2-G026	8	18	23.1								
162	9223F	LW2-G019	8	18	23.0								
164	9214F	LW2-G010	8	18	23.2								
167	9208F	Control	8	18	23.0								
17	9219F	LW2-G064	8	19	22.6								
31	9220F	LW2-G203-1	8	19	22.9								
32	9216F	LW2-G007-1	8	19	22.9								
37	9218F	LW2-G060	8	19	22.9								
43	9222F	LW2-G015	8	19	22.9								
45	9225F	LW2-G294-1	8	19	23.1								
60	9227F	LW2-G311-1	8	19	23.1								
70	9213F	LW2-G009	8	19	23.1								
74	9215F	LW2-G011	8	19	23.1								
76	9228F	LW2-G324-1	8	19	23.1								
94	9226F	LW2-G270	8	19	23.1								
98	9232F	LW2-G220	8	19	23.1								
124	9231F	LW2-G221	8	19	23.3								
125	9230F	LW2-G345-1	8	19	23.4								
139	9229F	LW2-G334	8	19	23.4								
146	9224F	LW2-G017	8	19	23.2								
147	9221F	LW2-G066	8	19	23.2								
148	9217F	LW2-G026	8	19	23.2								
162	9223F	LW2-G019	8	19	23.1								
164	9214F	LW2-G010	8	19	23.3								
167	9208F	Control	8	19	23.1								

ANC07712
BZTO104(e)007712

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
17	9219F	LW2-G064	8	20	23.0	5.4		7.1						
31	9220F	LW2-G203-1	8	20	23.1	5.1		7.0						
32	9216F	LW2-G007-1	8	20	23.0	5.2		7.0						
37	9218F	LW2-G060	8	20	23.0	5.6		7.0						
43	9222F	LW2-G015	8	20	23.1	4.8		7.0						
45	9225F	LW2-G294-1	8	20	23.2	4.4		7.0						
60	9227F	LW2-G311-1	8	20	23.2	4.7		6.9						
70	9213F	LW2-G009	8	20	23.2	5.6		7.0						
74	9215F	LW2-G011	8	20	23.2	5.4		7.0						
76	9228F	LW2-G324-1	8	20	23.2	5.8		7.0						
94	9226F	LW2-G270	8	20	23.1	4.6		7.0						
98	9232F	LW2-G220	8	20	23.1	5.2		7.1						
124	9231F	LW2-G221	8	20	23.4	5.4		7.0						
125	9230F	LW2-G345-1	8	20	23.5	5.0		7.0						
139	9229F	LW2-G334	8	20	23.5	4.4		7.3						
146	9224F	LW2-G017	8	20	23.2	4.8		7.1						
147	9221F	LW2-G066	8	20	23.1	5.0		7.1						
148	9217F	LW2-G026	8	20	23.2	4.8		7.1						
162	9223F	LW2-G019	8	20	23.1	5.8		7.1						
164	9214F	LW2-G010	8	20	23.2	4.8		7.1						
167	9208F	Control	8	20	23.1	5.4		7.1						
17	9219F	LW2-G064	8	21	23.0									
31	9220F	LW2-G203-1	8	21	23.1									
32	9216F	LW2-G007-1	8	21	23.0									
37	9218F	LW2-G060	8	21	23.0									
43	9222F	LW2-G015	8	21	23.0									
45	9225F	LW2-G294-1	8	21	23.0									
60	9227F	LW2-G311-1	8	21	23.1									
70	9213F	LW2-G009	8	21	23.0									
74	9215F	LW2-G011	8	21	23.1									
76	9228F	LW2-G324-1	8	21	23.1									
94	9226F	LW2-G270	8	21	23.1									
98	9232F	LW2-G220	8	21	23.1									
124	9231F	LW2-G221	8	21	23.1									
125	9230F	LW2-G345-1	8	21	23.2									
139	9229F	LW2-G334	8	21	23.3									
146	9224F	LW2-G017	8	21	23.2									
147	9221F	LW2-G066	8	21	23.2									
148	9217F	LW2-G026	8	21	23.2									
162	9223F	LW2-G019	8	21	23.2									
164	9214F	LW2-G010	8	21	23.1									
167	9208F	Control	8	21	23.1									

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
17	9219F	LW2-G064	8	22	22.0	5.5	160	6.9					
31	9220F	LW2-G203-1	8	22	22.1	5.2	165	6.9					
32	9216F	LW2-G007-1	8	22	22.0	5.5	165	6.9					
37	9218F	LW2-G060	8	22	22.0	5.5	165	6.8					
43	9222F	LW2-G015	8	22	22.0	5.1	165	6.9					
45	9225F	LW2-G294-1	8	22	22.0	4.6	165	6.8					
60	9227F	LW2-G311-1	8	22	22.0	5.1	165	6.7					
70	9213F	LW2-G009	8	22	22.1	5.6	165	7.0					
74	9215F	LW2-G011	8	22	22.1	5.5	165	7.0					
76	9228F	LW2-G324-1	8	22	22.2	6.0	165	6.9					
94	9226F	LW2-G270	8	22	22.1	4.6	170	7.0					
98	9232F	LW2-G220	8	22	22.1	5.5	170	7.2					
124	9231F	LW2-G221	8	22	22.4	5.3	170	6.9					
125	9230F	LW2-G345-1	8	22	22.4	5.1	165	6.9					
139	9229F	LW2-G334	8	22	22.4	5.0	180	7.1					
146	9224F	LW2-G017	8	22	22.3	5.0	170	7.0					
147	9221F	LW2-G066	8	22	22.2	5.5	165	7.0					
148	9217F	LW2-G026	8	22	22.2	5.2	170	7.1					
162	9223F	LW2-G019	8	22	22.0	5.8	170	7.0					
164	9214F	LW2-G010	8	22	22.1	5.3	170	7.0					
167	9208F	Control	8	22	22.0	5.7	165	7.0					
17	9219F	LW2-G064	8	23	22.6								
31	9220F	LW2-G203-1	8	23	22.7								
32	9216F	LW2-G007-1	8	23	22.6								
37	9218F	LW2-G060	8	23	22.6								
43	9222F	LW2-G015	8	23	22.6								
45	9225F	LW2-G294-1	8	23	22.8								
60	9227F	LW2-G311-1	8	23	22.8								
70	9213F	LW2-G009	8	23	22.8								
74	9215F	LW2-G011	8	23	22.7								
76	9228F	LW2-G324-1	8	23	22.7								
94	9226F	LW2-G270	8	23	22.6								
98	9232F	LW2-G220	8	23	22.6								
124	9231F	LW2-G221	8	23	22.8								
125	9230F	LW2-G345-1	8	23	22.9								
139	9229F	LW2-G334	8	23	22.8								
146	9224F	LW2-G017	8	23	22.8								
147	9221F	LW2-G066	8	23	22.7								
148	9217F	LW2-G026	8	23	22.6								
162	9223F	LW2-G019	8	23	22.6								
164	9214F	LW2-G010	8	23	22.8								
167	9208F	Control	8	23	22.6								

ANC07714
BZTO104(e)007714

Test Number: 686-1

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
17	9219F	LW2-G064	8	24	22.9	6.0		6.9						
31	9220F	LW2-G203-1	8	24	23.0	5.8		6.9						
32	9216F	LW2-G007-1	8	24	22.9	5.8		6.9						
37	9218F	LW2-G060	8	24	22.9	6.2		6.9						
43	9222F	LW2-G015	8	24	22.9	5.4		6.8						
45	9225F	LW2-G294-1	8	24	23.0	5.0		6.7						
60	9227F	LW2-G311-1	8	24	23.0	5.3		6.7						
70	9213F	LW2-G009	8	24	23.0	6.2		6.8						
74	9215F	LW2-G011	8	24	23.0	6.0		6.9						
76	9228F	LW2-G324-1	8	24	23.0	6.4		6.9						
94	9226F	LW2-G270	8	24	22.9	5.1		6.9						
98	9232F	LW2-G220	8	24	22.9	6.0		7.0						
124	9231F	LW2-G221	8	24	23.2	5.8		7.0						
125	9230F	LW2-G345-1	8	24	23.2	5.6		6.9						
139	9229F	LW2-G334	8	24	23.2	5.5		6.9						
146	9224F	LW2-G017	8	24	23.1	5.6		6.9						
147	9221F	LW2-G066	8	24	23.0	5.8		6.9						
148	9217F	LW2-G026	8	24	23.0	5.5		7.0						
162	9223F	LW2-G019	8	24	23.0	6.1		7.0						
164	9214F	LW2-G010	8	24	23.1	5.6		7.0						
167	9208F	Control	8	24	23.0	6.1		7.0						
17	9219F	LW2-G064	8	25	22.6									
31	9220F	LW2-G203-1	8	25	22.7									
32	9216F	LW2-G007-1	8	25	22.7									
37	9218F	LW2-G060	8	25	22.7									
43	9222F	LW2-G015	8	25	22.8									
45	9225F	LW2-G294-1	8	25	22.9									
60	9227F	LW2-G311-1	8	25	22.9									
70	9213F	LW2-G009	8	25	22.9									
74	9215F	LW2-G011	8	25	22.9									
76	9228F	LW2-G324-1	8	25	22.9									
94	9226F	LW2-G270	8	25	22.8									
98	9232F	LW2-G220	8	25	22.8									
124	9231F	LW2-G221	8	25	23.1									
125	9230F	LW2-G345-1	8	25	23.2									
139	9229F	LW2-G334	8	25	23.2									
146	9224F	LW2-G017	8	25	23.0									
147	9221F	LW2-G066	8	25	23.0									
148	9217F	LW2-G026	8	25	22.9									
162	9223F	LW2-G019	8	25	22.9									
164	9214F	LW2-G010	8	25	22.9									
167	9208F	Control	8	25	22.9									

ANC07715
BZTO104(e)007715

Test Number: 686-1

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
17	9219F	LW2-G064	8	26	23.1								
31	9220F	LW2-G203-1	8	26	23.1								
32	9216F	LW2-G007-1	8	26	23.1								
37	9218F	LW2-G060	8	26	23.0								
43	9222F	LW2-G015	8	26	23.1								
45	9225F	LW2-G294-1	8	26	23.1								
60	9227F	LW2-G311-1	8	26	23.1								
70	9213F	LW2-G009	8	26	23.1								
74	9215F	LW2-G011	8	26	23.1								
76	9228F	LW2-G324-1	8	26	23.2								
94	9226F	LW2-G270	8	26	23.1								
98	9232F	LW2-G220	8	26	23.1								
124	9231F	LW2-G221	8	26	23.1								
125	9230F	LW2-G345-1	8	26	23.2								
139	9229F	LW2-G334	8	26	23.2								
146	9224F	LW2-G017	8	26	23.2								
147	9221F	LW2-G066	8	26	23.2								
148	9217F	LW2-G026	8	26	23.1								
162	9223F	LW2-G019	8	26	23.1								
164	9214F	LW2-G010	8	26	23.1								
167	9208F	Control	8	26	23.1								
17	9219F	LW2-G064	8	27	23.0	5.7		6.5					
31	9220F	LW2-G203-1	8	27	23.0	5.8		6.4					
32	9216F	LW2-G007-1	8	27	23.0	5.2		6.4					
37	9218F	LW2-G060	8	27	23.0	5.7		6.4					
43	9222F	LW2-G015	8	27	23.0	4.8		6.4					
45	9225F	LW2-G294-1	8	27	23.1	4.0		6.2					
60	9227F	LW2-G311-1	8	27	23.0	5.1		6.3					
70	9213F	LW2-G009	8	27	23.1	5.4		6.4					
74	9215F	LW2-G011	8	27	23.1	5.3		6.4					
76	9228F	LW2-G324-1	8	27	23.1	6.0		6.4					
94	9226F	LW2-G270	8	27	23.0	4.8		6.4					
98	9232F	LW2-G220	8	27	23.0	5.1		6.5					
124	9231F	LW2-G221	8	27	23.2	5.2		6.5					
125	9230F	LW2-G345-1	8	27	23.2	4.7		6.4					
139	9229F	LW2-G334	8	27	23.2	4.9		6.4					
146	9224F	LW2-G017	8	27	23.2	4.6		6.5					
147	9221F	LW2-G066	8	27	23.0	4.9		6.5					
148	9217F	LW2-G026	8	27	23.0	5.0		6.5					
162	9223F	LW2-G019	8	27	23.0	5.7		6.5					
164	9214F	LW2-G010	8	27	23.0	4.8		6.6					
167	9208F	Control	8	27	22.9	5.4		6.6					

ANC07716
BZTO104(e)007716

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
17	9219F	LW2-G064	8	28	23.0	6.9	150	6.7	43	50	<0.1		
31	9220F	LW2-G203-1	8	28	23.1	6.6	155	6.6	51	40	<0.1		
32	9216F	LW2-G007-1	8	28	23.1	6.7	155	6.6	51	40	<0.1		
37	9218F	LW2-G060	8	28	23.0	6.9	155	6.6	43	40	0.2		
43	9222F	LW2-G015	8	28	23.1	6.4	160	6.6	43	40	0.1		
45	9225F	LW2-G294-1	8	28	23.1	6.4	155	6.6	43	50	<0.1		
60	9227F	LW2-G311-1	8	28	23.1	6.5	155	6.5	43	40	0.1		
70	9213F	LW2-G009	8	28	23.1	6.8	160	6.5	43	40	<0.1		
74	9215F	LW2-G011	8	28	23.2	6.7	160	6.6	43	50	0.1		
76	9228F	LW2-G324-1	8	28	23.2	7.0	155	6.6	43	40	<0.1		
94	9226F	LW2-G270	8	28	23.1	6.5	155	6.6	43	50	<0.1		
98	9232F	LW2-G220	8	28	23.1	6.7	160	6.6	51	40	0.1		
124	9231F	LW2-G221	8	28	23.1	6.8	160	6.7	43	50	0.1		
125	9230F	LW2-G345-1	8	28	23.3	6.4	160	6.7	43	50	<0.1		
139	9229F	LW2-G334	8	28	23.3	6.3	160	6.7	43	40	<0.1		
146	9224F	LW2-G017	8	28	23.2	6.3	160	6.8	43	50	<0.1		
147	9221F	LW2-G066	8	28	23.2	6.7	155	6.8	43	40	<0.1		
148	9217F	LW2-G026	8	28	23.2	6.4	160	6.7	43	50	0.2		
162	9223F	LW2-G019	8	28	23.2	7.2	160	6.8	43	40	<0.1		
164	9214F	LW2-G010	8	28	23.2	6.5	160	6.8	43	50	<0.1		
167	9208F	Control	8	28	23.2	7.0	160	6.8	43	40	<0.1		
				Mean	22.9	5.8	167	7.0	45	44	---	5.1	6.9
				SD	0.3	0.8	11	0.2	4	5	---	4.7	0.3
				n	609	294	126	294	42	42	42	21	21
				Min	22.0	3.6	150	6.2	34	40	<0.1	<0.5	6.5
				Max	23.6	7.3	225	8.6	51	60	1.7	18.2	7.8

ANC07717
BZTO104(e)007717

CHAIN-OF-CUSTODY RECORDS

Windward Environmental

CHAIN-OF-CUSTODY/TEST REQUEST FORM

1242

Project/Client Name: LWG - PORTLAND HBC
Ship to: NAS
Windward Project No:
Attn: GERALD IRISSARRI
Shipping Date: 7/23/04
Contact Name: H. ANDERSEN
Shipping address:
Airbill Number:
Sampled By: H. ANDERSEN / WINDWARD

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers (COOLER # / TEMP #)	Matrix	Test(s) Requested (check test(s) required): 10-DAY CHIRONOMUS	28-DAY HYALELLA						Comments / Instructions [Jar tag number(s)]
7/19/04	1452	LW2 - G009	6 4	SEDIMENT	X	X		NAS#	9213F			TEMPERATURES OF
7/19/04	1515	LW2 - G010	6 4	SEDIMENT	X	X			9214F			COOLERS UPON
7/19/04	1550	LW2 - G011	5 4	SEDIMENT	X	X			9215F			RECEIPT AT LAB #
7/20/04	1005	LW2 - G007-1	6 4	SEDIMENT	X	X			9216F			#1 3.0°C
7/20/04	1115	LW2 - G026	1 4	SEDIMENT	X	X			9217F			#2 3.5°C
7/20/04	1142	LW2 - G060	1 4 ✓	SEDIMENT	X	X			9218F			#3 5.5°C
7/20/04	1215	LW2 - G064	2 4	SEDIMENT	X	X			9219F			#4 2.0°C
7/20/04	1440	LW2 - G203-1	1 4 ✓	SEDIMENT	X	X			9220F			#5 1.0°C
7/20/04	1557	LW2 - G066	5 4	SEDIMENT	X	X			9221F			#6 4.0°C
7/20/04	1640	LW2 - G015	4 4	SEDIMENT	X	X			9222F			
7/20/04	1710	LW2 - G019	4 4	SEDIMENT	X	X			9223F			
7/20/04	1735	LW2 - G017	3 4	SEDIMENT	X	X			9224F			

Total Number of Containers: 48
Purchase Order / Statement of Work #:

1) Released by:	1) Rec'd by:	2) Released by:	1) Rec'd by:
Print name: HOLLY ANDERSEN	GERALD IRISSARRI	Print name:	
Signature: Holly Anderson	Gerald Irissarri	Signature:	
Company: WINDWARD	NORTHWESTERN AQUATIC SCIENCES	Company:	Company:
Date/Time: 1122 AM 7/23/04	7-23-04 1122 AM	Date/Time:	Date/Time:

* Distribution: White and yellow copies accompany shipment; pink-consignor's copy; white-consignee return with results; yellow-consignee's copy.

* Instructions for completion of Chain-of-Custody/Test Request Form on back.

To be completed by Laboratory upon sample receipt:

Date of receipt:	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

Wind Ward environmental LLC
200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: 206.378.1364
Fax: 206.217.0089

ANC07719
BZT0104(e)007719

2 of 2

Windward Environmental

CHAIN-OF-CUSTODY/TEST REQUEST FORM

1243

Project/Client Name: LWG - PORTLAND HARBOR
Windward Project No:
Contact Name: H. ANDERSEN
Sampled By: H. ANDERSEN / WINDWARD

Ship to: NAS
Attn: GERALD IRISSARRI
Shipping address:

Shipping Date: 7/23/04
Airbill Number:

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers (COOLER #)	Matrix	Test(s) Requested (check test(s) required)							Comments / Instructions [Jar tag number(s)]
					10-DAY CHLORONOS	28-DAY HYALELLA						
7/21/04	0925	LW2 - G294-1	2 4	SEDIMENT	X	X		NAS#	9225F			
7/21/04	1007	LW2 - G270	5 4	SEDIMENT	X	X			9226F			
7/21/04	1137	LW2 - G311-1	5 4	SEDIMENT	X	X			9227F			
7/22/04	0902	LW2 - G324-1	2 4	SEDIMENT	X	X			9228F			
7/22/04	1022	LW2 - G334	4 4	SEDIMENT	X	X			9229F			
7/22/04	1054	LW2 - G345-1	3 4	SEDIMENT	X	X			9230F			
7/22/04	1239	LW2 - G221	6 4	SEDIMENT	X	X			9231F			
7/22/04	1308	LW2 - G220	3 4	SEDIMENT	X	X			9232F			

19 of 19

Total Number of Containers: 32
Purchase Order / Statement of Work #

1) Released by:	1) Rec'd by:	2) Released by:	1) Rec'd by:
Print name: HEIDI ANDERSEN	GERALD IRISSARRI	Print name:	
Signature: Heidi Andersen	Gerald Irissarri	Signature:	
Company: WINDWARD	NORTHWESTERN AQUATIC SCIENCES	Company:	Company:
Date/Time: 1120 AM 7/23/04	7-23-04 1128 AM	Date/Time:	Date/Time:

* Distribution: White and yellow copies accompany shipment; pink-consignor's copy; white-consignee return with results; yellow-consignee's copy.
* Instructions for completion of Chain-of-Custody/Test Request Form on back.

To be completed by Laboratory upon sample receipt:

Date of receipt:	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

Wind Ward environmental LLC
200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: 206.378.1364
Fax: 206.217.0089

ANC07720
BZTO104(e)007720

APPENDIX II

RAW DATA – REFERENCE TOXICANT TEST

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS- _____

ACUTE TOXICITY TEST (ALL SPECIES)

Test No. 999-1809 Client: QC Test Investigator _____

Test Type (rangefinding/definitive) _____ Test Length (hr) 96

Species *Hyalella azteca*

STUDY MANAGEMENT

Client: QC test

Client's Study Monitor: QC test

Testing Laboratory: Northwestern Aquatic Sciences

Test Location: Newport Laboratory

Laboratory's Study Personnel:

Proj. Man./Study Dir. G.J. Irissarri GJI

QA Officer L. K. Nemeth

1. GJI 2. G.E. Hayes GEH

3. William T. Montgomery WTM 4. M.S. Redmond MSR S.B. Pradyan

Test Beginning: 7-27-04 1200 Test Ending: 7-31-04 1115

TEST MATERIAL

Description: Cadmium as $CdCl_2$-2.5H_2O (1.0 mg/ml) Prepared: 4-2-03 mg/mL Lot No.: TNZ

NAS Sample No.				
Date of Collection:				
Date of Receipt:				
Temperature (deg C):				
Dissolved oxygen (mg/L):				
pH:				
Conductivity (umhos/cm):				
Hardness (mg/L):				
Alkalinity (mg/L):				
Salinity (ppt):				
Total chlorine (mg/L):				
Total ammonia-N (mg/L):				

DILUTION WATER

Description: Moderately hard synthetic water

Date of Preparation/Collection: 7-27-04

Water Quality: Cond. (umhos/cm): 310 Salinity (ppt) — pH 8.0

Hardness (mg/L as $CaCO_3$): 102 Alkalinity (mg/L as $CaCO_3$): 80

Treatments: Aerated ≥ 24 hrs

TEST LOCATION

Test conducted in (circle one): room 1 (room 2) trailer water bath other: _____

Randomization chart:

0 A	7.5 A	15 A	60 A	3.75 A	30 A				
15 B	3.75 B	0 B	7.5 B	30 B	60 B				

Error codes: 1) Correction of handwriting error
2) Written in wrong location; entry deleted
3) Wrong date deleted; replaced with correct date
4) Error found in measurement; measurement repeated

Revised 12-5-01

ANC07722
BZTO104(e)007722

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-_____

ACUTE TOXICITY TEST (ALL SPECIES)

Test No. 999-1809 Client QC Test Investigator _____

TEST ORGANISMS

Species: *Hyalella azteca* Age: 7-8d Size: _____

Source: Chesapeake Cultures, Hayes, VA Date received: 7-26-04

Acclimation Data:

Date	Temp. (deg.C)	DO (mg/L)	pH	Cond. umhos/cm	Hardness (mg/L)	Alkalinity (mg/L.)	Feeding Amount	Feeding description	Water changes
7-26-04	23.7	8.0	7.1	460	119	190	1ml per beaker	YTC	Rec'd 4L, 4x 50%
7-27-04	22.4	8.3	8.3	310	68	70	1ml per beaker	11	4x 50%
Mean	23.1	11.6	7.7	385	94	130			
S.D.	—								
(N)	2	2	2	2	2	2			

Photoperiod during acclimation: 16:8 L:D

TEST PROCEDURES AND CONDITIONS

Test concentrations (50% series recommended): 60, 30, 15, 7.5, 3.75, 0 ug/L

Test chamber: 250 ml glass beakers Test volume: 100 ml

Replicates/treatment: 10 Organisms/treatment: 20 (10/rep)

Test water changes: None Aeration during test: None

Feeding: 0.5 ml YTC suspension per beaker on days 0 and 2

Duration: 24-hr, 48-hr, (96-hr) Test temperature (deg.C): (23 ± 1) or 20 ± 1

Beaker placement: Stratified randomization Photoperiod: 16:8, L:D

MISCELLANEOUS NOTES

Test solution preparation:

1st working stock made by 1:99 (1ml ↑ 100 ml) dilution of concentrated 1.0 mg/ml Cd stock.
Final conc.: 10 ug/L.

2nd working stock made by 10:90 (10ml ↑ 100 ml) dilution of concentrated 1st working stock.
Final conc.: 1ug/L.

OB 7-27-04

Test concentration (ug/L)	ml of 2nd working stock per 200 ml	Dilution water
60	12	Brought up to final volume of 200 ml with dilution water and distributed evenly between two replicates
30	6	
15	3	
7.5	1.5	
3.75	0.75	
0	0	

ANC07723
BZTO104(e)007723

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-_____

ACUTE TOXICITY TEST (ALL SPECIES)

Test No. 999-1809 Client QC Test

DAILY RECORD SHEET

Day 0 (7/27/04) DS

Conc. (ug/L)	Temp. (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	Survivors A	Survivors B
1. 60	23.1	8.4	320	8.0	68	70	10	10
2. 30	23.1	8.4	320	8.1			10	10
3. 15	23.1	8.5	315	8.1			10	10
4. 7.5	23.1	8.5	315	8.1			10	10
5. 3.75	23.0	8.4	315	8.1			10	10
6. 0	23.0	8.4	315	8.0	68	70	10	10
All animals fed 0.5 ml YTC suspension. Initials: DS								

Day 1 (7/28/04) DS/BBP

Conc. (ug/L)	Temp. (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	Survivors A	Survivors B
1. 60	23.5	8.1	330	7.9			10	10
2. 30	23.5	8.0	335	7.9			9 (1D)	10
3. 15	23.6	8.0	330	7.9			10	10
4. 7.5	23.6	8.1	330	7.9			10	10
5. 3.75	23.8	8.0	320	7.9			10	10
6. 0	23.7	8.0	325	7.9			10	10

Day 2 (7/29/04) GDA/BBP

Conc. (ug/L)	Temp.* (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	Survivors A	Survivors B
1. 60	24.6	7.8	345	7.8			5 (4D)	4 (6D)
2. 30	24.6	8.0	350	7.8			5 (4D)	7 (3D)
3. 15	24.6	8.1	340	7.8			7 (3D)	8 (2D)
4. 7.5	24.7	8.1	340	7.8			9 (1D)	9 (1D)
5. 3.75	24.6	8.2	325	7.8			9 (1D)	9 (1D)
6. 0	24.7	8.0	340	7.8			10	10
All animals fed 0.5 ml YTC suspension. Initials: GJ								

TEMP (°C)
22.7
22.8
22.8
22.8
22.8
22.6

TEMP ADJUSTM -0.1

*TEMP OF ROOM ADJUSTED LOWER, -0.1

Day 3 (7/30/04) GJ

Conc. (ug/L)	Temp. (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	Survivors A	Survivors B
1. 60	23.3	7.6	360	7.8			∅ (5D)	∅ (4D)
2. 30	23.3	7.8	365	7.8			∅ (5D)	2 (5D)
3. 15	23.4	7.6	355	7.8			3 (4D)	2 (6D)
4. 7.5	23.5	7.6	350	7.8			7 (2D)	5 (4D)
5. 3.75	23.4	7.4	340	7.8			8 (1D)	9
6. 0	23.5	7.5	340	7.8			10	10

Day 4 (7/31/04) DS/GJ

Conc. (ug/L)	Temp. (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	Survivors A	Survivors B
1. 60	—	—	—	—	—	—	∅	∅
2. 30 *	23.1	8.1	355	7.9			∅	∅ (2D)
3. 15	23.1	8.1	365	7.9			∅ (3D)	∅ (2D)
4. 7.5	23.1	8.0	365	7.9			4 (3D)	3 (2D)
5. 3.75	23.2	7.9	345	7.8			9	9
6. 0	23.2	8.0	360	7.8	85	70	10	9 (1D)
Mean	23.4	8.0	338	7.9				
SD	0.6	0.3	17	0.1				
n	35	29	29	29				

*B-repl

Revised 12-5-01

ANC07724
BZTO104(e)007724

Chesapeake Cultures

P.O. Box 507 Hayes, VA 23072 (804) 693-4046 (804)694-4704 fax
www.c-cultures.com
e-mail growfish@c-cultures.com

NAS

Shipment Information

Species Hyalella azteca Date 7/23/04

Age ~3-4 days 1.0-1.5 mm P.O. No. verbal

Quanitity 2,500+ Invoice No. 4783

Temperature 23.5°C Salinity — pH 7.94

Notes

Rec 7-26-04
1010 AM (VB)

Biologist SJ Mane

Please inspect shipment and report any problem immediately

4 of 7

Acute 96-hr Toxicity Test-96 Hr Survival

Start Date:	7/27/04 12:00	Test ID:	999-1809	Sample ID:	REF-Ref Toxicant
End Date:	7/31/04 11:15	Lab ID:	ORNAS-Northwestern Aquati	Sample Type:	CDCL-Cadmium chloride
Sample Date:		Protocol:	EPAA 91-EPA Acute	Test Species:	HA-Hyalella azteca
Comments:					

Conc-ug/L	1	2
D-Control	1.0000	0.9000
3.75	0.8000	0.9000
7.5	0.4000	0.3000
15	0.0000	0.0000
30	0.0000	0.0000
60	0.0000	0.0000

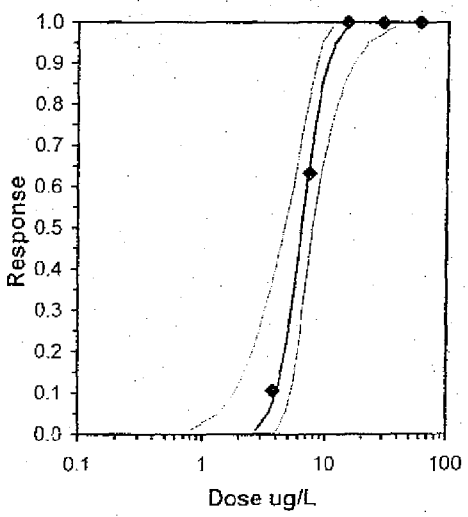
			Transform: Arcsin Square Root					Number	Total
Conc-ug/L	Mean	N-Mean	Mean	Min	Max	CV%	N	Resp	Number
D-Control	0.9500	1.0000	1.3305	1.2490	1.4120	8.661	2	1	20
3.75	0.8500	0.8947	1.1781	1.1071	1.2490	8.517	2	3	20
7.5	0.3500	0.3684	0.6322	0.5796	0.6847	11.753	2	13	20
15	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2	20	20
30	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2	20	20
60	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2	20	20

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Normality of the data set cannot be confirmed				
Bartlett's Test indicates equal variances (p = 0.94)	0.13035	9.21035		

Maximum Likelihood-Probit

Parameter	Value	SE	95% Fiducial Limits		Control	Chi-Sq	Critical	P-value	Mu	Sigma	Iter
Slope	6.23463	1.73446	2.83509	9.63416	0.05	0.40494	7.81472	0.94	0.80696	0.16039	7
Intercept	-0.0311	1.48763	-2.9469	2.88464							
TSCR	0.05817	0.05081	-0.0414	0.15777							

Point	Probits	ug/L	95% Fiducial Limits	
EC01	2.674	2.71538	0.79136	4.00123
EC05	3.355	3.49252	1.36126	4.76151
EC10	3.718	3.99402	1.8118	5.24119
EC15	3.964	4.37246	2.19246	5.60415
EC20	4.158	4.69865	2.54649	5.92156
EC25	4.326	4.99781	2.89013	6.21955
EC40	4.747	5.83887	3.92833	7.12406
EC50	5.000	6.41157	4.66018	7.83775
EC60	5.253	7.04044	5.4368	8.76816
EC75	5.674	8.22524	6.70222	11.0737
EC80	5.842	8.74895	7.17289	12.3344
EC85	6.036	9.40162	7.70138	14.0986
EC90	6.282	10.2924	8.34845	16.8283
EC95	6.645	11.7704	9.30354	22.1235
EC99	7.326	15.139	11.1949	37.6355



ANC07726

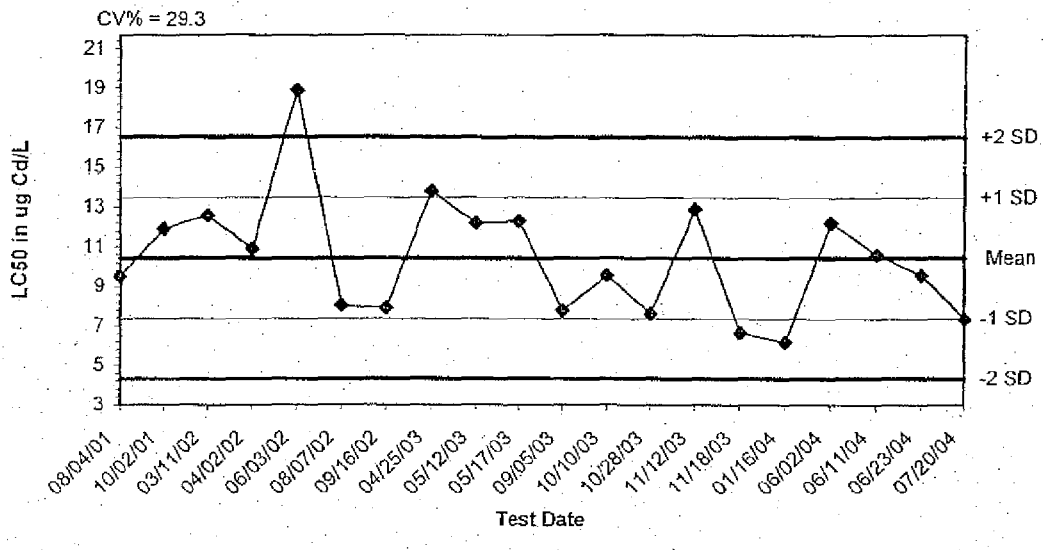
BZTO104(e)007726

Test: AT-Acute 96-hr Toxicity Test							Test ID: 999-1809		
Species: HA-Hyalella azteca							Protocol: EPAA 91-EPA Acute		
Sample ID: REF-Ref Toxicant							Sample Type: CDCL-Cadmium chloride		
Start Date: 7/27/04 12:00			End Date: 7/31/04 11:15				Lab ID: ORNAS-Northwestern Aquatic Sciences		
Pos	ID	Rep	Group	Start	24 Hr	48 Hr	72 Hr	96 Hr	Notes
	1	1	D-Control	10				10	
	2	2	D-Control	10				9	
	3	1	3.750	10				8	
	4	2	3.750	10				9	
	5	1	7.500	10				4	
	6	2	7.500	10				3	
	7	1	15.000	10				0	
	8	2	15.000	10				0	
	9	1	30.000	10				0	
	10	2	30.000	10				0	
	11	1	60.000	10				0	
	12	2	60.000	10				0	

Comments: Data entry verified against laboratory bench sheets
MR 8-19-04

ANC07727
BZTO104(e)007727

Hyalella azteca 96-hr reference toxicant test - last 20 points



Dates	Values	Mean	-1 SD	-2 SD	+1 SD	+2 SD
08/04/01	9.5000	10.4250	7.3734	4.3217	13.4766	16.5283
10/02/01	11.9000	10.4250	7.3734	4.3217	13.4766	16.5283
03/11/02	12.6000	10.4250	7.3734	4.3217	13.4766	16.5283
04/02/02	10.9000	10.4250	7.3734	4.3217	13.4766	16.5283
06/03/02	18.9000	10.4250	7.3734	4.3217	13.4766	16.5283
08/07/02	8.0400	10.4250	7.3734	4.3217	13.4766	16.5283
09/16/02	7.9200	10.4250	7.3734	4.3217	13.4766	16.5283
04/25/03	13.8000	10.4250	7.3734	4.3217	13.4766	16.5283
05/12/03	12.2000	10.4250	7.3734	4.3217	13.4766	16.5283
05/17/03	12.3000	10.4250	7.3734	4.3217	13.4766	16.5283
09/05/03	7.7900	10.4250	7.3734	4.3217	13.4766	16.5283
10/10/03	9.5600	10.4250	7.3734	4.3217	13.4766	16.5283
10/28/03	7.6200	10.4250	7.3734	4.3217	13.4766	16.5283
11/12/03	12.9000	10.4250	7.3734	4.3217	13.4766	16.5283
11/18/03	6.6700	10.4250	7.3734	4.3217	13.4766	16.5283
01/16/04	6.1900	10.4250	7.3734	4.3217	13.4766	16.5283
06/02/04	12.2000	10.4250	7.3734	4.3217	13.4766	16.5283
06/11/04	10.6000	10.4250	7.3734	4.3217	13.4766	16.5283
06/23/04	9.5600	10.4250	7.3734	4.3217	13.4766	16.5283
07/20/04	7.3500	10.4250	7.3734	4.3217	13.4766	16.5283

ysk
8-20-04

7067

ANC07728
BZTO104(e)007728

Report

of

Test No. 686-10

Toxicity of Portland Harbor RI/FS Freshwater Test Sediments (Batch 5) using a 10-day Midge, *Chironomus tentans*, Sediment Bioassay

Submitted to

Windward Environmental, Inc.
200 West Mercer Street, Suite 401
Seattle, WA 98119

Submitted by

Northwestern Aquatic Sciences
3814 Yaquina Bay Road
P.O. Box 1437
Newport, OR 97365

January 18, 2005

TOXICITY TEST REPORT

TEST IDENTIFICATION

Test No.: 686-10

Title: Toxicity of Portland Harbor RI/FS freshwater test sediments (batch 5) using a 10-day midge, *Chironomus tentans*, sediment bioassay.

Protocol No.: NAS-686-CT4b, June 24, 2004. Based on ASTM 2003, Standard Method No. E 1706-00 and U.S. EPA Method 100.2 (EPA/600/R-99/064, 2000) This protocol can be found in Appendix B of the Portland Harbor RI/FS Round 2 Quality Assurance Project Plan, June 24, 2004.

STUDY MANAGEMENT

Study Sponsor: Windward Environmental, Inc., 200 West Mercer Street, Suite 401, Seattle, WA 98119.

Sponsor's Study Monitor: Ms. Helle Andersen

Testing Laboratory: Northwestern Aquatic Sciences, P.O. Box 1437, Newport, OR 97365

Test Location: Newport laboratory

Laboratory's Study Personnel: G.J. Irissarri, B.S., Proj. Man./Study Dir.; L.K. Nemeth, M.B.A., QA Officer; R.S. Caldwell, PhD, Sr. Toxicol.; M.S. Redmond, M.S., Aq. Toxicol.; G.A. Buhler, B.S., Aq. Toxicol.; W.T. Montgomery, A.A., Sr. Tech.; G. Hayes, B.S., Tech.; S.J. Gage, B.A., Tech.; B.B. Pridgeon, Lab Asst.

Study Schedule:

Test Beginning: 9-3-04, 1550 hrs.

Test Ending: 9-13-04, 1300 hrs.

Disposition of Study Records: All specimens, raw data, reports and other study records are stored according to Good Laboratory Practice regulations at Northwestern Aquatic Sciences, 3814 Yaquina Bay Rd., Newport, OR 97365.

Good Laboratory Practices: The test was conducted following the principles of Good Laboratory Practices (GLP) as defined in the EPA/TSCA Good Laboratory Practice regulations revised August 17, 1989 (40 CFR Part 792).

Statement of Quality Assurance: The test data were reviewed by the Quality Assurance Unit to assure that the study was performed in accordance with the protocol and standard operating procedures. This report is an accurate reflection of the raw data.

TEST MATERIAL

Test Sediments: Portland Harbor RI/FS freshwater test sediments (Batch 5). Details are as follows:

NAS Sample No.	9376F	9377F	9378F	9379F	9380F
Description	LW2-G353-1	LW2-G384-1	LW2-G390	LW2-G387	LW2-G372-1
Collection Date	8/23/2004	8/23/2004	8/23/2004	8/23/2004	8/24/2004
Receipt Date	8/26/2004	8/26/2004	8/26/2004	8/26/2004	8/26/2004
NAS Sample No.	9381F	9382F	9383F	9384F	9385F
Description	LW2-G398	LW2-G492-1	LW2-G497	LW2-G474	LW2-G469
Collection Date	8/24/2004	8/24/2004	8/24/2004	8/24/2004	8/24/2004
Receipt Date	8/26/2004	8/26/2004	8/26/2004	8/26/2004	8/26/2004
NAS Sample No.	9386F	9387F	9388F	9389F	9390F
Description	LW2-G458	LW2-G450-1	LW2-G441	LW2-G444	LW2-G455
Collection Date	8/24/2004	8/25/2004	8/25/2004	8/25/2004	8/25/2004
Receipt Date	8/26/2004	8/26/2004	8/26/2004	8/26/2004	8/26/2004
NAS Sample No.	9391F	9392F	9393F	9394F	9395F
Description	LW2-G445	LW2-G359	LW2-G321	LW2-G329	LW2-G197-1
Collection Date	8/25/2004	8/25/2004	8/25/2004	8/25/2004	8/25/2004
Receipt Date	8/26/2004	8/26/2004	8/26/2004	8/26/2004	8/26/2004

ANC07730
BZTO104(e)007730

ash-free dry wt. = dry weight of organisms recovered on day 10 – ashed dry weight, in mg

Means and standard deviations for the biological endpoints described above, and for water quality data, were computed using Microsoft Excel 2000.

PROTOCOL DEVIATIONS

1. Additional pH measurements were made in the overlying water on test day 5.
2. The 80% control survival of reference toxicant test fell below the 90% minimum required. The resulting LC50 (5.71 g/L) was still within one standard deviation of the mean LC50 value of the control chart.

REFERENCE TOXICANT TEST

The reference toxicant test is a multi-concentration toxicity test using potassium chloride, to evaluate the performance of the test organisms used in the sediment toxicity test. The performance is evaluated by comparing the results of this test with historical results obtained at the laboratory. A summary of the reference toxicant test result is given below. The reference toxicant test raw data are found in Appendix II.

Test No.: 999-1837
Reference Toxicant and Source: Potassium chloride (Fisher, Lot No. 006829).
Test Date: 9-3-04
Dilution Water Used: Moderately hard synthetic water prepared from Milli-Q® deionized water.
Result: 96-hr LC50, 5.71 g/L. Control survival was 80% in this test, but the LC50 result is within the laboratory's control chart warning limits (2.78 to 7.40 g/L).

TEST RESULTS

Observations of water quality in the overlying water throughout the test are summarized in Table 1. A detailed tabulation of the water quality results by sample and test day can be found in Appendix I. Interstitial ammonia and pH measurements are listed in Table 2. The means and standard deviations of percent mortality and growth (ash-free dry weight) of midges exposed for 10 days to sediments are summarized in Table 3. Detailed data organized by sample and replicate, and summary statistics for these observations, are given in Appendix I.

All water quality observations of overlying water temperature and dissolved oxygen were within the protocol specified ranges. Ammonia-N in the overlying water ranged from <0.1 to 1.9 mg/L in all day 0 and day 10 observations. Interstitial bulk sediment values for ammonia-N ranged from 0.9 to 22.2 mg/L.
The test met the survival and weight acceptability criteria specified in the test protocol with 86.3% mean control survival (≥70% required) and a control individual mean ash-free dry weight of 1.23 mg per larvae (0.48 mg required). The reference toxicant (positive control) result was within the laboratory's control chart limits (5.71 g/L; control chart mean ± 2 S.D. = 5.09 ± 2.31). It is concluded, therefore, that the test has developed fully acceptable data for use in making management decisions.

REFERENCES

ASTM. 2003. Standard Test Methods for Measuring the Toxicity of Sediment-Associated Contaminants with Fresh Water Invertebrates. ASTM Standard Method No. E 1706-00. Am. Soc. Test. Mat., West Conshohocken, PA.

U.S. EPA. 2000. Section 12, Test Method 100.2, *Chironomus tentans* 10-d Survival and Growth Test for Sediments, pp 55-62 In: Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates (Second Edition). EPA/600/R-99/064.

ANC07731
BZTO104(e)007731

Table 1. Summary of water quality conditions during tests of the midge, *Chironomus tentans*, exposed to freshwater sediments.

Water Quality Parameter	Mean ± S.D.	Minimum	Maximum	N
Temperature (°C)	22.9 ± 0.2	22.2	23.3	231
Dissolved oxygen (mg/L)	5.1 ± 0.8	2.8	6.6	231
Conductivity (µmhos/cm)	184 ± 38	155	390	42
pH	6.3 ± 0.1	6.1	6.5	63
Hardness (mg/L as $CaCO_3$)	48 ± 7	43	68	42
Alkalinity (mg/L as $CaCO_3$)	45 ± 7	40	60	42
Total ammonia (mg/L)	---	<0.1	1.9	42

Table 2. Pore water ammonia-N and pH in bulk test sediments at the time of test setup.

NAS Sample No.	Sample Description	Ammonia (mg/L)	pH
9403F	Control	1.6	7.0
9376F	LW2-G353-1	9.8	6.3
9377F	LW2-G384-1	16.3	6.3
9378F	LW2-G390	4.7	6.3
9379F	LW2-G387	16.1	6.2
9380F	LW2-G372-1	4.2	6.3
9381F	LW2-G398	13.2	6.2
9382F	LW2-G492-1	14.9	6.3
9383F	LW2-G497	22.2	6.3
9384F	LW2-G474	16.2	6.4
9385F	LW2-G469	15.0	6.3
9386F	LW2-G458	11.2	6.4
9387F	LW2-G450-1	15.1	6.4
9388F	LW2-G441	5.4	6.6
9389F	LW2-G444	5.3	6.4
9390F	LW2-G455	8.3	6.4
9391F	LW2-G445	0.9	6.4
9392F	LW2-G359	17.8	6.3
9393F	LW2-G321	9.1	6.6
9394F	LW2-G329	1.7	6.9
9395F	LW2-G197-1	2.7	6.5

ANC07732
BZTO104(e)007732

Table 3. Mortality and growth[1] results of *Chironomus tentans* 10-day sediment toxicity test

Sample description		Average percent mortality (Mean ± SD)	Average ash-free dry wt/midge (mg)[1] (Mean ± SD)
9403F	Control	13.8 ± 9.2	1.23 ± 0.32
9376F	LW2-G353-1	8.8 ± 14.6	1.23 ± 0.21
9377F	LW2-G384-1	17.5 ± 24.9	1.13 ± 0.20
9378F	LW2-G390	25.0 ± 20.0	0.65 ± 0.13
9379F	LW2-G387	15.0 ± 14.1	1.26 ± 0.28
9380F	LW2-G372-1	3.8 ± 7.4	1.09 ± 0.21
9381F	LW2-G398	8.8 ± 16.4	1.34 ± 0.24
9382F	LW2-G492-1	10.0 ± 10.7	1.30 ± 0.27
9383F	LW2-G497	12.5 ± 8.9	1.20 ± 0.20
9384F	LW2-G474	11.3 ± 8.3	1.31 ± 0.17
9385F	LW2-G469	21.3 ± 13.6	1.15 ± 0.22
9386F	LW2-G458	11.3 ± 9.9	1.27 ± 0.31
9387F	LW2-G450-1	25.0 ± 25.6	1.20 ± 0.26
9388F	LW2-G441	12.5 ± 13.9	1.30 ± 0.23
9389F	LW2-G444	10.0 ± 7.6	1.10 ± 0.22
9390F	LW2-G455	33.8 ± 29.2	0.73 ± 0.26
9391F	LW2-G445	11.3 ± 11.3	0.86 ± 0.27
9392F	LW2-G359	27.5 ± 20.5	1.14 ± 0.29
9393F	LW2-G321	16.3 ± 11.9	1.02 ± 0.22
9394F	LW2-G329	5.0 ± 5.3	1.23 ± 0.13
9395F	LW2-G197-1	15.0 ± 12.0	1.34 ± 0.31

[1] Pupae were not included in the sample to estimate ash-free dry weight (as per EPA/600/R-99/064, p. 59, section 12.3.8.2)

ANC07733
BZTO104(e)007733

APPENDIX I

RAW DATA

TEST DESCRIPTION, MONITORING, AND RESULTS BENCHSHEETS

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b
CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

REVIEWED PAGES 1-37 GJI 11-4-04

Test No. 686-10 Client Windward Environmental Investigator

STUDY MANAGEMENT

Client: Windward Enviromental, 200 West Mercer Street, Suite 401, Seattle, WA 98119
Client's Study Monitor: Ms. Helle Andersen GJI
Testing Laboratory: Northwestern Aquatic Sciences
Test Location: Newport Laboratory
Laboratory's Study Personnel:
Proj. Man./Study Dir. G.J. Irissarri GJI
QA Officer L.K. Nemeth
1. G.J. Irissarri 2. Susan Cage 6. M.S. Redmond MSR
3. William T. Montgomery WTM 4. B.B. Pridgeon BBP
5. G.C. Hayes 7. R.S. Caldwell
Study Schedule:
Test Beginning: 9-3-04 1550 Test Ending: 9-13-04 1300

TEST MATERIAL

General description (see sample logbook/chain-of-custody for details):

NAS Sample No.:	9403F	9376F	9377F	9378F	9379F
Description:	Control	LW2-G353-1	LW2-G384-1	LW2-G390	LW2-G387
Collection Date:	8/30/2004	8/23/2004	8/23/2004	8/23/2004	8/23/2004
Receipt Date:	8/30/2004	8/26/2004	8/26/2004	8/26/2004	8/26/2004
NAS Sample No.:	9380F	9381F	9382F	9383F	9384F
Description:	LW2-G372-1	LW2-G398	LW2-G492-1	LW2-G497	LW2-G474
Collection Date:	8/24/2004	8/24/2004	8/24/2004	8/24/2004	8/24/2004
Receipt Date:	8/26/2004	8/26/2004	8/26/2004	8/26/2004	8/26/2004
NAS Sample No.:	9385F	9386F	9387F	9388F	9389F
Description:	LW2-G469	LW2-G458	LW2-G450-1	LW2-G441	LW2-G444
Collection Date:	8/24/2004	8/24/2004	8/25/2004	8/25/2004	8/25/2004
Receipt Date:	8/26/2004	8/26/2004	8/26/2004	8/26/2004	8/26/2004
NAS Sample No.:	9390F	9391F	9392F	9393F	9394F
Description:	LW2-G455	LW2-G445	LW2-G359	LW2-G321	LW2-G329
Collection Date:	8/25/2004	8/25/2004	8/25/2004	8/25/2004	8/25/2004
Receipt Date:	8/26/2004	8/26/2004	8/26/2004	8/26/2004	8/26/2004
NAS Sample No.:	9395F				
Description:	LW2-G197-1				
Collection Date:	8/25/2004				
Receipt Date:	8/26/2004				
NAS Sample No.:					
Description:					
Collection Date:					
Receipt Date:					

Error codes: 1) correction of handwriting error
2) written in wrong location; entry deleted
3) wrong date deleted, replaced with corrrect date
4) error found in measurement; measurement repeated

ANC07736
BZTO104(e)007736

NORTHWESTERN AQUATIC SCIENCES — PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-10 Client Windward Environmental Investigator

SEDIMENT DESCRIPTIONS -- SUPPLEMENTAL NOTES

Sample No.	Description
9403F	BLACK FINE MUD
9376F	Dark gray brown fine mud
9377F	GRAY BROWN FINE MUD
9378F	DARK GRAY/BROWN FINE MUD
9379F	Dark gray-smooth texture mud
9380F	Dark gray brown fine mud
9381F	DARK GRAY/BROWN FINE MUD
9382F	Gray brown mud
9383F	Dark brown mud
9384F	Dark gray - smooth texture mud
9385F	Dark gray brown fine mud
9386F	Dark Gray fine mud
9387F	Dark brown fine mud
9388F	Dark brown gray fine mud, 2 Chironomids found
9389F	Dark brown fine mud
9390F	Gray-brown gritty sand w/ woody debris + strong petroleum odor
9391F	Dark brown fine mud w wood debris.
9392F	Gray brown fine mud (1 chironomid)
9393F	Gray-brown sandy mud
9394F	DARK GRAY/BROWN FINE MUD
9395F	Dark gray brown sandy mud w wood debris.

ANC07737
BZTO104(e)007737

NORTHWESTERN AQUATIC SCIENCES — PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-10 Client Windward Environmental Investigator

TEST WATER

Source: Dechlorinated Newport, OR tap water

Date of Collection: 8-31-04, 9-3-04, 9-5-04, 9-7-04, 9-9-04, 9-10-04

pH 7.2, 9.1, 7.0, 7.0, 6.9, 6.9 ($\bar{X}$ = 7.0 ± 0.1) 5, 6.1

Cond (umhos/cm^2) 160, 170, 165, 160, 160, 170 ($\bar{X}$ = 164 ± 4.9)

Hardness (mg/L) 34, 34, 34, 34, 34, 34 ($\bar{X}$ = 34 ± 0.0)

Alkalinity (mg/L) 30, 30, 30, 30, 30, 40 ($\bar{X}$ = 31.7 ± 4.1)

Treatments: Aerated ≥ 24 hrs

TEST ORGANISMS

Species: *Chironomus tentans* Age: 3rd instar Date received: —

Source: NAS cultures

Acclimation Data:

Date	Temp. (deg.C)	DO (mg/L)	pH	Cond umhos/cm	Feeding amount (ml)	Feeding description*	Water changes	Hardness (mg/L)	Alkalinity (mg/L)
8-23-04	24.0	7.4	7.1	275	ANIMALS	FED TETRA	CULTURE	—	—
8-25-04	23.7	7.9	7.1	265	FIN AND SELENASTRUM		TANKS	85	70
8-27-04	24.1	8.0	7.4	290	DETAILS RECORDED		CHANGED	—	—
8-30-04	24.0	6.0	6.9	320	ON CHIRONOMID		TWICE	—	—
9-1-04	24.0	6.6	6.9	315	CULTURE DATA		WEEKLY	111	90
9-3-04	23.2	7.4	7.0	280	SHEETS.			51	70
Mean	23.8	7.2	7.1	293				82	77
S.D.	0.3	0.8	0.2	22				30	12
(N)	6	6	6	6				3	3

Photoperiod during acclimation: 16:8, L:D

*S=Selenastrum, T=Tetra Fin suspension

TEST PROCEDURES AND CONDITIONS

Test chambers: 300 ml glass beakers

Test volumes: 100 ml of test sediment; 275 ml total volume

Replicates/treatment: (8) 8 Organisms/treatment: (80) 80 (10/REP)

Test water changes: Twice daily

Aeration: only if DO falls below 2.5 mg/L

Feeding: everyday beginning with day zero

Test temperature (deg.C): 23

Beaker placement: Total randomization

Photoperiod: 16:8, L:D

Control Sediment:

Source: From an area approximately one mile east of the Hwy. 101 bridge at Beaver Creek, approx. 8 miles south of Newport, OR.

Date collected: 8/30/04

Sieved through 0.5 -mm screen NAS# 9403F

Storage: 4°C in the dark in closed containers.

MISCELLANEOUS NOTES

ANC07738
BZTO104(e)007738

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-10 Client Windward Environmental Investigator _____

Test conducted in (circle one): room 1 (room 2) trailer water bath other: _____

Randomization chart:

5								165	
4								164	
3	→						→	163	168
2								162	167
1								161	166

FRONT OF SHELF

Randomization chart:

Randomization chart:

Randomization chart:

ANC07739
BZTO104(e)007739

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No 686-10 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 0 (9/3/09) GB/BBP

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond.* umhos/cm	pH*	Hardness* (mg/L)	Alkalinity* (mg/L)	S (ppm)	NH3* (ppm)	Comments
8	22.9	6.2	195	6.2	58	60			Each beaker fed 1.5 ml
11	22.9	6.2	175	6.3	51	40			Prime Tropical Flakes
17	22.8	6.4	390	6.3	60	40			suspension.
40	23.0	6.4	195	6.4	51	50			Initials: GJ
48	23.0	6.4	200	6.3	60	50			
53	22.9	6.3	200	6.2	60	60			
59	22.9	6.6	180	6.5	51	40			
77	23.0	6.4	280	6.4	43	40			
85	23.0	6.2	190	6.5	51	40			Water changed in all
97	23.1	6.4	190	6.2	51	60			beakers.
102	23.0	6.2	165	6.2	51	40			Time: 0635
106	23.0	6.2	160	6.2	43	40			Initials: GJ
109	23.1	6.0	170	6.3	43	50			
129	23.2	6.1	160	6.3	51	40			
134	23.2	6.1	155	6.3	43	40			
138	23.2	6.2	190	6.2	60	50			
159	23.1	6.0	160	6.3	43	40			Water changed in all
165	23.1	6.0	170	6.3	43	40			beakers.
166	23.1	6.3	160	6.3	43	40			Time: 1730
167	23.0	6.5	200	6.2	60	60			Initials:
168	23.0	6.4	170	6.2	60	60			

*Water quality measurements to be taken.

Day 1 (9/4/09) GB/GJL

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. umhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
8	23.0	5.4							Each beaker fed 1.5 ml
11	23.0	5.6							Prime Tropical Flakes
17	23.0	5.7							suspension.
40	23.1	6.0							Initials: GJL
48	23.1	5.8							
53	23.0	5.9							
59	23.0	5.5							
77	22.9	5.6							
85	23.1	5.7							Water changed in all
97	23.0	5.9							beakers.
102	22.9	6.2							Time: 0740
106	23.0	6.0							Initials: GJL
109	23.1	6.1							
129	23.3	6.3							
134	23.3	6.0							
138	23.2	5.8							
159	23.1	5.9							Water changed in all
165	23.1	5.5							beakers.
166	23.0	5.4							Time: 1930
167	22.9	5.2							Initials:
168	23.0	5.8							

*Water quality measurements to be taken.

ANC07740
BZTO104(e)007740

Test No 686-10 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 2 (9/5 04) 631

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
8	22.9	5.4							Each beaker fed 1.5 ml
11	23.0	5.4							Prime Tropical Flakes
17	22.9	6.1							suspension.
40	23.0	4.7							Initials: 631
48	23.0	5.2							
53	23.0	4.6							
59	23.1	5.5							
77	23.0	5.6							
85	23.1	5.0							Water changed in all
97	23.0	4.9							beakers.
102	23.0	5.1							Time: 0740
106	23.1	4.7							Initials: 631
109	23.1	5.2							
129	23.2	5.0							
134	23.3	5.4							
138	23.2	4.4							
159	23.1	5.3							Water changed in all
165	23.1	5.4							beakers.
166	23.0	5.7							Time: 1815
167	23.0	5.4							Initials: [illegible]
168	23.0	5.7							

*Water quality measurements to be taken.

Day 3 (9/6 0445)

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
8	22.7	5.6							Each beaker fed 1.5 ml
11	22.9	5.5							Prime Tropical Flakes
17	22.9	5.9							suspension.
40	23.0	4.8							Initials: BB
48	22.9	5.4							
53	22.8	5.0							
59	22.8	5.3							
77	22.9	5.5							
85	22.9	5.1							Water changed in all
97	22.9	5.4							beakers.
102	22.9	5.1							Time: 0650
106	22.9	4.4							Initials: BB
109	23.0	5.3							
129	23.0	5.5							
134	23.0	5.7							
138	23.0	4.6							
159	23.0	4.9							Water changed in all
165	22.9	5.1							beakers.
166	23.0	5.2							Time: 1800
167	22.9	5.3							Initials: BBP
168	22.9	5.5							

*Water quality measurements to be taken.

ANC07741
BZTO104(e)007741

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No 686-10 Client Windward Environmental Investigator _____

DAILY RECORD SHEET

Day 4 (9/7/04) KB

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. umhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
8	22.8	4.2							Each beaker fed 1.5 ml
11	22.9	4.2							Prime Tropical Flakes
17	22.8	4.4							suspension.
40	22.9	4.4							Initials: KB
48	22.9	4.4							
53	22.8	3.8							
59	22.9	4.2							
77	22.9	4.8							
85	22.9	5.0							Water changed in all
97	22.9	3.9							beakers.
102	22.9	4.3							Time: 0655
106	23.0	5.0							Initials: GJL
109	22.9	4.6							
129	23.0	3.9							
134	23.0	4.1							
138	23.0	4.2							
159	22.9	4.8							Water changed in all
165	22.9	4.9							beakers.
166	22.9	5.2							Time: 1725
167	22.9	4.3							Initials: AJ
168	22.9	4.4							

*Water quality measurements to be taken.

Day 5 (9/8/04) CSH AJ GJL

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. umhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
8	22.6	4.0		6.5					Each beaker fed 1.5 ml
11	22.8	3.6		6.5					Prime Tropical Flakes
17	22.8	3.0		6.4					suspension.
40	22.8	4.2		6.4					Initials: KB
48	22.8	3.4		6.4					
53	22.8	3.4		6.4					
59	22.9	4.2		6.4					
77	22.8	4.2		6.4					
85	22.9	4.6		6.4					Water changed in all
97	22.9	4.2		6.3					beakers.
102	22.9	4.1		6.2					Time: 0710
106	23.0	4.7		6.2					Initials: GJL
109	23.0	4.2		6.2					
129	23.1	4.1		6.2					
134	23.1	3.3		6.1					
138	22.9	3.4		6.1					
159	22.9	4.4		6.3					Water changed in all
165	23.1	4.3		6.3					beakers.
166	23.1	5.0		6.2					Time: 1730
167	23.0	4.2		6.2					Initials: AJ
168	23.1	4.0		6.2					

*Water quality measurements to be taken.

ANC07742
BZTO104(e)007742

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No 686-10 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 6 (9/9 0640 BP

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. umhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
8	22.6	3.8							Each beaker fed 1.5 ml
11	22.7	4.0							Prime Tropical Flakes
17	22.6	4.8							suspension.
40	22.8	4.6							Initials: GSI
48	22.8	3.1							
53	22.7	3.6							
59	22.7	4.3							
77	22.7	3.9							
85	22.7	4.3							Water changed in all
97	22.7	4.2							beakers.
102	22.7	4.2							Time: 0655
106	22.7	4.1							Initials: GSI
109	22.7	4.4							
129	22.8	4.8							
134	22.8	3.6							
138	22.8	3.6							
159	22.7	4.5							Water changed in all
165	23.1	4.5							beakers.
166	23.1	4.8							Time: 1730
167	23.1	4.0							Initials: BBP
168	23.2	4.1							

*Water quality measurements to be taken.

Day 7 (9/10 104) DSI

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. umhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
8	22.8	4.5							Each beaker fed 1.5 ml
11	22.8	4.6							Prime Tropical Flakes
17	22.8	3.9							suspension.
40	22.8	5.2							Initials: GSI
48	22.8	4.4							
53	22.8	4.2							
59	22.8	4.1							
77	22.9	4.6							
85	22.8	4.4							Water changed in all
97	22.9	4.5							beakers.
102	22.9	4.6							Time: 0650
106	22.9	4.4							Initials: GSI
109	22.9	4.7							
129	22.9	5.2							
134	22.9	4.4							
138	22.9	4.3							
159	22.8	5.1							Water changed in all
165	22.8	5.4							beakers.
166	22.9	4.3							Time: 1720
167	22.8	4.4							Initials: DJ
168	22.8	4.3							

*Water quality measurements to be taken.

ANC07743
BZTO104(e)007743

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No 686-10 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 8 (9 12 10)

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. µmhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
8	23.1	5.1							Each beaker fed 1.5 ml
11	23.0	5.4							Prime Tropical Flakes
17	23.0	4.8							suspension.
40	22.8	5.4							Initials:
48	22.8	48.6							
53	22.8	5.4							
59	22.8	5.4							
77	22.8	5.4							
85	22.8	4.7							Water changed in all
97	22.9	6.0							beakers.
102	22.9	5.4							Time: 0745
106	22.9	5.6							Initials:
109	22.8	5.6							
129	22.8	6.1							
134	22.8	6.1							
138	22.7	5.9							
159	22.6	6.1							Water changed in all
165	22.7	6.1							beakers.
166	22.6	5.9							Time: 1815
167	22.6	5.82							Initials:
168	22.6	5.4							

*Water quality measurements to be taken.

Day 9 (9 12 10)

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. µmhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
8	22.5	5.2							Each beaker fed 1.5 ml
11	22.5	5.3							Prime Tropical Flakes
17	22.4	4.6							suspension.
40	22.4	5.3							Initials:
48	22.4	5.3							
53	22.4	4.5							
59	22.3	5.3							
77	22.4	4.5							
85	22.3	6.6							Water changed in all
97	22.4	5.3							beakers.
102	22.4	5.3							Time: 0745
106	22.5	5.8							Initials:
109	22.5	6.2							
129	22.4	5.9							
134	22.4	5.9							
138	22.4	6.0							
159	22.3	6.3							Water changed in all
165	22.3	6.3							beakers.
166	22.2	5.9							Time: 1845
167	22.2	5.7							Initials:
168	22.2	5.3							

*Water quality measurements to be taken.

ANC07744
BZTO104(e)007744

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No 686-10 Client Windward Environmental Investigator _____

DAILY RECORD SHEET

Day 10 (9/13 D4) arm/BBP

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond.* µmhos/cm	pH*	Hardness* (mg/L)	Alkalinity* (mg/L)	S (ppm)	NH3* (ppm)	Comments
8	23.2	4.6	195	6.2	43	50			Each beaker fed 1.5 ml
11	23.2	5.0	175	6.2	51	40			Prime Tropical Flakes
17	23.2	4.1	200	6.1	43	50			suspension.
40	23.2	5.4	175	6.2	43	50			Initials: —
48	23.1	4.3	175	6.1	43	40			
53	23.1	4.2	180	6.1	51	40			
59	23.2	5.0	165	6.2	43	40			
77	23.1	4.2	180	6.2	43	50			
85	23.2	6.5	170	6.2	43	40			Water changed in all
97	23.1	4.9	175	6.2	43	50			beakers.
102	23.1	5.0	170	6.2	51	40			Time: 0715
106	23.2	4.9	175	6.2	43	40			Initials: GM
109	23.1	5.4	175	6.2	43	40			
129	23.2	5.3	170	6.2	51	40			
134	23.2	5.1	170	6.2	43	50			
138	23.1	4.8	175	6.2	43	40			
159	23.1	5.5	170	6.3	43	40			Water changed in all
165	23.1	5.6	170	6.3	43	40			beakers.
166	23.1	5.7	170	6.2	43	50			Time:
167	23.1	4.4	175	6.2	43	50			Initials:
168	23.1	5.1	175	6.2	43	40			

*Water quality measurements to be taken.

Day _____(/ /)

Beaker No.	Temp. (deg.C)	DO (ppm)	Cond. µmhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
8									Each beaker fed 1.5 ml
11									Prime Tropical Flakes
17									suspension.
40									Initials:
48									
53									
59									
77									
85									Water changed in all
97									beakers.
102									Time:
106									Initials:
109									
129									
134									
138									
159									Water changed in all
165									beakers.
166									Time:
167									Initials:
168									

*Water quality measurements to be taken.

ANC07745
BZTO104(e)007745

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-10 Client Windward Environmental Investigator _____

DAY 20 TEST TERMINATION SHEET

Beaker No.	Number of survivors	Initials
1	8	GJ1
2	10	UB
3	9	GJ1
4	8	UB
5	6	GJ1
6	8	UB
7	10	GJ1
8	9	GJ1
9	11	UB
10	10	GJ1
11	6	GJ1
12	7	UB
13	8	GJ1
14	9	UB
15	9	UB
16	3	GJ1
17	7	GJ1
18	9	UB
19	9	GJ1
20	8	UB
21	7	GJ1
22	7	UB
23	GJ1 7 8	GJ1
24	7 + 1 pupa	UB
25	8	UB
26	8	GJ1
27	10	UB
28	7	UB
29	10	GJ1
30	10	GJ1
31	10	UB
32	9	GJ1
33	10	UB
34	10	GJ1
35	6	UB
36	7 + 1 pupa	UB
37	10	UB
38	10	UB
39	9	GJ1
40	10	GJ1
41	10	UB
42	9	GJ1
43	10	UB
44	10	GJ1
45	10	GJ1

Beaker No.	Number of survivors	Initials
46	10	UB
47	9	GJ1
48	9	UB
49	10	UB
50	9	GJ1
51	10	UB
52	8 + 1 PUPA	GJ1
53	7	GJ1
54	8 + 2 pupae	UB
55	8	[illegible]
56	10	GJ1
57	9	UB
58	7	GJ1
59	10	UB
60	10	GJ1
61	9	UB
62	8	[illegible]
63	10	UB
64	9	GJ1
65	8	UB
66	9	[illegible]
67	10	UB
68	10	GJ1
69	10	[illegible]
70	10	GJ1
71	6 + 1 PUPA	GJ1
72	10	GJ1
73	10	GJ1
74	9	[illegible]
75	10	GJ1
76	10	UB
77	8	UB
78	8	UB
79	9	UB
80	10	UB
81	10	GJ1
82	6	GJ1
83	6	UB
84	10	UB
85	9	GJ1
86	6	UB
87	9	GJ1
88	9	UB
89	8	UB
90	6	UB

ANC07746
BZTO104(e)007746

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-10 Client Windward Environmental Investigator _____

DAY 20 TEST TERMINATION SHEET

Beaker No.	Number of survivors	Initials
91	6 + 2 pupae	CAS
92	7	LCM
93	9	UB
94	7	LCM
95	8	UB
96	9	UB
97	8	LCM
98	9	GJ
99	7 + 1 pupa	UB
100	10	GJ
101	2	UB
102	9	UB
103	8	GJ
104	7	LCM
105	4	GJ
106	9	UB
107	10	GJ
108	11	UB
109	7	LCM
110	7	GJ
111	6	UB
112	10	GJ
113	10	LCM
114	9	UB
115	10	UB
116	10	GJ
117	10	LCM
118	10	UB
119	8	GJ
120	9	UB
121	9	LCM
122	9	GJ
123	10	UB
124	7 + 1 PUPA	GJ
125	8	LCM
126	10	UB
127	9	UB
128	9 + 1 PUPA	GJ
129	8	LCM
130	8	UB
131	9	GJ
132	8	GJ
133	7 + 1 pupa	UB
134	9	GJ
135	8 + 1 pupa	LCM

Beaker No.	Number of survivors	Initials
136	8	GJ
137	9	UB
138	7	GJ
139	9	UB
140	9 GJ	UB
141	6	LCM
142	9	GJ
143	7	CAS
144	6 + 1 PUPA	GJ
145	8	LCM
146	6	UB
147	6 + 1 PUPA	GJ
148	11	UB
149	8	LCM
150	9	GJ
151	9	LCM
152	8 + 1 pupa	UB
153	10	GJ
154	10	UB
155	9	LCM
156	8	UB
157	3	GJ
158	7	UB
159	8	GJ
160	7	LCM
161	9 + 1 PUPA	GJ
162	7	UB
163	9	UB
164	10	GJ
165	10	LCM
166	8	GJ
167	8	UB
168	6	LCM
169		
170		
171		
172		
173		
174		
175		
176		
177		
178		
179		
180		

ANC07747
BZTO104(e)007747

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-10 Client Windward Environmental Investigator _____

Tare: Date 9-3-04 Oven temp (C.) 67 Drying time (hr.) 24 Initials CB
Standard Weights: 10 mg: 10.006 100mg: 100.014

Final #1 Date 9-4-04 Oven temp (C.) 64 Drying time (hr.) 24 Initials GJL
Standard Weights: 10 mg: 10.006 100mg: 100.016

Final: #2 Date 9-5-04 Oven temp (C.) 62 Drying time (hr.) 24 Initials GJL
Standard Weights: 10 mg: 10.006 100mg: 100.018

Equip. used: Oven: Blue M Balance: Sartorius M3P

(Dry overnight at 60-90 degrees C)

Pan #	Tare wt. (mg)	Total wt. (mg) 1	Total wt. (mg) 2	#weighed	Comments
1	92.406	96.413	96.393	20	
2	102.094	105.650	105.634	20	
3	104.995	108.265	108.231	20	

ANC07748
BZTO104(e)007748

NORTHWESTERN AQUATIC SCIENCES — PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-10 Client Windward Environmental Investigator

WEIGHING DATA SHEET

Tare: Date 9-9-04 Oven temp (C.) 550 Drying time (hr.) 2 Initials JRF
Standard Weights: 10 mg: 10.006 100mg: 100.022

Final #1: Date 9-15-04 Oven temp (C.) 61 Drying time (hr.) 20 Initials JRF
Standard Weights: 10 mg: 10.008 100mg: 100.021

Final #2: Date 9-18-04 Oven temp (C.) 64 Drying time (hr.) 24 Initials GJL
Standard Weights: 10 mg: 10.005 100mg: 100.010

Final #3: Date 9-25-04 Oven temp (C.) 550 Drying time (hr.) 2 Initials GJL
Standard Weights: 10 mg: 10.006 100mg: 100.018

Equip. used: Oven BLUE M #1 Balance Sartorius M3P
Furnace FISHER MUFFLE FURNACE 650 SERIES

(Dry overnight at 60-90 degrees C) **(Final ashing is at 550 degrees C for 2 hours)**

Bkr. #	Pan #	Tare wt. (mg)	Total wt. (mg) 1	Total wt. (mg) 2	no. weighed	put into pans-initials	Ashed weight (mg)
1	1	92.37	98.34	98.29	8	GJL	93.21
2	2	90.6r96	104.04	103.98	10	GJL	95.11
3	3	93.50	105.14	105.08	9	GJL	96.75
4	4	87.35	96.37	96.33	8	GJL	88.76
5	5	105.22	113.10	113.06	6	GJL	106.66
6	6	92.21	103.66	103.59	8	GJL	95.72
7	7	99.27	113.71	113.63	10	GJL	102.52
8	8	95.07	109.75	109.68	9	GJL	99.53
9	9	96.19	111.87	111.79	11	GJL	99.41
10	10	84.93	97.04	96.98	10	GJL	87.89
11	11	91.78	105.31	105.26	6	GJL	95.93
12	12	94.92	110.36	110.31	7	GJL	98.65
13	13	99.18	114.90	114.86	8	GJL	103.44
14	14	95.49	107.40	107.35	9	GJL	97.84
15	15	98.80	110.74	110.67	9	GJL	101.33
16	16	101.61	106.60	106.55	3	GJL	103.83
17	17	89.28	98.45	98.40	7	GJL	93.21
18	18	90.47	107.01	106.95	9	GJL	94.20
19	19	95.83	107.97	107.90	9	GJL	98.17
20	20	91.49	106.79	106.72	8	GJL	95.50
21	21	94.65	107.26	107.20	7	GJL	99.51
22	22	99.60	111.16	111.10	7	GJL	106.79
23	23	98.84	112.15	112.09	8	GJL	101.55
24	24	104.29	118.98	118.93	7	GJL	106.34
25	25	92.61	108.96	108.48	8	GJL	96.58
26	26	94.03	99.58	99.63	8	AK	94.98
27	27	99.29	112.24	112.35	10	AK	102.52
28	28	90.36	94.22	94.24	7	AK	91.21
29	29	92.89	105.54	105.62	10	AK	95.89
30	30	96.59	110.85	110.94	10	AK	100.65
31	31	98.88	114.63	114.76	10	AK	103.49
32	32	95.39	100.47	100.50	9	AK	96.18
33	33	97.22	112.74	112.83	10	AK	102.30

ANC07749
BZTO104(e)007749

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-10 Client Windward Environmental Investigator

WEIGHING DATA SHEET

See page _____ for information on drying times and temperatures, standard weights,etc.

Bkr. #	Pan #	Tare wt. (mg)	Total wt. (mg) 1	Total wt. (mg) 2	no. weighed	put into pans-initials	Ash weight (mg)
34	34	87.38	99.89	99.99	10		90.86
35	35	98.47	102.35	102.37	6		99.10
36	36	91.06	105.70	105.81	7		96.09
37	37	96.46	115.98	116.12	10		103.00
38	38	100.33	115.29	115.15	10		103.38
39	39	96.29	112.15	112.24	9		101.74
40	40	99.56	119.72	119.82	10		106.94
41	41	91.88	113.12	113.21	10		103.41
42	42	97.18	108.29	108.35	9		99.98
43	43	88.66	103.93	104.01	10		93.12
44	44	92.46	106.66	106.74	10		96.08
45	45	84.15	98.21	98.28	10		88.33
46	46	96.15	109.13	109.21	10		99.80
47	47	96.04	107.53	107.60	9		98.56
48	48	99.10	114.69	114.80	9		103.12
49	49	103.62	116.96	117.04	10		107.24
50	50	86.14	99.27	99.33	9		89.77
51	51	100.54	109.40	109.29	10	BBP	102.51
52	52	100.80	111.96	111.88	8	BBP	103.85
53	53	100.60	114.42	114.33	7	BBP	104.58
54	54	100.46	113.95	113.84	8	BBP	105.10
55	55	95.61	109.54	109.47	8	BBP	99.33
56	56	105.02	119.78	119.65	10	BBP	109.61
57	57	102.80	117.53	117.43	9	BBP	103.31
58	58	99.73	108.33	108.27	7	BBP	101.73
59	59	103.88	113.60	113.55	10	BBP	106.21
60	60	98.93	112.35	112.30	10	BBP	102.94
61	61	98.85	109.97	109.87	9	BBP	101.56
62	62	96.25	102.15	102.09	8	BBP	97.47
63	63	94.00	107.20	107.08	10	BBP	97.45
64	64	100.72	113.40	113.35	9	BBP	103.56
65	65	89.92	102.79	102.73	8	BBP	93.77
66	66	93.64	106.34	106.26	9	BBP	97.22
67	67	95.97	111.01	110.92	10	BBP	99.93
68	68	88.05	102.87	102.73	10	BBP	91.59
69	69	96.65	112.13	112.02	10	BBP	101.38
70	70	96.79	110.38	110.29	10	BBP	100.52
71	71	98.01	110.85	110.76	6	BBP	101.21
72	72	91.00	109.67	109.58	10	BBP	96.33
73	73	93.80	106.48	106.39	10	BBP	96.67
74	74	97.03	114.92	114.78	9	BBP	102.61
75	75	96.66	109.46	109.35	10	BBP	100.23
76	76	90.69	103.54	103.45	10	BBP	94.39

ANC07750
BZTO104(e)007750

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-10 Client Windward Environmental Investigator

WEIGHING DATA SHEET

See page _____ for information on drying times and temperatures, standard weights,etc.

Bkr. #	Pan #	Tare wt. (mg)	Total wt. (mg) 1	Total wt. (mg) 2	no. weighed	put into pans-initials	Ash weight (mg)
77	77	91.97	99.25	99.19	8	BBP	93.14
78	78	98.47	105.17	105.11	8	BBP	99.56
79	79	91.86	104.42	104.37	9	BBP	95.06
80	80	95.84	110.08	109.96	10	GGL	100.17
81	81	98.92	114.74	114.61	10	GGL	104.09
82	82	96.17	110.02	109.90	6	GGL	100.23
83	83	99.89	112.04	111.95	6	GGL	103.01
84	84	95.06	113.96	113.84	10	GGL	101.66
85	85	97.72	113.10	113.01	9	GGL	102.19
86	86	93.13	—	—	0	GGL	—
87	87	64.47	75.68	75.59	9	GGL	67.19
88	88	96.40	108.68	108.60	9	GGL	100.67
89	89	97.90	110.04	109.97	8	GGL	101.26
90	90	98.70	106.50	108.46	6	GGL	101.85
91	91	88.22	95.95	95.92	6	GGL	91.00
92	92	101.27	110.42	110.38	7	GGL	103.77
93	93	97.29	109.21	109.15	9	GGL	100.89
94	94	94.10	98.73	98.70	7	GGL	95.28
95	95	95.16	108.91	108.85	8	GGL	99.68
96	96	109.34	128.15	128.09	9	GGL	115.87
97	97	94.69	109.85	109.81	8	GGL	99.94
98	98	93.72	110.40	110.35	9	GGL	98.21
99	99	102.30	115.74	115.70	7	GGL	106.46
100	100	100.32	119.36	119.27	10	GGL	106.88
101	101	96.25	99.51	99.48	2	GGL	97.36
102	102	97.19	110.61	110.53	9	GGL	100.81
103	103	95.02	107.20	107.15	8	GGL	98.80
104	104	92.37	103.69	103.64	7	GGL	95.31
105	105	94.67	97.49	97.46	4	GGL	95.36
106	106	91.08	109.93	109.84	9	GGL	98.14
107	107	96.14	107.56	107.55	10	GGL	99.53
108	108	69.31	80.43	80.37	11	GGL	72.15
109	109	67.02	82.26	82.26	7	GGL	71.72
110	110	94.86	111.93	111.94	7	GGL	100.06
111	111	95.93	103.04	103.04	6	GGL	97.78
112	112	95.56	115.08	115.07	10	GGL	102.82
113	113	91.49	109.91	109.90	10	GGL	98.88
114	114	88.65	108.83	108.82	9	GGL	95.26
115	115	93.76	116.53	116.50	10	GGL	102.70
116	116	95.21	108.32	108.33	10	GGL	99.34
117	117	95.57	114.54	114.54	10	GGL	101.43
118	118	92.04	104.23	104.25	10	GGL	95.53
119	119	92.20	103.97	103.96	8	GGL	95.79

ANC07751
BZTO104(e)007751

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-10 Client Windward Environmental Investigator

WEIGHING DATA SHEET

See page _____ for information on drying times and temperatures, standard weights,etc.

Bkr. #	Pan #	Tare wt. (mg)	Total wt. (mg) 1	Total wt. (mg) 2	no. weighed	put into pans-initials	Ash weight (mg)
120	120	94.22	114.44	114.42	9	GDA	101.59
121	121	92.02	111.25	111.21	9	BBP	99.08
122	122	100.29	119.70	119.68	9	BBP	106.52
123	123	85.97	101.98	101.96	10	BBP	90.71
124	124	90.22	106.16	106.14	7	BBP	95.65
125	125	91.93	106.69	106.67	8	BBP	95.36
126	126	86.86	108.42	108.37	10	BBP	93.56
127	127	86.57	98.51	98.47	9	BBP	89.39
128	128	97.13	114.84	114.84	9	BBP	102.60
129	129	92.39	112.81	112.76	8	BBP	100.01
130	130	88.32	105.45	105.41	8	BBP	93.35
131	131	95.09	112.93	112.84	9	BBP	101.01
132	132	86.53	103.68	103.56	8	BBP	91.22
133	133	98.73	110.62	110.59	7	BBP	101.58
134	134	92.30	106.18	106.16	9	BBP	96.16
135	135	87.17	104.47	104.44	8	BBP	92.95
136	136	93.30	110.48	110.43	8	BBP	99.05
137	137	88.77	109.57	109.51	9	BBP	95.19
138	138	86.12	103.08	103.09	7	BBP	91.32
139	139	90.64	112.58	112.61	9	GDA	99.76
140	140	97.18	119.69	119.74	9	GDA	105.33
141	141	91.36	105.50	105.51	6	GDA	95.83
142	142	93.98	111.74	111.75	9	GDA	100.24
143	143	99.27	116.02	116.02	7	GDA	104.88
144	144	103.78	118.60	118.61	6	GDA	108.74
145	145	92.59	112.63	112.64	8	GDA	99.87
146	146	94.15	103.87	103.86	6	GDA	97.18
147	147	93.27	108.74	108.76	6	GDA	98.42
148	148	96.72	116.49	116.48	11	GDA	102.66
149	149	96.15	116.70	116.74	8	GDA	104.37
150	150	91.65	104.94	104.96	9	GDA	96.36
151	151	85.24	102.30	102.31	9	GDA	89.88
152	152	96.89	112.10	112.10	8	GDA	102.57
153	153	95.67	117.24	117.24	10	GDA	102.84
154	154	96.22	112.35	112.39	10	GDA	101.28
155	155	95.46	113.36	113.39	9	GDA	101.95
156	156	92.56	110.19	110.21	8	GDA	99.27
157	157	97.71	101.82	101.81	3	GDA	98.76
158	158	89.96	101.19	101.18	7	GDA	93.13
159	159	90.41	97.70	97.71	8	GDA	92.14
160	160	63.49	71.08	71.08	7	GDA	65.56
161	161	99.29	118.10	118.14	9	GDA	106.54
162	162	87.80	104.34	104.38	7	GDA	93.19

ANC07752
BZTO104(e)007752

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-10 Client Windward Environmental Investigator

WEIGHING DATA SHEET

See page _____ for information on drying times and temperatures, standard weights,etc.

Bkr. #	Pan #	Tare wt. (mg)	Total wt. (mg) 1	Total wt. (mg) 2	no. weighed	put into pans-initials	Ash weight (mg)
163	163	92.08	111.45	111.47	9	[illegible]	99.84
164	164	99.62	120.88	120.88	10	BBP	107.12
165	165	100.43	118.56	118.56	10	BBP	107.66
166	166	95.32	100.32	100.31	8	BBP	96.58
167	167	95.65	112.72	112.71	8	BBP	101.54
168	168	93.38	105.04	105.03	6	BBP	97.91
169	169						
170	170						
171	171						
172	172						
173	173						
174	174						
175	175						
176	176						
177	177						
178	178						
179	179						
180	180						
181	181						
182	182						
183	183						
184	184						
185	185						
186	186						
187	187						
188	188						
189	189						
190	190						
191	191						
192	192						
193	193						
194	194						
195	195						
196	196						
197	197						
198	198						
199	199						
200	200						
201	201						
202	202						
203	203						
204	204						
205	205						

ANC07753
BZTO104(e)007753

Test Number: 686-10

Freshwater Sediment Test
10-Day Chironomus tentans

Randomization Key

BKR	NAS SMPL	CLIENT DESCRIP	REPL	
89	9403F	Control	1	
125	9403F	Control	2	
38	9403F	Control	3	
148	9403F	Control	4	
24	9403F	Control	5	
151	9403F	Control	6	
4	9403F	Control	7	
77	9403F	Control	8	wq replicate
136	9376F	LW2-G353-1	1	
60	9376F	LW2-G353-1	2	
83	9376F	LW2-G353-1	3	
112	9376F	LW2-G353-1	4	
122	9376F	LW2-G353-1	5	
43	9376F	LW2-G353-1	6	
113	9376F	LW2-G353-1	7	
165	9376F	LW2-G353-1	8	wq replicate
155	9377F	LW2-G384-1	1	
157	9377F	LW2-G384-1	2	
70	9377F	LW2-G384-1	3	
73	9377F	LW2-G384-1	4	
154	9377F	LW2-G384-1	5	
19	9377F	LW2-G384-1	6	
15	9377F	LW2-G384-1	7	
11	9377F	LW2-G384-1	8	wq replicate
26	9378F	LW2-G390	1	
51	9378F	LW2-G390	2	
105	9378F	LW2-G390	3	
94	9378F	LW2-G390	4	
108	9378F	LW2-G390	5	
22	9378F	LW2-G390	6	
111	9378F	LW2-G390	7	
159	9378F	LW2-G390	8	wq replicate
142	9379F	LW2-G387	1	
76	9379F	LW2-G387	2	
27	9379F	LW2-G387	3	
144	9379F	LW2-G387	4	
153	9379F	LW2-G387	5	
130	9379F	LW2-G387	6	
92	9379F	LW2-G387	7	
53	9379F	LW2-G387	8	wq replicate
49	9380F	LW2-G372-1	1	
81	9380F	LW2-G372-1	2	
46	9380F	LW2-G372-1	3	
10	9380F	LW2-G372-1	4	
34	9380F	LW2-G372-1	5	
25	9380F	LW2-G372-1	6	
72	9380F	LW2-G372-1	7	
102	9380F	LW2-G372-1	8	wq replicate
9	9381F	LW2-G398	1	
63	9381F	LW2-G398	2	
84	9381F	LW2-G398	3	
82	9381F	LW2-G398	4	
12	9381F	LW2-G398	5	
126	9381F	LW2-G398	6	
164	9381F	LW2-G398	7	
40	9381F	LW2-G398	8	wq replicate

ANC07754
BZTO104(e)007754

Test Number: 686-10

Freshwater Sediment Test
10-Day Chironomus tentans

BKR	NAS SMPL	CLIENT DESCRIP	REPL	
88	9382F	LW2-G492-1	1	
54	9382F	LW2-G492-1	2	
13	9382F	LW2-G492-1	3	
37	9382F	LW2-G492-1	4	
33	9382F	LW2-G492-1	5	
57	9382F	LW2-G492-1	6	
18	9382F	LW2-G492-1	7	
138	9382F	LW2-G492-1	8	wq replicate
42	9383F	LW2-G497	1	
124	9383F	LW2-G497	2	
135	9383F	LW2-G497	3	
6	9383F	LW2-G497	4	
65	9383F	LW2-G497	5	
100	9383F	LW2-G497	6	
31	9383F	LW2-G497	7	
97	9383F	LW2-G497	8	wq replicate
140	9384F	LW2-G474	1	
99	9384F	LW2-G474	2	
74	9384F	LW2-G474	3	
117	9384F	LW2-G474	4	
163	9384F	LW2-G474	5	
95	9384F	LW2-G474	6	
30	9384F	LW2-G474	7	
167	9384F	LW2-G474	8	wq replicate
52	9385F	LW2-G469	1	
79	9385F	LW2-G469	2	
90	9385F	LW2-G469	3	
103	9385F	LW2-G469	4	
3	9385F	LW2-G469	5	
104	9385F	LW2-G469	6	
141	9385F	LW2-G469	7	
48	9385F	LW2-G469	8	wq replicate
41	9386F	LW2-G458	1	
145	9386F	LW2-G458	2	
152	9386F	LW2-G458	3	
110	9386F	LW2-G458	4	
44	9386F	LW2-G458	5	
137	9386F	LW2-G458	6	
61	9386F	LW2-G458	7	
8	9386F	LW2-G458	8	wq replicate
93	9387F	LW2-G450-1	1	
132	9387F	LW2-G450-1	2	
101	9387F	LW2-G450-1	3	
162	9387F	LW2-G450-1	4	
47	9387F	LW2-G450-1	5	
121	9387F	LW2-G450-1	6	
80	9387F	LW2-G450-1	7	
168	9387F	LW2-G450-1	8	wq replicate
20	9388F	LW2-G441	1	
115	9388F	LW2-G441	2	
7	9388F	LW2-G441	3	
36	9388F	LW2-G441	4	
71	9388F	LW2-G441	5	
56	9388F	LW2-G441	6	
45	9388F	LW2-G441	7	
109	9388F	LW2-G441	8	wq replicate

ANC07755
BZTO104(e)007755

Test Number: 686-10

Freshwater Sediment Test
10-Day Chironomus tentans

BKR	NAS SMPL	CLIENT DESCRIP	REPL	
131	9389F	LW2-G444	1	
156	9389F	LW2-G444	2	
66	9389F	LW2-G444	3	
75	9389F	LW2-G444	4	
91	9389F	LW2-G444	5	
2	9389F	LW2-G444	6	
39	9389F	LW2-G444	7	
106	9389F	LW2-G444	8	wq replicate
127	9390F	LW2-G455	1	
146	9390F	LW2-G455	2	
160	9390F	LW2-G455	3	
35	9390F	LW2-G455	4	
78	9390F	LW2-G455	5	
32	9390F	LW2-G455	6	
86	9390F	LW2-G455	7	
166	9390F	LW2-G455	8	wq replicate
116	9391F	LW2-G445	1	
28	9391F	LW2-G445	2	
150	9391F	LW2-G445	3	
118	9391F	LW2-G445	4	
107	9391F	LW2-G445	5	
62	9391F	LW2-G445	6	
55	9391F	LW2-G445	7	
134	9391F	LW2-G445	8	wq replicate
16	9392F	LW2-G359	1	
120	9392F	LW2-G359	2	
58	9392F	LW2-G359	3	
149	9392F	LW2-G359	4	
5	9392F	LW2-G359	5	
139	9392F	LW2-G359	6	
50	9392F	LW2-G359	7	
17	9392F	LW2-G359	8	wq replicate
14	9393F	LW2-G321	1	
21	9393F	LW2-G321	2	
23	9393F	LW2-G321	3	
1	9393F	LW2-G321	4	
119	9393F	LW2-G321	5	
123	9393F	LW2-G321	6	
158	9393F	LW2-G321	7	
59	9393F	LW2-G321	8	wq replicate
98	9394F	LW2-G329	1	
161	9394F	LW2-G329	2	
64	9394F	LW2-G329	3	
96	9394F	LW2-G329	4	
128	9394F	LW2-G329	5	
69	9394F	LW2-G329	6	
67	9394F	LW2-G329	7	
85	9394F	LW2-G329	8	wq replicate
114	9395F	LW2-G197-1	1	
68	9395F	LW2-G197-1	2	
143	9395F	LW2-G197-1	3	
29	9395F	LW2-G197-1	4	
133	9395F	LW2-G197-1	5	
147	9395F	LW2-G197-1	6	
87	9395F	LW2-G197-1	7	
129	9395F	LW2-G197-1	8	wq replicate

ANC07756
BZTO104(e)007756

TEST DATA ANALYSIS RECORDS

Freshwater Sediment Test
10-Day Chironomus tentans

Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

ASHED DRY WT= weight of ashed pan + weight of ashed test organisms recovered at test termination
TAFDW=DRY WT - ASHED DRY WT= total ash-free organism weight for given replicate
AFDW=average individual ash-free biomass=TAFDW/WT COUNT

INITIAL WEIGHT

pan #	tare wt (mg)	final wt (mg)	wt count	avg. wt/ organism
1	92.406	98.393	20	0.20
2	102.094	105.634	20	0.18
3	104.895	108.231	20	0.17

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)		SURV	MORT	PSURV	PMORT	WT	AFDW
1	89	9403F	Control	1		10	8	2	80.0	20.0	97.90	8	109.97	101.26	12.07	1.51	8.71	1.09							
2	125	9403F	Control	2		10	8	2	80.0	20.0	91.93	8	106.67	95.36	14.74	1.84	11.31	1.41							
3	38	9403F	Control	3		10	10	0	100.0	0.0	100.33	10	115.15	103.38	14.82	1.48	11.77	1.18							
4	148	9403F	Control	4		11	11	0	100.0	0.0	96.72	11	116.48	102.66	19.76	1.80	13.82	1.26							
5	24	9403F	Control	5		10	8	2	80.0	20.0	104.29	7	118.93	106.34	14.64	2.09	12.59	1.80	Mean	8.8	1.4	86.3	13.8	1.58	1.23
6	151	9403F	Control	6		10	9	1	90.0	10.0	85.24	8	102.31	89.88	17.07	1.90	12.43	1.38	SD	1.2	0.9	9.2	9.2	0.41	0.32
7	4	9403F	Control	7		10	8	2	80.0	20.0	87.35	8	96.33	88.76	8.98	1.12	7.57	0.95	n	8	8	8	8	8	8
8	77	9403F	Control	8	wq replicate	10	8	2	80.0	20.0	91.97	8	99.19	93.14	7.22	0.90	6.05	0.76							
9	136	9376F	LW2-G353-1	1		10	8	2	80.0	20.0	93.30	8	110.43	99.05	17.13	2.14	11.38	1.42							
10	60	9376F	LW2-G353-1	2		10	10	0	100.0	0.0	99.93	10	112.30	102.94	13.37	1.34	9.36	0.94							
11	83	9376F	LW2-G353-1	3		10	6	4	60.0	40.0	99.89	6	111.95	103.01	12.06	2.01	8.94	1.49							
12	112	9376F	LW2-G353-1	4		10	10	0	100.0	0.0	95.56	10	115.07	102.82	19.51	1.95	12.25	1.23							
13	122	9376F	LW2-G353-1	5		10	9	1	90.0	10.0	100.29	9	119.68	106.52	19.39	2.15	13.16	1.46	Mean	9.1	0.9	91.3	8.8	1.85	1.23
14	43	9376F	LW2-G353-1	6		10	10	0	100.0	0.0	88.66	10	104.01	93.12	15.35	1.54	10.89	1.09	SD	1.5	1.5	14.6	14.6	0.29	0.21
15	113	9376F	LW2-G353-1	7		10	10	0	100.0	0.0	91.49	10	109.90	98.88	18.41	1.84	11.02	1.10	n	8	8	8	8	8	8
16	165	9376F	LW2-G353-1	8	wq replicate	10	10	0	100.0	0.0	100.43	10	118.56	107.66	18.13	1.81	10.90	1.09							
17	155	9377F	LW2-G384-1	1		10	9	1	90.0	10.0	95.46	9	113.39	101.95	17.93	1.99	11.44	1.27							
18	157	9377F	LW2-G384-1	2		10	3	7	30.0	70.0	97.71	3	101.81	98.76	4.10	1.37	3.05	1.02							
19	70	9377F	LW2-G384-1	3		10	10	0	100.0	0.0	96.79	10	110.29	100.52	13.50	1.35	9.77	0.98							
20	73	9377F	LW2-G384-1	4		10	10	0	100.0	0.0	93.80	10	106.39	96.67	12.59	1.26	9.72	0.97							
21	154	9377F	LW2-G384-1	5		10	10	0	100.0	0.0	99.22	10	112.39	101.28	16.17	1.62	11.11	1.11	Mean	8.3	1.8	82.5	17.5	1.56	1.13
22	19	9377F	LW2-G384-1	6		10	9	1	90.0	10.0	95.83	9	107.90	98.17	12.07	1.34	9.73	1.08	SD	2.5	2.5	24.9	24.9	0.37	0.20
23	15	9377F	LW2-G384-1	7		10	9	1	90.0	10.0	98.80	9	110.67	101.33	11.87	1.32	9.34	1.04	n	8	8	8	8	8	8
24	11	9377F	LW2-G384-1	8	wq replicate	10	6	4	60.0	40.0	91.78	6	105.26	95.93	13.48	2.25	9.93	1.66							
25	26	9376F	LW2-G390	1		10	8	2	80.0	20.0	94.03	8	99.63	94.98	5.60	0.70	4.65	0.58							
26	51	9376F	LW2-G390	2		10	10	0	100.0	0.0	100.54	10	109.29	102.51	8.75	0.88	6.76	0.68							
27	105	9376F	LW2-G390	3		10	4	6	40.0	60.0	94.67	4	97.46	95.36	2.79	0.70	2.10	0.52							
28	94	9376F	LW2-G390	4		10	7	3	70.0	30.0	94.10	7	98.70	95.28	4.60	0.66	3.42	0.49							
29	108	9376F	LW2-G390	5		11	11	0	100.0	0.0	69.31	11	80.37	72.15	11.06	1.01	8.22	0.75	Mean	7.6	2.5	75.0	25.0	0.96	0.65
30	22	9376F	LW2-G390	6		10	7	3	70.0	30.0	99.60	7	111.10	106.79	11.53	1.64	4.31	0.62	SD	2.2	2.0	20.0	20.0	0.33	0.13
31	111	9376F	LW2-G390	7		10	6	4	60.0	40.0	95.93	6	103.04	97.78	7.11	1.19	5.26	0.88	n	8	8	8	8	8	8
32	159	9376F	LW2-G390	8	wq replicate	10	8	2	80.0	20.0	90.41	8	97.71	92.14	7.30	0.91	5.57	0.70							
33	142	9379F	LW2-G387	1		10	9	1	90.0	10.0	93.98	9	111.75	100.24	17.77	1.97	11.51	1.28							
34	76	9379F	LW2-G387	2		10	10	0	100.0	0.0	90.69	10	103.45	94.39	12.76	1.28	9.06	0.91							
35	27	9379F	LW2-G387	3		10	10	0	100.0	0.0	99.29	10	112.35	102.52	13.06	1.31	9.83	0.98							
36	144	9379F	LW2-G387	4		10	7	3	70.0	30.0	103.78	6	118.61	108.74	14.83	2.47	9.87	1.65							
37	153	9379F	LW2-G387	5		10	10	0	100.0	0.0	95.67	10	117.24	102.84	21.57	2.16	14.40	1.44	Mean	8.5	1.5	85.0	15.0	1.82	1.26
38	130	9379F	LW2-G387	6		10	8	2	80.0	20.0	88.32	8	105.41	93.35	17.09	2.14	12.06	1.51	SD	1.4	1.4	14.1	14.1	0.46	0.28
39	92	9379F	LW2-G387	7		10	7	3	70.0	30.0	101.27	7	110.38	103.77	9.11	1.30	6.61	0.94	n	8	8	8	8	8	8
40	53	9379F	LW2-G387	8	wq replicate	10	7	3	70.0	30.0	100.60	7	114.33	104.58	13.73	1.96	9.75	1.39							
41	49	9380F	LW2-G372-1	1		10	10	0	100.0	0.0	103.62	10	117.04	107.24	13.42	1.34	9.80	0.98							
42	81	9380F	LW2-G372-1	2		10	10	0	100.0	0.0	98.92	10	114.61	104.09	15.69	1.57	10.52	1.05							
43	46	9380F	LW2-G372-1	3		10	10	0	100.0	0.0	98.15	10	109.21	99.90	13.06	1.31	9.41	0.94							
44	10	9380F	LW2-G372-1	4		10	10	0	100.0	0.0	84.93	10	96.98	87.89	12.05	1.21	9.09	0.91							
45	34	9380F	LW2-G372-1	5		10	10	0	100.0	0.0	87.38	10	99.99	90.86	12.61	1.26	9.13	0.91	Mean	9.6	0.4	96.3	3.8	1.50	1.09
46	25	9380F	LW2-G372-1	6		10	8	2	80.0	20.0	92.61	8	108.46	96.56	15.87	1.98	11.90	1.49	SD	0.7	0.7	7.4	7.4	0.29	0.21
47	72	9380F	LW2-G372-1	7		10	10	0	100.0	0.0	91.00	10	109.56	98.33	18.56	1.86	13.25	1.33	n	8	8	8	8	8	8
48	102	9380F	LW2-G372-1	8	wq replicate	10	9	1	90.0	10.0	97.18	9	110.53	100.81	13.34	1.48	9.72	1.08							

ANC07758
BZTO104(e)007758

Test Number: 686-10

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	ITAFDW (mg)	AFDW (mg)		SURV	MORT	PSURV	PMORT	WT	AFDW
49	9	9381F	LW2-G398	1		11	11	0	100.0	0.0	96.19	11	111.79	99.41	15.60	1.42	12.38	1.13							
50	83	9381F	LW2-G398	2		10	10	0	100.0	0.0	94.00	10	107.06	97.45	13.06	1.31	9.63	0.96							
51	84	9381F	LW2-G398	3		10	10	0	100.0	0.0	95.06	10	113.84	101.66	18.78	1.88	12.16	1.22							
52	82	9381F	LW2-G398	4		10	6	4	60.0	40.0	96.17	6	109.90	100.23	13.73	2.29	9.67	1.61							
53	12	9381F	LW2-G398	5		10	7	3	70.0	30.0	94.92	7	110.31	98.65	15.39	2.20	11.56	1.67	Mean	9.3	0.9	91.3	8.8	1.92	1.34
54	126	9381F	LW2-G398	6		10	10	0	100.0	0.0	88.86	10	108.37	93.56	21.51	2.15	14.81	1.46	SD	1.8	1.6	16.4	16.4	0.37	0.24
55	164	9381F	LW2-G398	7		10	10	0	100.0	0.0	99.62	10	120.88	107.12	21.26	2.13	13.76	1.38	n	6	6	6	6	6	6
56	40	9381F	LW2-G398	8	wq replicate	10	10	0	100.0	0.0	99.56	10	119.02	105.94	20.26	2.03	12.86	1.29							
57	88	9382F	LW2-G492-1	1		10	9	1	90.0	10.0	96.40	9	108.60	100.87	12.20	1.36	7.93	0.88							
58	54	9382F	LW2-G492-1	2		10	10	0	100.0	0.0	100.46	8	113.84	105.10	13.38	1.67	8.74	1.09							
59	13	9382F	LW2-G492-1	3		10	8	2	80.0	20.0	99.18	8	114.86	103.44	15.68	1.96	11.42	1.43							
60	37	9382F	LW2-G492-1	4		10	10	0	100.0	0.0	96.46	10	116.12	103.00	19.66	1.97	13.12	1.31							
61	33	9382F	LW2-G492-1	5		10	10	0	100.0	0.0	97.22	10	112.83	102.30	15.61	1.56	10.53	1.05	Mean	9.0	1.0	90.0	10.0	1.60	1.30
62	57	9382F	LW2-G492-1	6		10	9	1	90.0	10.0	102.80	9	117.43	103.31	14.63	1.63	14.12	1.57	SD	1.1	1.1	10.7	10.7	0.33	0.27
63	16	9382F	LW2-G492-1	7		10	9	1	90.0	10.0	90.47	9	106.95	94.20	16.48	1.83	12.75	1.42	n	6	6	6	6	6	6
64	136	9382F	LW2-G492-1	8	wq replicate	10	7	3	70.0	30.0	86.12	7	103.09	91.32	16.97	2.42	11.77	1.68							
65	42	9383F	LW2-G497	1		10	9	1	90.0	10.0	97.18	9	108.35	99.98	11.17	1.24	8.37	0.93							
66	124	9383F	LW2-G497	2		10	8	2	80.0	20.0	90.22	7	106.14	95.65	15.92	2.27	10.49	1.50							
67	135	9383F	LW2-G497	3		10	9	1	90.0	10.0	87.17	8	104.44	92.95	17.27	2.16	11.49	1.44							
68	6	9383F	LW2-G497	4		10	8	2	80.0	20.0	92.21	8	103.59	95.72	11.38	1.42	7.87	0.98							
69	85	9383F	LW2-G497	5		10	8	2	80.0	20.0	89.92	8	102.73	93.77	12.81	1.60	8.96	1.12	Mean	8.8	1.3	87.5	12.5	1.76	1.20
70	100	9383F	LW2-G497	6		10	10	0	100.0	0.0	100.32	10	119.27	106.68	18.95	1.90	12.39	1.24	SD	0.9	0.9	8.9	8.9	0.36	0.20
71	31	9383F	LW2-G497	7		10	10	0	100.0	0.0	98.88	10	114.76	103.49	15.88	1.59	11.27	1.13	n	6	6	6	6	6	6
72	97	9383F	LW2-G497	8	wq replicate	10	8	2	80.0	20.0	94.69	8	109.81	99.84	15.12	1.39	9.67	1.23							
73	140	9384F	LW2-G474	1		10	9	1	90.0	10.0	97.18	9	119.74	105.33	22.56	2.51	14.41	1.60							
74	89	9384F	LW2-G474	2		10	8	2	80.0	20.0	102.30	7	115.70	106.46	13.40	1.91	9.24	1.32							
75	74	9384F	LW2-G474	3		10	9	1	90.0	10.0	97.03	9	114.78	102.61	17.75	1.97	12.17	1.35							
76	117	9384F	LW2-G474	4		10	10	0	100.0	0.0	95.57	10	114.54	101.43	18.97	1.90	13.11	1.31							
77	183	9384F	LW2-G474	5		10	9	1	90.0	10.0	92.08	9	111.47	99.84	19.39	2.15	11.63	1.29	Mean	8.9	1.1	88.8	11.3	1.97	1.31
78	95	9384F	LW2-G474	6		10	8	2	80.0	20.0	95.16	8	108.85	99.68	13.69	1.71	9.17	1.15	SD	0.8	0.8	8.3	8.3	0.32	0.17
79	30	9384F	LW2-G474	7		10	10	0	100.0	0.0	96.59	10	110.94	100.65	14.35	1.44	10.29	1.03	n	6	6	6	6	6	6
80	167	9384F	LW2-G474	8	wq replicate	10	8	2	80.0	20.0	95.65	8	112.71	101.54	17.06	2.13	11.17	1.40							
81	52	9385F	LW2-G469	1		10	9	1	90.0	10.0	100.60	8	111.86	103.85	11.08	1.39	8.03	1.00							
82	79	9385F	LW2-G469	2		10	9	1	90.0	10.0	91.86	9	104.37	95.06	12.51	1.39	9.31	1.03							
83	90	9385F	LW2-G469	3		10	6	4	60.0	40.0	98.70	6	108.46	101.85	9.76	1.63	6.61	1.10							
84	103	9385F	LW2-G469	4		10	8	2	80.0	20.0	95.02	8	107.15	98.80	12.13	1.52	8.35	1.04							
85	3	9385F	LW2-G469	5		10	9	1	90.0	10.0	93.50	9	105.98	96.75	11.58	1.29	8.33	0.93	Mean	7.9	2.1	78.8	21.3	1.61	1.15
86	104	9385F	LW2-G469	6		10	7	3	70.0	30.0	92.37	7	103.64	95.31	11.27	1.61	8.33	1.19	SD	1.4	1.4	13.6	13.6	0.34	0.22
87	141	9385F	LW2-G469	7		10	6	4	60.0	40.0	91.36	6	105.51	95.83	14.15	2.36	9.68	1.61	n	6	6	6	6	6	6
88	46	9385F	LW2-G469	8	wq replicate	10	9	1	90.0	10.0	99.10	9	114.80	103.12	15.70	1.74	11.68	1.30							
89	41	9386F	LW2-G458	1		10	10	0	100.0	0.0	99.88	10	113.21	103.41	13.33	1.33	9.80	0.98							
90	145	9386F	LW2-G458	2		10	8	2	80.0	20.0	92.59	8	112.64	99.87	20.05	2.51	12.77	1.60							
91	152	9386F	LW2-G458	3		10	9	1	90.0	10.0	98.88	8	112.10	102.57	15.21	1.90	9.53	1.19							
92	110	9386F	LW2-G458	4		10	7	3	70.0	30.0	94.86	7	111.94	100.06	17.08	2.44	11.88	1.70							
93	44	9386F	LW2-G458	5		10	10	0	100.0	0.0	92.46	10	108.74	96.08	14.28	1.43	10.66	1.07	Mean	8.9	1.1	88.8	11.3	1.55	1.27
94	137	9386F	LW2-G458	6		10	9	1	90.0	10.0	89.77	9	109.51	95.19	20.74	2.30	14.32	1.59	SD	1.0	1.0	9.9	9.9	0.52	0.31
95	61	9386F	LW2-G458	7		10	9	1	90.0	10.0	98.85	9	109.87	101.56	11.02	1.22	8.31	0.92	n	6	6	6	6	6	6
96	8	9386F	LW2-G458	8	wq replicate	10	9	1	90.0	10.0	95.07	9	109.68	99.53	14.61	1.62	10.15	1.13							
97	93	9387F	LW2-G450-1	1		10	9	1	90.0	10.0	97.29	9	109.15	100.89	11.86	1.32	8.26	0.92							
98	132	9387F	LW2-G450-1	2		10	8	2	80.0	20.0	86.53	8	103.56	91.22	17.03	2.13	12.34	1.54							
99	101	9387F	LW2-G450-1	3		10	2	8	20.0	80.0	96.25	2	99.48	97.36	3.23	1.62	2.12	1.06							
100	162	9387F	LW2-G450-1	4		10	7	3	70.0	30.0	87.60	7	104.38	93.19	16.58	2.37	11.19	1.60							
101	47	9387F	LW2-G450-1	5		10	9	1	90.0	10.0	96.04	9	107.60	98.56	11.56	1.28	9.04	1.00	Mean	7.5	2.5	75.0	25.0	1.78	1.20
102	121	9387F	LW2-G450-1	6		10	9	1	90.0	10.0	92.02	9	111.21	99.08	19.19	2.13	12.13	1.35	SD	2.6	2.6	25.6	25.6	0.42	0.26
103	80	9387F	LW2-G450-1	7		10	10	0	100.0	0.0	95.84	10	109.96	100.17	14.12	1.41	9.79	0.98	n	6	6	6	6	6	6
104	166	9387F	LW2-G450-1	8	wq replicate	10	6	4	60.0	40.0	93.36	6	105.03	97.91	11.65	1.94	7.12	1.19							
105	20	9388F	LW2-G441	1		10	8	2	80.0	20.0	91.49	8	106.72	95.50	15.23	1.90	11.22	1.40							
106	115	9388F	LW2-G441	2		10	10	0	100.0	0.0	93.76	10	116.50	102.70	22.74	2.27	13.80	1.38							
107	7	9388F	LW2-G441	3		10	10	0	100.0	0.0	99.27	10	113.63	102.52	14.36	1.44	11.11	1.11							
108	36	9388F	LW2-G441	4		10	8	2	80.0	20.0	91.06	7	105.81	96.09	14.75	2.11	9.72	1.39							
109	71	9388F	LW2-G441	5		10	7	3	70.0	30.0	98.01	8	110.76	101.21	12.75	2.13	9.55	1.59	Mean	8.8	1.3	87.5	12.5	1.86	1.30
110	58	9388F	LW2-G441	6		10	10	0	100.0	0.0	105.02	10	119.65	109.61	14.63	1.46	10.04	1.00	SD	1.4	1.4	13.9	13.9	0.37	0.23
111	45	9388F	LW2-G441	7		10	10	0	100.0	0.0	84.15	10	98.28	88.33	14.13	1.41	9.95	1.00	n	6	6	6	6	6	6
112	109	9388F	LW2-G441	8	wq replicate	10	7	3	70.0	30.0	67.02	7	82.26	71.72	15.24	2.18	10.54	1.51							

ANC07759
BZTO104(e)007759

Test Number: 686-10

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)		SURV	MORT	PSURV	PMORT	WT	AFDW
113	131	9389F	LW2-G444	1		10	9	1	90.0	10.0	95.09	9	112.84	101.01	17.75	1.97	11.83	1.31							
114	156	9389F	LW2-G444	2		10	8	2	80.0	20.0	92.56	8	110.21	99.27	17.65	2.21	10.94	1.37							
115	66	9389F	LW2-G444	3		10	9	1	90.0	10.0	93.64	9	106.26	97.22	12.62	1.40	9.04	1.00							
116	75	9389F	LW2-G444	4		10	10	0	100.0	0.0	96.68	10	109.35	100.23	12.67	1.27	9.12	0.91							
117	91	9389F	LW2-G444	5		10	8	2	80.0	20.0	88.22	6	95.92	91.00	7.70	1.28	4.92	0.62	Mean	9.0	1.0	90.0	10.0	1.66	1.10
118	2	9389F	LW2-G444	6		10	10	0	100.0	0.0	90.96	10	103.98	95.11	13.02	1.30	8.87	0.89	SD	0.8	0.8	7.6	7.6	0.39	0.22
119	39	9389F	LW2-G444	7		10	9	1	90.0	10.0	96.29	9	112.24	101.74	15.95	1.77	10.50	1.17	n	6	6	6	6	6	6
120	105	9389F	LW2-G444	8	wq replicate	10	9	1	90.0	10.0	91.08	9	109.84	98.14	18.76	2.08	11.70	1.30							
121	127	9390F	LW2-G455	1		10	9	1	90.0	10.0	86.67	9	98.47	89.39	11.80	1.32	8.08	1.01							
122	145	9390F	LW2-G455	2		10	6	4	60.0	40.0	94.15	6	103.86	97.18	9.71	1.62	6.68	1.11							
123	160	9390F	LW2-G455	3		10	7	3	70.0	30.0	63.49	7	71.08	65.56	7.59	1.08	5.52	0.79							
124	35	9390F	LW2-G455	4		10	6	4	60.0	40.0	98.47	6	102.37	99.10	3.90	0.65	3.27	0.55							
125	78	9390F	LW2-G455	5		10	8	2	80.0	20.0	96.47	8	105.11	99.56	8.64	0.83	5.55	0.69	Mean	6.8	3.4	68.3	33.8	0.96	0.73
126	32	9390F	LW2-G455	6		10	9	1	90.0	10.0	95.39	9	100.50	96.18	5.11	0.57	4.32	0.48	SD	2.9	2.9	29.2	29.2	0.40	0.26
127	86	9390F	LW2-G455	7		10	0	10	0.0	100.0	93.13	0							n	6	6	6	6	7	7
128	168	9390F	LW2-G455	8	wq replicate	10	8	2	80.0	20.0	95.32	8	100.31	96.58	4.99	0.62	3.73	0.47							
129	118	9391F	LW2-G445	1		10	10	0	100.0	0.0	95.21	10	108.33	99.34	13.12	1.31	8.99	0.90							
130	28	9391F	LW2-G445	2		10	7	3	70.0	30.0	90.38	7	94.24	91.21	3.86	0.55	3.03	0.43							
131	150	9391F	LW2-G445	3		10	9	1	90.0	10.0	91.65	9	104.96	96.36	13.31	1.48	8.60	0.96							
132	118	9391F	LW2-G445	4		10	10	0	100.0	0.0	92.04	10	104.25	95.53	12.21	1.22	8.72	0.87							
133	107	9391F	LW2-G445	5		10	10	0	100.0	0.0	96.14	10	107.55	99.53	11.41	1.14	8.02	0.80	Mean	8.9	1.1	88.8	11.3	1.21	0.86
134	62	9391F	LW2-G445	6		10	8	2	80.0	20.0	96.25	8	102.09	97.47	5.84	0.73	4.62	0.58	SD	1.1	1.1	11.3	11.3	0.40	0.27
135	55	9391F	LW2-G445	7		10	8	2	80.0	20.0	95.61	8	109.47	99.33	13.86	1.73	10.14	1.27	n	8	8	8	8	8	8
136	134	9391F	LW2-G445	8	wq replicate	10	9	1	90.0	10.0	92.30	9	106.16	96.16	13.86	1.54	10.00	1.11							
137	16	9392F	LW2-G359	1		10	3	7	30.0	70.0	101.61	3	106.55	103.63	4.94	1.65	2.72	0.91							
138	120	9392F	LW2-G359	2		10	9	1	90.0	10.0	94.22	9	114.42	101.59	20.20	2.24	12.83	1.43							
139	58	9392F	LW2-G359	3		10	7	3	70.0	30.0	99.73	7	106.27	101.73	6.54	1.22	6.54	0.93							
140	149	9392F	LW2-G359	4		10	8	2	80.0	20.0	96.15	8	116.74	104.37	20.59	2.57	12.37	1.55							
141	5	9392F	LW2-G359	5		10	6	4	60.0	40.0	105.22	6	113.06	106.66	7.84	1.31	6.40	1.07	Mean	7.3	2.8	72.5	27.5	1.76	1.14
142	139	9392F	LW2-G359	6		10	9	1	90.0	10.0	90.64	9	112.61	99.76	21.97	2.44	12.85	1.43	SD	2.1	2.1	20.5	20.5	0.56	0.29
143	50	9392F	LW2-G359	7		10	9	1	90.0	10.0	86.14	9	99.33	89.77	13.19	1.47	9.56	1.06	n	8	8	8	8	6	6
144	17	9392F	LW2-G359	8	wq replicate	10	7	3	70.0	30.0	89.28	7	98.40	93.21	9.12	1.30	5.19	0.74							
145	14	9393F	LW2-G321	1		10	9	1	90.0	10.0	95.49	9	107.35	97.84	11.86	1.32	9.51	1.06							
146	21	9393F	LW2-G321	2		10	7	3	70.0	30.0	94.65	7	107.20	99.51	12.55	1.79	7.69	1.10							
147	23	9393F	LW2-G321	3		10	8	2	80.0	20.0	98.84	8	112.09	101.55	13.25	1.66	10.54	1.32							
148	1	9393F	LW2-G321	4		10	8	2	80.0	20.0	92.37	8	98.29	93.21	5.92	0.74	5.08	0.64							
149	119	9393F	LW2-G321	5		10	8	2	80.0	20.0	92.20	8	103.96	95.79	11.76	1.47	8.17	1.02	Mean	8.4	1.6	83.8	16.3	1.39	1.02
150	123	9393F	LW2-G321	6		10	10	0	100.0	0.0	85.97	10	101.96	90.71	15.99	1.60	11.25	1.13	SD	1.2	1.2	11.9	11.9	0.37	0.22
151	158	9393F	LW2-G321	7		10	7	3	70.0	30.0	89.96	7	101.18	93.13	11.22	1.50	8.05	1.15	n	8	8	8	8	8	8
152	59	9393F	LW2-G321	8	wq replicate	10	10	0	100.0	0.0	103.68	10	113.55	106.21	9.67	0.97	7.34	0.73							
153	98	9394F	LW2-G329	1		10	9	1	90.0	10.0	93.72	9	110.36	99.21	16.63	1.85	12.14	1.35							
154	161	9394F	LW2-G329	2		10	10	0	100.0	0.0	99.29	9	118.14	106.54	18.85	2.09	11.60	1.29							
155	64	9394F	LW2-G329	3		10	9	1	90.0	10.0	100.72	9	113.35	103.56	12.63	1.40	9.79	1.09							
156	96	9394F	LW2-G329	4		10	9	1	90.0	10.0	109.34	9	128.09	115.67	18.75	2.08	12.22	1.36							
157	128	9394F	LW2-G329	5		10	10	0	100.0	0.0	97.13	9	114.84	102.60	17.71	1.97	12.24	1.36	Mean	9.5	0.5	95.0	5.0	1.77	1.23
158	69	9394F	LW2-G329	6		10	10	0	100.0	0.0	96.65	10	112.02	101.36	15.37	1.54	10.64	1.06	SD	0.5	0.5	5.3	5.3	0.27	0.13
159	67	9394F	LW2-G329	7		10	10	0	100.0	0.0	95.97	10	110.92	99.93	14.95	1.50	10.99	1.10	n	8	8	8	8	8	8
160	85	9394F	LW2-G329	8	wq replicate	10	9	1	90.0	10.0	97.72	9	113.01	102.19	15.29	1.70	10.82	1.20							
161	114	9395F	LW2-G197-1	1		10	9	1	90.0	10.0	88.65	9	108.82	95.26	20.17	2.24	13.56	1.51							
162	68	9395F	LW2-G197-1	2		10	10	0	100.0	0.0	86.05	10	102.73	91.59	14.68	1.47	11.14	1.11							
163	143	9395F	LW2-G197-1	3		10	7	3	70.0	30.0	99.27	7	116.02	104.88	16.75	2.39	11.14	1.59							
164	29	9395F	LW2-G197-1	4		10	10	0	100.0	0.0	92.89	10	105.62	95.89	12.73	1.27	9.73	0.97							
165	133	9395F	LW2-G197-1	5		10	8	2	80.0	20.0	98.73	7	110.59	101.58	11.86	1.69	9.01	1.29	Mean	8.5	1.5	85.0	15.0	1.93	1.34
166	147	9395F	LW2-G197-1	6		10	7	3	70.0	30.0	93.27	8	108.76	98.42	15.49	2.58	10.34	1.72	SD	1.2	1.2	12.0	12.0	0.57	0.31
167	87	9395F	LW2-G197-1	7		10	9	1	90.0	10.0	64.47	9	75.59	67.19	11.12	1.24	8.40	0.93	n	8	8	8	8	8	8
168	129	9395F	LW2-G197-1	8	wq replicate	10	8	2	80.0	20.0	92.39	8	112.76	100.01	20.37	2.55	12.75	1.59							

Beakers #24, 36, 52, 64, 71, 99, 124, 128, 133, 135, 144, 147, 152, and 161 each had one pupa which was not included in the weighing. Beaker #91 had two pupae which were not included in the weighing.

Pupae are not included in the sample to estimate ash-free dry weight (as per EPA/600/R-94/064, p. 59, section 12.3.8.2)

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Test Number: 686-10

Freshwater Sediment Test
10-Day Chironomus tentans

Water Quality Data

NAS SMPL	CLIENT DESCRIP	Bulk Sediment Interstitial water NH3	pH
9403F	Control	1.6	7.0
9376F	LW2-G353-1	9.8	6.3
9377F	LW2-G384-1	16.3	6.3
9378F	LW2-G390	4.7	6.3
9379F	LW2-G387	16.1	6.2
9380F	LW2-G372-1	4.2	6.3
9381F	LW2-G398	13.2	6.2
9382F	LW2-G492-1	14.9	6.3
9383F	LW2-G497	22.2	6.3
9384F	LW2-G474	16.2	6.4
9385F	LW2-G469	15.0	6.3
9386F	LW2-G458	11.2	6.4
9387F	LW2-G450-1	15.1	6.4
9388F	LW2-G441	5.4	6.6
9389F	LW2-G444	5.3	6.4
9390F	LW2-G455	8.3	6.4
9391F	LW2-G445	0.9	6.4
9392F	LW2-G359	17.8	6.3
9393F	LW2-G321	9.1	6.6
9394F	LW2-G329	1.7	6.9
9395F	LW2-G197-1	2.7	6.5

	NAS	CLIENT			Overlying water						
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	NH3	HARD	ALK
8	9386F	LW2-G458	8	0	22.9	6.2	195	6.2	1.0	68	60
11	9377F	LW2-G384-1	8	0	22.9	6.2	175	6.3	1.4	51	40
17	9392F	LW2-G359	8	0	22.8	6.4	390	6.3	0.8	60	40
40	9381F	LW2-G398	8	0	23.0	6.6	195	6.4	1.2	51	50
48	9385F	LW2-G469	8	0	23.0	6.4	200	6.3	1.4	60	50
53	9379F	LW2-G387	8	0	22.9	6.3	200	6.2	1.4	60	60
59	9393F	LW2-G321	8	0	22.9	6.6	180	6.5	0.9	51	40
77	9403F	Control	8	0	23.0	6.4	280	6.4	<0.1	43	40
85	9394F	LW2-G329	8	0	23.0	6.2	190	6.5	0.1	51	40
97	9383F	LW2-G497	8	0	23.1	6.4	190	6.2	1.9	51	60
102	9380F	LW2-G372-1	8	0	23.0	6.2	165	6.2	0.5	51	40
106	9389F	LW2-G444	8	0	23.0	6.2	160	6.2	0.7	43	40
109	9388F	LW2-G441	8	0	23.1	6.0	170	6.3	0.6	43	50
129	9395F	LW2-G197-1	8	0	23.2	6.4	160	6.3	0.3	51	40
134	9391F	LW2-G445	8	0	23.2	6.1	155	6.3	<0.1	43	40
138	9382F	LW2-G492-1	8	0	23.2	6.2	180	6.2	1.2	60	50
159	9378F	LW2-G390	8	0	23.1	6.0	160	6.3	0.6	43	40
165	9376F	LW2-G353-1	8	0	23.1	6.0	170	6.3	0.9	43	40
166	9390F	LW2-G455	8	0	23.1	6.3	160	6.3	0.7	43	40
167	9384F	LW2-G474	8	0	23.0	6.5	200	6.2	1.2	60	60
168	9387F	LW2-G450-1	8	0	23.0	6.4	170	6.2	1.5	60	60
8	9386F	LW2-G458	8	1	23.0	5.4					
11	9377F	LW2-G384-1	8	1	23.0	5.9					
17	9392F	LW2-G359	8	1	23.0	5.7					
40	9381F	LW2-G398	8	1	23.1	6.0					
48	9385F	LW2-G469	8	1	23.1	5.8					
53	9379F	LW2-G387	8	1	23.0	5.9					
59	9393F	LW2-G321	8	1	23.0	5.5					
77	9403F	Control	8	1	22.9	5.6					
85	9394F	LW2-G329	8	1	23.1	5.7					
97	9383F	LW2-G497	8	1	23.0	5.9					
102	9380F	LW2-G372-1	8	1	22.9	6.2					
106	9389F	LW2-G444	8	1	23.0	6.0					
109	9388F	LW2-G441	8	1	23.1	6.1					

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129	9395F	LW2-G197-1	8	1	23.3	6.3										
134	9391F	LW2-G445	8	1	23.3	6.0										
138	9382F	LW2-G492-1	8	1	23.2	5.8										
159	9378F	LW2-G390	8	1	23.1	5.9										
165	9376F	LW2-G353-1	8	1	23.1	5.5										
166	9390F	LW2-G455	8	1	23.0	5.4										
167	9384F	LW2-G474	8	1	22.9	5.2										
168	9387F	LW2-G450-1	8	1	23.0	5.8										
8	9386F	LW2-G458	8	2	22.9	5.4										
11	9377F	LW2-G384-1	8	2	23.0	5.4										
17	9392F	LW2-G359	8	2	22.9	6.1										
40	9381F	LW2-G398	8	2	23.0	4.7										
48	9385F	LW2-G469	8	2	23.0	5.2										
53	9379F	LW2-G387	8	2	23.0	4.6										
59	9393F	LW2-G321	8	2	23.1	5.5										
77	9403F	Control	8	2	23.0	5.6										
85	9394F	LW2-G329	8	2	23.1	5.0										
97	9383F	LW2-G497	8	2	23.0	4.9										
102	9380F	LW2-G372-1	8	2	23.0	5.1										
106	9389F	LW2-G444	8	2	23.1	4.7										
109	9388F	LW2-G441	8	2	23.1	5.2										
129	9395F	LW2-G197-1	8	2	23.2	5.0										
134	9391F	LW2-G445	8	2	23.3	5.4										
138	9382F	LW2-G492-1	8	2	23.2	4.4										
159	9378F	LW2-G390	8	2	23.1	5.3										
165	9376F	LW2-G353-1	8	2	23.1	5.4										
166	9390F	LW2-G455	8	2	23.0	5.7										
167	9384F	LW2-G474	8	2	23.0	5.4										
168	9387F	LW2-G450-1	8	2	23.0	5.7										
8	9386F	LW2-G458	8	3	22.7	5.6										
11	9377F	LW2-G384-1	8	3	22.9	5.5										
17	9392F	LW2-G359	8	3	22.9	5.9										
40	9381F	LW2-G398	8	3	23.0	4.8										
48	9385F	LW2-G469	8	3	22.9	5.4										
53	9379F	LW2-G387	8	3	22.8	5.0										
59	9393F	LW2-G321	8	3	22.8	5.3										
77	9403F	Control	8	3	22.9	5.5										
85	9394F	LW2-G329	8	3	22.9	5.1										
97	9383F	LW2-G497	8	3	22.9	5.4										
102	9380F	LW2-G372-1	8	3	22.9	5.1										
106	9389F	LW2-G444	8	3	22.9	4.4										
109	9388F	LW2-G441	8	3	23.0	5.3										
129	9395F	LW2-G197-1	8	3	23.0	5.5										
134	9391F	LW2-G445	8	3	23.0	5.7										
138	9382F	LW2-G492-1	8	3	23.0	4.6										
159	9378F	LW2-G390	8	3	23.0	4.9										
165	9376F	LW2-G353-1	8	3	22.9	5.1										
166	9390F	LW2-G455	8	3	23.0	5.2										
167	9384F	LW2-G474	8	3	22.9	5.3										
168	9387F	LW2-G450-1	8	3	22.9	5.5										
8	9386F	LW2-G458	8	4	22.8	4.2										
11	9377F	LW2-G384-1	8	4	22.9	4.2										
17	9392F	LW2-G359	8	4	22.8	4.4										
40	9381F	LW2-G398	8	4	22.9	4.4										
48	9385F	LW2-G469	8	4	22.9	4.4										
53	9379F	LW2-G387	8	4	22.8	3.8										
59	9393F	LW2-G321	8	4	22.9	4.2										
77	9403F	Control	8	4	22.9	4.8										
85	9394F	LW2-G329	8	4	22.9	5.0										
97	9383F	LW2-G497	8	4	22.9	3.9										
102	9380F	LW2-G372-1	8	4	22.9	4.3										
106	9389F	LW2-G444	8	4	23.0	5.0										
109	9388F	LW2-G441	8	4	22.9	4.6										
129	9395F	LW2-G197-1	8	4	23.0	3.9										

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134	9391F	LW2-G445	8	4	23.0	4.1									
138	9382F	LW2-G492-1	8	4	23.0	4.2									
159	9378F	LW2-G390	8	4	22.9	4.8									
165	9376F	LW2-G353-1	8	4	22.9	4.9									
166	9390F	LW2-G455	8	4	22.9	5.2									
167	9384F	LW2-G474	8	4	22.9	4.3									
168	9387F	LW2-G450-1	8	4	22.9	4.4									
8	9386F	LW2-G458	8	5	22.6	4.0	6.5								
11	9377F	LW2-G384-1	8	5	22.8	3.6	6.5								
17	9392F	LW2-G359	8	5	22.8	3.0	6.4								
40	9381F	LW2-G398	8	5	22.8	4.2	6.4								
48	9385F	LW2-G469	8	5	22.8	3.4	6.4								
53	9379F	LW2-G387	8	5	22.8	3.4	6.4								
59	9393F	LW2-G321	8	5	22.9	4.2	6.4								
77	9403F	Control	8	5	22.8	4.2	6.4								
85	9394F	LW2-G329	8	5	22.9	4.6	6.4								
97	9383F	LW2-G497	8	5	22.9	4.2	6.3								
102	9380F	LW2-G372-1	8	5	22.9	4.1	6.2								
106	9389F	LW2-G444	8	5	23.0	4.7	6.2								
109	9388F	LW2-G441	8	5	23.0	4.2	6.2								
129	9395F	LW2-G197-1	8	5	23.1	4.1	6.2								
134	9391F	LW2-G445	8	5	23.1	3.3	6.1								
138	9382F	LW2-G492-1	8	5	22.9	3.4	6.1								
159	9378F	LW2-G390	8	5	22.9	4.4	6.3								
165	9376F	LW2-G353-1	8	5	23.1	4.3	6.3								
166	9390F	LW2-G455	8	5	23.1	5.0	6.2								
167	9384F	LW2-G474	8	5	23.0	4.2	6.2								
168	9387F	LW2-G450-1	8	5	23.1	4.0	6.2								
8	9386F	LW2-G458	8	6	22.6	3.8									
11	9377F	LW2-G384-1	8	6	22.7	4.0									
17	9392F	LW2-G359	8	6	22.6	2.8									
40	9381F	LW2-G398	8	6	22.8	4.6									
48	9385F	LW2-G469	8	6	22.8	3.1									
53	9379F	LW2-G387	8	6	22.7	3.6									
59	9393F	LW2-G321	8	6	22.7	4.3									
77	9403F	Control	8	6	22.7	3.9									
85	9394F	LW2-G329	8	6	22.7	4.3									
97	9383F	LW2-G497	8	6	22.7	4.2									
102	9380F	LW2-G372-1	8	6	22.7	4.2									
106	9389F	LW2-G444	8	6	22.7	4.1									
109	9388F	LW2-G441	8	6	22.7	4.4									
129	9395F	LW2-G197-1	8	6	22.8	4.8									
134	9391F	LW2-G445	8	6	22.8	3.6									
138	9382F	LW2-G492-1	8	6	22.8	3.6									
159	9378F	LW2-G390	8	6	22.7	4.5									
165	9376F	LW2-G353-1	8	6	23.1	4.5									
166	9390F	LW2-G455	8	6	23.1	4.8									
167	9384F	LW2-G474	8	6	23.1	4.0									
168	9387F	LW2-G450-1	8	6	23.2	4.1									
8	9386F	LW2-G458	8	7	22.8	4.5									
11	9377F	LW2-G384-1	8	7	22.8	4.6									
17	9392F	LW2-G359	8	7	22.8	3.9									
40	9381F	LW2-G398	8	7	22.8	5.2									
48	9385F	LW2-G469	8	7	22.8	4.4									
53	9379F	LW2-G387	8	7	22.8	4.2									
59	9393F	LW2-G321	8	7	22.8	4.1									
77	9403F	Control	8	7	22.9	4.6									
85	9394F	LW2-G329	8	7	22.8	4.4									
97	9383F	LW2-G497	8	7	22.9	4.5									
102	9380F	LW2-G372-1	8	7	22.9	4.6									
106	9389F	LW2-G444	8	7	22.9	4.4									
109	9388F	LW2-G441	8	7	22.9	4.7									
129	9395F	LW2-G197-1	8	7	22.9	5.2									
134	9391F	LW2-G445	8	7	22.9	4.4									

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138	9382F	LW2-G492-1	8	7	22.9	4.3										
159	9378F	LW2-G390	8	7	22.8	5.1										
165	9376F	LW2-G353-1	8	7	22.8	5.4										
166	9390F	LW2-G455	8	7	22.9	4.3										
167	9384F	LW2-G474	8	7	22.8	4.4										
168	9387F	LW2-G450-1	8	7	22.8	4.3										
8	9386F	LW2-G458	8	8	23.1	5.1										
11	9377F	LW2-G384-1	8	8	23.0	5.4										
17	9392F	LW2-G359	8	8	23.0	4.8										
40	9381F	LW2-G398	8	8	22.8	5.4										
48	9385F	LW2-G469	8	8	22.8	4.6										
53	9379F	LW2-G387	8	8	22.8	5.4										
59	9393F	LW2-G321	8	8	22.8	5.4										
77	9403F	Control	8	8	22.8	5.4										
85	9394F	LW2-G329	8	8	22.8	4.7										
97	9383F	LW2-G497	8	8	22.9	6.0										
102	9380F	LW2-G372-1	8	8	22.9	5.4										
106	9389F	LW2-G444	8	8	22.9	5.6										
109	9388F	LW2-G441	8	8	22.8	5.6										
129	9395F	LW2-G197-1	8	8	22.8	6.1										
134	9391F	LW2-G445	8	8	22.8	6.1										
138	9382F	LW2-G492-1	8	8	22.7	5.9										
159	9378F	LW2-G390	8	8	22.6	6.1										
165	9376F	LW2-G353-1	8	8	22.7	6.1										
166	9390F	LW2-G455	8	8	22.6	5.9										
167	9384F	LW2-G474	8	8	22.6	5.2										
168	9387F	LW2-G450-1	8	8	22.6	5.4										
8	9386F	LW2-G458	8	9	22.5	5.2										
11	9377F	LW2-G384-1	8	9	22.5	5.3										
17	9392F	LW2-G359	8	9	22.4	4.6										
40	9381F	LW2-G398	8	9	22.4	5.3										
48	9385F	LW2-G469	8	9	22.4	5.3										
53	9379F	LW2-G387	8	9	22.4	4.5										
59	9393F	LW2-G321	8	9	22.3	5.3										
77	9403F	Control	8	9	22.4	4.5										
85	9394F	LW2-G329	8	9	22.3	6.6										
97	9383F	LW2-G497	8	9	22.4	5.3										
102	9380F	LW2-G372-1	8	9	22.4	5.3										
106	9389F	LW2-G444	8	9	22.5	5.8										
109	9388F	LW2-G441	8	9	22.5	6.2										
129	9395F	LW2-G197-1	8	9	22.4	5.9										
134	9391F	LW2-G445	8	9	22.4	5.9										
138	9382F	LW2-G492-1	8	9	22.4	6.0										
159	9378F	LW2-G390	8	9	22.3	6.3										
165	9376F	LW2-G353-1	8	9	22.3	6.3										
166	9390F	LW2-G455	8	9	22.2	5.9										
167	9384F	LW2-G474	8	9	22.2	5.7										
168	9387F	LW2-G450-1	8	9	22.2	5.3										
8	9386F	LW2-G458	8	10	23.2	4.6	175	6.2	0.8	43	50					
11	9377F	LW2-G384-1	8	10	23.2	5.0	175	6.2	0.8	51	40					
17	9392F	LW2-G359	8	10	23.2	4.1	200	6.1	0.7	43	50					
40	9381F	LW2-G398	8	10	23.2	5.4	175	6.2	0.7	43	50					
48	9385F	LW2-G469	8	10	23.1	4.3	175	6.1	0.8	43	40					
53	9379F	LW2-G387	8	10	23.1	4.2	180	6.1	0.7	51	40					
59	9393F	LW2-G321	8	10	23.1	5.0	165	6.2	0.6	43	40					
77	9403F	Control	8	10	23.1	4.2	180	6.2	0.4	43	50					
85	9394F	LW2-G329	8	10	23.2	6.5	170	6.2	0.2	43	40					
97	9383F	LW2-G497	8	10	23.1	4.9	175	6.2	0.7	43	50					
102	9380F	LW2-G372-1	8	10	23.1	5.0	170	6.2	0.6	51	40					
106	9389F	LW2-G444	8	10	23.2	4.9	175	6.2	0.7	43	40					
109	9388F	LW2-G441	8	10	23.1	5.4	175	6.2	0.6	43	40					
129	9395F	LW2-G197-1	8	10	23.2	5.3	170	6.2	0.3	51	40					
134	9391F	LW2-G445	8	10	23.2	5.1	170	6.2	0.4	43	50					
138	9382F	LW2-G492-1	8	10	23.1	4.8	175	6.2	0.5	43	40					

ANC07764
BZTO104(e)007764

159	9378F	LW2-G390	8	10	23.1	5.5	170	6.3	0.6	43	40				
165	9376F	LW2-G353-1	8	10	23.1	5.6	170	6.3	0.6	43	40				
166	9390F	LW2-G455	8	10	23.1	5.7	170	6.2	0.4	43	50				
167	9384F	LW2-G474	8	10	23.1	4.4	175	6.2	0.6	43	50				
168	9387F	LW2-G450-1	8	10	23.1	5.1	175	6.2	0.6	43	40				
				Mean	22.9	5.1	184	6.3	---	48	45		10.1	6.4	
				SD	0.2	0.8	38	0.1	---	7	7		6.3	0.2	
				n	231	231	42	63	42	42	42		21	21	
				Min	22.2	2.8	155	6.1	<0.1	43	40		0.9	6.2	
				Max	23.3	6.6	390	6.5	1.9	68	60		22.2	7.0	

ANC07765
BZTO104(e)007765

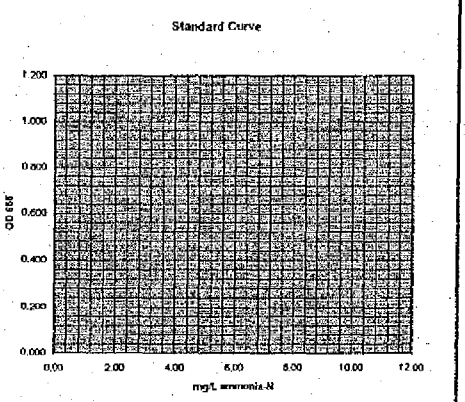
AMMONIA EXPOSURE BENCHSHEETS AND ANALYSIS

Total Ammonia-N in Sediment Pore Water: Computation Worksheet

Salicylate Method (SOP #5492)

Result

	Sample description	Dilution factor	OD655	NH_3-N (mg/L)	pH	Salinity (ppt)
	Blank	-----	-----	-----	7	
	1.0 mg/L NH_3-N Std.	-----	.097	1.00	.09	
	3.0 mg/L NH_3-N Std.	-----	.291	3.00	.29	0
	6.0 mg/L NH_3-N Std.	-----	.580	6.00	.58	0
	10.0 mg/L NH_3-N Std.	-----	.940	10.00	.94	0
	3.0 mg/L spike	-----	.296		.296	
	3.0 mg/L spike dupl.	-----	.292		.292	
1.	9376F	5	.185		6.3	
2.	9377F	5	.310		6.3	
3.	9378F	5	.090		6.3	
4.	9379F	5	.205		6.2	
5.	9380F	5	.080		6.3	
6.	9381F	5	.250		6.2	
7.	9382F	5	.282		6.3	
8.	9383F	5	.422		6.3	
9.	9384F	5	.307		6.4	
10.	9385F	5	.285		6.3	
11.	9386F	5	.213		6.4	
12.	9387F	5	.287		6.4	
13.	9388F	5	.102		6.6	
14.	9389F	5	.100		6.4	
15.	9390F	5	.158		6.4	
16.	9391F	5	.017		6.4	
17.	9392F	5	.337		6.3	
18.	9393F	5	.172		6.6	
19.	9394F	5	.032		6.9	
20.	9395F	5	.051		6.5	
21.	9403F	5	.030		7.0	
22.		5				
23.		5				
24.		5				
25.		5				
26.		5				
27.		5				
28.		5				
29.		5				
30.		5				
31.		5				
32.		5				
33.		5				
34.		5				
35.		5				
36.		5				



Reporting limit (mg/L) =	0.5
Recovery (%) =	#VALUE!
Precision (RPD) =	#VALUE!
Sample volume (ml):	0.10
Dilution factor	5

Sample Set Description:

Proj. No.: 686
Bulk sediment porewaters
Batch 5

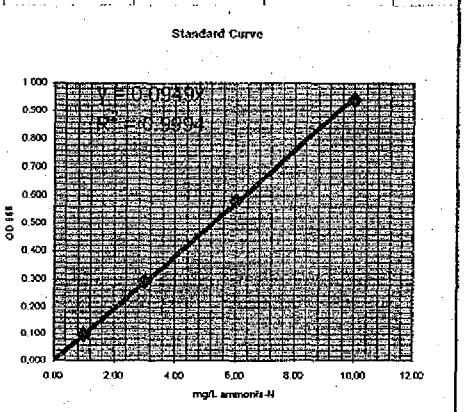
Analyst:	RSC
Date analysed:	9/2/2004

ANC07767
BZTO104(e)007767

Total Ammonia-N in Sediment Pore Water: Computation Worksheet

Salicylate Method (SOP #5492)

Result	Sample description	Dilution factor	OD_{655}	NH_3-N (mg/L)	pH	Salinity (ppt)
	Blank	-----	----	-----		
	1.0 mg/L NH_3-N Std.	-----	0.097	1.00		
	3.0 mg/L NH_3-N Std.	-----	0.291	3.00		
	6.0 mg/L NH_3-N Std.	-----	0.580	6.00		
	10.0 mg/L NH_3-N Std.	-----	0.940	10.00		
	3.0 mg/L spike	-----	0.296	3.12		
	3.0 mg/L spike dupl.	-----	0.292	3.08		
1.	9376F	5	0.185	9.75		
2.	9377F	5	0.310	16.34		
3.	9378F	5	0.090	4.74		
4.	9379F	5	0.305	16.07		
5.	9380F	5	0.080	4.22		
6.	9381F	5	0.250	13.17		
7.	9382F	5	0.282	14.86		
8.	9383F	5	0.422	22.24		
9.	9384F	5	0.307	16.18		
10.	9385F	5	0.285	15.02		
11.	9386F	5	0.213	11.22		
12.	9387F	5	0.287	15.12		
13.	9388F	5	0.102	5.38		
14.	9389F	5	0.100	5.27		
15.	9390F	5	0.158	8.33		
16.	9391F	5	0.017	0.90		
17.	9392F	5	0.337	17.76		
18.	9393F	5	0.172	9.06		
19.	9394F	5	0.032	1.69		
20.	9395F	5	0.051	2.69		
21.	9403F	5	0.030	1.58		
22.		5				
23.		5				
24.		5				
25.		5				
26.		5				
27.		5				
28.		5				
29.		5				
30.		5				
31.		5				
32.		5				
33.		5				
34.		5				
35.		5				
36.		5				



Reporting limit (mg/L) =	0.5
Recovery (%) =	103.3
Precision (RPD) =	1.36
Sample volume (ml):	0.10
Dilution factor	5

Sample Set Description:

Proj. No.: 686

Bulk sediment porewaters

Batch 5

Analyst: RSC

Date analysed: 9/2/2004

ANC07768
BZTO104(e)007768

Total Ammonia-N in Water: Computation Worksheet

Salicylate Method (SOP #5492)

Result

	Sample description	Dilution factor	OD655	NH3-N (mg/L)
	Blank	----	----	----
	1.0 mg/L NH3-N Std.	----	.100	1.00
	3.0 mg/L NH3-N Std.	----	.293	3.00
	6.0 mg/L NH3-N Std.	----	.575	6.00
	10.0 mg/L NH3-N Std.	----	.940	10.00
	3.0 mg/L spike	----	.298	
	3.0 mg/L spike dupl.	----	.282	
1.	8	1	.090	
2.	11	1	.134	
3.	17	1	.074	
4.	40	1	.116	
5.	48	1	.133	
6.	53	1	.131	
7.	59	1	.084	
8.	77	1	.008	
9.	85	1	.010	
10.	97	1	.180	
11.	102	1	.046	
12.	106	1	.067	
13.	109	1	.058	
14.	129	1	.027	
15.	134	1	.008	
16.	138	1	.110	
17.	159	1	.053	
18.	165	1	.088	
19.	166	1	.170	
20.	167	1	.171	
21.	168	1	.141	
22.				
23.				
24.				
25.				
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27.				
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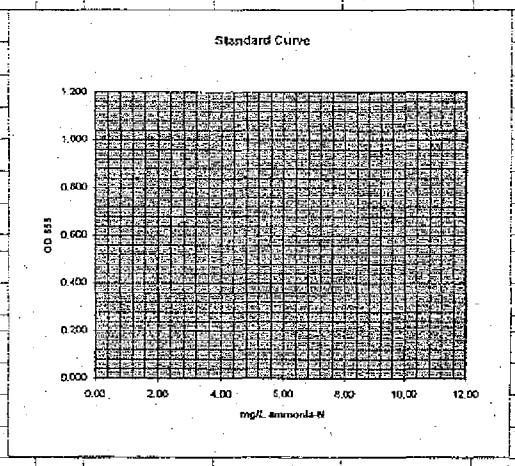
31.				
32.				
33.				
34.				
35.				
36.				



Reporting limit (mg/L) =	0.1
Recovery (%) =	#VALUE!
Precision (RPD) =	#VALUE!
Sample volume (ml):	0.50
Dilution factor	1

Sample Set Description:

Test No.:	686-10
Test Day:	0 (9-03-04)
Species:	*Chironomus*
Overlying water	
Analyst:	RSC
Date analysed:	9/3/2004

ANC07769
BZTO104(e)007769

Total Ammonia-N in Water: Computation Worksheet

Salicylate Method (SOP #5492)

Result

	Sample description	Dilution factor	OD_{655}	NH_3-N (mg/L)
	Blank	-----	----	----
	1.0 mg/L NH_3-N Std.	-----	0.100	1.00
	3.0 mg/L NH_3-N Std.	-----	0.293	3.00
	6.0 mg/L NH_3-N Std.	-----	0.575	6.00
	10.0 mg/L NH_3-N Std.	-----	0.940	10.00
	3.0 mg/L spike	-----	0.298	3.15
	3.0 mg/L spike dupl.	-----	0.282	2.98
1.	8	1	0.090	0.95
2.	11	1	0.134	1.41
3.	17	1	0.074	0.78
4.	40	1	0.116	1.22
5.	48	1	0.133	1.40
6.	53	1	0.131	1.38
7.	59	1	0.084	0.89
8.	77	1	0.008	ND
9.	85	1	0.010	0.11
10.	97	1	0.180	1.90
11.	102	1	0.046	0.49
12.	106	1	0.067	0.71
13.	109	1	0.058	0.61
14.	129	1	0.027	0.29
15.	134	1	0.008	ND
16.	138	1	0.110	1.16
17.	159	1	0.053	0.56
18.	165	1	0.088	0.93
19.	166	1	0.070	0.74
20.	167	1	0.111	1.17
21.	168	1	0.141	1.49
22.				
23.				
24.				
25.				
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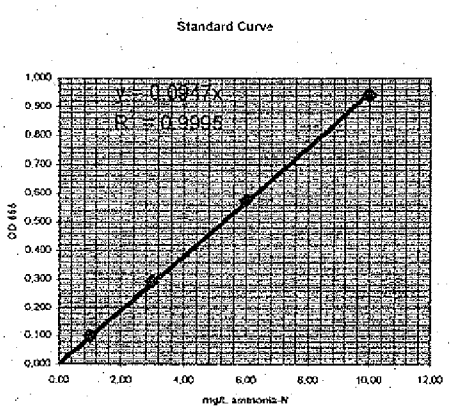
32.				
33.				
34.				
35.				
36.				



Reporting limit (mg/L) =	0.1
Recovery (%) =	102.0
Precision (RPD) =	5.52
Sample volume (ml):	0.50
Dilution factor	1

Sample Set Description:

Test No.:	686-10
Test Day:	0 (9-03-04)
Species:	*Chironomus*
	Overlying water
Analyst:	RSC
Date analysed:	9/3/2004

Total Ammonia-N in Water: Computation Worksheet

Salicylate Method (SOP #5492)

Result

	Sample description	Dilution factor	OD655	NH_3-N (mg/L)
	Blank	----	----	----
	1.0 mg/L NH_3-N Std.	----	.092	1.00
	3.0 mg/L NH_3-N Std.	----	.256	3.00
	6.0 mg/L NH_3-N Std.	----	.570	6.00
	10.0 mg/L NH_3-N Std.	----	.850	10.00
	3.0 mg/L spike	----	.260	
	3.0 mg/L spike dupl.	----	.264	
1.	8	1	.065	
2.	11	1	.070	
3.	17	1	.060	
4.	40	1	.055	
5.	48	1	.070	
6.	53	1	.058	
7.	59	1	.050	
8.	77	1	.037	
9.	85	1	.016	
10.	97	1	.055	
11.	102	1	.047	
12.	106	1	.061	
13.	109	1	.048	
14.	129	1	.026	
15.	134	1	.032	
16.	138	1	.046	
17.	159	1	.048	
18.	165	1	.048	
19.	166	1	.037	
20.	167	1	.054	
21.	168	1	.049	
22.				
23.				
24.				
25.				
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31.				
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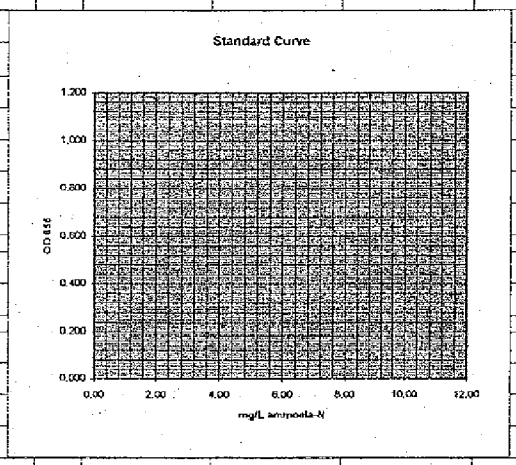
35.				
36.				



Reporting limit (mg/L) =	0.1
Recovery (%) =	#VALUE!
Precision (RPD) =	#VALUE!
Sample volume (ml):	0.50
Dilution factor	1

Sample Set Description:

Test No.:	686-10
Test Day:	10 (9-13-04)
Species:	*Chironomus*
Overlying water	
Analyst:	RSC
Date analysed:	9/14/2004

Total Ammonia-N in Water: Computation Worksheet

Salicylate Method (SOP #5492)

Result

	Sample description	Dilution factor	OD_{655}	NH_3-N (mg/L)
	Blank	-----	-----	-----
	1.0 mg/L NH_3-N Std.	-----	0.092	1.00
	3.0 mg/L NH_3-N Std.	-----	0.256	3.00
	6.0 mg/L NH_3-N Std.	-----	0.510	6.00
	10.0 mg/L NH_3-N Std.	-----	0.850	10.00
	3.0 mg/L spike	-----	0.260	3.06
	3.0 mg/L spike dupl.	-----	0.264	3.10
1.	8	1	0.065	0.76
2.	11	1	0.070	0.82
3.	17	1	0.060	0.71
4.	40	1	0.055	0.65
5.	48	1	0.070	0.82
6.	53	1	0.058	0.68
7.	59	1	0.050	0.59
8.	77	1	0.037	0.43
9.	85	1	0.016	0.19
10.	97	1	0.058	0.68
11.	102	1	0.047	0.55
12.	106	1	0.061	0.72
13.	109	1	0.048	0.56
14.	129	1	0.026	0.31
15.	134	1	0.032	0.38
16.	138	1	0.046	0.54
17.	159	1	0.048	0.56
18.	165	1	0.048	0.56
19.	166	1	0.037	0.43
20.	167	1	0.054	0.63
21.	168	1	0.049	0.58
22.				
23.				
24.				
25.				
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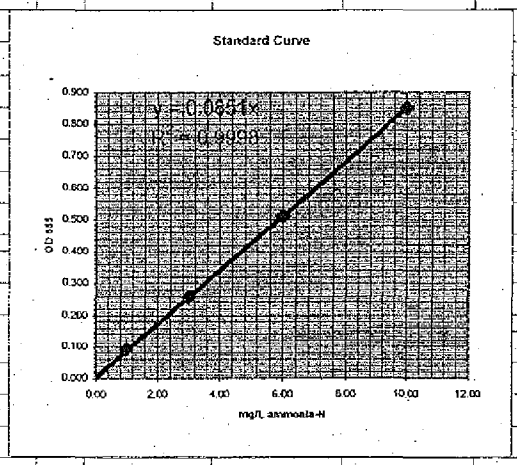

Reporting limit (mg/L) =	0.1
Recovery (%) =	102.7
Precision (RPD) =	-1.53
Sample volume (ml):	0.50
Dilution factor	1

Sample Set Description:

Test No.:	686-10
Test Day:	10 (9-13-04)
Species:	*Chironomus*
Overlying water	
Analyst:	RSC
Date analysed:	9/14/2004

CHAIN-OF-CUSTODY RECORDS

Windward Environmental

CHAIN-OF-CUSTODY/TEST REQUEST FORM

1325

Project/Client Name: PORTLAND HARBOR RI/FS ROUND 2
Windward Project No: 03.28.04.28
Contact Name: HELLE ANDERSEN
Sampled By: THAI DO

Ship to: NORTHWEST AQUATIC SCIENCES
Attn: GERALD IRISSARRI
Shipping address: NEWPORT, OREGON

Shipping Date: HAND DELIVERED
Airbill Number: ———

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required)							Comments / Instructions [Jar tag number(s)]
					10-day Chir.	28-day Hy.						
08.23.04	10:24	LW2-G353-1	4L/4	SEDIMENT	✓	✓			NAS#	9376F		INTERNAL TEMP OF
08.23.04	12:06	LW2-G384-1	4L/4	SEDIMENT	✓	✓				9377F		ICE CHESTS AT LAB
08.23.04	12:57	LW2-G390	4L/4	SEDIMENT	✓	✓				9378F		RECEIPT:
08.23.04	13:19	LW2-G387	4L/4	SEDIMENT	✓	✓				9379F		#1 2.5°C
08.24.04	09:07	LW2-G372-1	4L/4	SEDIMENT	✓	✓				9380F		#2 1.0°C
08.24.04	10:37	LW2-G398	4L/4	SEDIMENT	✓	✓				9381F		#3 3.5°C
08.24.04	11:31	LW2-G492-1	4L/4	SEDIMENT	✓	✓				9382F		#4 2.5°C
08.24.04	12:43	LW2-G497	4L/4	SEDIMENT	✓	✓				9383F		#6 2.0°C
08.24.04	13:17	LW2-G474	4L/4	SEDIMENT	✓	✓				9384F		#7 2.5°C
08.24.04	13:39	LW2-G469	4L/4	SEDIMENT	✓	✓				9385F		
08.24.04	15:03	LW2-G458	4L/4	SEDIMENT	✓	✓				9386F		
08.25.04	08:56	LW2-G450-1	4L/4	SEDIMENT	✓	✓				9387F		
08.25.04	09:36	LW2-G441	4L/4	SEDIMENT	✓	✓				9388F		
		Total Number of Containers	52/80	Purchase Order / Statement of Work #								

1) Released by: THAI DO
Print name:
Signature:
Company: WINDWARD ENVIRONMENTAL LLC
Date/Time: 08.26.04/10:10

1) Rec'd by: GERALD IRISSARRI
Company: NORTHWESTERN AQUATIC SCIENCES
Date/Time: 8-26-04 1010 HRS

2) Released by:
Print name:
Signature:
Company:
Date/Time:

1) Rec'd by:
Company:
Date/Time:

* Distribution: White and yellow copies accompany shipment; pink-consignor's copy; white-consignee return with results; yellow-consignee's copy.
* Instructions for completion of Chain-of-Custody/Test Request Form on back.

Wind Ward environmental LLC
• 200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: 206.378.1364
Fax: 206.217.0089

To be completed by Laboratory upon sample receipt:

Date of receipt:	Laboratory WO #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

ANC07774
BZT0104(e)007774

2 of 2

Windward Environmental

CHAIN-OF-CUSTODY/TEST REQUEST FORM

1326

Project/Client Name: PORTLAND HARBOR RI/FS ROUND 2
Windward Project No: 03.28.04.28
Contact Name: HELLE ANDERSEN
Sampled By: THAI DO

Ship to: NORTHWEST AQUATIC SCIENCES
Attn: GERALD IRISSARRI
Shipping address: NEWPORT, OREGON

Shipping Date: HAND DELIVERED
Airbill Number: —

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required)							Comments / Instructions [Jar tag number(s)]
					10-day Chir.	28-day Hy.						
08.25.04	09:56	LW2-G444	4L/4	SEDIMENT	✓	✓			NAS#	9389F		
08.25.04	10:30	LW2-G455	4L/4	SEDIMENT	✓	✓				9390F		
08.25.04	11:16	LW2-G445	4L/4	SEDIMENT	✓	✓				9391F		
08.25.04	11:47	LW2-G359	4L/4	SEDIMENT	✓	✓				9392F		
08.25.04	13:47	LW2-G321	4L/4	SEDIMENT	✓	✓				9393F		
08.25.04	14:06	LW2-G329	4L/4	SEDIMENT	✓	✓				9394F		
08.25.04	15:05	LW2-G197-1	4L/4	SEDIMENT	✓	✓				9395F		
		Total Number of Containers	28/80	Purchase Order / Statement of Work #								

1) Released by:	1) Rec'd by:	2) Released by:	1) Rec'd by:
Print name: THAI DO	Print name: GERALD IRISSARRI	Print name:	
Signature:	Signature:	Signature:	
Company: WINDWARD ENVIRONMENTAL LLC	Company: NORTHWESTERN AQUATIC SCIENCES	Company:	Company:
Date/Time: 08.26.04/10:10	Date/Time: 8-26-04 1010 HRS	Date/Time:	Date/Time:

* Distribution: White and yellow copies accompany shipment; pink-consignor's copy; white-consignee return with results; yellow-consignee's copy.
* Instructions for completion of Chain-of-Custody/Test Request Form on back.

Wind Ward environmental LLC
• 200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: 206.378.1364
Fax: 206.217.0089

To be completed by Laboratory upon sample receipt:

Date of receipt:	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

page 37 of 37

ANC07775
BZTO104(e)007775

APPENDIX II

RAW DATA – REFERENCE TOXICANT TEST

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS- _____

ACUTE TOXICITY TEST (ALL SPECIES)

REVIEWED KT PAGES 1-6 GJI 11-14-04

Test No. 999-1837 Client: QC Test Investigator _____

Test Type (rangefinding/definitive) _____ Test Length (hr) 96

Species *Chironomus tentans*

STUDY MANAGEMENT

Client: QC test

Client's Study Monitor: QC test

Testing Laboratory: Northwestern Aquatic Sciences

Test Location: Newport Laboratory

Laboratory's Study Personnel:

Proj. Man./Study Dir. G.J. Irissarri GJI

QA Officer L. K. Nemeth LKN

1. GA Buhler GAB 2. M.S. Redmond MSR

3. _____ 4. _____

Study Schedule:

Test Beginning: 9-3-04 1150 Test Ending: 9-7-04 1230

TEST MATERIAL

Description: Potassium Chloride Crystals - Fisher Lot No.: 006829

NAS Sample No.				
Date of Collection:				
Date of Receipt:				
Temperature (deg C):				
Dissolved oxygen (mg/L):				
pH:				
Conductivity (umhos/cm):				
Hardness (mg/L):				
Alkalinity (mg/L):				
Salinity (ppt):				
Total chlorine (mg/L):				
Total ammonia-N (mg/L):				
_____:				

DILUTION WATER

Description: Moderately hard synthetic water

Date of Preparation/Collection: 9-2-04

Water Quality: Cond. (umhos/cm): 290 Salinity (ppt) _____ pH 7.5

Hardness (mg/L as $CaCO_3$): 85 Alkalinity (mg/L as $CaCO_3$): 70

Treatments: Aerated ≥ 24 hrs

TEST LOCATION

Test conducted in (circle one): room 1 (room 2) trailer water bath other: _____

Randomization chart:

10	10	2.5	2.5	1.25	10	ϕ	2.5	10	20
20	ϕ	10	1.25	ϕ	2.5	20	1.25	ϕ	2.5
1.25	1.25	5	ϕ	2.5	20	1.25	5	20	5
2.5	20	ϕ	10	5	1.25	2.5	20	1.25	10
ϕ	2.5	20	5	20	5	10	ϕ	5	1.25
5	5	1.25	20	10	ϕ	5	10	2.5	ϕ

Error codes: 1) Correction of handwriting error
2) Written in wrong location; entry deleted
3) Wrong date deleted; replaced with correct date
4) Error found in measurement; measurement repeated

Revised 12-5-01

ANC07777
BZTO104(e)007777

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-_____

ACUTE TOXICITY TEST (ALL SPECIES)

Test No. 999-1837 Client QC Test Investigator _____

TEST ORGANISMS

Species: *Chironomus tentans* Age: _____ Size: 3rd instar

Source: NAS CULTURES Date received: —

Acclimation Data:

Date	Temp. (deg.C)	DO (mg/L)	pH	Cond. umhos/cm	Hardness (mg/L)	Alkalinity (mg/L)	Feeding Amount	Feeding description*	Water changes
8-23-04	24.0	7.4	7.1	275			ANIMALS FED TETRA CULTURE		
8-25-04	23.7	7.9	7.1	265	85	70	FIN	AND SELENASTRUM	TANKS
8-27-04	24.1	8.0	7.4	290					CHANGED
8-30-04	24.0	6.0	6.9	320			DETAILS RECORDED		TWICE
9-1-04	24.0	6.6	6.9	315	111	90	ON CHIRONOMID		DAILY
9-3-04	23.2	7.4	7.0	290	51	70	CULTURE DATA		
Mean	23.8	7.2	7.1	293	82	77	SHEETS		
S.D.	0.3	0.8	0.2	22	30	12			
(N)	6	6	6	6	3	3			

Photoperiod during acclimation: 16:8, L:D *S=*Selenastrum*, T=Tetra Fin suspension

TEST PROCEDURES AND CONDITIONS

Test concentrations (50% series recommended): 20, 10, 5, 2.5, 1.25, 0 g/L

Test chamber: 30 ml plastic cups Test volume: 20 ml

Replicates/treatment: 10 Organisms/treatment: 10 (1/rep)

Test water changes: None Aeration during test: None

Feeding: 0.25 ml Prime Tropical Flakes (4g/L) suspension per cup on days 0 and 2

Duration: 24-hr, 48-hr, (96-hr) Test temperature (deg.C): 23 ± 1

Beaker placement: Stratified randomization Photoperiod: 16:8, L:D

MISCELLANEOUS NOTES

Test solution preparation:

Working stock: Dissolve 10g KCl crystals in dilution water and dilute to 500 mL.
Final conc.: 20 g/L.

Test concentration (g/L)	KCl working stock (ml/200ml)	ml of dilution water per 200 ml
20	200	0
10	100	100
5	50	150
2.5	25	175
1.25	12.5	187.5
0	0	200

LAS 9-3-04

ANC07778
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NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-_____

ACUTE TOXICITY TEST (ALL SPECIES)

Test No. 999-1837 Client QC Test

DAILY RECORD SHEET

Day 0 (9 / 3 /04) GB Temp Beaker (°C): 23.2

Conc. (g/L)	Temp. (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	Comments
1. 20	23.3	8.5	>20000	7.8	94	70	
2. 10	23.3	8.5	13,900	7.8			
3. 5	23.3	8.6	7,380	7.7			
4. 2.5	23.3	8.6	4,240	7.6			
5. 1.25	23.3	8.7	2,320	7.6			
6. 0	23.3	8.7	295	7.5	85	70	
All animals fed 0.25 ml Prime Tropical Flakes suspension. Initials: GB							

Day 1 (9 / 4 /04) GB Temp Beaker (°C): 23.4

Conc. (g/L)	Temp. (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	Comments
1. 20							
2. 10							
3. 5							
4. 2.5							
5. 1.25							
6. 0							

Day 2 (9 / 5 /04) GJ Temp Beaker (°C): 23.5

Conc. (g/L)	Temp. (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	Comments
1. 20							
2. 10							
3. 5							
4. 2.5							
5. 1.25							
6. 0							
All animals fed 0.25 ml Prime Tropical Flakes suspension. Initials: GJ							

Day 3 (9 / 6 /04) GB Temp Beaker (°C): 23.4

Conc. (g/L)	Temp. (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	Comments
1. 20							
2. 10							
3. 5							
4. 2.5							
5. 1.25							
6. 0							

Day 4 (9 / 7 /04) GJ Temp Beaker (°C): 23.5

Conc. (g/L)	Temp. (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	Comments
1. 20	–	–	–	–	–	–	
2. 10	–	–	–	–			
3. 5	23.8	7.4	7090	7.6			
4. 2.5	23.7	7.3	4130	7.4			
5. 1.25	23.7	7.4	2290	7.3			
6. 0	23.6	6.7	320	6.9	94	90	
Mean	23.5	8.0		7.5	91	77	
SD	0.2	0.8		0.3	5	12	
n	10	10		10	3	3	

Revised 12-5-01

ANC07779
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NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-_____

ACUTE TOXICITY TEST (ALL SPECIES)

Test No. 999-1837 Client QC Test Investigator _____

DAILY RECORD SHEET - Survivors

Day 0 (9/13/04) 631

Conc. (g/L)	Survivors in Replicate: 1	2	3	4	5	6	7	8	9	10	Total
1. 20	1	1	1	1	1	1	1	1	1	1	10
2. 10	1	1	1	1	1	1	1	1	1	1	10
3. 5	1	1	1	1	1	1	1	1	1	1	10
4. 2.5	1	1	1	1	1	1	1	1	1	1	10
5. 1.25	1	1	1	1	1	1	1	1	1	1	10
6. 0	1	1	1	1	1	1	1	1	1	1	10

Day 1 (9/14/04) 632

Conc. (g/L)	Survivors in Replicate: 1	2	3	4	5	6	7	8	9	10	Total
1. 20	X	X	X	X	X	X	X	X	X	X	0 (10D)
2. 10	X	X	X	X	X	X	X	X	X	1	1 (9D)
3. 5	1	1	X	1	1	1	1	1	1	1	9 (1D)
4. 2.5	1	1	1	1	1	1	1	1	1	1	10
5. 1.25	1	1	1	1	1	1	1	1	1	1	10
6. 0	1	1	1	1	1	1	1	1	1	1	10

Day 2 (9/15/04) 631

Conc. (g/L)	Survivors in Replicate: 1	2	3	4	5	6	7	8	9	10	Total
1. 20	X	X	X	X	X	X	X	X	X	X	0
2. 10	X	X	X	X	X	X	X	X	X	X	0 (1D)
3. 5	1	1	X	1	1	1	1	1	X	1	8 (1D)
4. 2.5	1	1	1	1	1	1	1	1	1	1	10
5. 1.25	1	1	1	1	1	1	1	1	1	1	10
6. 0	1	1	1	1	1	1	1	1	1	1	10

Day 3 (9/16/04) MB

Conc. (g/L)	Survivors in Replicate: 1	2	3	4	5	6	7	8	9	10	Total
1. 20	X	X	X	X	X	X	X	X	X	X	0
2. 10	X	X	X	X	X	X	X	X	X	X	0
3. 5	1	1	X	1	1	1	1	1	X	1	8
4. 2.5	1	1	1	1	1	1	1	1	1	1	10
5. 1.25	1	1	1	1	1	1	1	1	1	1	10
6. 0	1	1	1	1	1	1	1	1	1	1	10

Day 4 (9/17/04) 631

Conc. (g/L)	Survivors in Replicate: 1	2	3	4	5	6	7	8	9	10	Total
1. 20	X	X	X	X	X	X	X	X	X	X	0
2. 10	X	X	X	X	X	X	X	X	X	X	0
3. 5	1	1	X	1	X	X	1	1	X	1	6 (2D)
4. 2.5	1	1	1	1	1	X	1	1	1	1	9 (1D)
5. 1.25	1	1	1	1	1	X 1 63	1	X	1	1	9 (1D)
6. 0	1	X	1	1	X	1	1	1	1	1	8 (2D)

ANC07780
BZTO104(e)007780

Acute 96-hr Toxicity Test-96 Hr Survival

Start Date:	9/3/04 11:50	Test ID:	999-1837	Sample ID:	REF-Ref Toxicant
End Date:	9/7/04 12:30	Lab ID:	ORNAS-Northwestern Aquati	Sample Type:	KCL-Potassium chloride
Sample Date:		Protocol:	EPAF 91-EPA Freshwater	Test Species:	CT-Chironomus tentans
Comments:					

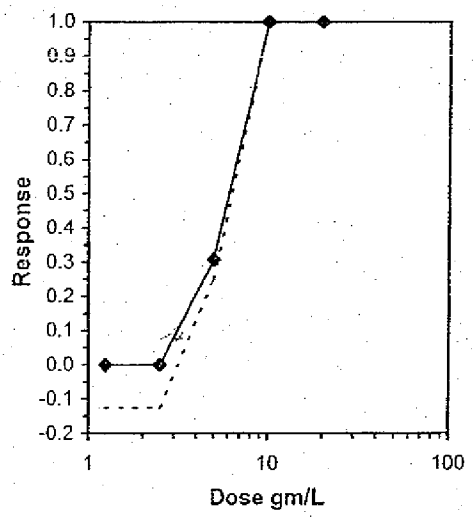
Conc-gm/L	1
D-Control	0.8000
1.25	0.9000
2.5	0.9000
5	0.6000
10	0.0000
20	0.0000

Conc-gm/L	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's Exact P	1-Tailed Critical	Number Resp	Total Number
D-Control	0.8000	1.0000	2	8	10	1			2	10
1.25	0.9000	1.1250	1	9	10	1	0.5000	0.0500	1	10
2.5	0.9000	1.1250	1	9	10	1	0.5000	0.0500	1	10
5	0.6000	0.7500	4	6	10	1	0.3142	0.0500	4	10
10	0.0000	0.0000	10	0	10	1			10	10
20	0.0000	0.0000	10	0	10	1			10	10

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Fisher's Exact Test	5	10	7.07107	

Trimmed Spearman-Karber

Trim Level	EC50	95% CL	
0.0%	5.7129	4.6665	6.9941
5.0%	5.7881	4.6118	7.2645
10.0%	5.8605	4.5024	7.6283
20.0%	5.9888	4.0370	8.8841
Auto-0.0%	5.7129	4.6665	6.9941



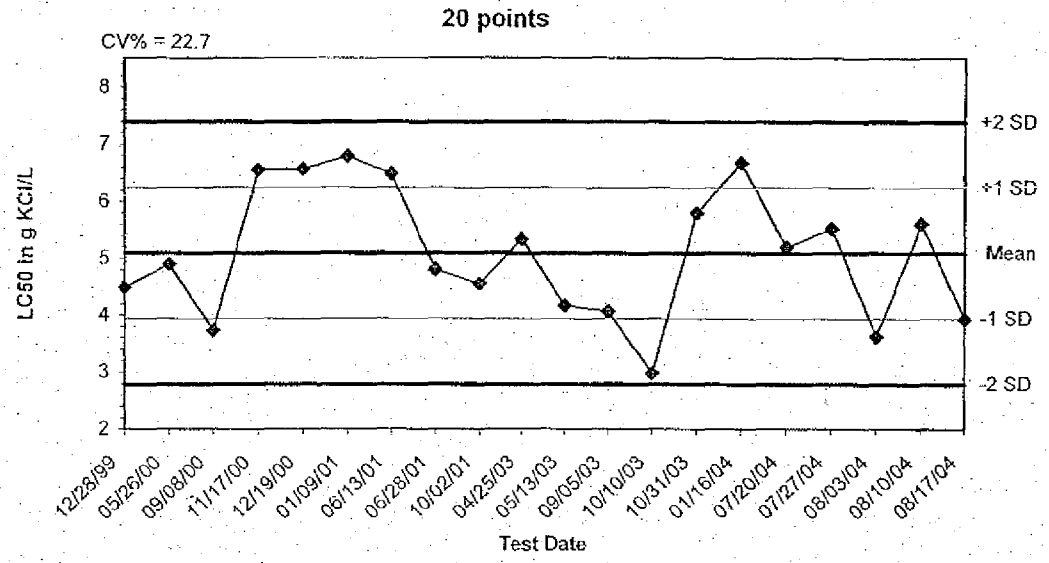
ANC07781
BZTO104(e)007781

Test: AT-Acute 96-hr Toxicity Test							Test ID: 999-1837		
Species: CT-Chironomus tentans							Protocol: EPAF 91-EPA Freshwater		
Sample ID: REF-Ref Toxicant							Sample Type: KCL-Potassium chloride		
Start Date: 9/3/04 11:50			End Date: 9/7/04 12:30				Lab ID: ORNAS-Northwestern Aquatic Sciences		
Pos	ID	Rep	Group	Start	24 Hr	48 Hr	72 Hr	96 Hr	Notes
	1	1	D-Control	10				8	
	2	1	1.250	10				9	
	3	1	2.500	10				9	
	4	1	5.000	10				6	
	5	1	10.000	10				0	
	6	1	20.000	10				0	

Comments: Data entry verified against laboratory benchsheets
MSL
9-17-04

ANC07782
BZTO104(e)007782

Chironomus tentans THIRD INSTAR 96-hr reference toxicant test - last 20 points



Dates	Values	Mean	-1 SD	-2 SD	+1 SD	+2 SD
12/28/99	4.4900	5.0895	3.9361	2.7826	6.2429	7.3964
05/26/00	4.9000	5.0895	3.9361	2.7826	6.2429	7.3964
09/08/00	3.7300	5.0895	3.9361	2.7826	6.2429	7.3964
11/17/00	6.5600	5.0895	3.9361	2.7826	6.2429	7.3964
12/19/00	6.5700	5.0895	3.9361	2.7826	6.2429	7.3964
01/09/01	6.7900	5.0895	3.9361	2.7826	6.2429	7.3964
06/13/01	6.4900	5.0895	3.9361	2.7826	6.2429	7.3964
06/28/01	4.8000	5.0895	3.9361	2.7826	6.2429	7.3964
10/02/01	4.5500	5.0895	3.9361	2.7826	6.2429	7.3964
04/25/03	5.3400	5.0895	3.9361	2.7826	6.2429	7.3964
05/13/03	4.1600	5.0895	3.9361	2.7826	6.2429	7.3964
09/05/03	4.0600	5.0895	3.9361	2.7826	6.2429	7.3964
10/10/03	2.9800	5.0895	3.9361	2.7826	6.2429	7.3964
10/31/03	5.8000	5.0895	3.9361	2.7826	6.2429	7.3964
01/16/04	6.6800	5.0895	3.9361	2.7826	6.2429	7.3964
07/20/04	5.2000	5.0895	3.9361	2.7826	6.2429	7.3964
07/27/04	5.5300	5.0895	3.9361	2.7826	6.2429	7.3964
08/03/04	3.6200	5.0895	3.9361	2.7826	6.2429	7.3964
08/10/04	5.6100	5.0895	3.9361	2.7826	6.2429	7.3964
08/17/04	3.9300	5.0895	3.9361	2.7826	6.2429	7.3964

MSR
9-17-04

ANC07783
BZTO104(e)007783

Report

of

Test No. 686-11

Toxicity of Portland Harbor RI/FS Freshwater Test Sediments (Batch 6) using a 28-day Amphipod, *Hyalella azteca*, Sediment Bioassay

Submitted to

Windward Environmental, Inc.
200 West Mercer Street, Suite 401
Seattle, WA 98119

Submitted by

Northwestern Aquatic Sciences
3814 Yaquina Bay Road
P.O. Box 1437
Newport, OR 97365

January 18, 2005

ANC07784
BZTO104(e)007784

TOXICITY TEST REPORT

TEST IDENTIFICATION

Test No.: 686-11

Title: Toxicity of Portland Harbor RI/FS freshwater test sediments (Batch 6) using a 28-day amphipod, *Hyalella azteca*, sediment bioassay.

Protocol No.: NAS-686-HA4c, June 24, 2004. Based on ASTM Method E 1706-00 (ASTM 2003) and EPA Method 100.4 (EPA/600/R-99/064, 2000). This protocol can be found in Appendix B of the Portland Harbor RI/FS Round 2 Quality Assurance Project Plan, June 24, 2004.

STUDY MANAGEMENT

Study Sponsor: Windward Environmental, Inc., 200 West Mercer Street, Suite 401, Seattle, WA 98119.

Sponsor's Study Monitor: Ms. Helle Andersen

Testing Laboratory: Northwestern Aquatic Sciences, P.O. Box 1437, Newport, OR 97365

Test Location: Newport laboratory

Laboratory's Study Personnel: G.J. Irissarri, B.S., Proj. Man./Study Dir.; L.K. Nemeth, M.B.A., QA Officer; R.S. Caldwell, Ph.D., Sr. Toxicol.; M.S. Redmond, M.S., Aq. Toxicol.; G.A. Buhler, B.S., Aq. Toxicol.; W.T. Montgomery, A.A., Sr. Tech.; G. Hayes, B.S., Tech.; S.J. Gage, B.A., Tech.; B.B. Pridgeon, Lab Asst.

Study Schedule:

Test Beginning: 9-10-04, 1410 hrs.

Test Ending: 10-8-04, 1300 hrs.

Disposition of Study Records: All specimens, raw data, reports and other study records are stored according to Good Laboratory Practice regulations at Northwestern Aquatic Sciences, 3814 Yaquina Bay Rd., Newport, OR 97365.

Good Laboratory Practices: The test was conducted following the principles of Good Laboratory Practices (GLP) as defined in the EPA/TSCA Good Laboratory Practice regulations revised August 17, 1989 (40 CFR Part 792).

Statement of Quality Assurance: The test data were reviewed by the Quality Assurance Unit to assure that the study was performed in accordance with the protocol and standard operating procedures. This report is an accurate reflection of the raw data.

TEST MATERIAL

Test Sediments: Portland Harbor RI/FS freshwater test sediments (Batch 6). Details are as follows:

NAS Sample No.	9413F	9414F	9415F	9416F	9417F
Description	LW2-G232	LW2-G263	LW2-G269	LW2-G283	LW2-G264
Collection Date	8-30-04	8-30-04	8-30-04	8-30-04	8-30-04
Receipt Date	9-2-04	9-2-04	9-2-04	9-2-04	9-2-04
NAS Sample No.	9418F	9419F	9420F	9421F	9422F
Description	LW2-G278	LW2-G276	LW2-G284	LW2-G267	LW2-G453
Collection Date	8-30-04	8-30-04	8-30-04	8-30-04	8-31-04
Receipt Date	9-2-04	9-2-04	9-2-04	9-2-04	9-2-04
NAS Sample No.	9423F	9424F	9425F	9426F	9427F
Description	LW2-G456	LW2-G457	LW2-G461	LW2-G468	LW2-G467
Collection Date	8-31-04	8-31-04	8-31-04	8-31-04	9-1-04
Receipt Date	9-2-04	9-2-04	9-2-04	9-2-04	9-2-04
NAS Sample No.	9428F	9429F	9430F	9431F	9432F
Description	LW2-G473	LW2-G477	LW2-G480	LW2-G454	LW2-G386
Collection Date	9-1-04	9-1-04	9-1-04	9-1-04	9-1-04
Receipt Date	9-2-04	9-2-04	9-2-04	9-2-04	9-2-04

ANC07785
BZTO104(e)007785

the salicylate (Clin. Chim. Acta 14:403, 1996) colorimetric method. Samples were not distilled prior to analysis. The photoperiod was 16:8, L:D.

DATA ANALYSIS METHODS

Survival and mortality were calculated for each replicate as follows:

percent survival = 100 x (number surviving/initial number tested)
percent mortality = 100 x (number dead/initial number tested)

average individual biomass = (final wt. - tare wt.)/number weighed,
where:
final wt. = tare wt. + dry weight of organisms recovered on day 28, in mg

Means and standard deviations for the biological endpoints described above, and for water quality data, were computed using Microsoft Excel 2000.

PROTOCOL DEVIATIONS

1. Test organisms were 6-7 days old at test initiation. The protocol specifies 7-8 days old.

REFERENCE TOXICANT TEST

The reference toxicant test is a multi-concentration toxicity test using cadmium chloride, to evaluate the performance of the test organisms used in the sediment toxicity test. The performance is evaluated by comparing the results of this test with historical results obtained at the laboratory. A summary of the reference toxicant test result is given below. The reference toxicant test raw data are found in Appendix II.

Test No.: 999- 1838
Reference Toxicant and Source: Cadmium as $CdCl_2 \bullet 2½ H_2O$, Mallinckrodt Lot #TNZ, 1.0 mg/ml stock prepared 4-2-03.
Test Date: 9-10-04.
Dilution Water Used: Moderately hard synthetic water prepared from Milli-Q® deionized water.
Result: 96-hr LC50, 8.03 µg/L. This result is within the laboratory's control chart warning limits (3.42 -- 14.1 µg/L).

TEST RESULTS

Observations of water quality in the overlying water throughout the test are summarized in Table 1. A detailed tabulation of the water quality results by sample and test day can be found in Appendix I. Interstitial ammonia measurements and pH for bulk sediments are listed in Table 2. The means and standard deviations of percent mortality of *Hyalella* exposed for 28 days to sediments, and the growth measured as dry weight are summarized in Table 3. Detailed data organized by sample and replicate, and summary statistics for these observations, are given in Appendix I.

All water quality observations of overlying water temperature and dissolved oxygen were within the protocol specified ranges. Ammonia-N in the overlying water ranged from <0.1 to 3.4 mg/L in all day 0 and day 28 observations. Interstitial bulk sediment values for ammonia-N ranged from 1.0 to 35.1 mg/L.

The test met the acceptability criteria specified in the test protocol with 88.8% of control survival (≥80% required). The reference toxicant (positive control) result was within the laboratory's control chart limits (8.03 µg/L; control chart mean ± 2 S.D. = 8.74 ± 5.33). It is concluded, therefore, that the test has developed fully acceptable data for use in making management decisions.

REFERENCES

ASTM. 2003. Standard Test Methods for Measuring the Toxicity of Sediment-Associated Contaminants with Fresh Water Invertebrates. ASTM Standard Method No. E 1706-00. Am. Soc. Test. Mat., West Conshohocken, PA.

ANC07786
BZTO104(e)007786

U.S. EPA. 2000. Section 11, Test Method 100.1, *Hyalella azteca* 10-d Survival and Growth Test for Sediments, pp 47-54 In: Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates (Second Edition). EPA/600/R-99/064.

STUDY APPROVAL

Gerald Grissani 1-20-05
Project Manager/Study Director Date

Linda K. Nemeth 1/19/05
Quality Assurance Unit Date

Richard A. Caldwell 1/20/05
Laboratory Director Date

ANC07787
BZTO104(e)007787

TEST DESCRIPTION, MONITORING, AND RESULTS BENCHSHEETS

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-11 Client Windward Environmental Investigator

STUDY MANAGEMENT

Client: Windward Enviromental, 200 West Mercer Street, Suite 401, Seattle, WA 98119

Client's Study Monitor: Ms. Helle Andersøn e

Testing Laboratory: Northwestern Aquatic Sciences

Test Location: Newport Laboratory

Laboratory's Study Personnel:

Proj. Man./Study Dir. G.J. Irissarri 7. R.S. Gilbert RSG

QA Officer L.K. Nemeth

1. CA Butler CAB 2. Susan Gage SAG

3. G.C. Hayes GCH 4. Vickie T Montgomery VTM

Study Schedule: 5. M.S. Redmond MSR 6. B.B. Pridgeon BBP

Test Beginning: 9-10-04 1410 Test Ending: 10-8-04 1300

TEST MATERIAL

General description (see sample logbook/chain-of-custody for details):

NAS Sample No.:	9403F	9413F	9414F	9415F	9416F
Description:	Control	LW2-G232	LW2-G263	LW2-G269	LW2-G283
Collection Date:	8/30/04	8/30/04	8/30/04	8/30/04	8/30/04
Receipt Date:	8/30/04	9/2/04	9/2/04	9/2/04	9/2/04

NAS Sample No.:	9417F	9418F	9419F	9420F	9421F
Description:	LW2-G264	LW2-G278	LW2-G276	LW2-G284	LW2-G267
Collection Date:	8/30/04	8/30/04	8/30/04	8/30/04	8/30/04
Receipt Date:	9/2/04	9/2/04	9/2/04	9/2/04	9/2/04

NAS Sample No.:	9422F	9423F	9424F	9425F	9426F
Description:	LW2-G453	LW2-G456	LW2-G457	LW2-G461	LW2-G468
Collection Date:	8/31/04	8/31/04	8/31/04	8/31/04	8/31/04
Receipt Date:	9/2/04	9/2/04	9/2/04	9/2/04	9/2/04

NAS Sample No.:	9427F	9428F	9429F	9430F	9431F
Description:	LW2-G467	LW2-G473	LW2-G477	LW2-G480	LW2-G454
Collection Date:	9/1/04	9/1/04	9/1/04	9/1/04	9/1/04
Receipt Date:	9/2/04	9/2/04	9/2/04	9/2/04	9/2/04

NAS Sample No.:	9432F	9433F			
Description:	LW2-G386	LW2-G339			
Collection Date:	9/1/04	9/1/04			
Receipt Date:	9/2/04	9/2/04			

NAS Sample No.:					
Description:					
Collection Date:					
Receipt Date:					

Error codes: 1) correction of handwriting error
2) written in wrong location; entry deleted
3) wrong date deleted, replaced with corrrect date
4) error found in measurement; measurement repeated

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HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

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SEDIMENT DESCRIPTIONS – SUPPLEMENTAL NOTES

Sample No.	Description
9403F	Black odorless mud
9413F	Brown sandy mud
9414F	Grey mud with (Napthalene) smell along w/ gravel & Sand
9415F	Dark gray mud w/ petroleum odor
9416F	Dark grey mud w/ petroleum odor
9417F	Gray brown mud w/ chunks
9418F	Gras BROWN Mud, Slight creasote Odor
9419F	Brown mud
9420F	Dark grey fine mud.
9421F	Gray brown sandy mud w/ Woody debris (3 Chironomids removed)
9422F	Gray/green mud w/ petroleum odor w/ sm. rocks
9423F	Gray brown sandy mud
9424F	Dark gray fine mud
9425F	Gray-brown mud
9426F	
9427F	Dark gray muddy coarse sand
9428F	Gray-Brown mud
9429F	Brown mud w/ rocks
9430F	Dark gray coarse sand w/ Woody debris & petroleum odor
9431F	Coarse gray sand w/ rocks
9432F	gras BROWN Mud
9433F	Light-brown sandy (fine) mud

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NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-11 Client Windward Environmental Investigator

TEST WATER

Source: Dechlorinated Newport, OR Tap Water

Date of Collection:

pH (See Attached Sheet)

Cond (umhos/cm2)

Hardness (mg/La0

Alkalinity (mg/L)

Treatments: Aerated ≥24 hrs

TEST ORGANISMS

Species: *Hyalella azteca* Age: 6-7 days Date received: 9-8-04

Source: Chesapeake Cultures, Hayes, VA

Acclimation Data:

Date	Temp. (deg.C)	DO (mg/L)	pH	Cond umhos/cm	Feeding amount	Feeding description	Water changes	Hardness (mg/L)	Alkalinity (mg/L)
9-8-04	23.7	>15.0	7.2	400	10ml/pan*	YTC	yes	170	170
9-9-04	22.7	8.6	7.7	270	"	"	yes	102	90
9-10-04	22.3	8.7	7.2	220	"	"	yes	68	70
Mean	22.9	10.8	7.4	313				113	110
S.D.	0.7	3.7	0.3	75				52 (+)	58
(N)	3	3	3	3		*animals divided into		3 pans	3

Photoperiod during acclimation: 16:8, L:D

TEST PROCEDURES AND CONDITIONS

Test chambers: 300 ml glass beakers

Test volumes: 100 ml of test sediment; 275 ml total volume

Replicates/treatment: (8) 8 Organisms/treatment: (80) 80 (10/rep.)

Test water changes: Twice daily

Aeration: only if DO falls below 2.5 mg/L

Feeding: everyday beginning with day zero

Test temperature (deg.C): 23

Beaker placement: Total randomization

Photoperiod: 16:8, L:D

Control Sediment:

Source: From an area approximately one mile east of the Hwy. 101 bridge at Beaver Creek, approx. 8 miles south of Newport, OR.

Date collected: 8/30/04

Sieved through 0.5 -mm screen NAS# 9403F

Storage: 4°C in the dark in closed containers.

MISCELLANEOUS NOTES

LIGHT INTENSITY MEASUREMENTS:

10-3-04

SITE A
77 FT CANDLES
(829 LUX)

SITE B
66 FT-CANDLES
(710 LUX)

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NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4b

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-11 Client Windward Environmental Investigator

Test Dilution Water: Dechlorinated Newport, OR Tap Water

Date of Collection	Total Chlorine (mg/L)	Hardness (mg/L)	Alkalinity (mg/L)	Conductivity (µmhos/cm)	pH
9-9-04	<0.02	34	30	160	6.9
9-10-04	<0.02	34	40	170	6.9
9-13-04	<0.02	34	40	165	6.9
9-13-04 [illegible]	<0.02	34	30	170	6.9
9-15-04	<0.02	34	30	165	7.1
9-17-04	<0.02	34	30	160	7.3
9-18-04	<0.02	34	30	160	7.3
9-20-04	<0.02	34	30	165	6.9
9-22-04	<0.02	34	30	160	6.9
9-23-04	<0.02	34	30	160	6.9
9-25-04	<0.02	34	40	160	6.9
9-26-04	<0.02	34	40	160	6.9
9-27-04	<0.02	34	30	165	6.9
9-29-04	<0.02	34	40	160	6.9
9-30-04	<0.02	34	40	160	6.9
10-2-04	<0.02	34	30	170	6.9
10-4-04	<0.02	34	40	165	6.9
10-7-04	<0.02	34	30	165	6.9
		34 QA			
	$\bar{X}$	34	34	163	7.0
	SD	0	5	4	0.1
	N	18	18	18	18

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HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-11 Client Windward Environmental Investigator _____

Test conducted in (circle one): room 1 (room 2) trailer water bath other:_____

Randomization chart:

5								170	175
4								169	174
3								168	173
2								167	172
1								166	171

176

Randomization chart:

Randomization chart:

Randomization chart:

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HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 686-11 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 0 (9/10/10) MB/BBP

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond.* µmhos/cm	pH*	Hardness* (mg/L)	Alkalinity* (mg/L)	S (ppm)	NH3* (ppm)	Comments
2	22.8	6.6	240	6.3	51	60			Each beaker fed 1.0 ml
26	22.8	7.2	550	6.5	60	50			YTC suspension
27	22.8	7.1	170	6.3	34	50			Initials: MB
38	22.7	7.1	185	6.3	51	50			
39	22.7	7.0	225	6.0	68	30			
44	22.8	7.2	205	6.3	60	50			
56	22.8	7.2	200	6.2	60	50			
70	23.0	7.3	180	6.3	60	50			
87	22.8	7.2	190	6.2	60	50			Water changed in all
91	22.8	7.0	160	6.4	43	40			beakers.
99	22.8	7.1	245	6.5	51	50			Time: 0650
102	22.9	7.3	195	6.4	51	50			Initials: BBP
112	22.8	6.8	2000	6.3	77	60			
113	22.8	7.0	200	6.2	60	50			
114	22.8	7.3	200	6.1	60	60			
125	22.9	7.2	180	6.2	51	40			
127	22.8	7.2	165	6.3	51	40			Water changed in all
129	22.9	7.4	180 @ 25.3	6.3	60	50			beakers.
136	22.9	7.2	180	6.3	51	50			Time: 1725
145	22.8	7.0	175	6.4	51	50			Initials: BBP
163	22.8	7.1	170	6.4	51	40			
171	22.9	7.3	180	6.3	60	40			

*Water quality measurements to be taken.

Day 1 (9/11/10) MB

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. µmhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2	22.9								Each beaker fed 1.0 ml
26	22.9								YTC suspension
27	22.9								Initials: MB
38	22.8								
39	22.8								
44	22.9								
56	22.9								
70	22.9								
87	22.8								Water changed in all
91	22.9								beakers.
99	22.9								Time: 0745
102	22.8								Initials: MB
112	22.8								
113	22.8								
114	22.8								
125	22.9								
127	22.9								Water changed in all
129	22.9								beakers.
136	22.9								Time: 1815
145	22.9								Initials: BBP
163	22.9								
171	22.9								

*Water quality measurements to be taken.

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HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 686-11 Client Windward Environmental Investigator _____

DAILY RECORD SHEET

Day 2 (9 1/2 104) WRM

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. umhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2	22.2								Each beaker fed 1.0 ml
26	22.3								YTC suspension
27	22.2								Initials: AJ
38	22.2								
39	22.2								
44	22.3								
56	22.3								
70	22.4								
87	22.4								Water changed in all
91	22.4								beakers.
99	22.4								Time: 0745
102	22.3								Initials: WRM
112	22.3								
113	22.3								
114	22.3								
125	22.3								
127	22.3								Water changed in all
129	22.3								beakers.
136	22.3								Time: 1845
145	22.3								Initials: BJSP
163	22.2								
171	22.3								

*Water quality measurements to be taken.

Day 3 (9 13 04) WB/WRM

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. umhos/cm	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2	23.0	6.2		6.3					Each beaker fed 1.0 ml
26	23.1	6.6		6.4					YTC suspension
27	23.1	6.5		6.4					Initials: AJM
38	23.1	6.1		6.3					
39	23.1	6.4		6.2					
44	23.1	6.4		6.2					
56	23.1	6.5		6.3					
70	23.2	6.5		6.3					
87	23.1	6.9		6.3					Water changed in all
91	23.1	6.5		6.3					beakers.
99	23.2	6.5		6.5					Time: 0715
102	23.1	6.1		6.3					Initials: WB
112	23.1	6.1		6.3					
113	23.1	6.1		6.3					
114	23.2	6.0		6.3					
125	23.2	6.2		6.3					
127	23.1	6.3		6.3					Water changed in all
129	23.1	6.3		6.3					beakers.
136	23.1	6.4		6.3					Time: 1720
145	23.1	6.5		6.4					Initials: GBA
163	23.1	6.4		6.3					
171	23.2	6.9		6.4					

*Water quality measurements to be taken.

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DAILY RECORD SHEET

Day 4 (9/14/04) MM

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. (mhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2	23.1								Each beaker fed 1.0 ml
26	23.0								YTC suspension
27	23.0								Initials: GJ
38	23.0								
39	22.9								
44	23.0								
56	23.0								
70	23.2								
87	23.0								Water changed in all
91	23.0								beakers.
99	23.1								Time: 0630
102	23.0								Initials: GJ
112	23.0								
113	23.0								
114	23.0								
125	23.1								
127	23.0								Water changed in all
129	23.0								beakers.
136	23.0								Time: 1735
145	23.1								Initials: BBP
163	23.0								
171	23.0								

*Water quality measurements to be taken.

Day 5 (9/15/04) BBP

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond.* (mhos/cm)	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2	23.0	5.6	170	6.2					Each beaker fed 1.0 ml
26	23.0	6.2	245	6.4					YTC suspension
27	22.9	6.4	165	6.3					Initials: GJ
38	22.9	6.4	170	6.3					
39	23.0	6.2	180	6.2					
44	23.0	6.3	175	6.2					
56	23.1	5.8	175	6.3					
70	23.2	6.1	170	6.3					
87	23.0	6.4	170	6.3					Water changed in all
91	23.0	6.0	165	6.2					beakers.
99	23.1	6.2	185	6.4					Time: 0720
102	23.0	6.3	175	6.3					Initials: BB
112	23.0	6.2	175	6.2					
113	23.0	6.0	175	6.2					
114	23.0	6.0	170	6.2					
125	23.1	6.0	165	6.2					
127	23.1	5.8	165	6.2					Water changed in all
129	23.0	5.8	170	6.2					beakers.
136	23.0	6.0	170	6.3					Time: 1745
145	23.0	6.2	165	6.3					Initials: BBP
163	23.0	6.2	170	6.4					
171	23.1	5.8	175	6.4					

*Water quality measurements to be taken.

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DAILY RECORD SHEET

Day 6 (9 Nov 04): VB

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. (mhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2	22.9								Each beaker fed 1.0 ml
26	22.9								YTC suspension
27	22.9								Initials: VB
38	22.9								
39	22.9								
44	22.9								
56	23.0								
70	23.0								
87	22.9								Water changed in all
91	22.9								beakers.
99	22.9								Time: 0705
102	22.9								Initials: VB
112	22.9								
113	22.9								
114	22.9								
125	23.0								
127	22.9								Water changed in all
129	22.9								beakers.
136	23.0								Time: 1730
145	23.0								Initials: VB
163	22.9								
171	22.9								

*Water quality measurements to be taken.

Day 7 (9 Nov 04) VB

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. (mhos/cm)	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2	22.9	6.8		6.7					Each beaker fed 1.0 ml
26	22.9	7.2		6.7					YTC suspension
27	22.9	6.6		6.5					Initials: VB
38	22.9	6.4		6.5					
39	22.9	6.8		6.4					
44	22.9	6.6		6.5					
56	22.9	6.9		6.5					
70	23.0	6.6		6.6					
87	22.9	6.6		6.5					Water changed in all
91	22.9	6.6		6.6					beakers.
99	22.9	7.0		6.6					Time: 0645
102	22.9	6.6		6.6					Initials: VB
112	22.9	6.2		6.5					
113	22.9	6.4		6.5					
114	22.9	6.6		6.6					
125	23.0	6.5		6.5					
127	22.9	6.9		6.6					Water changed in all
129	22.9	6.0		6.5					beakers.
136	22.9	6.2		6.5					Time: 1725
145	22.9	6.1		6.5					Initials: VB
163	22.9	6.9		6.7					
171	22.9	6.2		6.5					

*Water quality measurements to be taken.

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HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 686-11 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 8 (9/18/04) VB

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. umhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2	22.9								Each beaker fed 1.0 ml
26	22.9								YTC suspension
27	22.8								Initials: VB
38	22.8								
39	22.8								
44	22.8								
56	22.9								
70	22.9								
87	22.8								Water changed in all
91	22.8								beakers.
99	22.7								Time: 0710
102	22.7								Initials: VB
112	22.8								
113	22.8								
114	22.8								
125	22.8								
127	22.8								Water changed in all
129	22.8								beakers.
136	22.9								Time: 1835
145	22.8								Initials: [illegible]
163	22.9								
171	22.9								

*Water quality measurements to be taken.

Day 9 (9/19/04) VB

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. umhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2	22.4								Each beaker fed 1.0 ml
26	22.4								YTC suspension
27	22.4								Initials: VB
38	22.4								
39	22.4								
44	22.3								
56	22.3								
70	22.3								
87	22.3								Water changed in all
91	22.3								beakers.
99	22.3								Time: 0650
102	22.4								Initials: VB
112	22.3								
113	22.2								
114	22.3								
125	22.3								
127	22.4								Water changed in all
129	22.2								beakers.
136	22.3								Time: 1735
145	22.2								Initials: BBP
163	22.3								
171	22.3								

*Water quality measurements to be taken.

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HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 686-11 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 10 (9/20/04) WTM

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. umhos/cm	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2	22.4	7.1		6.6					Each beaker fed 1.0 ml
26	22.4	7.6		6.8					YTC suspension
27	22.3	7.5		6.6					Initials: CB
38	22.3	7.0		6.6					
39	22.3	7.7		6.6					
44	22.3	7.1		6.7					
56	22.3	7.1		6.6					
70	22.4	7.2		6.6					
87	22.4	5.8		6.5					Water changed in all
91	22.4	7.0		6.6					beakers.
99	22.4	7.2		6.9					Time: 0650
102	22.3	6.8		6.6					Initials: GJ
112	22.3	7.1		6.6					
113	22.3	7.1		6.6					
114	22.3	7.0		6.6					
125	22.3	7.2		6.6					
127	22.3	7.1		6.6					Water changed in all
129	22.3	7.0		6.6					beakers.
136	22.3	7.0		6.6					Time: 1710
145	22.3	7.5		6.6					Initials: BBP
163	22.3	7.6		6.6					
171	22.4	6.7		6.6					

*Water quality measurements to be taken.

Day 11 (9/21/04) WTM

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. umhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2	22.8								Each beaker fed 1.0 ml
26	22.8								YTC suspension
27	22.7								Initials: WTM
38	22.7								
39	22.7								
44	22.8								
56	22.8								
70	22.8								
87	22.8								Water changed in all
91	22.8								beakers.
99	22.8								Time: 0710
102	22.7								Initials: GJ
112	22.8								
113	22.8								
114	22.8								
125	22.8								
127	22.8								Water changed in all
129	22.8								beakers.
136	22.8								Time: 1725
145	22.8								Initials: BBP
163	22.8								
171	22.9								

*Water quality measurements to be taken.

ANC07799
BZTO104(e)007799

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 686-11 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 12 (9/22/04) KK/mm

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond.* umhos/cm	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2	23.0	5.4	170	7.0					Each beaker fed 1.0 ml
26	22.9	6.0	185	6.9					YTC suspension
27	22.8	5.8	165	6.8					Initials: MS
38	22.8	5.8	165	6.7					
39	22.8	6.0	175	6.7					
44	22.8	6.1	170	6.7					
56	22.9	6.1	170	6.7					
70	22.9	6.1	170	6.7					
87	22.9	5.9	170	6.7					Water changed in all
91	22.9	5.9	170	6.7					beakers.
99	22.9	6.0	185	7.0					Time: 0705
102	22.9	6.0	175	6.8					Initials: GJ1
112	22.8	5.7	170	6.8					
113	22.9	5.6	170	6.8					
114	22.9	5.8	170	6.8					
125	22.9	6.0	170	6.8					
127	22.9	6.1	170	6.8					Water changed in all
129	22.9	5.8	170	6.8					beakers.
136	22.9	5.8	170	6.8					Time: 1735
145	22.9	6.1	165	6.8					Initials: BBP
163	22.9	6.1	170	6.7					
171	22.9	5.1	165	6.7					

*Water quality measurements to be taken.

Day 13 (9/23/04) mm

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. umhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2	22.7								Each beaker fed 1.0 ml
26	22.7								YTC suspension
27	22.6								Initials: mm
38	22.5								
39	22.5								
44	22.6								
56	22.6								
70	22.7								
87	22.6								Water changed in all
91	22.7								beakers.
99	22.7								Time: 0705
102	22.6								Initials: GJ1
112	22.6								
113	22.6								
114	22.6								
125	22.7								
127	22.6								Water changed in all
129	22.7								beakers.
136	22.6								Time: 1705
145	22.7								Initials: BBP
163	22.7								
171	22.8								

*Water quality measurements to be taken.

ANC07800
BZTO104(e)007800

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 686-11 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 14 (9/24/04) UB

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. (mhos/cm)	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2	22.8	5.1		6.3					Each beaker fed 1.0 ml
26	22.7	5.9		6.4					YTC suspension
27	22.7	6.1		6.4					Initials: UB
38	22.6	5.8		6.3					
39	22.6	5.9		6.2					
44	22.6	6.2		6.2					
56	22.6	6.0		6.3					
70	22.6	5.8		6.2					
87	22.6	5.3		6.2					Water changed in all
91	22.6	5.9		6.3					beakers.
99	22.7	5.6		6.5					Time: 0645
102	22.7	5.4		6.4					Initials: UB
112	22.7	5.3		6.4					
113	22.6	5.8		6.4					
114	22.6	5.6		6.4					
125	22.7	5.7		6.3					
127	22.7	5.6		6.3					Water changed in all
129	22.6	5.8		6.3					beakers.
136	22.6	6.0		6.4					Time: 1800
145	22.6	5.8		6.3					Initials: [illegible]
163	22.7	6.2		6.3					
171	22.7	5.3		6.3					

*Water quality measurements to be taken.

Day 15 (9/25/04) UB/ DF

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. (mhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2	23.0								Each beaker fed 1.0 ml
26	23.0								YTC suspension
27	23.0								Initials: DF
38	22.9								
39	22.9								
44	22.8								
56	22.6								
70	22.6								
87	22.9								Water changed in all
91	22.9								beakers.
99	23.0								Time: 0715
102	23.0								Initials: UB
112	23.0								
113	23.0								
114	23.0								
125	23.0								
127	23.0								Water changed in all
129	23.0								beakers.
136	23.0								Time: 1905
145	23.0								Initials: [illegible]
163	23.0								
171	22.7								

*Water quality measurements to be taken.

ANC07801
BZTO104(e)007801

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 686-11 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 16 (9/26 04) um/631

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. µmhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2	22.7								Each beaker fed 1.0 ml
26	22.6								YTC suspension
27	22.6								Initials: WDM
38	22.6								
39	22.5								
44	22.5								
56	22.6								
70	22.7								
87	22.7								Water changed in all
91	22.7								beakers.
99	22.7								Time: 0730
102	22.7								Initials: um
112	22.6								
113	22.6								
114	22.6								
125	22.7								
127	22.6								Water changed in all
129	22.6								beakers.
136	22.6								Time: 17:40
145	22.7								Initials: MR
163	22.7								
171	22.7								

*Water quality measurements to be taken.

Day 17 (9/27/04) DJ

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. µmhos/cm	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2	23.0	6.2		6.6					Each beaker fed 1.0 ml
26	23.0	6.2		6.6					YTC suspension
27	22.9	6.1		6.5					Initials: 631
38	22.9	6.0		6.5					
39	22.9	6.0		6.4					
44	22.9	6.0		6.4					
56	23.0	6.0		6.5					
70	23.1	5.9		6.5					
87	22.9	5.9		6.4					Water changed in all
91	23.0	6.2		6.5					beakers.
99	23.0	5.9		6.5					Time: 0650
102	23.0	5.7		6.5					Initials: 631
112	22.9	5.7		6.5					
113	22.9	5.4		6.5					
114	22.9	5.8		6.5					
125	23.0	5.8		6.5					
127	22.9	6.0		6.5					Water changed in all
129	23.0	5.9		6.5					beakers.
136	22.9	6.1		6.5					Time: 1725
145	23.0	6.1		6.5					Initials: BBP
163	23.0	6.2		6.5					
171	23.0	5.9		6.5					

*Water quality measurements to be taken.

ANC07802
BZTO104(e)007802

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 686-11 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 18 (9/28/04) WDM

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. (mhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2	22.8								Each beaker fed 1.0 ml
26	22.7								YTC suspension
27	22.7								Initials: WDM
38	22.6								
39	22.6								
44	22.7								
56	22.7								
70	22.7								
87	22.7								Water changed in all
91	22.7								beakers.
99	22.7								Time: 0705
102	22.7								Initials: GJL
112	22.7								
113	22.6								
114	22.6								
125	22.7								
127	22.7								Water changed in all
129	22.7								beakers.
136	22.7								Time: 1725
145	22.7								Initials: BBP
163	22.7								
171	22.7								

*Water quality measurements to be taken.

Day 19 (9/29/04) AS

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond.* (mhos/cm)	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2	23.1	5.4	220	6.6	Re: Conductivity				Each beaker fed 1.0 ml
26	23.1	6.2	225	6.5					YTC suspension
27	23.1	5.8	215	6.4	See attached				Initials: CB
38	23.1	5.9	215	6.5	deviation Form				
39	23.1	5.9	220	6.4					
44	23.1	5.7	215	6.4					
56	23.1	5.8	220	6.4	Pg 29a of 61				
70	23.2	5.9	215	6.5					
87	23.1	5.3	215	6.5					Water changed in all
91	23.1	5.8	215	6.5					beakers.
99	23.1	5.6	230	6.5					Time: 0720
102	23.1	5.5	220	6.5					Initials: GJL
112	23.1	5.5	220	6.6					
113	23.1	5.4	225	6.6					
114	23.1	5.3	220	6.5					
125	23.1	@ 5.2 5.4	220	6.6					
127	23.1	5.8	215	6.5					Water changed in all
129	23.1	5.6	220	6.5					beakers.
136	23.1	6.1	215	6.5					Time: 1725
145	23.1	6.9	210	6.6					Initials: GJL
163	23.2	6.4	215	6.5					
171	23.2	5.3	215	6.6					

*Water quality measurements to be taken.

ANC07803
BZTO104(e)007803

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 686-11 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 20 (9/30 04) AB / AY

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2	22.5								Each beaker fed 1.0 ml
26	22.5								YTC suspension
27	22.5								Initials: GJ
38	22.4								
39	22.5								
44	22.5								
56	22.5								
70	22.6								
87	22.5								Water changed in all
91	22.6								beakers.
99	22.6								Time: 0720
102	22.6								Initials: AB
112	22.5								
113	22.5								
114	22.5								
125	22.6								
127	22.4								Water changed in all
129	22.5								beakers.
136	22.5								Time: 1735
145	22.5								Initials: [illegible]
163	22.5								
171	22.5								

*Water quality measurements to be taken.

Day 21 (10/1 04) AY / [illegible]

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. (umhos/cm)	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2	23.0	5.0		6.2					Each beaker fed 1.0 ml
26	22.9	5.7		6.2					YTC suspension
27	22.9	5.3		6.2					Initials: [illegible]
38	22.9	5.0		6.2					
39	22.9	5.2		6.2					
44	22.9	5.4		6.2					
56	22.9	4.9		6.2					
70	22.9	5.2		6.2					
87	22.9	5.2		6.2					Water changed in all
91	22.9	5.3		6.3					beakers.
99	22.9	5.0		6.3					Time: 0635
102	22.9	4.8		6.3					Initials: GJ
112	22.9	4.6		6.3					
113	22.9	4.6		6.3					
114	22.9	4.8		6.3					
125	22.9	4.7		6.3					
127	22.9	5.1		6.3					Water changed in all
129	22.9	5.0		6.3					beakers.
136	22.9	5.1		6.2					Time: 1751
145	22.9	5.4		6.2					Initials: BBP
163	22.9	5.6		6.3					
171	22.9	4.8		6.2					

*Water quality measurements to be taken.

ANC07804
BZTO104(e)007804

Test No 686-11 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 22 (10/2 6-1) CB

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2	22.4								Each beaker fed 1.0 ml
26	22.3								YTC suspension
27	22.2								Initials: WTM
38	22.2								
39	22.3								
44	22.3								
56	22.3								
70	22.4								
87	22.4								Water changed in all
91	22.5								beakers.
99	22.4								Time: 0620
102	22.3								Initials: CB
112	22.3								
113	22.3								
114	22.3								
125	22.2								
127	22.2								Water changed in all
129	22.3								beakers.
136	22.2								Time: 1800
145	22.2								Initials: BBP
163	22.2								
171	22.3								

*Water quality measurements to be taken.

Day 23 (10/3 6-4) GJL

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2	23.1								Each beaker fed 1.0 ml
26	23.1								YTC suspension
27	23.0								Initials: GJL
38	23.0								
39	23.0								
44	23.1								
56	23.~~3~~1	GJL ① 10-3-04							
70	23.3								
87	23.1								Water changed in all
91	23.1								beakers.
99	23.2								Time: 0750
102	23.0								Initials: GJL
112	23.0								
113	23.1								
114	23.1								
125	23.1								
127	23.0								Water changed in all
129	23.1								beakers.
136	22.9								Time: 1740
145	23.0								Initials: BBA
163	23.0								
171	22.9								

*Water quality measurements to be taken.

Test No. 686-11 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 24 (10/14/04) AJ

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. (mhos/cm)	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2	22.7	4.7		6.2					Each beaker fed 1.0 ml
26	22.7	5.9		6.3					YTC suspension
27	22.7	5.8		6.3					Initials: CB
38	22.7	5.4		6.3					
39	22.6	5.5		6.3					
44	22.7	5.7		6.2					
56	22.7	5.6		6.2					
70	22.7	5.1		6.2					
87	22.6	5.2		6.3					Water changed in all
91	22.7	5.2		6.4					beakers.
99	22.8	5.4		6.4					Time: 0635
102	22.7	5.2		6.3					Initials: GSL
112	22.7	5.1		6.4					
113	22.7	5.4		6.3					
114	22.8	5.5		6.3					
125	22.7	6.1		6.4					
127	22.7	6.5		6.4					Water changed in all
129	22.7	6.5		6.5					beakers.
136	22.7	5.5		6.4					Time: 1715
145	22.7	5.5		6.4					Initials: BBP
163	22.7	5.8		6.4					
171	22.7	4.9		6.4					

*Water quality measurements to be taken.

Day 25 (10/15/04) CB/BBP

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. (mhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2	22.9								Each beaker fed 1.0 ml
26	22.9								YTC suspension
27	22.9								Initials: GSL
38	22.8								
39	22.8								
44	22.8								
56	22.8								
70	22.9								
87	22.9								Water changed in all
91	22.8								beakers.
99	22.9								Time: 0700
102	22.9								Initials: CB
112	22.8								
113	22.8								
114	22.8								
125	22.9								
127	22.9								Water changed in all
129	22.9								beakers.
136	22.9								Time: 1735
145	22.8								Initials: AJ
163	22.9								
171	22.9								

*Water quality measurements to be taken.

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 686-11 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 26 (10 / 6 /04) wm / sf

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond.* umhos/cm	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2	23.0	4.8	160	6.1					Each beaker fed 1.0 ml
26	23.0	5.9	165	6.2					YTC suspension
27	22.9	5.5	160	6.2					Initials: GJT
38	22.9	5.4	160	6.2					
39	22.9	5.4	160	6.2					
44	23.0	5.5	160	6.2					
56	23.0	5.3	165	6.3					
70	23.1	5.1	165	6.3					
87	23.0	5.1	160	6.2					Water changed in all
91	23.0	5.5	160	6.3					beakers.
99	23.0	5.1	165	6.3					Time: 0645
102	23.0	5.0	160	6.3					Initials: GJT
112	22.9	4.9	160	6.2					
113	22.9	4.9	160	6.2					
114	23.0	5.0	165	6.3					
125	22.9	5.4	165	6.3					
127	22.9	5.4	160	6.3					Water changed in all
129	22.9	5.4	160	6.3					beakers.
136	23.0	5.1	160	6.3					Time: 1715
145	23.0	5.4	165	6.3					Initials: [illegible]
163	23.0	5.7	160	6.3					
171	23.1	5.0	165	6.3					

*Water quality measurements to be taken.

Day 27 (10 / 7 /04) sf

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. umhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2	23.0								Each beaker fed 1.0 ml
26	23.0								YTC suspension
27	23.0								Initials: wm
38	22.9								
39	22.9								
44	23.0								
56	22.9								
70	23.1								
87	23.0								Water changed in all
91	22.9								beakers.
99	23.0								Time: 0705
102	23.0								Initials: GJT
112	22.9								
113	22.9								
114	22.9								
125	22.9								
127	23.0								Water changed in all
129	23.0								beakers.
136	23.0								Time: 1730
145	23.0								Initials: sf
163	23.0								
171	23.0								

*Water quality measurements to be taken.

ANC07807
BZTO104(e)007807

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 686-11 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 28 (10/8 WQMB/AT/BBP

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond.* umhos/cm	pH*	Hardness* (mg/L)	Alkalinity* (mg/L)	S (ppm)	NH3* (ppm)	Comments
2	23.1	6.0	160	6.3	43	40			Each beaker fed 1.0 ml
26	23.0	7.2	165	6.5	43	40			YTC suspension
27	22.9	7.4	160	6.4	43	40			Initials: BA
38	22.9	6.9	160	6.3	43	40			
39	23.0	6.9	165	6.2	43	40			
44	22.9	7.1	160	6.3	43	40			
56	23.0	7.1	165	6.4	43	40			
70	23.2	6.9	165	6.4	34	40			
87	23.0	7.1	165	6.4	43	40			Water changed in all
91	23.1	7.4	165	6.4	34	40			beakers.
99	23.0	6.9	165	6.4	34	40			Time: 1300
102	23.0	6.7	165	6.3	34	40			Initials: WB
112	23.0	7.1	165	6.4	43	40			
113	22.9	6.9	160	6.3	43	40			
114	22.9	6.9	165	6.3	51	40			
125	23.1	7.1	165	6.4	34	40			
127	23.0	7.3	165	6.4	43	40			Water changed in all
129	23.0	7.3	160	6.4	43	40			beakers.
136	23.0	6.8	165	6.5	43	40			Time:
145	23.0	7.3	165	6.5	51	40			Initials:
163	23.0	7.4	165	6.5	43	40			
171	23.3	5.9	160	6.4	43	40			

*Water quality measurements to be taken.

Day (/ /)

Beaker No.	Temp. (deg.C)	DO (ppm)	Cond. umhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
2									Each beaker fed 1.0 ml
26									YTC suspension
27									Initials:
38									
39									
44									
56									
70									
87									Water changed in all
91									beakers.
99									Time:
102									Initials:
112									
113									
114									
125									
127									Water changed in all
129									beakers.
136									Time:
145									Initials:
163									
171									

*Water quality measurements to be taken.

ANC07808
BZTO104(e)007808

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-11 Client Windward Environmental Investigator _____

DAY 28 TEST TERMINATION SHEET

Beaker No.	Number of survivors	Initials
1	9	UB
2	9	UB
3	9	UB
4	10	UB
5	1	UB
6	10	UB
7	8	UB
8	9	UB
9	9	UB
10	0	UB
11	10	UB
12	9	UB
13	10	UB
14	9	UB
15	10	UB
16	9	UB
17	9	UB
18	9	UB
19	9	UB
20	9	UB
21	7	UB
22	8	UB
23	10	UB
24	6	UB
25	10	UB
26	10	UB
27	10	UB
28	9	UB
29	0	UB
30	9	UB
31	10	UB
32	8	GDA
33	10	UB
34	10	UB
35	7	UB
36	9	UB
37	10	UB
38	9	GDA
39	9	UB
40	9	UB
41	8	GDA
42	10	UB
43	9	UB
44	10	GDA
45	9	UB

Beaker No.	Number of survivors	Initials
46	10	UB
47	10	UB
48	9 9	GDA
49	9	UB
50	10	UB
51	10	GDA
52	9	LWM
53	9	UB
54	9	LWM
55	10	GDA
56	9	UB
57	8	UB
58	0	GDA
59	9	LWM
60	9	UB
61	8	UB
62	8	LWM
63	9	GDA
64	10	LWM
65	10	GDA
66	9	LWM
67	10	UB
68	0	UB
69	10	GDA
70	8	UB
71	10	LWM
72	9	UB
73	10	LWM
74	10	GDA
75	10	LWM
76	7	GDA
77	7	LWM
78	9	UB
79	9	UB
80	10	UB
81	9	LWM
82	7	UB
83	8	GDA
84	7	UB
85	9	LWM
86	9	UB
87	0	GDA
88	0	LWM
89	9	UB
90	0	LWM

Date 10/21/04

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-11 Client Windward Environmental Investigator

DAY 28 TEST TERMINATION SHEET

Beaker No.	Number of survivors	Initials
91	10	
92	9	
93	10	
94	11	
95	8	
96	10	
97	0	
98	10	
99	9	
100	9	
101	7	
102	8	
103	10	
104	7	
105	8	
106	10	
107	9	
108	8	
109	10	
110	10	
111	10	
112	10	
113	8	
114	5	
115	10	
116	10	
117	10	
118	9	
119	1	
120	10	
121	0	
122	0	
123	8	
124	8	
125	10	
126	9	
127	10	
128	10	
129	10	
130	9	
131	10	
132	10	
133	9	
134	10	
135	10	

Beaker No.	Number of survivors	Initials
136	10	
137	7	
138	10	
139	10	
140	8	
141	8	
142	10	
143	1	
144	9	
145	9	
146	10	
147	7	
148	9	
149	9	
150	9	
151	10	
152	1	
153	10	
154	10	
155	9	
156	7	
157	6	
158	10	
159	10	
160	9	
161	10	
162	6	
163	9	
164	10	
165	8	
166	6	
167	7	
168	9	
169	7	
170	0	
171	1	
172	2	
173	9	
174	10	
175	9	
176	5	
177		
178		
179		
180		

RSZ 10/21/04

ANC07810
BZTO104(e)007810

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c
HYALELLA AZTECA 14-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-11 Client Windward Environmental Investigator

ZERO-TIME WEIGHING DATA SHEET

Tare: Date 9-10-04 Oven temp (C.) 60 Drying time (hr.) 24 Initials GJZ
Standard Weights: 10 mg: 10.006 100mg: 100.018

Final: Date 9-12-04 Oven temp (C.) 62 Drying time (hr.) 24 Initials GJZ
Standard Weights: 10 mg: 10.006 100mg: 100.018

Equip. used: Oven: BLUE M #1 Balance: SARTORIUS M3P

(Dry overnight at 60-90 degrees C)

Pan #	Tare wt. (mg)	Total wt. (mg)	#weighed	Comments
1	29.230	~~30.36~~ 29.903 ⓒ GJZ 9-12-04	20	
2	28.724	29.472	20	
3	28.902	29.600	20	
4	28.255	29.066	20	
5	29.509	30.307	20	

ANC07811
BZTO104(e)007811

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-11 Client Windward Environmental Investigator

WEIGHING DATA SHEET

Tare: Date 10-4-04 Oven temp (C.) 67 Drying time (hr.) 24 Initials JRF
Standard Weights: 10 mg: 10.005 100mg: 100.018

Final #1: Date 10-11-04 Oven temp (C.) 62 Drying time (hr.) 24 Initials JRF
Standard Weights: 10 mg: 10.008 100mg: 100.018

Final #2: Date 10-13-04 Oven temp (C.) 73 Drying time (hr.) 23 Initials JRF
Standard Weights: 10 mg: 10.006 100mg: 100.017

Equip. used: Oven BLUE M #1 Balance Sartorius M3P
(Dry overnight at 60-90 degrees C)

Bkr. #	Pan #	Tare wt. (mg)	Total wt. (mg) 1	Total wt. (mg) 2	no. weighed	put into pans-initials	Comments
1	1	28.456	29.461	29.449	9		
2	2	30.425	32.096	32.080	9		
3	3	29.009	31.698	31.681	9		
4	4	31.528	33.875	33.860	10		
5	5	26.525	28.891	28.877	1		
6	6	29.152	31.436	31.427	10		
7	7	29.466	32.508	32.501	8		
8	8	30.623	32.542	32.533	9		
9	9	31.560	33.271	33.257	8		
10	10	30.996	—	—	0		
11	11	27.654	30.023	30.011	10		
12	12	28.397	30.908	30.898	9		
13	13	30.202	31.918	31.912	10		
14	14	31.252	32.911	32.898	9		
15	15	28.686	30.131	30.161	10		
16	16	30.403	33.490	33.492	9		
17	17	30.018	32.671	32.669	9		
18	18	29.354	31.483	31.480	9		
19	19	28.684	31.426	31.441	9		
20	20	30.451	32.689	32.675	9		
21	21	28.214	30.747	30.727	7		
22	22	28.602	30.746	30.737	8		
23	23	29.030	32.093	32.097	10		
24	24	30.443	32.614	32.618	6		
25	25	29.028	31.937	31.956	10		
26	26	28.878	30.810	30.816	10		
27	27	28.247	31.502	31.514	10		
28	28	27.033	29.819	29.864	9		
29	29	31.116	—	—	0		
30	30	30.183	32.288	32.300	9		
31	31	29.526	31.840	31.844	10		
32	32	31.528	34.388	34.403	8		
33	33	27.249	29.860	29.876	10		

ANC07812
BZTO104(e)007812

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-11 Client Windward Environmental Investigator

WEIGHING DATA SHEET

See page _____ for information on drying times and temperatures, standard weights,etc.

Bkr. #	Pan #	Tare wt. (mg)	Total wt. (mg) 1	Total wt. (mg) 2	no. weighed	put into pans-initials	Comments
34	34	28.940	31.957	31.955	10	AM	
35	35	29.774	31.182	31.80	7	AM	
36	36	30.996	34.700	34.715	9	AM	
37	37	31.088	33.991	34.000	10	AM	
38	38	27.301	29.674	29.676	9	AM	
39	39	28.286	30.748	30.763	9	AM	
40	40	28.369	31.038	31.050	9	AM	
41	41	28.363	30.532	30.563	8	AM	
42	42	29.280	32.532	32.568	10	AM	
43	43	31.025	34.330	34.364	9	AM	
44	44	28.895	31.072	31.105	10	AM	
45	45	28.359	30.867	30.896	9	AM	
46	46	28.826	32.666	32.703	10	AM	
47	47	29.388	32.256	32.290	10	AM	
48	48	29.272	31.519	31.535	9	AM	
49	49	28.910	31.728	31.755	9	AM	
50	50	30.380	33.502	33.523	10	AM	
51	51	27.088	29.870	29.899	10	AM	
52	52	29.409	32.252	32.288	9	AM	
53	53	30.686	33.261	33.291	9	AM	
54	54	28.941	31.525	31.577	9	AM	
55	55	28.393	31.123	31.160	10	BBP	
56	56	29.398	31.901	31.935	9	BBP	
57	57	28.874	31.227	31.252	8	BBP	
58	58	28.491	—	—	0	BBP	
59	59	29.439	32.316	32.348	9	BBP	
60	60	28.820	31.311	31.351	9	BBP	
61	61	30.959	33.253	33.295	8	BBP	
62	62	28.952	31.420	31.470	8	BBP	
63	63	29.850	31.969	32.016	9	BBP	
64	64	28.792	31.081	31.114	10	BBP	
65	65	29.247	32.375	32.410	10	BBP	
66	66	29.792	32.964	32.998	9	BBP	
67	67	28.840	30.909	30.942	10	BBP	
68	68	29.580	—	—	0	BBP	
69	69	29.436	32.001	32.043	10	BBP	
70	70	31.714	33.966	34.000	8	BBP	
71	71	27.959	29.388	29.430	10	BBP	
72	72	29.647	32.971	33.012	9	BBP	
73	73	31.468	34.676	34.704	10	BBP	
74	74	28.528	30.516	30.549	10	BBP	
75	75	28.252	31.154	31.187	10	BBP	
76	76	30.161	32.495	32.532	7	BBP	

ANC07813
BZTO104(e)007813

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-11 Client Windward Environmental Investigator

WEIGHING DATA SHEET

See page _____ for information on drying times and temperatures, standard weights,etc.

Bkr. #	Pan #	Tare wt. (mg)	Total wt. (mg) 1	Total wt. (mg) 2	no. weighed	put into pans-initials	Comments
77	77	28.646	30.737	30.766	7	BBP	
78	78	29.517	31.811	31.844	9	BBP	
79	79	30.254	32.242	32.272	9	BBP	
80	80	30.670	33.397	33.429	10	BBP	
81	81	28.126	29.684	29.728	9		
82	82	28.522	30.500	30.542	7		
83	83	27.835	30.368	30.414	8		
84	84	28.247	29.863	30.421	7		
85	85	29.126	32.224	32.257	9		
86	86	30.640	32.260	32.295	9		
87	87	29.938	—	—	0		
88	88	30.915	—	—	0		
89	89	28.646	31.289	31.329	9		
90	90	28.677	—	—	0		
91	91	27.510	29.443	29.474	10		
92	92	29.879	32.796	32.827	9		
93	93	29.232	31.906	31.946	10		
94	94	28.482	31.498	31.520	11		
95	95	28.826	32.275	32.336	8		
96	96	28.864	30.802	30.853	10		
97	97	30.658	—	—	0		
98	98	28.627	31.296	31.347	10		
99	99	30.055	33.124	33.187	9		
100	100	28.107	30.185	30.239	9		
101	101	28.827	29.847	29.879	7		
102	102	30.150	32.705	32.752	8		
103	103	28.116	30.892	30.908	10		
104	104	30.478	32.790	32.813	7		
105	105	29.293	31.512	31.541	8		
106	106	28.876	30.941	30.958	10		
107	107	26.728	29.311	29.333	9		
108	108	28.504	—	—	0		
109	109	28.028	30.624	30.645	10		
110	110	29.851	32.553	32.577	10		
111	111	28.402	31.062	31.085	10		
112	112	28.421	31.287	31.304	10		
113	113	30.909	33.169	33.187	8		
114	114	28.869	30.394	30.411	5		
115	115	29.061	31.334	31.352	9		
116	116	28.721	31.249	31.265	10		
117	117	29.120	32.095	32.131	10		
118	118	29.102	31.264	31.308	9		
119	119	29.231	29.599	29.644	1		

ANC07814
BZTO104(e)007814

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-11 Client Windward Environmental Investigator

WEIGHING DATA SHEET

See page _____ for information on drying times and temperatures, standard weights,etc.

Bkr. #	Pan #	Tare wt. (mg)	Total wt. (mg) 1	Total wt. (mg) 2	no. weighed	put into pans-initials	Comments
120	120	29.327	31.614	31.659	10		
121	121	29.143	—	—	0		
122	122	27.142	—	—	0		
123	123	29.824	31.230	31.270	8		
124	124	28.518	30.584	30.620	8		
125	125	28.289	30.952	30.981	10		
126	126	28.613	31.753	31.778	9		
127	127	27.796	30.750	30.774	10		
128	128	28.780	30.913	30.946	10		
129	129	28.273	31.040	31.081	10		
130	130	27.510	29.542	29.584	9		
131	131	28.247	30.267	30.314	10		
132	132	27.565	30.713	30.708	10		
133	133	28.923	31.516	31.509	9		
134	134	29.784	32.632	32.645	10		
135	135	27.409	29.869	29.881	10		
136	136	28.650	30.099	30.106	10		
137	137	27.923	29.672	29.685	7		
138	138	28.331	31.081	31.096	10		
139	139	27.995	30.853	30.873	10		
140	140	30.167	32.823	32.832	8		
141	141	29.425	31.332	31.349	8		
142	142	27.316	29.900	29.916	10		
143	143	29.388	29.826	29.839	1		
144	144	29.061	32.119	32.132	9		
145	145	28.932	31.602	31.586	9		
146	146	29.629	32.080	32.083 JF	10		
147	147	31.146	33.111	33.127	7	BBP	
148	148	28.323	30.729	30.736	9	BBP	
149	149	29.315	32.059	32.064	9	BBP	
150	150	27.888	29.824	29.840	9	BBP	
151	151	30.424	32.131	32.132	10	BBP	
152	152	28.721	29.264	29.263	1	BBP	
153	153	29.001	31.736	31.744	10	BBP	
154	154	26.706	29.891	29.898	10	BBP	
155	155	30.239	32.145	32.169	9	BBP	
156	156	29.776	31.836	31.848	7	BBP	
157	157	JF 29.199 30.351	32.204	32.216	6	BBP	
158	158	28.171	30.036	30.048	10	BBP	
159	159	29.199	31.734	31.741	10	BBP	
160	160	29.820	32.858	32.874	9	BBP	
161	161	29.126	31.996	32.013	10	BBP	
162	162	27.847	30.042	30.051	6	BBP	

ANC07815
BZTO104(e)007815

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-11 Client Windward Environmental Investigator

WEIGHING DATA SHEET

See page _____ for information on drying times and temperatures, standard weights,etc.

Bkr. #	Pan #	Tare wt. (mg)	Total wt. (mg) 1	Total wt. (mg) 2	no. weighed	put into pans-initials	Comments
163	163	29.188	30.695	30.912	9	BBP	
164	164	28.706	31.574	31.572	10	BBP	
165	165	27.736	30.129	30.145	8	BBP	
166	166	30.512	33.178	33.178	6	BBP	
167	167	28.948	29.979	29.996	7	BBP	
168	168	32.431	35.269	35.265	9	BBP	
169	169	28.014	30.342	30.352	7	BBP	
170	170	29.656	—	—	0	BBP	
171	171	27.598	27.770	27.791	1	BBP	
172	172	29.490	30.860	30.879	8	BBP	
173	173	28.234	30.898	30.904	9	BBP	
174	174	27.771	30.669	30.685	10	BBP	
175	175	27.847	30.412	30.420	9	BBP	
176	176	29.906	30.530	30.544	5	BBP	
177	177						
178	178						
179	179						
180	180						
181	181						
182	182						
183	183						
184	184						
185	185						
186	186						
187	187						
188	188						
189	189						
190	190						
191	191						
192	192						
193	193						
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204	204						
205	205						

ANC07816
BZTO104(e)007816

Chesapeake Cultures

P.O. Box 507 Hayes, VA 23072 (804) 693-4046 (804)694-4704 fax
www.c-cultures.com
e-mail growfish@c-cultures.com

N.A.S.

Shipment Information

Species *Hyalella azteca* Date *9/7/04*

Age *3-4d.; 1.2-1.5mm* P.O. No. *verbal*

Quanitity *2600+* Invoice No. *4816*

Temperature *24°C* Salinity *—* pH *7.96*

Notes *Thank you!*

Rec'd 9-8-04 Biologist *Sarah Williams*

** Please inspect shipment and report any problem immediately **

ANC07817
BZTO104(e)007817

DEVIATION FORM

Project Number 686 **Test Number &Description** 686-9, 686-11, 686-13, 686-15

Study Director or Project Manager G.J. Irissarri

Recorded By R.S. Caldwell **Date** 10-21-04

Description of Deviation (attach additional pages and/or documentation as needed)
Routine conductivity readings taken on 9-29-04 in Tests No. 686-9 686-11, 686-13, and 686-15 all were found to be 50-60 µmhos/cm higher than all other readings for these tests. All batches of test water prepared on or around 9-29-04 were found to have a normal level of conductivity. We conclude, therefore, that the 9-29-04 conductance readings in test containers are all erroneous, probably due to the calibration setting having been accidentally altered and unnoticed. Because test water batches were normal, it is concluded that the actual test container conductances were also normal.

Potential Impact on Project
None

Corrective Action
Test container conductance readings in Tests No. 686-9 686-11, 686-13, and 686-15 were invalidated and not used in the water quality summary statistics for these tests.

Anticipated Completion Date NA Actual Completion Date NA

Approval: Richard S. Caldwell Date: 10-20-04
SD/PM (R.S. Caldwell for G.J. Irissarri)

QA Representative Comments

Approval: Linda K. Hemstad Date: 10/21/04
QA Representative

ANC07818
BZTO104(e)007818

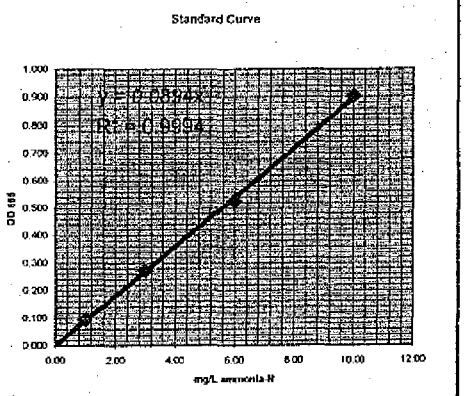
AMMONIA EXPOSURE BENCHSHEETS AND ANALYSIS

Total Ammonia-N in Sediment Pore Water: Computation Worksheet

Salicylate Method (SOP #5492)

Result

	Sample description	Dilution factor	OD_{655}	NH_3-N (mg/L)	pH	Salinity (ppt)
	Blank	-----	-----	-----		
	1.0 mg/L NH_3-N Std.	-----	0.094	1.00		
	3.0 mg/L NH_3-N Std.	-----	0.271	3.00		
	6.0 mg/L NH_3-N Std.	-----	0.524	6.00		
	10.0 mg/L NH_3-N Std.	-----	0.900	10.00		
	3.0 mg/L spike	-----	0.278	3.11		
	3.0 mg/L spike dupl.	-----	0.272	3.04		
1.	9413F	5	0.080	4.47		
2.	9414F	5	0.203	11.35		
3.	9415F	5	0.412	23.04		
4.	9416F	5	0.187	10.46		
5.	9417F	5	0.182	10.18		
6.	9418F	5	0.280	15.66		
7.	9419F	5	0.287	16.05		
8.	9420F	5	0.177	9.90		
9.	9421F	5	0.051	2.85		
10.	9422F	5	0.628	35.12		
11.	9423F	5	0.337	18.85		
12.	9424F	5	0.297	16.61		
13.	9425F	5	0.265	14.82		
14.	9426F	5	0.212	11.86		
15.	9427F	5	0.084	4.70		
16.	9428F	5	0.165	9.23		
17.	9429F	5	0.139	7.77		
18.	9430F	5	0.130	7.27		
19.	9431F	5	0.017	0.95		
20.	9432F	5	0.147	8.22		
21.	9433F	5	0.129	7.21		
22.	9403F	5	0.024	1.34		
23.		5				
24.		5				
25.		5				
26.		5				
27.		5				
28.		5				
29.		5				
30.		5				
31.		5				
32.		5				
33.		5				
34.		5				
35.		5				
36.		5				



Reporting limit (mg/L) =	0.5
Recovery (%) =	102.5
Precision (RPD) =	2.18
Sample volume (ml):	0.10
Dilution factor	5

Sample Set Description:

Proj. No.: 686
Bulk sediment porewaters
Batch 6

Analyst: RSC
Date analysed: 9/9/2004

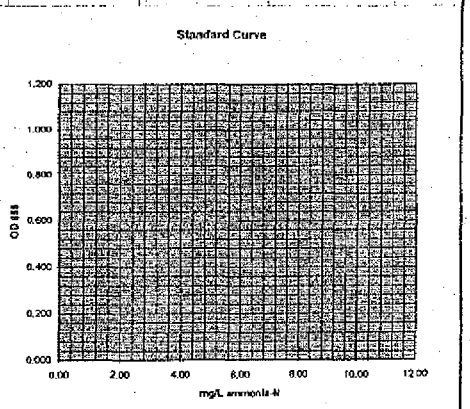
ANC07820
BZTO104(e)007820

Total Ammonia-N in Sediment Pore Water: Computation Worksheet

Salicylate Method (SOP #5492)

Result

	Sample description	Dilution factor	OD655	NH_3-N (mg/L)	pH	Salinity (ppt)
	Blank	-----	-----	-----		
	1.0 mg/L NH_3-N Std.	-----	.094	1.00		
	3.0 mg/L NH_3-N Std.	-----	.271	3.00		
	6.0 mg/L NH_3-N Std.	-----	.524	6.00		
	10.0 mg/L NH_3-N Std.	-----	.900	10.00		
	3.0 mg/L spike	-----	.278			
	3.0 mg/L spike dupl.	-----	.272			
1.	9413F	5	.080		5.9	
2.	9414F	5	.203		5.0	
3.	9415F	5	.412		6.3	
4.	9416F	5	.187		6.3	
5.	9417F	5	.182		6.2	
6.	9418F	5	.380		6.2	
7.	9419F	5	.387		6.2	
8.	9420F	5	.177		6.3	
9.	9421F	5	.051		6.2	
10.	9422F	5	.628		6.3	
11.	9423F	5	.337		6.3	
12.	9424F	5	.297		6.4	
13.	9425F	5	.265		6.4	
14.	9426F	5	.212		6.5	
15.	9427F	5	.084		6.5	
16.	9428F	5	.165		6.5	
17.	9429F	5	.139		6.6	
18.	9430F	5	.130		6.4	
19.	9431F	5	.017		6.4	
20.	9432F	5	.147		6.5	
21.	9433F	5	.129		6.6	
22.	9403F	5	.024		7.2	
23.		5				
24.		5				
25.		5				
26.		5				
27.		5				
28.		5				
29.		5				
30.		5				
31.		5				
32.		5				
33.		5				
34.		5				
35.		5				
36.		5				



Reporting limit (mg/L) =	0.5
Recovery (%) =	#VALUE!
Precision (RPD) =	#VALUE!
Sample volume (ml):	0.10
Dilution factor	5

Sample Set Description:

Proj. No.: 686
Bulk sediment porewaters
Batch 6

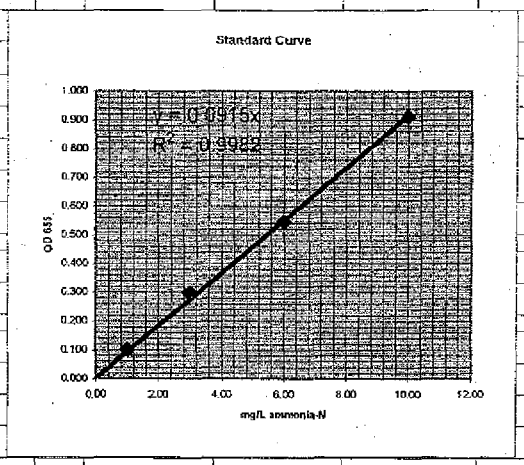
Analyst:	RSC
Date analysed:	9/9/2004

ANC07821
BZTO104(e)007821

Total Ammonia-N in Water: Computation Worksheet
Salicylate Method (SOP #5492)

Result

	Sample description	Dilution factor	OD_{655}	NH_3-N (mg/L)
	Blank	-----	-----	-----
	1.0 mg/L NH_3-N Std.	-----	0.100	1.00
	3.0 mg/L NH_3-N Std.	-----	0.298	3.00
	6.0 mg/L NH_3-N Std.	-----	0.545	6.00
	10.0 mg/L NH_3-N Std.	-----	0.910	10.00
	3.0 mg/L spike	-----	0.298	3.25
	3.0 mg/L spike dupl.	-----	0.297	3.24
1.	2	1	0.142	1.55
2.	26	1	0.050	0.55
3.	27	1	0.061	0.67
4.	38	1	0.110	1.20
5.	39	1	0.127	1.39
6.	44	1	0.212	2.31
7.	56	1	0.229	2.50
8.	70	1	0.099	1.08
9.	87	1	0.107	1.17
10.	91	1	0.021	0.23
11.	99	1	0.013	0.14
12.	102	1	0.261	2.85
13.	112	1	0.203	2.22
14.	113	1	0.171	1.87
15.	114	1	0.200	2.18
16.	125	1	0.102	1.11
17.	127	1	0.065	0.71
18.	129	1	0.127	1.39
19.	136	1	0.107	1.17
20.	145	1	0.060	0.66
21.	163	1	0.041	0.45
22.	171	1	0.313	3.42
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				
31.				
32.				
33.				
34.				
35.				
36.				



Reporting limit (mg/L) =	0.1
Recovery (%) =	108.3
Precision (RPD) =	0.34
Sample volume (ml):	0.50
Dilution factor	1

Sample Set Description:

Test No.:	686-11
Test Day:	0 (9-10-04)
Species:	*Hyalella*
Overlying water	
Analyst:	RSC
Date analysed:	9/23/2004

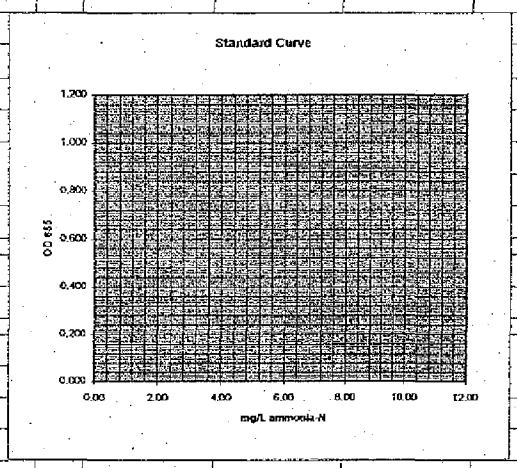
ANC07822
BZTO104(e)007822

Total Ammonia-N in Water: Computation Worksheet

Salicylate Method (SOP #5492)

Result

	Sample description	Dilution factor	OD655	NH3-N (mg/L)
	Blank	-----	----	----
	1.0 mg/L NH3-N Std.	-----	.100	1.00
	3.0 mg/L NH3-N Std.	-----	.294	3.00
	6.0 mg/L NH3-N Std.	-----	.595	6.00
	10.0 mg/L NH3-N Std.	-----	.910	10.00
	3.0 mg/L spike	-----	.298	
	3.0 mg/L spike dupl.	-----	.297	
1.	2	1	.142	
2.	26	1	.050	
3.	27	1	.061	
4.	38	1	.110	
5.	39	1	.127	
6.	44	1	.212	
7.	56	1	.229	
8.	~~72~~ 70 (R2	1	.099	
9.	87	1	.107	
10.	91	1	.026	
11.	99	1	.013	
12.	102	1	.261	
13.	112	1	.203	
14.	113	1	.171	
15.	114	1	.200	
16.	125	1	.102	
17.	127	1	.065	
18.	129	1	.127	
19.	136	1	.107	
20.	145	1	.060	
21.	163	1	.041	
22.	171	1	.313	
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				
31.				
32.				
33.				
34.				
35.				
36.				



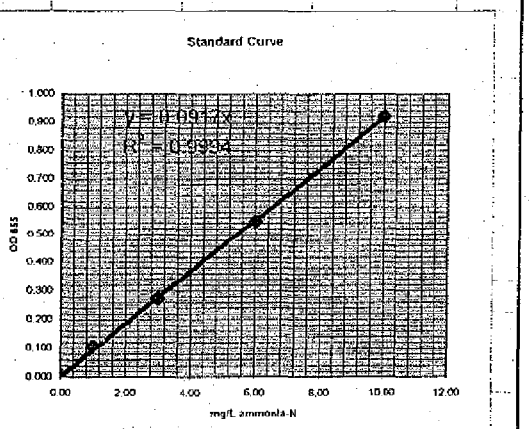
Reporting limit (mg/L) =	0.1
Recovery (%) =	#VALUE!
Precision (RPD) =	#VALUE!
Sample volume (ml):	0.50
Dilution factor	1

Sample Set Description:

Test No.:	686-11
Test Day:	0 (9-10-04)
Species:	*Hyalella*
Overlying water	
Analyst:	RSC
Date analysed:	9/23/2004

Total Ammonia-N in Water: Computation Worksheet
Salicylate Method (SOP #5492)

Result	Sample description	Dilution factor	OD_{655}	NH_3-N (mg/L)
	Blank	-----	-----	-----
	1.0 mg/L NH_3-N Std.	-----	0.105	1.00
	3.0 mg/L NH_3-N Std.	-----	0.271	3.00
	6.0 mg/L NH_3-N Std.	-----	0.545	6.00
	10.0 mg/L NH_3-N Std.	-----	0.920	10.00
	3.0 mg/L spike	-----	0.279	3.04
	3.0 mg/L spike dupl.	-----	0.276	3.01
1.	2	1	0.023	0.25
2.	26	1	0.009	ND
3.	27	1	0.010	0.11
4.	38	1	0.008	ND
5.	39	1	0.011	0.12
6.	44	1	0.010	0.11
7.	56	1	0.015	0.16
8.	70	1	0.009	ND
9.	87	1	0.008	ND
10.	91	1	0.002	ND
11.	99	1	0.002	ND
12.	102	1	0.011	0.12
13.	112	1	0.006	ND
14.	113	1	0.006	ND
15.	114	1	0.010	0.11
16.	125	1	0.010	0.11
17.	127	1	0.014	0.15
18.	129	1	0.018	0.20
19.	136	1	0.007	ND
20.	145	1	0.010	0.11
21.	163	1	0.011	0.12
22.	171	1	0.065	0.71
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				
31.				
32.				
33.				
34.				
35.				
36.				



Reporting limit (mg/L) = 0.1

Recovery (%) = 100.9
Precision (RPD) = 1.08

Sample volume (ml): 0.50
Dilution factor 1

Sample Set Description:
Test No.: 686-11
Test Day: 28 (10-8-04)
Species: *Hyalella*

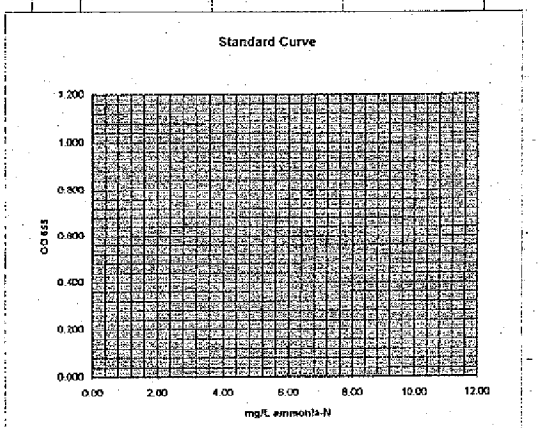
Overlying water

Analyst: RSC
Date analysed: 10/10/2004

Total Ammonia-N in Water: Computation Worksheet
Salicylate Method (SOP #5492)

Result

	Sample description	Dilution factor	OD_{655}	NH_3-N (mg/L)
	Blank	-----	-----	-----
	1.0 mg/L NH_3-N Std.	-----	.105	1.00
	3.0 mg/L NH_3-N Std.	-----	.271	3.00
	6.0 mg/L NH_3-N Std.	-----	.545	6.00
	10.0 mg/L NH_3-N Std.	-----	.920	10.00
	3.0 mg/L spike	-----	.279	
	3.0 mg/L spike dupl.	-----	.276	
1.	2	1	.023	
2.	26	1	.009	
3.	27	1	.010	
4.	38	1	.008	
5.	39	1	.011	
6.	44	1	.010	
7.	56	1	.015	
8.	~~72~~ 70 RSC	1	.009	
9.	87	1	.008	
10.	91	1	.002	
11.	99	1	.002	
12.	102	1	.011	
13.	112	1	.006	
14.	113	1	.006	
15.	114	1	.010	
16.	125	1	.010	
17.	127	1	.014	
18.	129	1	.018	
19.	136	1	.007	
20.	145	1	.010	
21.	163	1	.011	
22.	171	1	.061	
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				
31.				
32.				
33.				
34.				
35.				
36.				



Reporting limit (mg/L) = 0.1

Recovery (%) = #VALUE!
Precision (RPD) = #VALUE!

Sample volume (ml): 0.50
Dilution factor 1

Sample Set Description:
Test No.: 686-11
Test Day: 28 (10-8-04)
Species: *Hyalella*

Overlying water

Analyst: RSC
Date analysed: 10/10/2004

ANC07825
BZTO104(e)007825

Test Number: P686-11

Freshwater Sediment Test
28-day Hyalella azteca

Randomization Sheet

BKR	NAS SMPL	CLIENT DESCRIP	REPL	
144	9403F	Control	1	
16	9403F	Control	2	
168	9403F	Control	3	
46	9403F	Control	4	
36	9403F	Control	5	
117	9403F	Control	6	
166	9403F	Control	7	
99	9403F	Control	8	wq replicate
76	9413F	LW2-G232	1	
149	9413F	LW2-G232	2	
161	9413F	LW2-G232	3	
23	9413F	LW2-G232	4	
42	9413F	LW2-G232	5	
160	9413F	LW2-G232	6	
126	9413F	LW2-G232	7	
145	9413F	LW2-G232	8	wq replicate
11	9414F	LW2-G263	1	
159	9414F	LW2-G263	2	
41	9414F	LW2-G263	3	
120	9414F	LW2-G263	4	
128	9414F	LW2-G263	5	
49	9414F	LW2-G263	6	
80	9414F	LW2-G263	7	
39	9414F	LW2-G263	8	wq replicate
12	9415F	LW2-G269	1	
32	9415F	LW2-G269	2	
104	9415F	LW2-G269	3	
116	9415F	LW2-G269	4	
124	9415F	LW2-G269	5	
54	9415F	LW2-G269	6	
137	9415F	LW2-G269	7	
102	9415F	LW2-G269	8	wq replicate
10	9416F	LW2-G283	1	
122	9416F	LW2-G283	2	
29	9416F	LW2-G283	3	
143	9416F	LW2-G283	4	
90	9416F	LW2-G283	5	
170	9416F	LW2-G283	6	
108	9416F	LW2-G283	7	
87	9416F	LW2-G283	8	wq replicate
162	9417F	LW2-G264	1	
140	9417F	LW2-G264	2	
174	9417F	LW2-G264	3	
62	9417F	LW2-G264	4	
24	9417F	LW2-G264	5	
14	9417F	LW2-G264	6	
156	9417F	LW2-G264	7	
38	9417F	LW2-G264	8	wq replicate
3	9418F	LW2-G278	1	
132	9418F	LW2-G278	2	
146	9418F	LW2-G278	3	
50	9418F	LW2-G278	4	
25	9418F	LW2-G278	5	
43	9418F	LW2-G278	6	
169	9418F	LW2-G278	7	
112	9418F	LW2-G278	8	wq replicate
151	9419F	LW2-G276	1	
155	9419F	LW2-G276	2	
37	9419F	LW2-G276	3	
85	9419F	LW2-G276	4	
86	9419F	LW2-G276	5	
9	9419F	LW2-G276	6	
81	9419F	LW2-G276	7	
56	9419F	LW2-G276	8	wq replicate

ANC07826
BZTO104(e)007826

Test Number: P686-11

Freshwater Sediment Test
28-day Hyalella azteca

BKR	NAS SMPL	CLIENT DESCRIP	REPL	
15	9420F	LW2-G284	1	
21	9420F	LW2-G284	2	
139	9420F	LW2-G284	3	
101	9420F	LW2-G284	4	
59	9420F	LW2-G284	5	
18	9420F	LW2-G284	6	
148	9420F	LW2-G284	7	
129	9420F	LW2-G284	8	wq replicate
78	9421F	LW2-G267	1	
13	9421F	LW2-G267	2	
172	9421F	LW2-G267	3	
52	9421F	LW2-G267	4	
94	9421F	LW2-G267	5	
118	9421F	LW2-G267	6	
176	9421F	LW2-G267	7	
163	9421F	LW2-G267	8	wq replicate
88	9422F	LW2-G453	1	
5	9422F	LW2-G453	2	
58	9422F	LW2-G453	3	
97	9422F	LW2-G453	4	
68	9422F	LW2-G453	5	
121	9422F	LW2-G453	6	
119	9422F	LW2-G453	7	
171	9422F	LW2-G453	8	wq replicate
45	9423F	LW2-G456	1	
60	9423F	LW2-G456	2	
106	9423F	LW2-G456	3	
150	9423F	LW2-G456	4	
34	9423F	LW2-G456	5	
82	9423F	LW2-G456	6	
175	9423F	LW2-G456	7	
44	9423F	LW2-G456	8	wq replicate
141	9424F	LW2-G457	1	
35	9424F	LW2-G457	2	
77	9424F	LW2-G457	3	
147	9424F	LW2-G457	4	
64	9424F	LW2-G457	5	
51	9424F	LW2-G457	6	
61	9424F	LW2-G457	7	
114	9424F	LW2-G457	8	wq replicate
8	9425F	LW2-G461	1	
133	9425F	LW2-G461	2	
100	9425F	LW2-G461	3	
165	9425F	LW2-G461	4	
173	9425F	LW2-G461	5	
6	9425F	LW2-G461	6	
123	9425F	LW2-G461	7	
113	9425F	LW2-G461	8	wq replicate
96	9426F	LW2-G468	1	
131	9426F	LW2-G468	2	
30	9426F	LW2-G468	3	
79	9426F	LW2-G468	4	
167	9426F	LW2-G468	5	
1	9426F	LW2-G468	6	
67	9426F	LW2-G468	7	
2	9426F	LW2-G468	8	wq replicate
65	9427F	LW2-G467	1	
152	9427F	LW2-G467	2	
98	9427F	LW2-G467	3	
153	9427F	LW2-G467	4	
164	9427F	LW2-G467	5	
66	9427F	LW2-G467	6	
93	9427F	LW2-G467	7	
127	9427F	LW2-G467	8	wq replicate

ANC07827
BZTO104(e)007827

Test Number: P686-11

Freshwater Sediment Test
28-day Hyalella azteca

BKR	NAS SMPL	CLIENT DESCRIP	REPL	
20	9428F	LW2-G473	1	
89	9428F	LW2-G473	2	
84	9428F	LW2-G473	3	
107	9428F	LW2-G473	4	
31	9428F	LW2-G473	5	
69	9428F	LW2-G473	6	
135	9428F	LW2-G473	7	
70	9428F	LW2-G473	8	wq replicate
63	9429F	LW2-G477	1	
138	9429F	LW2-G477	2	
53	9429F	LW2-G477	3	
103	9429F	LW2-G477	4	
142	9429F	LW2-G477	5	
92	9429F	LW2-G477	6	
134	9429F	LW2-G477	7	
125	9429F	LW2-G477	8	wq replicate
110	9430F	LW2-G480	1	
7	9430F	LW2-G480	2	
72	9430F	LW2-G480	3	
40	9430F	LW2-G480	4	
83	9430F	LW2-G480	5	
73	9430F	LW2-G480	6	
95	9430F	LW2-G480	7	
27	9430F	LW2-G480	8	wq replicate
22	9431F	LW2-G454	1	
154	9431F	LW2-G454	2	
109	9431F	LW2-G454	3	
57	9431F	LW2-G454	4	
105	9431F	LW2-G454	5	
75	9431F	LW2-G454	6	
19	9431F	LW2-G454	7	
91	9431F	LW2-G454	8	wq replicate
158	9432F	LW2-G386	1	
74	9432F	LW2-G386	2	
130	9432F	LW2-G386	3	
48	9432F	LW2-G386	4	
71	9432F	LW2-G386	5	
111	9432F	LW2-G386	6	
47	9432F	LW2-G386	7	
136	9432F	LW2-G386	8	wq replicate
157	9433F	LW2-G339	1	
28	9433F	LW2-G339	2	
33	9433F	LW2-G339	3	
115	9433F	LW2-G339	4	
55	9433F	LW2-G339	5	
17	9433F	LW2-G339	6	
4	9433F	LW2-G339	7	
26	9433F	LW2-G339	8	wq replicate

ANC07828
BZTO104(e)007828

TEST DATA ANALYSIS RECORDS

Test Number: P686-11

Freshwater Sediment Test
28-day Hyalella azteca

Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or
dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

INITIAL WEIGHT

pan #	tare wt (mg)	final wt (mg)	wt count	avg. wt/ organism
1	29.230	29.903	20	0.034
2	28.724	29.472	20	0.037
3	28.902	29.600	20	0.035
4	28.255	29.066	20	0.041
5	29.509	30.307	20	0.040

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)
1	144	9403F	Control	1		10	9	1	90.0	10.0	29.061	9	32.132	3.07	0.34
2	16	9403F	Control	2		10	9	1	90.0	10.0	30.403	9	33.492	3.09	0.34
3	168	9403F	Control	3		10	9	1	90.0	10.0	32.431	9	35.265	2.83	0.31
4	46	9403F	Control	4		10	10	0	100.0	0.0	28.826	10	32.703	3.88	0.39
5	36	9403F	Control	5		10	9	1	90.0	10.0	30.996	9	34.715	3.72	0.41
6	117	9403F	Control	6		10	10	0	100.0	0.0	29.120	10	32.131	3.01	0.30
7	166	9403F	Control	7		10	6	4	60.0	40.0	30.512	6	33.178	2.67	0.44
8	99	9403F	Control	8	wq replicate	10	9	1	90.0	10.0	30.055	9	33.187	3.13	0.35
9	76	9413F	LW2-G232	1		10	7	3	70.0	30.0	30.161	7	32.532	2.37	0.34
10	149	9413F	LW2-G232	2		10	9	1	90.0	10.0	29.315	9	32.064	2.75	0.31
11	161	9413F	LW2-G232	3		10	10	0	100.0	0.0	29.126	10	32.013	2.89	0.29
12	23	9413F	LW2-G232	4		10	10	0	100.0	0.0	29.030	10	32.097	3.07	0.31
13	42	9413F	LW2-G232	5		10	10	0	100.0	0.0	29.280	10	32.568	3.29	0.33
14	160	9413F	LW2-G232	6		10	9	1	90.0	10.0	29.820	9	32.874	3.05	0.34
15	126	9413F	LW2-G232	7		10	9	1	90.0	10.0	28.613	9	31.778	3.17	0.35
16	145	9413F	LW2-G232	8	wq replicate	10	9	1	90.0	10.0	28.932	9	31.588	2.65	0.29
17	11	9414F	LW2-G263	1		10	10	0	100.0	0.0	27.654	10	30.011	2.36	0.24
18	159	9414F	LW2-G263	2		10	10	0	100.0	0.0	29.199	10	31.741	2.54	0.25
19	41	9414F	LW2-G263	3		10	8	2	80.0	20.0	28.363	8	30.563	2.20	0.28
20	120	9414F	LW2-G263	4		10	10	0	100.0	0.0	29.327	10	31.659	2.33	0.23
21	128	9414F	LW2-G263	5		10	10	0	100.0	0.0	28.780	10	30.946	2.17	0.22
22	49	9414F	LW2-G263	6		10	9	1	90.0	10.0	28.910	9	31.755	2.85	0.32
23	80	9414F	LW2-G263	7		10	10	0	100.0	0.0	30.670	10	33.429	2.76	0.28
24	39	9414F	LW2-G263	8	wq replicate	10	9	1	90.0	10.0	28.286	9	30.763	2.48	0.28
25	12	9415F	LW2-G269	1		10	9	1	90.0	10.0	28.397	9	30.898	2.50	0.28
26	32	9415F	LW2-G269	2		10	8	2	80.0	20.0	31.528	8	34.403	2.88	0.36
27	104	9415F	LW2-G269	3		10	7	3	70.0	30.0	30.478	7	32.813	2.34	0.33
28	116	9415F	LW2-G269	4		10	10	0	100.0	0.0	28.721	10	31.265	2.54	0.25
29	124	9415F	LW2-G269	5		10	8	2	80.0	20.0	28.518	8	30.620	2.10	0.26
30	54	9415F	LW2-G269	6		10	9	1	90.0	10.0	28.941	9	31.577	2.64	0.29
31	137	9415F	LW2-G269	7		10	7	3	70.0	30.0	27.923	7	29.685	1.76	0.25
32	102	9415F	LW2-G269	8	wq replicate	10	8	2	80.0	20.0	30.150	8	32.752	2.60	0.33

	INDEX	SURV	MORT	PSURV	PMORT	WT
Mean		8.9	1.1	88.8	11.3	0.36
SD		1.2	1.2	12.5	12.5	0.05
n		8	8	8	8	8
Mean		9.1	0.9	91.3	8.8	0.32
SD		1.0	1.0	9.9	9.9	0.02
n		8	8	8	8	8
Mean		9.5	0.5	95.0	5.0	0.26
SD		0.8	0.8	7.6	7.6	0.03
n		8	8	8	8	8
Mean		8.3	1.8	82.5	17.5	0.29
SD		1.0	1.0	10.4	10.4	0.04
n		8	8	8	8	8

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ANC07830
BZTO104(e)007830

Test Number: P686-11

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
33	10	9416F	LW2-G283	1		10	0	10	0.0	100.0	30.996	0									
34	122	9416F	LW2-G283	2		10	0	10	0.0	100.0	27.142	0									
35	29	9416F	LW2-G283	3		10	0	10	0.0	100.0	31.116	0									
36	143	9416F	LW2-G283	4		10	1	9	10.0	90.0	29.388	1	29.839	0.45	0.45						
37	90	9416F	LW2-G283	5		10	0	10	0.0	100.0	28.677	0				Mean	0.1	9.9	1.3	98.8	0.45
38	170	9416F	LW2-G283	6		10	0	10	0.0	100.0	29.656	0				SD	0.4	0.4	3.5	3.5	
39	108	9416F	LW2-G283	7		10	0	10	0.0	100.0	28.504	0				n	8	8	8	8	1
40	87	9416F	LW2-G283	8	wq replicate	10	0	10	0.0	100.0	29.938	0									
41	162	9417F	LW2-G264	1		10	6	4	60.0	40.0	27.847	6	30.051	2.20	0.37						
42	140	9417F	LW2-G264	2		10	8	2	80.0	20.0	30.167	8	32.832	2.67	0.33						
43	174	9417F	LW2-G264	3		10	10	0	100.0	0.0	27.771	10	30.685	2.91	0.29						
44	62	9417F	LW2-G264	4		10	8	2	80.0	20.0	28.952	8	31.470	2.52	0.31						
45	24	9417F	LW2-G264	5		10	6	4	60.0	40.0	30.443	6	32.618	2.18	0.36	Mean	7.9	2.1	78.8	21.3	0.30
46	14	9417F	LW2-G264	6		10	9	1	90.0	10.0	31.252	9	32.898	1.65	0.18	SD	1.5	1.5	14.6	14.6	0.06
47	156	9417F	LW2-G264	7		10	7	3	70.0	30.0	29.776	7	31.848	2.07	0.30	n	8	8	8	8	8
48	38	9417F	LW2-G264	8	wq replicate	10	9	1	90.0	10.0	27.301	9	29.676	2.38	0.26						
49	3	9418F	LW2-G278	1		10	9	1	90.0	10.0	29.009	9	31.681	2.67	0.30						
50	132	9418F	LW2-G278	2		10	10	0	100.0	0.0	27.565	10	30.708	3.14	0.31						
51	146	9418F	LW2-G278	3		10	10	0	100.0	0.0	29.629	10	32.083	2.45	0.25						
52	50	9418F	LW2-G278	4		10	10	0	100.0	0.0	30.380	10	33.523	3.14	0.31						
53	25	9418F	LW2-G278	5		10	10	0	100.0	0.0	29.028	10	31.956	2.93	0.29	Mean	9.4	0.6	93.8	6.3	0.31
54	43	9418F	LW2-G278	6		10	9	1	90.0	10.0	31.025	9	34.364	3.34	0.37	SD	1.1	1.1	10.6	10.6	0.04
55	169	9418F	LW2-G278	7		10	7	3	70.0	30.0	28.014	7	30.352	2.34	0.33	n	8	8	8	8	8
56	112	9418F	LW2-G278	8	wq replicate	10	10	0	100.0	0.0	28.421	10	31.304	2.88	0.29						
57	151	9419F	LW2-G276	1		10	10	0	100.0	0.0	30.424	10	32.132	1.71	0.17						
58	155	9419F	LW2-G276	2		10	9	1	90.0	10.0	30.239	9	32.169	1.93	0.21						
59	37	9419F	LW2-G276	3		10	10	0	100.0	0.0	31.088	10	34.000	2.91	0.29						
60	85	9419F	LW2-G276	4		10	9	1	90.0	10.0	29.126	9	32.257	3.13	0.35						
61	86	9419F	LW2-G276	5		10	9	1	90.0	10.0	30.640	9	32.295	1.66	0.18	Mean	9.3	0.8	92.5	7.5	0.24
62	9	9419F	LW2-G276	6		10	9	1	90.0	10.0	31.560	8	33.257	1.70	0.21	SD	0.5	0.5	4.6	4.6	0.06
63	81	9419F	LW2-G276	7		10	9	1	90.0	10.0	28.126	9	29.728	1.60	0.18	n	8	8	8	8	8
64	56	9419F	LW2-G276	8	wq replicate	10	9	1	90.0	10.0	29.398	9	31.935	2.54	0.28						
65	15	9420F	LW2-G284	1		10	10	0	100.0	0.0	28.686	10	30.161	1.48	0.15						
66	21	9420F	LW2-G284	2		10	7	3	70.0	30.0	28.214	7	30.727	2.51	0.36						
67	139	9420F	LW2-G284	3		10	10	0	100.0	0.0	27.995	10	30.873	2.88	0.29						
68	101	9420F	LW2-G284	4		10	7	3	70.0	30.0	28.827	7	29.879	1.05	0.15						
69	59	9420F	LW2-G284	5		10	9	1	90.0	10.0	29.439	9	32.348	2.91	0.32	Mean	8.9	1.1	88.8	11.3	0.26
70	18	9420F	LW2-G284	6		10	9	1	90.0	10.0	29.354	9	31.480	2.13	0.24	SD	1.2	1.2	12.5	12.5	0.08
71	148	9420F	LW2-G284	7		10	9	1	90.0	10.0	28.323	9	30.736	2.41	0.27	n	8	8	8	8	8
72	129	9420F	LW2-G284	8	wq replicate	10	10	0	100.0	0.0	28.273	10	31.081	2.81	0.28						

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ANC07831
BZTO104(e)007831

Test Number: P686-11

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
73	78	9421F	LW2-G267	1		10	9	1	90.0	10.0	29.517	9	31.844	2.33	0.26						
74	13	9421F	LW2-G267	2		10	10	0	100.0	0.0	30.202	10	31.912	1.71	0.17						
75	172	9421F	LW2-G267	3		10	8	2	80.0	20.0	29.490	8	30.879	1.39	0.17						
76	52	9421F	LW2-G267	4		10	9	1	90.0	10.0	29.409	9	32.288	2.88	0.32						
77	94	9421F	LW2-G267	5		11	11	0	100.0	0.0	28.482	11	31.520	3.04	0.28	Mean	8.8	1.4	86.3	13.8	0.22
78	118	9421F	LW2-G267	6		10	9	1	90.0	10.0	29.102	9	31.308	2.21	0.25	SD	1.8	1.6	16.0	16.0	0.06
79	176	9421F	LW2-G267	7		10	5	5	50.0	50.0	29.906	5	30.544	0.64	0.13	n	8	8	8	8	8
80	163	9421F	LW2-G267	8	wq replicate	10	9	1	90.0	10.0	29.188	9	30.912	1.72	0.19						
81	88	9422F	LW2-G453	1		10	0	10	0.0	100.0	30.915	0									
82	5	9422F	LW2-G453	2		10	1	9	10.0	90.0	28.525	1	28.877	0.35	0.35						
83	58	9422F	LW2-G453	3		10	0	10	0.0	100.0	28.491	0									
84	97	9422F	LW2-G453	4		10	0	10	0.0	100.0	30.658	0									
85	68	9422F	LW2-G453	5		10	0	10	0.0	100.0	29.580	0				Mean	0.4	9.6	3.8	96.3	
86	121	9422F	LW2-G453	6		10	0	10	0.0	100.0	29.143	0				SD	0.5	0.5	5.2	5.2	
87	119	9422F	LW2-G453	7		10	1	9	10.0	90.0	29.231	1	29.644	0.41	0.41	n	8	8	8	8	
88	171	9422F	LW2-G453	8	wq replicate	10	1	9	10.0	90.0	27.598	1	27.791	0.19	0.19						
89	45	9423F	LW2-G456	1		10	9	1	90.0	10.0	28.359	9	30.896	2.54	0.28						
90	60	9423F	LW2-G456	2		10	9	1	90.0	10.0	28.820	9	31.351	2.53	0.28						
91	106	9423F	LW2-G456	3		10	10	0	100.0	0.0	28.876	10	30.958	2.08	0.21						
92	150	9423F	LW2-G456	4		10	9	1	90.0	10.0	27.888	9	29.840	1.95	0.22						
93	34	9423F	LW2-G456	5		10	10	0	100.0	0.0	28.940	10	31.955	3.02	0.30	Mean	9.1	0.9	91.3	8.8	0.26
94	82	9423F	LW2-G456	6		10	7	3	70.0	30.0	28.522	7	30.542	2.02	0.29	SD	1.0	1.0	9.9	9.9	0.04
95	175	9423F	LW2-G456	7		10	9	1	90.0	10.0	27.847	9	30.420	2.57	0.29	n	8	8	8	8	8
96	44	9423F	LW2-G456	8	wq replicate	10	10	0	100.0	0.0	28.895	10	31.105	2.21	0.22						
97	141	9424F	LW2-G457	1		10	8	2	80.0	20.0	29.425	8	31.349	1.92	0.24						
98	35	9424F	LW2-G457	2		10	7	3	70.0	30.0	29.774	7	31.800	2.03	0.29						
99	77	9424F	LW2-G457	3		10	7	3	70.0	30.0	28.646	7	30.766	2.12	0.30						
100	147	9424F	LW2-G457	4		10	7	3	70.0	30.0	31.146	7	33.127	1.98	0.28						
101	64	9424F	LW2-G457	5		10	10	0	100.0	0.0	28.792	10	31.114	2.32	0.23	Mean	7.8	2.3	77.5	22.5	0.28
102	51	9424F	LW2-G457	6		10	10	0	100.0	0.0	27.088	10	29.899	2.81	0.28	SD	1.7	1.7	16.7	16.7	0.03
103	61	9424F	LW2-G457	7		10	8	2	80.0	20.0	30.959	8	33.295	2.34	0.29	n	8	8	8	8	8
104	114	9424F	LW2-G457	8	wq replicate	10	5	5	50.0	50.0	28.869	5	30.411	1.54	0.31						
105	8	9425F	LW2-G461	1		10	9	1	90.0	10.0	30.623	9	32.533	1.91	0.21						
106	133	9425F	LW2-G461	2		10	9	1	90.0	10.0	28.923	9	31.509	2.59	0.29						
107	100	9425F	LW2-G461	3		10	9	1	90.0	10.0	28.107	9	30.239	2.13	0.24						
108	165	9425F	LW2-G461	4		10	8	2	80.0	20.0	27.736	8	30.145	2.41	0.30						
109	173	9425F	LW2-G461	5		10	9	1	90.0	10.0	28.234	9	30.904	2.67	0.30	Mean	8.8	1.3	87.5	12.5	0.25
110	6	9425F	LW2-G461	6		10	10	0	100.0	0.0	29.152	10	31.427	2.28	0.23	SD	0.7	0.7	7.1	7.1	0.05
111	123	9425F	LW2-G461	7		10	8	2	80.0	20.0	29.824	8	31.270	1.45	0.18	n	8	8	8	8	8
112	113	9425F	LW2-G461	8	wq replicate	10	8	2	80.0	20.0	30.909	8	33.187	2.28	0.28						

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ANC07832
BZTO104(e)007832

Test Number: P686-11

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
113	96	9426F	LW2-G468	1		10	10	0	100.0	0.0	28.864	10	30.853	1.99	0.20						
114	131	9426F	LW2-G468	2		10	10	0	100.0	0.0	28.247	10	30.314	2.07	0.21						
115	30	9426F	LW2-G468	3		10	9	1	90.0	10.0	30.183	9	32.300	2.12	0.24						
116	79	9426F	LW2-G468	4		10	9	1	90.0	10.0	30.254	9	32.272	2.02	0.22						
117	167	9426F	LW2-G468	5		10	7	3	70.0	30.0	28.948	7	29.998	1.05	0.15	Mean	9.1	0.9	91.3	8.8	0.19
118	1	9426F	LW2-G468	6		10	9	1	90.0	10.0	28.456	9	29.449	0.99	0.11	SD	1.0	1.0	9.9	9.9	0.04
119	67	9426F	LW2-G468	7		10	10	0	100.0	0.0	28.840	10	30.942	2.10	0.21	n	8	8	8	8	8
120	2	9426F	LW2-G468	8	wq replicate	10	9	1	90.0	10.0	30.425	9	32.080	1.66	0.18						
121	65	9427F	LW2-G467	1		10	10	0	100.0	0.0	29.247	10	32.410	3.16	0.32						
122	152	9427F	LW2-G467	2		10	1	9	10.0	90.0	28.721	1	29.263	0.54	0.54						
123	98	9427F	LW2-G467	3		10	10	0	100.0	0.0	28.627	10	31.347	2.72	0.27						
124	153	9427F	LW2-G467	4		10	10	0	100.0	0.0	29.001	10	31.744	2.74	0.27						
125	164	9427F	LW2-G467	5		10	10	0	100.0	0.0	28.706	10	31.572	2.87	0.29	Mean	8.8	1.3	87.5	12.5	0.33
126	66	9427F	LW2-G467	6		10	9	1	90.0	10.0	29.792	9	32.998	3.21	0.36	SD	3.2	3.2	31.5	31.5	0.09
127	93	9427F	LW2-G467	7		10	10	0	100.0	0.0	29.232	10	31.946	2.71	0.27	n	8	8	8	8	8
128	127	9427F	LW2-G467	8	wq replicate	10	10	0	100.0	0.0	27.796	10	30.774	2.98	0.30						
129	20	9428F	LW2-G473	1		10	9	1	90.0	10.0	30.451	9	32.675	2.22	0.25						
130	89	9428F	LW2-G473	2		10	9	1	90.0	10.0	28.646	9	31.329	2.68	0.30						
131	84	9428F	LW2-G473	3		10	7	3	70.0	30.0	28.247	7	30.421	2.17	0.31						
132	107	9428F	LW2-G473	4		10	9	1	90.0	10.0	26.728	9	29.333	2.61	0.29						
133	31	9428F	LW2-G473	5		10	10	0	100.0	0.0	29.526	10	31.844	2.32	0.23	Mean	9.0	1.0	90.0	10.0	0.27
134	69	9428F	LW2-G473	6		10	10	0	100.0	0.0	29.436	10	32.043	2.61	0.26	SD	1.1	1.1	10.7	10.7	0.03
135	135	9428F	LW2-G473	7		10	10	0	100.0	0.0	27.409	10	29.881	2.47	0.25	n	8	8	8	8	8
136	70	9428F	LW2-G473	8	wq replicate	10	8	2	80.0	20.0	31.714	8	34.000	2.29	0.29						
137	63	9429F	LW2-G477	1		10	9	1	90.0	10.0	29.850	9	32.016	2.17	0.24						
138	138	9429F	LW2-G477	2		10	10	0	100.0	0.0	28.331	10	31.096	2.77	0.28						
139	53	9429F	LW2-G477	3		10	9	1	90.0	10.0	30.686	9	33.291	2.61	0.29						
140	103	9429F	LW2-G477	4		10	10	0	100.0	0.0	28.116	10	30.908	2.79	0.28						
141	142	9429F	LW2-G477	5		10	10	0	100.0	0.0	27.316	10	29.916	2.60	0.26	Mean	9.6	0.4	96.3	3.8	0.28
142	92	9429F	LW2-G477	6		10	9	1	90.0	10.0	29.879	9	32.827	2.95	0.33	SD	0.5	0.5	5.2	5.2	0.03
143	134	9429F	LW2-G477	7		10	10	0	100.0	0.0	29.784	10	32.645	2.86	0.29	n	8	8	8	8	8
144	125	9429F	LW2-G477	8	wq replicate	10	10	0	100.0	0.0	28.289	10	30.981	2.69	0.27						
145	110	9430F	LW2-G480	1		10	10	0	100.0	0.0	29.851	10	32.577	2.73	0.27						
146	7	9430F	LW2-G480	2		10	8	2	80.0	20.0	29.466	8	32.501	3.04	0.38						
147	72	9430F	LW2-G480	3		10	9	1	90.0	10.0	29.647	9	33.012	3.37	0.37						
148	40	9430F	LW2-G480	4		10	9	1	90.0	10.0	28.369	9	31.050	2.68	0.30						
149	83	9430F	LW2-G480	5		10	8	2	80.0	20.0	27.835	8	30.414	2.58	0.32	Mean	9.0	1.0	90.0	10.0	0.34
150	73	9430F	LW2-G480	6		10	10	0	100.0	0.0	31.468	10	34.704	3.24	0.32	SD	0.9	0.9	9.3	9.3	0.05
151	95	9430F	LW2-G480	7		10	8	2	80.0	20.0	28.826	8	32.336	3.51	0.44	n	8	8	8	8	8
152	27	9430F	LW2-G480	8	wq replicate	10	10	0	100.0	0.0	28.247	10	31.514	3.27	0.33						

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ANC07833
BZTO104(e)007833

Test Number: P686-11

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
153	22	9431F	LW2-G454	1		10	8	2	80.0	20.0	28.602	8	30.737	2.14	0.27						
154	154	9431F	LW2-G454	2		10	10	0	100.0	0.0	26.706	10	29.898	3.19	0.32						
155	109	9431F	LW2-G454	3		10	10	0	100.0	0.0	28.028	10	30.645	2.62	0.26						
156	57	9431F	LW2-G454	4		10	8	2	80.0	20.0	28.874	8	31.252	2.38	0.30						
157	105	9431F	LW2-G454	5		10	8	2	80.0	20.0	29.293	8	31.541	2.25	0.28	Mean	9.1	0.9	91.3	8.8	0.28
158	75	9431F	LW2-G454	6		10	10	0	100.0	0.0	28.252	10	31.187	2.94	0.29	SD	1.0	1.0	9.9	9.9	0.04
159	19	9431F	LW2-G454	7		10	9	1	90.0	10.0	28.684	9	31.441	2.76	0.31	n	8	8	8	8	8
160	91	9431F	LW2-G454	8	wq replicate	10	10	0	100.0	0.0	27.510	10	29.474	1.96	0.20						
161	158	9432F	LW2-G386	1		10	10	0	100.0	0.0	28.171	10	30.048	1.88	0.19						
162	74	9432F	LW2-G386	2		10	10	0	100.0	0.0	28.528	10	30.549	2.02	0.20						
163	130	9432F	LW2-G386	3		10	9	1	90.0	10.0	27.510	9	29.584	2.07	0.23						
164	48	9432F	LW2-G386	4		10	9	1	90.0	10.0	29.272	9	31.535	2.26	0.25						
165	71	9432F	LW2-G386	5		10	10	0	100.0	0.0	27.959	10	29.430	1.47	0.15	Mean	9.8	0.3	97.5	2.5	0.22
166	111	9432F	LW2-G386	6		10	10	0	100.0	0.0	28.402	10	31.085	2.68	0.27	SD	0.5	0.5	4.6	4.6	0.05
167	47	9432F	LW2-G386	7		10	10	0	100.0	0.0	29.388	10	32.290	2.90	0.29	n	8	8	8	8	8
168	136	9432F	LW2-G386	8	wq replicate	10	10	0	100.0	0.0	28.650	10	30.106	1.46	0.15						
169	157	9433F	LW2-G339	1		10	6	4	60.0	40.0	30.351	6	32.216	1.87	0.31						
170	28	9433F	LW2-G339	2		10	9	1	90.0	10.0	27.033	9	29.864	2.83	0.31						
171	33	9433F	LW2-G339	3		10	10	0	100.0	0.0	27.249	10	29.876	2.63	0.26						
172	115	9433F	LW2-G339	4		10	10	0	100.0	0.0	29.061	9	31.352	2.29	0.25						
173	55	9433F	LW2-G339	5		10	10	0	100.0	0.0	28.393	10	31.160	2.77	0.28	Mean	9.3	0.8	92.5	7.5	0.27
174	17	9433F	LW2-G339	6		10	9	1	90.0	10.0	30.018	9	32.669	2.65	0.29	SD	1.4	1.4	13.9	13.9	0.04
175	4	9433F	LW2-G339	7		10	10	0	100.0	0.0	31.528	10	33.860	2.33	0.23	n	8	8	8	8	8
176	26	9433F	LW2-G339	8	wq replicate	10	10	0	100.0	0.0	28.878	10	30.816	1.94	0.19						

Note: Beakers # 9 and 115 each lost 1 animal in transfer to weigh pan.

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ANC07834
BZTO104(e)007834

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
BULK SEDIMENT POREWATER													
	9403F	Control										1.3	7.2
	9413F	LW2-G232										4.5	5.9
	9414F	LW2-G263										11.4	5.0
	9415F	LW2-G269										23.0	6.3
	9416F	LW2-G283										10.5	6.3
	9417F	LW2-G264										10.2	6.2
	9418F	LW2-G278										15.7	6.2
	9419F	LW2-G276										16.1	6.2
	9420F	LW2-G284										9.9	6.3
	9421F	LW2-G267										2.9	6.2
	9422F	LW2-G453										35.1	6.3
	9423F	LW2-G456										18.9	6.3
	9424F	LW2-G457										16.6	6.4
	9425F	LW2-G461										14.8	6.4
	9426F	LW2-G468										11.9	6.5
	9427F	LW2-G467										4.7	6.5
	9428F	LW2-G473										9.2	6.5
	9429F	LW2-G477										7.8	6.6
	9430F	LW2-G480										7.3	6.4
	9431F	LW2-G454										1.0	6.4
	9432F	LW2-G386										8.2	6.5
	9433F	LW2-G339										7.2	6.6

ANC07835
BZTO104(e)007835

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
TEST OVERLYING WATER													
2	9426F	LW2-G468	8	0	22.8	6.6	210	6.3	51	60	1.6		
26	9433F	LW2-G339	8	0	22.8	7.2	550	6.5	60	50	0.6		
27	9430F	LW2-G480	8	0	22.8	7.1	170	6.3	34	50	0.7		
38	9417F	LW2-G264	8	0	22.7	7.1	185	6.3	51	50	1.2		
39	9414F	LW2-G263	8	0	22.7	7.0	225	6.0	68	30	1.4		
44	9423F	LW2-G456	8	0	22.8	7.2	205	6.3	60	50	2.3		
56	9419F	LW2-G276	8	0	22.8	7.2	200	6.2	60	50	2.5		
70	9428F	LW2-G473	8	0	23.0	7.3	180	6.3	60	50	1.1		
87	9416F	LW2-G283	8	0	22.8	7.2	190	6.2	60	50	1.2		
91	9431F	LW2-G454	8	0	22.8	7.0	160	6.4	43	40	0.2		
99	9403F	Control	8	0	22.8	7.1	245	6.5	51	50	0.1		
102	9415F	LW2-G269	8	0	22.9	7.3	195	6.4	51	50	2.9		
112	9418F	LW2-G278	8	0	22.8	6.8	200	6.3	77	60	2.2		
113	9425F	LW2-G461	8	0	22.8	7.0	200	6.2	60	50	1.9		
114	9424F	LW2-G457	8	0	22.8	7.3	200	6.1	60	60	2.2		
125	9429F	LW2-G477	8	0	22.9	7.2	180	6.2	51	40	1.1		
127	9427F	LW2-G467	8	0	22.8	7.2	165	6.3	51	40	0.7		
129	9420F	LW2-G284	8	0	22.9	7.4	180	6.3	60	50	1.4		
136	9432F	LW2-G386	8	0	22.9	7.2	180	6.3	51	50	1.2		
145	9413F	LW2-G232	8	0	22.8	7.0	175	6.4	51	50	0.7		
163	9421F	LW2-G267	8	0	22.8	7.1	170	6.4	51	40	0.5		
171	9422F	LW2-G453	8	0	22.9	7.3	180	6.3	60	40	3.4		
2	9426F	LW2-G468	8	1	22.9								
26	9433F	LW2-G339	8	1	22.9								
27	9430F	LW2-G480	8	1	22.9								
38	9417F	LW2-G264	8	1	22.8								
39	9414F	LW2-G263	8	1	22.8								
44	9423F	LW2-G456	8	1	22.9								
56	9419F	LW2-G276	8	1	22.9								
70	9428F	LW2-G473	8	1	22.9								
87	9416F	LW2-G283	8	1	22.8								
91	9431F	LW2-G454	8	1	22.9								
99	9403F	Control	8	1	22.9								
102	9415F	LW2-G269	8	1	22.8								
112	9418F	LW2-G278	8	1	22.8								
113	9425F	LW2-G461	8	1	22.8								
114	9424F	LW2-G457	8	1	22.8								
125	9429F	LW2-G477	8	1	22.9								
127	9427F	LW2-G467	8	1	22.9								
129	9420F	LW2-G284	8	1	22.9								
136	9432F	LW2-G386	8	1	22.9								
145	9413F	LW2-G232	8	1	22.9								
163	9421F	LW2-G267	8	1	22.9								
171	9422F	LW2-G453	8	1	22.9								

ANC07836
BZTO104(e)007836

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
2	9426F	LW2-G468	8	2	22.2								
26	9433F	LW2-G339	8	2	22.3								
27	9430F	LW2-G480	8	2	22.2								
38	9417F	LW2-G264	8	2	22.2								
39	9414F	LW2-G263	8	2	22.2								
44	9423F	LW2-G456	8	2	22.3								
56	9419F	LW2-G276	8	2	22.3								
70	9428F	LW2-G473	8	2	22.4								
87	9416F	LW2-G283	8	2	22.4								
91	9431F	LW2-G454	8	2	22.4								
99	9403F	Control	8	2	22.4								
102	9415F	LW2-G269	8	2	22.3								
112	9418F	LW2-G278	8	2	22.3								
113	9425F	LW2-G461	8	2	22.3								
114	9424F	LW2-G457	8	2	22.3								
125	9429F	LW2-G477	8	2	22.3								
127	9427F	LW2-G467	8	2	22.3								
129	9420F	LW2-G284	8	2	22.3								
136	9432F	LW2-G386	8	2	22.3								
145	9413F	LW2-G232	8	2	22.3								
163	9421F	LW2-G267	8	2	22.2								
171	9422F	LW2-G453	8	2	22.3								
2	9426F	LW2-G468	8	3	23.0	6.2		6.3					
26	9433F	LW2-G339	8	3	23.1	6.6		6.4					
27	9430F	LW2-G480	8	3	23.1	6.5		6.4					
38	9417F	LW2-G264	8	3	23.1	6.1		6.3					
39	9414F	LW2-G263	8	3	23.1	6.4		6.2					
44	9423F	LW2-G456	8	3	23.1	6.4		6.2					
56	9419F	LW2-G276	8	3	23.1	6.5		6.3					
70	9428F	LW2-G473	8	3	23.2	6.5		6.3					
87	9416F	LW2-G283	8	3	23.1	5.9		6.3					
91	9431F	LW2-G454	8	3	23.1	6.5		6.3					
99	9403F	Control	8	3	23.2	6.5		6.5					
102	9415F	LW2-G269	8	3	23.1	6.1		6.3					
112	9418F	LW2-G278	8	3	23.1	6.1		6.3					
113	9425F	LW2-G461	8	3	23.1	6.1		6.3					
114	9424F	LW2-G457	8	3	23.2	6.0		6.3					
125	9429F	LW2-G477	8	3	23.2	6.2		6.3					
127	9427F	LW2-G467	8	3	23.1	6.3		6.3					
129	9420F	LW2-G284	8	3	23.1	6.3		6.3					
136	9432F	LW2-G386	8	3	23.1	6.4		6.3					
145	9413F	LW2-G232	8	3	23.1	6.5		6.4					
163	9421F	LW2-G267	8	3	23.1	6.4		6.3					
171	9422F	LW2-G453	8	3	23.2	5.9		6.4					

ANC07837
BZTO104(e)007837

Test Number: 686-11

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
2	9426F	LW2-G468	8	4	23.1								
26	9433F	LW2-G339	8	4	23.0								
27	9430F	LW2-G480	8	4	23.0								
38	9417F	LW2-G264	8	4	23.0								
39	9414F	LW2-G263	8	4	22.9								
44	9423F	LW2-G456	8	4	23.0								
56	9419F	LW2-G276	8	4	23.0								
70	9428F	LW2-G473	8	4	23.2								
87	9416F	LW2-G283	8	4	23.0								
91	9431F	LW2-G454	8	4	23.0								
99	9403F	Control	8	4	23.1								
102	9415F	LW2-G269	8	4	23.0								
112	9418F	LW2-G278	8	4	23.0								
113	9425F	LW2-G461	8	4	23.0								
114	9424F	LW2-G457	8	4	23.0								
125	9429F	LW2-G477	8	4	23.1								
127	9427F	LW2-G467	8	4	23.0								
129	9420F	LW2-G284	8	4	23.0								
136	9432F	LW2-G386	8	4	23.0								
145	9413F	LW2-G232	8	4	23.1								
163	9421F	LW2-G267	8	4	23.0								
171	9422F	LW2-G453	8	4	23.0								
2	9426F	LW2-G468	8	5	23.0	5.6	170	6.2					
26	9433F	LW2-G339	8	5	23.0	6.2	245	6.4					
27	9430F	LW2-G480	8	5	22.9	6.4	165	6.3					
38	9417F	LW2-G264	8	5	22.9	6.4	170	6.3					
39	9414F	LW2-G263	8	5	23.0	6.2	180	6.2					
44	9423F	LW2-G456	8	5	23.0	6.3	175	6.2					
56	9419F	LW2-G276	8	5	23.1	5.8	175	6.3					
70	9428F	LW2-G473	8	5	23.2	6.1	170	6.3					
87	9416F	LW2-G283	8	5	23.0	6.4	170	6.3					
91	9431F	LW2-G454	8	5	23.0	6.0	165	6.2					
99	9403F	Control	8	5	23.1	6.2	185	6.4					
102	9415F	LW2-G269	8	5	23.0	6.3	175	6.3					
112	9418F	LW2-G278	8	5	23.0	6.2	175	6.2					
113	9425F	LW2-G461	8	5	23.0	6.0	175	6.2					
114	9424F	LW2-G457	8	5	23.0	6.0	170	6.2					
125	9429F	LW2-G477	8	5	23.1	6.0	165	6.2					
127	9427F	LW2-G467	8	5	23.1	5.8	165	6.2					
129	9420F	LW2-G284	8	5	23.0	5.8	170	6.2					
136	9432F	LW2-G386	8	5	23.0	6.0	170	6.3					
145	9413F	LW2-G232	8	5	23.0	6.2	165	6.3					
163	9421F	LW2-G267	8	5	23.0	6.2	170	6.4					
171	9422F	LW2-G453	8	5	23.1	5.2	175	6.4					

ANC07838
BZTO104(e)007838

Test Number: 686-11

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
2	9426F	LW2-G468	8	6	22.9									
26	9433F	LW2-G339	8	6	22.9									
27	9430F	LW2-G480	8	6	22.9									
38	9417F	LW2-G264	8	6	22.9									
39	9414F	LW2-G263	8	6	22.9									
44	9423F	LW2-G456	8	6	22.9									
56	9419F	LW2-G276	8	6	23.0									
70	9428F	LW2-G473	8	6	23.0									
87	9416F	LW2-G283	8	6	22.9									
91	9431F	LW2-G454	8	6	22.9									
99	9403F	Control	8	6	22.9									
102	9415F	LW2-G269	8	6	22.9									
112	9418F	LW2-G278	8	6	22.9									
113	9425F	LW2-G461	8	6	22.9									
114	9424F	LW2-G457	8	6	22.9									
125	9429F	LW2-G477	8	6	23.0									
127	9427F	LW2-G467	8	6	22.9									
129	9420F	LW2-G284	8	6	22.9									
136	9432F	LW2-G386	8	6	23.0									
145	9413F	LW2-G232	8	6	23.0									
163	9421F	LW2-G267	8	6	22.9									
171	9422F	LW2-G453	8	6	22.9									
2	9426F	LW2-G468	8	7	22.9	6.8		6.7						
26	9433F	LW2-G339	8	7	22.9	7.2		6.7						
27	9430F	LW2-G480	8	7	22.9	6.6		6.5						
38	9417F	LW2-G264	8	7	22.9	6.4		6.5						
39	9414F	LW2-G263	8	7	22.9	6.8		6.4						
44	9423F	LW2-G456	8	7	22.9	6.6		6.5						
56	9419F	LW2-G276	8	7	22.9	6.9		6.5						
70	9428F	LW2-G473	8	7	23.0	6.6		6.6						
87	9416F	LW2-G283	8	7	22.9	6.6		6.5						
91	9431F	LW2-G454	8	7	22.9	6.6		6.6						
99	9403F	Control	8	7	22.9	7.0		6.6						
102	9415F	LW2-G269	8	7	22.9	6.6		6.6						
112	9418F	LW2-G278	8	7	22.9	6.2		6.5						
113	9425F	LW2-G461	8	7	22.9	6.4		6.5						
114	9424F	LW2-G457	8	7	22.9	6.6		6.6						
125	9429F	LW2-G477	8	7	23.0	6.5		6.5						
127	9427F	LW2-G467	8	7	22.9	6.4		6.6						
129	9420F	LW2-G284	8	7	22.9	6.0		6.5						
136	9432F	LW2-G386	8	7	22.9	6.2		6.5						
145	9413F	LW2-G232	8	7	22.9	6.1		6.5						
163	9421F	LW2-G267	8	7	22.9	6.4		6.7						
171	9422F	LW2-G453	8	7	22.9	6.2		6.5						

ANC07839
BZTO104(e)007839

Test Number: 686-11

Freshwater Sediment Test
28-Day Hyalella azteca

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
2	9426F	LW2-G468	8	8	22.9								
26	9433F	LW2-G339	8	8	22.9								
27	9430F	LW2-G480	8	8	22.8								
38	9417F	LW2-G264	8	8	22.8								
39	9414F	LW2-G263	8	8	22.8								
44	9423F	LW2-G456	8	8	22.8								
56	9419F	LW2-G276	8	8	22.9								
70	9428F	LW2-G473	8	8	22.9								
87	9416F	LW2-G283	8	8	22.8								
91	9431F	LW2-G454	8	8	22.8								
99	9403F	Control	8	8	22.7								
102	9415F	LW2-G269	8	8	22.7								
112	9418F	LW2-G278	8	8	22.8								
113	9425F	LW2-G461	8	8	22.8								
114	9424F	LW2-G457	8	8	22.8								
125	9429F	LW2-G477	8	8	22.8								
127	9427F	LW2-G467	8	8	22.8								
129	9420F	LW2-G284	8	8	22.8								
136	9432F	LW2-G386	8	8	22.9								
145	9413F	LW2-G232	8	8	22.8								
163	9421F	LW2-G267	8	8	22.9								
171	9422F	LW2-G453	8	8	22.9								
2	9426F	LW2-G468	8	9	22.4								
26	9433F	LW2-G339	8	9	22.4								
27	9430F	LW2-G480	8	9	22.4								
38	9417F	LW2-G264	8	9	22.4								
39	9414F	LW2-G263	8	9	22.4								
44	9423F	LW2-G456	8	9	22.3								
56	9419F	LW2-G276	8	9	22.3								
70	9428F	LW2-G473	8	9	22.3								
87	9416F	LW2-G283	8	9	22.3								
91	9431F	LW2-G454	8	9	22.3								
99	9403F	Control	8	9	22.3								
102	9415F	LW2-G269	8	9	22.4								
112	9418F	LW2-G278	8	9	22.3								
113	9425F	LW2-G461	8	9	22.2								
114	9424F	LW2-G457	8	9	22.3								
125	9429F	LW2-G477	8	9	22.3								
127	9427F	LW2-G467	8	9	22.4								
129	9420F	LW2-G284	8	9	22.2								
136	9432F	LW2-G386	8	9	22.3								
145	9413F	LW2-G232	8	9	22.2								
163	9421F	LW2-G267	8	9	22.3								
171	9422F	LW2-G453	8	9	22.3								

ANC07840
BZTO104(e)007840

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
2	9426F	LW2-G468	8	10	22.4	7.1		6.6					
26	9433F	LW2-G339	8	10	22.4	7.6		6.8					
27	9430F	LW2-G480	8	10	22.3	7.5		6.6					
38	9417F	LW2-G264	8	10	22.3	7.0		6.6					
39	9414F	LW2-G263	8	10	22.3	7.7		6.6					
44	9423F	LW2-G456	8	10	22.3	7.1		6.7					
56	9419F	LW2-G276	8	10	22.3	7.1		6.6					
70	9428F	LW2-G473	8	10	22.4	7.2		6.6					
87	9416F	LW2-G283	8	10	22.4	5.8		6.5					
91	9431F	LW2-G454	8	10	22.4	7.0		6.6					
99	9403F	Control	8	10	22.4	7.2		6.9					
102	9415F	LW2-G269	8	10	22.3	6.8		6.6					
112	9418F	LW2-G278	8	10	22.3	7.1		6.6					
113	9425F	LW2-G461	8	10	22.3	7.1		6.6					
114	9424F	LW2-G457	8	10	22.3	7.0		6.6					
125	9429F	LW2-G477	8	10	22.3	7.2		6.6					
127	9427F	LW2-G467	8	10	22.3	7.1		6.6					
129	9420F	LW2-G284	8	10	22.3	7.0		6.6					
136	9432F	LW2-G386	8	10	22.3	7.0		6.6					
145	9413F	LW2-G232	8	10	22.3	7.5		6.6					
163	9421F	LW2-G267	8	10	22.3	7.6		6.6					
171	9422F	LW2-G453	8	10	22.4	6.7		6.6					
2	9426F	LW2-G468	8	11	22.8								
26	9433F	LW2-G339	8	11	22.8								
27	9430F	LW2-G480	8	11	22.7								
38	9417F	LW2-G264	8	11	22.7								
39	9414F	LW2-G263	8	11	22.7								
44	9423F	LW2-G456	8	11	22.8								
56	9419F	LW2-G276	8	11	22.8								
70	9428F	LW2-G473	8	11	22.8								
87	9416F	LW2-G283	8	11	22.8								
91	9431F	LW2-G454	8	11	22.8								
99	9403F	Control	8	11	22.8								
102	9415F	LW2-G269	8	11	22.7								
112	9418F	LW2-G278	8	11	22.8								
113	9425F	LW2-G461	8	11	22.8								
114	9424F	LW2-G457	8	11	22.8								
125	9429F	LW2-G477	8	11	22.8								
127	9427F	LW2-G467	8	11	22.8								
129	9420F	LW2-G284	8	11	22.8								
136	9432F	LW2-G386	8	11	22.8								
145	9413F	LW2-G232	8	11	22.8								
163	9421F	LW2-G267	8	11	22.8								
171	9422F	LW2-G453	8	11	22.9								

ANC07841
BZTO104(e)007841

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
2	9426F	LW2-G468	8	12	23.0	5.4	170	7.0					
26	9433F	LW2-G339	8	12	22.9	6.0	185	6.9					
27	9430F	LW2-G480	8	12	22.8	5.8	165	6.8					
38	9417F	LW2-G264	8	12	22.8	5.8	165	6.7					
39	9414F	LW2-G263	8	12	22.8	6.0	175	6.7					
44	9423F	LW2-G456	8	12	22.8	6.1	170	6.7					
56	9419F	LW2-G276	8	12	22.9	6.1	170	6.7					
70	9428F	LW2-G473	8	12	22.9	6.1	170	6.7					
87	9416F	LW2-G283	8	12	22.9	5.9	170	6.7					
91	9431F	LW2-G454	8	12	22.9	5.9	170	6.7					
99	9403F	Control	8	12	22.9	6.0	185	7.0					
102	9415F	LW2-G269	8	12	22.9	6.0	175	6.8					
112	9418F	LW2-G278	8	12	22.8	5.7	170	6.8					
113	9425F	LW2-G461	8	12	22.9	5.6	170	6.8					
114	9424F	LW2-G457	8	12	22.9	5.8	170	6.8					
125	9429F	LW2-G477	8	12	22.9	6.0	170	6.8					
127	9427F	LW2-G467	8	12	22.9	6.1	170	6.8					
129	9420F	LW2-G284	8	12	22.9	5.8	170	6.8					
136	9432F	LW2-G386	8	12	22.9	5.8	170	6.8					
145	9413F	LW2-G232	8	12	22.9	6.1	165	6.8					
163	9421F	LW2-G267	8	12	22.9	6.1	170	6.7					
171	9422F	LW2-G453	8	12	22.9	5.1	165	6.7					
2	9426F	LW2-G468	8	13	22.7								
26	9433F	LW2-G339	8	13	22.7								
27	9430F	LW2-G480	8	13	22.6								
38	9417F	LW2-G264	8	13	22.5								
39	9414F	LW2-G263	8	13	22.5								
44	9423F	LW2-G456	8	13	22.6								
56	9419F	LW2-G276	8	13	22.6								
70	9428F	LW2-G473	8	13	22.7								
87	9416F	LW2-G283	8	13	22.6								
91	9431F	LW2-G454	8	13	22.7								
99	9403F	Control	8	13	22.7								
102	9415F	LW2-G269	8	13	22.6								
112	9418F	LW2-G278	8	13	22.6								
113	9425F	LW2-G461	8	13	22.6								
114	9424F	LW2-G457	8	13	22.6								
125	9429F	LW2-G477	8	13	22.7								
127	9427F	LW2-G467	8	13	22.6								
129	9420F	LW2-G284	8	13	22.7								
136	9432F	LW2-G386	8	13	22.6								
145	9413F	LW2-G232	8	13	22.7								
163	9421F	LW2-G267	8	13	22.7								
171	9422F	LW2-G453	8	13	22.8								

ANC07842
BZTO104(e)007842

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
2	9426F	LW2-G468	8	14	22.8	5.1		6.3					
26	9433F	LW2-G339	8	14	22.7	5.9		6.4					
27	9430F	LW2-G480	8	14	22.7	6.1		6.4					
38	9417F	LW2-G264	8	14	22.6	5.8		6.3					
39	9414F	LW2-G263	8	14	22.6	5.9		6.2					
44	9423F	LW2-G456	8	14	22.6	6.2		6.2					
56	9419F	LW2-G276	8	14	22.6	6.0		6.3					
70	9428F	LW2-G473	8	14	22.6	5.8		6.2					
87	9416F	LW2-G283	8	14	22.6	5.3		6.2					
91	9431F	LW2-G454	8	14	22.6	5.9		6.3					
99	9403F	Control	8	14	22.7	5.6		6.5					
102	9415F	LW2-G269	8	14	22.7	5.4		6.4					
112	9418F	LW2-G278	8	14	22.7	5.3		6.4					
113	9425F	LW2-G461	8	14	22.6	5.8		6.4					
114	9424F	LW2-G457	8	14	22.6	5.6		6.4					
125	9429F	LW2-G477	8	14	22.7	5.7		6.3					
127	9427F	LW2-G467	8	14	22.7	5.6		6.3					
129	9420F	LW2-G284	8	14	22.6	5.8		6.3					
136	9432F	LW2-G386	8	14	22.6	6.0		6.4					
145	9413F	LW2-G232	8	14	22.6	5.8		6.3					
163	9421F	LW2-G267	8	14	22.7	6.2		6.3					
171	9422F	LW2-G453	8	14	22.7	5.3		6.3					
2	9426F	LW2-G468	8	15	23.0								
26	9433F	LW2-G339	8	15	23.0								
27	9430F	LW2-G480	8	15	23.0								
38	9417F	LW2-G264	8	15	22.9								
39	9414F	LW2-G263	8	15	22.9								
44	9423F	LW2-G456	8	15	22.8								
56	9419F	LW2-G276	8	15	22.6								
70	9428F	LW2-G473	8	15	22.6								
87	9416F	LW2-G283	8	15	22.9								
91	9431F	LW2-G454	8	15	22.9								
99	9403F	Control	8	15	23.0								
102	9415F	LW2-G269	8	15	23.0								
112	9418F	LW2-G278	8	15	23.0								
113	9425F	LW2-G461	8	15	23.0								
114	9424F	LW2-G457	8	15	23.0								
125	9429F	LW2-G477	8	15	23.0								
127	9427F	LW2-G467	8	15	23.0								
129	9420F	LW2-G284	8	15	23.0								
136	9432F	LW2-G386	8	15	23.0								
145	9413F	LW2-G232	8	15	23.0								
163	9421F	LW2-G267	8	15	23.0								
171	9422F	LW2-G453	8	15	22.7								

ANC07843
BZTO104(e)007843

Water Quality Data

	NAS	CLIENT			Overlying water								Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3		NH3	pH
2	9426F	LW2-G468	8	16	22.7									
26	9433F	LW2-G339	8	16	22.6									
27	9430F	LW2-G480	8	16	22.6									
38	9417F	LW2-G264	8	16	22.6									
39	9414F	LW2-G263	8	16	22.5									
44	9423F	LW2-G456	8	16	22.5									
56	9419F	LW2-G276	8	16	22.6							S		
70	9428F	LW2-G473	8	16	22.7									
87	9416F	LW2-G283	8	16	22.7									
91	9431F	LW2-G454	8	16	22.7									
99	9403F	Control	8	16	22.7									
102	9415F	LW2-G269	8	16	22.7									
112	9418F	LW2-G278	8	16	22.6									
113	9425F	LW2-G461	8	16	22.6									
114	9424F	LW2-G457	8	16	22.6									
125	9429F	LW2-G477	8	16	22.7									
127	9427F	LW2-G467	8	16	22.6									
129	9420F	LW2-G284	8	16	22.6									
136	9432F	LW2-G386	8	16	22.6									
145	9413F	LW2-G232	8	16	22.7									
163	9421F	LW2-G267	8	16	22.7									
171	9422F	LW2-G453	8	16	22.7									
2	9426F	LW2-G468	8	17	23.0	6.2		6.6						
26	9433F	LW2-G339	8	17	23.0	6.2		6.6						
27	9430F	LW2-G480	8	17	22.9	6.1		6.5						
38	9417F	LW2-G264	8	17	22.9	6.0		6.5						
39	9414F	LW2-G263	8	17	22.9	6.0		6.4						
44	9423F	LW2-G456	8	17	22.9	6.0		6.4						
56	9419F	LW2-G276	8	17	23.0	6.0		6.5						
70	9428F	LW2-G473	8	17	23.1	5.9		6.5						
87	9416F	LW2-G283	8	17	22.9	5.9		6.4						
91	9431F	LW2-G454	8	17	23.0	6.2		6.5						
99	9403F	Control	8	17	23.0	5.9		6.5						
102	9415F	LW2-G269	8	17	23.0	5.7		6.5						
112	9418F	LW2-G278	8	17	22.9	5.7		6.5						
113	9425F	LW2-G461	8	17	22.9	5.4		6.5						
114	9424F	LW2-G457	8	17	22.9	5.8		6.5						
125	9429F	LW2-G477	8	17	23.0	5.8		6.5						
127	9427F	LW2-G467	8	17	22.9	6.0		6.5						
129	9420F	LW2-G284	8	17	23.0	5.9		6.5						
136	9432F	LW2-G386	8	17	22.9	6.1		6.5						
145	9413F	LW2-G232	8	17	23.0	6.1		6.5						
163	9421F	LW2-G267	8	17	23.0	6.2		6.5						
171	9422F	LW2-G453	8	17	23.0	5.9		6.5						

ANC07844
BZTO104(e)007844

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
2	9426F	LW2-G468	8	18	22.8								
26	9433F	LW2-G339	8	18	22.7								
27	9430F	LW2-G480	8	18	22.7								
38	9417F	LW2-G264	8	18	22.6								
39	9414F	LW2-G263	8	18	22.6								
44	9423F	LW2-G456	8	18	22.7								
56	9419F	LW2-G276	8	18	22.7								
70	9428F	LW2-G473	8	18	22.7								
87	9416F	LW2-G283	8	18	22.7								
91	9431F	LW2-G454	8	18	22.7								
99	9403F	Control	8	18	22.7								
102	9415F	LW2-G269	8	18	22.7								
112	9418F	LW2-G278	8	18	22.7								
113	9425F	LW2-G461	8	18	22.6								
114	9424F	LW2-G457	8	18	22.6								
125	9429F	LW2-G477	8	18	22.7								
127	9427F	LW2-G467	8	18	22.7								
129	9420F	LW2-G284	8	18	22.7								
136	9432F	LW2-G386	8	18	22.7								
145	9413F	LW2-G232	8	18	22.7								
163	9421F	LW2-G267	8	18	22.7								
171	9422F	LW2-G453	8	18	22.7								
2	9426F	LW2-G468	8	19	23.1	5.4		6.6					
26	9433F	LW2-G339	8	19	23.1	6.2		6.5					
27	9430F	LW2-G480	8	19	23.1	5.8		6.4					
38	9417F	LW2-G264	8	19	23.1	5.9		6.5					
39	9414F	LW2-G263	8	19	23.1	5.9		6.4					
44	9423F	LW2-G456	8	19	23.1	5.7		6.4					
56	9419F	LW2-G276	8	19	23.1	5.8		6.4					
70	9428F	LW2-G473	8	19	23.2	5.9		6.5					
87	9416F	LW2-G283	8	19	23.1	5.3		6.5					
91	9431F	LW2-G454	8	19	23.1	5.8		6.5					
99	9403F	Control	8	19	23.1	5.6		6.5					
102	9415F	LW2-G269	8	19	23.1	5.5		6.5					
112	9418F	LW2-G278	8	19	23.1	5.5		6.6					
113	9425F	LW2-G461	8	19	23.1	5.4		6.6					
114	9424F	LW2-G457	8	19	23.1	5.3		6.5					
125	9429F	LW2-G477	8	19	23.1	5.4		6.6					
127	9427F	LW2-G467	8	19	23.1	5.8		6.5					
129	9420F	LW2-G284	8	19	23.1	5.6		6.5					
136	9432F	LW2-G386	8	19	23.1	6.1		6.5					
145	9413F	LW2-G232	8	19	23.1	6.9		6.6					
163	9421F	LW2-G267	8	19	23.2	6.4		6.5					
171	9422F	LW2-G453	8	19	23.2	5.3		6.6					

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
2	9426F	LW2-G468	8	20	22.5								
26	9433F	LW2-G339	8	20	22.5								
27	9430F	LW2-G480	8	20	22.5								
38	9417F	LW2-G264	8	20	22.4								
39	9414F	LW2-G263	8	20	22.5								
44	9423F	LW2-G456	8	20	22.5								
56	9419F	LW2-G276	8	20	22.5								
70	9428F	LW2-G473	8	20	22.6								
87	9416F	LW2-G283	8	20	22.5								
91	9431F	LW2-G454	8	20	22.6								
99	9403F	Control	8	20	22.6								
102	9415F	LW2-G269	8	20	22.6								
112	9418F	LW2-G278	8	20	22.5								
113	9425F	LW2-G461	8	20	22.5								
114	9424F	LW2-G457	8	20	22.5								
125	9429F	LW2-G477	8	20	22.6								
127	9427F	LW2-G467	8	20	22.4								
129	9420F	LW2-G284	8	20	22.5								
136	9432F	LW2-G386	8	20	22.5								
145	9413F	LW2-G232	8	20	22.5								
163	9421F	LW2-G267	8	20	22.5								
171	9422F	LW2-G453	8	20	22.5								
2	9426F	LW2-G468	8	21	23.0	5.0		6.2					
26	9433F	LW2-G339	8	21	22.9	5.7		6.2					
27	9430F	LW2-G480	8	21	22.9	5.3		6.2					
38	9417F	LW2-G264	8	21	22.9	5.0		6.2					
39	9414F	LW2-G263	8	21	22.9	5.2		6.2					
44	9423F	LW2-G456	8	21	22.9	5.4		6.2					
56	9419F	LW2-G276	8	21	22.9	4.9		6.2					
70	9428F	LW2-G473	8	21	22.9	5.2		6.2					
87	9416F	LW2-G283	8	21	22.9	5.2		6.2					
91	9431F	LW2-G454	8	21	22.9	5.3		6.3					
99	9403F	Control	8	21	22.9	5.0		6.3					
102	9415F	LW2-G269	8	21	22.9	4.8		6.3					
112	9418F	LW2-G278	8	21	22.9	4.6		6.3					
113	9425F	LW2-G461	8	21	22.9	4.6		6.3					
114	9424F	LW2-G457	8	21	22.9	4.8		6.3					
125	9429F	LW2-G477	8	21	22.9	4.7		6.3					
127	9427F	LW2-G467	8	21	22.9	5.1		6.3					
129	9420F	LW2-G284	8	21	22.9	5.0		6.3					
136	9432F	LW2-G386	8	21	22.9	5.1		6.2					
145	9413F	LW2-G232	8	21	22.9	5.4		6.2					
163	9421F	LW2-G267	8	21	22.9	5.6		6.3					
171	9422F	LW2-G453	8	21	22.9	4.8		6.2					

ANC07846
BZTO104(e)007846

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
2	9426F	LW2-G468	8	22	22.4								
26	9433F	LW2-G339	8	22	22.3								
27	9430F	LW2-G480	8	22	22.2								
38	9417F	LW2-G264	8	22	22.2								
39	9414F	LW2-G263	8	22	22.3								
44	9423F	LW2-G456	8	22	22.3								
56	9419F	LW2-G276	8	22	22.3								
70	9428F	LW2-G473	8	22	22.4								
87	9416F	LW2-G283	8	22	22.4								
91	9431F	LW2-G454	8	22	22.5								
99	9403F	Control	8	22	22.4								
102	9415F	LW2-G269	8	22	22.3								
112	9418F	LW2-G278	8	22	22.3								
113	9425F	LW2-G461	8	22	22.3								
114	9424F	LW2-G457	8	22	22.3								
125	9429F	LW2-G477	8	22	22.2								
127	9427F	LW2-G467	8	22	22.2								
129	9420F	LW2-G284	8	22	22.3								
136	9432F	LW2-G386	8	22	22.2								
145	9413F	LW2-G232	8	22	22.2								
163	9421F	LW2-G267	8	22	22.2								
171	9422F	LW2-G453	8	22	22.3								
2	9426F	LW2-G468	8	23	23.1								
26	9433F	LW2-G339	8	23	23.1								
27	9430F	LW2-G480	8	23	23.0								
38	9417F	LW2-G264	8	23	23.0								
39	9414F	LW2-G263	8	23	23.0								
44	9423F	LW2-G456	8	23	23.1								
56	9419F	LW2-G276	8	23	23.1								
70	9428F	LW2-G473	8	23	23.3								
87	9416F	LW2-G283	8	23	23.1								
91	9431F	LW2-G454	8	23	23.1								
99	9403F	Control	8	23	23.2								
102	9415F	LW2-G269	8	23	23.0								
112	9418F	LW2-G278	8	23	23.0								
113	9425F	LW2-G461	8	23	23.1								
114	9424F	LW2-G457	8	23	23.1								
125	9429F	LW2-G477	8	23	23.1								
127	9427F	LW2-G467	8	23	23.0								
129	9420F	LW2-G284	8	23	23.1								
136	9432F	LW2-G386	8	23	22.9								
145	9413F	LW2-G232	8	23	23.0								
163	9421F	LW2-G267	8	23	23.0								
171	9422F	LW2-G453	8	23	22.9								

ANC07847
BZTO104(e)007847

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
2	9426F	LW2-G468	8	24	22.7	4.7		6.2					
26	9433F	LW2-G339	8	24	22.7	5.9		6.3					
27	9430F	LW2-G480	8	24	22.7	5.8		6.3					
38	9417F	LW2-G264	8	24	22.7	5.4		6.3					
39	9414F	LW2-G263	8	24	22.6	5.5		6.3					
44	9423F	LW2-G456	8	24	22.7	5.7		6.2					
56	9419F	LW2-G276	8	24	22.7	5.6		6.2					
70	9428F	LW2-G473	8	24	22.7	5.1		6.2					
87	9416F	LW2-G283	8	24	22.6	5.2		6.3					
91	9431F	LW2-G454	8	24	22.7	5.2		6.4					
99	9403F	Control	8	24	22.8	5.4		6.4					
102	9415F	LW2-G269	8	24	22.7	5.2		6.3					
112	9418F	LW2-G278	8	24	22.7	5.1		6.4					
113	9425F	LW2-G461	8	24	22.7	5.4		6.3					
114	9424F	LW2-G457	8	24	22.8	5.5		6.3					
125	9429F	LW2-G477	8	24	22.7	6.1		6.4					
127	9427F	LW2-G467	8	24	22.7	6.5		6.4					
129	9420F	LW2-G284	8	24	22.7	6.5		6.5					
136	9432F	LW2-G386	8	24	22.7	5.5		6.4					
145	9413F	LW2-G232	8	24	22.7	5.5		6.4					
163	9421F	LW2-G267	8	24	22.7	5.8		6.4					
171	9422F	LW2-G453	8	24	22.7	4.9		6.4					
2	9426F	LW2-G468	8	25	22.9								
26	9433F	LW2-G339	8	25	22.9								
27	9430F	LW2-G480	8	25	22.9								
38	9417F	LW2-G264	8	25	22.8								
39	9414F	LW2-G263	8	25	22.8								
44	9423F	LW2-G456	8	25	22.8								
56	9419F	LW2-G276	8	25	22.8								
70	9428F	LW2-G473	8	25	22.9								
87	9416F	LW2-G283	8	25	22.9								
91	9431F	LW2-G454	8	25	22.8								
99	9403F	Control	8	25	22.9								
102	9415F	LW2-G269	8	25	22.9								
112	9418F	LW2-G278	8	25	22.8								
113	9425F	LW2-G461	8	25	22.8								
114	9424F	LW2-G457	8	25	22.8								
125	9429F	LW2-G477	8	25	22.9								
127	9427F	LW2-G467	8	25	22.9								
129	9420F	LW2-G284	8	25	22.9								
136	9432F	LW2-G386	8	25	22.9								
145	9413F	LW2-G232	8	25	22.8								
163	9421F	LW2-G267	8	25	22.9								
171	9422F	LW2-G453	8	25	22.9								

ANC07848
BZTO104(e)007848

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
2	9426F	LW2-G468	8	26	23.0	4.8	160	6.1					
26	9433F	LW2-G339	8	26	23.0	5.9	165	6.2					
27	9430F	LW2-G480	8	26	22.9	5.5	160	6.2					
38	9417F	LW2-G264	8	26	22.9	5.4	160	6.2					
39	9414F	LW2-G263	8	26	22.9	5.4	160	6.2					
44	9423F	LW2-G456	8	26	23.0	5.5	160	6.2					
56	9419F	LW2-G276	8	26	23.0	5.3	165	6.3					
70	9428F	LW2-G473	8	26	23.1	5.1	165	6.3					
87	9416F	LW2-G283	8	26	23.0	5.1	160	6.2					
91	9431F	LW2-G454	8	26	23.0	5.5	160	6.3					
99	9403F	Control	8	26	23.0	5.1	165	6.3					
102	9415F	LW2-G269	8	26	23.0	5.0	160	6.3					
112	9418F	LW2-G278	8	26	22.9	4.9	160	6.2					
113	9425F	LW2-G461	8	26	22.9	4.9	160	6.2					
114	9424F	LW2-G457	8	26	23.0	5.0	165	6.3					
125	9429F	LW2-G477	8	26	22.9	5.4	165	6.3					
127	9427F	LW2-G467	8	26	22.9	5.4	160	6.3					
129	9420F	LW2-G284	8	26	22.9	5.4	160	6.3					
136	9432F	LW2-G386	8	26	23.0	5.1	160	6.3					
145	9413F	LW2-G232	8	26	23.0	5.4	165	6.3					
163	9421F	LW2-G267	8	26	23.0	5.7	160	6.3					
171	9422F	LW2-G453	8	26	23.1	5.0	165	6.3					
2	9426F	LW2-G468	8	27	23.0								
26	9433F	LW2-G339	8	27	23.0								
27	9430F	LW2-G480	8	27	23.0								
38	9417F	LW2-G264	8	27	22.9								
39	9414F	LW2-G263	8	27	22.9								
44	9423F	LW2-G456	8	27	23.0								
56	9419F	LW2-G276	8	27	22.9								
70	9428F	LW2-G473	8	27	23.1								
87	9416F	LW2-G283	8	27	23.0								
91	9431F	LW2-G454	8	27	22.9								
99	9403F	Control	8	27	23.0								
102	9415F	LW2-G269	8	27	23.0								
112	9418F	LW2-G278	8	27	22.9								
113	9425F	LW2-G461	8	27	22.9								
114	9424F	LW2-G457	8	27	22.9								
125	9429F	LW2-G477	8	27	22.9								
127	9427F	LW2-G467	8	27	23.0								
129	9420F	LW2-G284	8	27	23.0								
136	9432F	LW2-G386	8	27	23.0								
145	9413F	LW2-G232	8	27	23.0								
163	9421F	LW2-G267	8	27	23.0								
171	9422F	LW2-G453	8	27	23.0								

ANC07849
BZTO104(e)007849

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
2	9426F	LW2-G468	8	28	23.1	6.0	160	6.3	43	40	0.3		
26	9433F	LW2-G339	8	28	23.0	7.2	165	6.5	43	40	<0.1		
27	9430F	LW2-G480	8	28	22.9	7.4	160	6.4	43	40	0.1		
38	9417F	LW2-G264	8	28	22.9	6.9	160	6.3	43	40	<0.1		
39	9414F	LW2-G263	8	28	23.0	6.9	165	6.2	43	40	0.1		
44	9423F	LW2-G456	8	28	22.9	7.1	160	6.3	43	40	0.1		
56	9419F	LW2-G276	8	28	23.0	7.1	165	6.4	43	40	0.2		
70	9428F	LW2-G473	8	28	23.2	6.9	165	6.4	34	40	<0.1		
87	9416F	LW2-G283	8	28	23.0	7.1	165	6.4	43	40	<0.1		
91	9431F	LW2-G454	8	28	23.1	7.4	165	6.4	34	40	<0.1		
99	9403F	Control	8	28	23.0	6.9	165	6.4	34	40	<0.1		
102	9415F	LW2-G269	8	28	23.0	6.7	165	6.3	34	40	0.1		
112	9418F	LW2-G278	8	28	23.0	7.1	165	6.4	43	40	<0.1		
113	9425F	LW2-G461	8	28	22.9	6.9	160	6.3	43	40	<0.1		
114	9424F	LW2-G457	8	28	22.9	6.9	165	6.3	51	40	0.1		
125	9429F	LW2-G477	8	28	23.1	7.1	165	6.4	34	40	0.1		
127	9427F	LW2-G467	8	28	23.0	7.3	165	6.4	43	40	0.2		
129	9420F	LW2-G284	8	28	23.0	7.3	160	6.4	43	40	0.2		
136	9432F	LW2-G386	8	28	23.0	6.8	165	6.5	43	40	<0.1		
145	9413F	LW2-G232	8	28	23.0	7.3	165	6.5	51	40	0.1		
163	9421F	LW2-G267	8	28	23.0	7.4	165	6.5	43	40	0.1		
171	9422F	LW2-G453	8	28	23.3	5.9	160	6.4	43	40	0.7		
				Mean	22.8	6.1	176	6.4	49	44	---	11.3	6.3
				SD	0.3	0.7	39	0.2	10	7	---	7.8	0.4
				n	638	286	110	286	44	44	44	22	22
				Min	22.2	4.6	160	6.0	34	30	<0.1	1.0	5.0
				Max	23.3	7.7	550	7.0	77	60	3.4	35.1	7.2
	Data Entry Verified												

ANC07850
BZTO104(e)007850

CHAIN-OF-CUSTODY RECORDS

Windward Environmental

CHAIN-OF-CUSTODY/TEST REQUEST FORM

1196

Project/Client Name: PORTLAND HARBOR RI/FS
Windward Project No:
Contact Name: HELLE ANDERSEN
Sampled By: ANGELITA RODRIQUEZ

Ship to: NORTHWESTERN AQUATIC SCIENCES
Attn: GERALD IRISSARRI
Shipping address: 3814 YAQUINA BAY RD NEWPORT OR
Shipping Date: 9/2/2004
Airbill Number:

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required) 10-DAY CHIRONOMID	28-DAY HYALELLA			MAS Smpl #			Comments / Instructions [Jar tag number(s)]
9/30/2004	10:06	LW2-G232	4/1L	Sediment					9413	F		INTERNAL TEMP OF
	10:43	LW2-G263	4/1L	Sediment					9414	F		ICE CHEST AT LAB
	11:03	LW2-G269	4/1L	Sediment					9415	F		RECEIPT:
	11:40	LW2-G283	4/1L	Sediment					9416	F		#1 0.5°C
	12:17	LW2-G264	4/1L	Sediment					9417	F		#2 1.5°C
	12:37	LW2-G278	4/1L	Sediment					9418	F		#3 2.0°C
	12:54	LW2-G276	4/1L	Sediment					9419	F		#4 3.5°C
	13:14	LW2-G284	4/1L	Sediment					9420	F		#5 4.0°C
	13:35	LW2-G267	4/1L	Sediment					9421	F		#6 4.8C
9/31/2004	10:38	LW2-G453	4/1L	Sediment					9422	F		#7 2.5°C
	11:15	LW2-G456	4/1L	Sediment					9423	F		
	11:57	LW2-G457	4/1L	Sediment					9424	F		
	12:13	LW2-G461	4/1L	Sediment					9425	F		
		Total Number of Containers	84	Purchase Order / Statement of Work #								

19 of 19

1) Released by:	1) Rec'd by:	2) Released by:	1) Rec'd by:
Print name: ANGELITA RODRIQUEZ	GERALD IRISSARRI	Print name:	
Signature:	Company: NORTHWESTERN AQUATIC SCIENCES	Signature:	Company:
Company: WINDWARD ENVIRONMENTAL	Date/Time: 9/2/04 10:43	Company:	Date/Time:
Date/Time: 9/2/2004 10:43		Date/Time:	

* Distribution: White and yellow copies accompany shipment; pink-consignor's copy; white-consignee return with results; yellow-consignee's copy.
* Instructions for completion of Chain-of-Custody/Test Request Form on back.

Wind Ward environmental LLC
200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: 206.378.1364
Fax: 206.217.0089

To be completed by Laboratory upon sample receipt:

Date of receipt:	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

ANC07852
BZTO104(e)007852

2 of 2

Windward Environmental

CHAIN-OF-CUSTODY/TEST REQUEST FORM

1353

Project/Client Name: PORTLAND HARBOR RI/FS
Windward Project No:
Contact Name: HELLE ANDERSEN
Sampled By: ANGELITA RODRIGUEZ

Ship to: GERALD IRISSARRI
Attn: 3814 YAQUINA BAY RD
Shipping address: NEWPORT OR 97365

Shipping Date: 9/2/2004
Airbill Number:

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required)							Comments / Instructions [Jar tag number(s)]
					10-DAY CHIRONOMID	28-DAY HYALELLA			MAS	Smpl #		
8/31/04	1311	LW2-G468 ·	4/1L	Sediment					9426	F		
9/1/04	0935	LW2-G467 ·	4/1L	Sediment					9427	F		
	1013	LW2-G483 ·	4/1L	Sediment					9428	F		
	1039	LW2-G477 ·	4/1L	Sediment					9429	F		
	1056	LW2-G480 ·	4/1L	Sediment					9430	F		
	1143	LW2-G454 ·	4/1L	Sediment					9431	F		
	1501	LW2-G386 ·	4/1L	Sediment					9432	F		
	1531	LW2-G339 ·	4/1L	Sediment					9433	F		
* 9/1/04	1112	LW2-G475 ·	4/1L	SEDIMENT					9434	F	*	MISTAKE IN FIELD, NOT A BIOASSAY STATION GSR 9/2/04 1130 AR 9/2/04 1130
		Total Number of Containers	8	Purchase Order / Statement of Work #								

1 of 1

1) Released by:	1) Rec'd by:	2) Released by:	1) Rec'd by:
Print name: ANGELITA RODRIGUEZ	GERALD IRISSARRI	Print name:	
Signature:	Company: NORTHWESTERN AQUATIC SCIENCES	Signature:	Company:
Company: WINDWARD ENVIRONMENTAL	Date/Time: 9/2/04 10:43	Company:	Date/Time:
Date/Time: 9/2/2004 10:43		Date/Time:	

* Distribution: White and yellow copies accompany shipment; pink-consignor's copy; white-consignee return with results; yellow-consignee's copy.
* Instructions for completion of Chain-of-Custody/Test Request Form on back.

Wind Ward environmental LLC
200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: 206.378.1364
Fax: 206.217.0089

To be completed by Laboratory upon sample receipt:

Date of receipt:	Laboratory W.O. #
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

ANC07853
BZTO104(e)007853

APPENDIX II

RAW DATA – REFERENCE TOXICANT TEST

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS- _____

ACUTE TOXICITY TEST (ALL SPECIES)

Test No. 999-1838 Client: QC Test Investigator _____

Test Type (rangefinding/definitive) _____ Test Length (hr) 96

Species *Hyalella azteca*

STUDY MANAGEMENT

Client: QC test

Client's Study Monitor: QC test

Testing Laboratory: Northwestern Aquatic Sciences

Test Location: Newport Laboratory

Laboratory's Study Personnel:

Proj. Man./Study Dir. G.J. Irissarri GJI

QA Officer L. K. Nemeth

1. GABichler VB 2. Wadine T. Montgomery WTM

3. M.S. Redmond MSR 4. S. Gage

Test Beginning: 9-10-04 1230 Test Ending: 9-14-04 1520

TEST MATERIAL Lot No.: TNZ Mallinckrodt

Description: Cadmium as $CdCl_2 \cdot 2.5H_2O$ (1.0 mg/ml) Prepared: 4-2-03

NAS Sample No.				
Date of Collection:				
Date of Receipt:				
Temperature (deg C):				
Dissolved oxygen (mg/L):				
pH:				
Conductivity (umhos/cm):				
Hardness (mg/L):				
Alkalinity (mg/L):				
Salinity (ppt):				
Total chlorine (mg/L):				
Total ammonia-N (mg/L):				

DILUTION WATER

Description: Moderately hard synthetic water

Date of Preparation/Collection: 9-2-04

Water Quality: Cond. (umhos/cm): 290 Salinity (ppt) _____ pH 7.5

Hardness (mg/L as $CaCO_3$): 85 Alkalinity (mg/L as $CaCO_3$): 70

Treatments: Aerated ≥ 24 hrs

TEST LOCATION

Test conducted in (circle one): room 1 (room 2) trailer water bath other: _____

Randomization chart:

REP A	30	ϕ	7.5	60	15	3.75				
B	ϕ	60	15	3.75	30	7.5				

Error codes: 1) Correction of handwriting error
2) Written in wrong location; entry deleted
3) Wrong date deleted; replaced with correct date
4) Error found in measurement; measurement repeated

Revised 12-5-01

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-_____

ACUTE TOXICITY TEST (ALL SPECIES)

Test No. 999-1838 Client QC Test Investigator _____

TEST ORGANISMS

Species: *Hyalella azteca* Age: 6-7 days Size: _____

Source: Chesapeake Cultures, Hayes, VA Date received: 9-8-04

Acclimation Data:

Date	Temp. (deg.C)	DO (mg/L)	pH	Cond. umhos/cm	Hardness (mg/L)	Alkalinity (mg/L)	Feeding Amount	Feeding description	Water changes
9-8-04	23.7	>15.0	7.7	400	170	170	10 ml	YTC	YES
9-9-04	22.7	8.6	7.7	270	102	90	"	"	YES
9-10-04	22.3	8.7	7.2	220	68	70	"	"	
Mean	22.9	10.8	7.4	313	113	110			
S.D.	0.7	3.7	0.3	75	52	53			
(N)	3	3	3	3	3	3			

Photoperiod during acclimation: 16:8, L:D

TEST PROCEDURES AND CONDITIONS

Test concentrations (50% series recommended): 60, 30, 15, 7.5, 3.75, 0 ug/L

Test chamber: 250 ml glass beakers Test volume: 100 ml

Replicates/treatment: 10 Organisms/treatment: 20 (10/rep)

Test water changes: None Aeration during test: None

Feeding: 0.5 ml YTC suspension per beaker on days 0 and 2

Duration: 24-hr, 48-hr, (96-hr) Test temperature (deg.C): (23 ± 1) or 20 ± 1

Beaker placement: Stratified randomization Photoperiod: 16:8, L:D

MISCELLANEOUS NOTES

Test solution preparation:

1st working stock made by 1:99 (1ml ↑ 100 ml) dilution of concentrated 1.0 mg/ml Cd stock.
Final conc.: 10 ug/L.

2nd working stock made by 10:90 (10ml ↑ 100 ml) dilution of concentrated 1st working stock.
Final conc.: 1ug/L.

Test concentration (ug/L)	ml of 2nd working stock per **200** ml	Dilution water
60	12	Brought up to final volume of 200 ml with dilution water and distributed evenly between two replicates
30	6	
15	3	
7.5	1.5	
3.75	0.75	
0	0	

6 SJ 9-10-04

ANC07856
BZTO104(e)007856

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-_____

ACUTE TOXICITY TEST (ALL SPECIES)

Test No. 999-1838 Client QC Test

DAILY RECORD SHEET

Day 0 (9 / 10 / 04)

Conc. (ug/L)	Temp. (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	Survivors A	Survivors B
1. 60	23.5	8.8	265	~~7.75~~	85	70	10	10
2. 30	23.6	8.8	275	7.5			10	10
3. 15	23.6	8.9	280	7.5			10	10
4. 7.5	23.5	8.9	280	7.5			10	10
5. 3.75	23.5	8.8	280	7.5			10	10
6. 0	23.5	8.9	280	7.5	85	70	10	10
All animals fed 0.5 ml YTC suspension. Initials: MB								

Day 1 (9 / 11 / 04) 08 / mm / GJ

Conc. (ug/L)	Temp. (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	Survivors A	Survivors B
1. 60	23.1	8.5	275	7.3			10	10
2. 30	23.1	8.4	285	7.3			10	10
3. 15	23.1	8.4	285	7.2			10	10
4. 7.5	23.1	8.5	285	7.2			10	10
5. 3.75	23.0	8.3	285	7.2			10	10
6. 0	23.1	8.3	280	7.2			10	10

Day 2 (9 / 12 / 04) mm / AF

Conc. (ug/L)	Temp. (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	Survivors A	Survivors B
1. 60	22.8	8.2	280	7.3			∅ (10D)	2 (8D)
2. 30	22.9	8.2	295	7.3			6 (4D)	3 (7D)
3. 15	22.9	8.2	295	7.3			6 (4D)	6 (4D)
4. 7.5	22.9	8.2	295	7.3			10	8 (2D)
5. 3.75	23.0	8.2	300	7.3			10	10
6. 0	23.0	8.2	300	7.3			10	10
All animals fed 0.5 ml YTC suspension. Initials: GJ								

Day 3 (9 / 13 / 04) mm / AF

Conc. (ug/L)	Temp. (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	Survivors A	Survivors B
1. 60	23.2	7.9	295	7.0			~~∅ (10D)~~	~~2 (8)~~ GJ
2. 30	23.2	7.9	310	7.1			∅ (6D)	∅ (3D)
3. 15	23.2	7.9	310	7.0			2 (4D)	1 (5D)
4. 7.5	23.3	7.8	305	7.0			6 (4D)	6 (2D)
5. 3.75	23.2	7.8	310	7.0			9 (1D)	10
6. 0	23.3	7.8	310	7.0			10	10

② 9-12-04

Day 4 (9 / 14 / 04) mm / AF

Conc. (ug/L)	Temp. (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	Survivors A	Survivors B
1. 60	—	—	—	—	—	—	∅	∅
2. 30	—	—	—	—			∅	∅
3. 15	23.0	8.0	305	7.3			1 (1D)	∅ (1D)
4. 7.5	23.0	7.9	305	7.3			6	5 (1D)
5. 3.75	23.0	7.9	305	7.3			9	9 (1D)
6. 0	22.9	7.8	310	7.2	85	80	9 (1D)	10
Mean	23.2	8.3	292	7.3	85	73		
SD	0.2	0.4	13	0.2	0	6		
n	28	28	28	28	3	3		

Revised 12-5-01

ANC07857
BZTO104(e)007857

Chesapeake Cultures

P.O. Box 507 Hayes, VA 23072 (804) 693-4046 (804)694-4704 fax
www.c-cultures.com
e-mail growfish@c-cultures.com

N.A.S.
Shipment Information

Species Hyalella azteca Date 9/7/04

Age ~3-4d.; 1.2-1.5mm P.O. No. verbal

Quanitity 2600+ Invoice No. 4816

Temperature 24°C Salinity — pH 7.96

Notes Thank you!

Rec'd 9-8-04 [illegible] Biologist [signature]

* *Please inspect shipment and report any problem immediately* *

4 of 7

Acute 96-hr Toxicity Test-96 Hr Survival

Start Date:	9/10/04 12:30	Test ID:	999-1838	Sample ID:	REF-Ref Toxicant
End Date:	9/14/04 15:20	Lab ID:	ORNAS-Northwestern Aquati	Sample Type:	CDCL-Cadmium chloride
Sample Date:		Protocol:	EPAF 91-EPA Freshwater	Test Species:	HA-Hyalella azteca
Comments:					

Conc-ug/L	1	2
D-Control	0.9000	1.0000
3.75	0.9000	0.9000
7.5	0.6000	0.5000
15	0.1000	0.0000
30	0.0000	0.0000
60	0.0000	0.0000

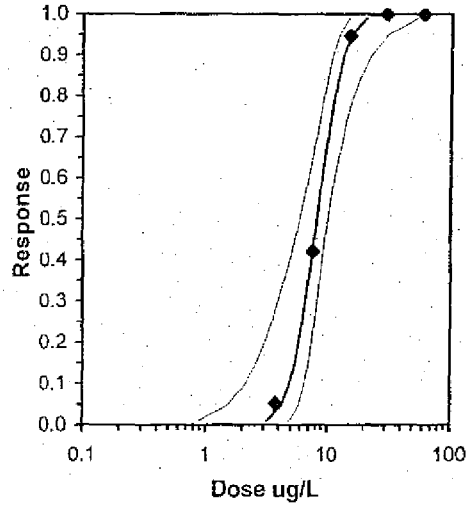
			Transform: Arcsin Square Root					Number	Total
Conc-ug/L	Mean	N-Mean	Mean	Min	Max	CV%	N	Resp	Number
D-Control	0.9500	1.0000	1.3305	1.2490	1.4120	8.661	2	1	20
3.75	0.9000	0.9474	1.2490	1.2490	1.2490	0.000	2	2	20
7.5	0.5500	0.5789	0.8357	0.7854	0.8861	8.518	2	9	20
15	0.0500	0.0526	0.2403	0.1588	0.3218	47.963	2	19	20
30	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2	20	20
60	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2	20	20

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Normality of the data set cannot be confirmed				
Equality of variance cannot be confirmed				

Maximum Likelihood-Probit

Parameter	Value	SE	95% Fiducial Limits		Control	Chi-Sq	Critical	P-value	Mu	Sigma	Iter
Slope	5.81273	1.60945	2.65821	8.96724	0.05	0.09306	7.81472	0.99	0.90494	0.17204	6
Intercept	-0.2602	1.545	-3.2883	2.76804							
TSCR	0.05909	0.04575	-0.0306	0.14876							

Point	Probits	ug/L	95% Fiducial Limits	
EC01	2.674	3.19684	0.86966	4.8181
EC05	3.355	4.18757	1.55224	5.80285
EC10	3.718	4.83574	2.10703	6.42856
EC15	3.964	5.32884	2.58371	6.90378
EC20	4.158	5.75635	3.03255	7.32042
EC25	4.326	6.15035	3.47268	7.71241
EC40	4.747	7.26694	4.82483	8.90776
EC50	5.000	8.03409	5.79391	9.85912
EC60	5.253	8.88222	6.83115	11.1141
EC75	5.674	10.4948	8.5269	14.2881
EC80	5.842	11.2131	9.15842	16.0493
EC85	6.036	12.1127	9.86961	18.5348
EC90	6.282	13.3478	10.7452	22.4193
EC95	6.645	15.4138	12.0491	30.0652
EC99	7.326	20.1908	14.6692	53.0867



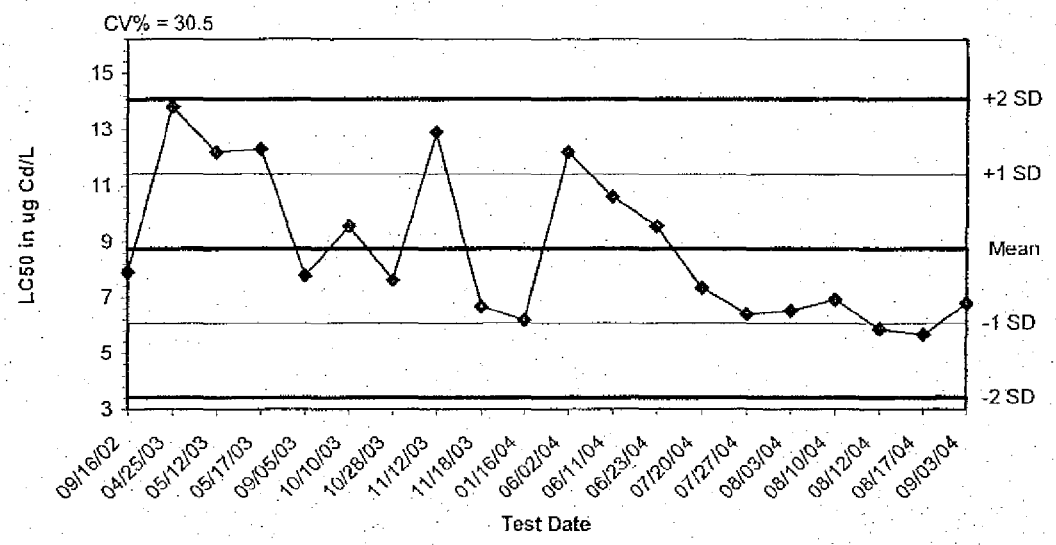
ANC07859
BZTO104(e)007859

Test: AT-Acute 96-hr Toxicity Test							Test ID: 999-1838		
Species: HA-Hyalella azteca							Protocol: EPAF 91-EPA Freshwater		
Sample ID: REF-Ref Toxicant							Sample Type: CDCL-Cadmium chloride		
Start Date: 9/10/04 12:30			End Date: 9/14/04 15:20				Lab ID: ORNAS-Northwestern Aquatic Sciences		
Pos	ID	Rep	Group	Start	24 Hr	48 Hr	72 Hr	96 Hr	Notes
	1	1	D-Control	10				9	
	2	2	D-Control	10				10	
	3	1	3.750	10				9	
	4	2	3.750	10				9	
	5	1	7.500	10				6	
	6	2	7.500	10				5	
	7	1	15.000	10				1	
	8	2	15.000	10				0	
	9	1	30.000	10				0	
	10	2	30.000	10				0	
	11	1	60.000	10				0	
	12	2	60.000	10				0	

Comments: Data entry verified against laboratory bench sheets
MSL 9-20-04

ANC07860
BZTO104(e)007860

Hyalella azteca 96-hr reference toxicant test - last 20 points



Dates	Values	Mean	-1 SD	-2 SD	+1 SD	+2 SD
09/16/02	7.9200	8.7445	6.0812	3.4178	11.4078	14.0712
04/25/03	13.8000	8.7445	6.0812	3.4178	11.4078	14.0712
05/12/03	12.2000	8.7445	6.0812	3.4178	11.4078	14.0712
05/17/03	12.3000	8.7445	6.0812	3.4178	11.4078	14.0712
09/05/03	7.7900	8.7445	6.0812	3.4178	11.4078	14.0712
10/10/03	9.5600	8.7445	6.0812	3.4178	11.4078	14.0712
10/28/03	7.6200	8.7445	6.0812	3.4178	11.4078	14.0712
11/12/03	12.9000	8.7445	6.0812	3.4178	11.4078	14.0712
11/18/03	6.6700	8.7445	6.0812	3.4178	11.4078	14.0712
01/16/04	6.1900	8.7445	6.0812	3.4178	11.4078	14.0712
06/02/04	12.2000	8.7445	6.0812	3.4178	11.4078	14.0712
06/11/04	10.6000	8.7445	6.0812	3.4178	11.4078	14.0712
06/23/04	9.5600	8.7445	6.0812	3.4178	11.4078	14.0712
07/20/04	7.3500	8.7445	6.0812	3.4178	11.4078	14.0712
07/27/04	6.4100	8.7445	6.0812	3.4178	11.4078	14.0712
08/03/04	6.5300	8.7445	6.0812	3.4178	11.4078	14.0712
08/10/04	6.9300	8.7445	6.0812	3.4178	11.4078	14.0712
08/12/04	5.8800	8.7445	6.0812	3.4178	11.4078	14.0712
08/17/04	5.6800	8.7445	6.0812	3.4178	11.4078	14.0712
09/03/04	6.8000	8.7445	6.0812	3.4178	11.4078	14.0712

MSR
9-20-04

ANC07861
BZTO104(e)007861

Report

of

Test No. 686-12

Toxicity of Portland Harbor RI/FS Freshwater Test Sediments (Batch 6) using a 10-day Midge, *Chironomus tentans*, Sediment Bioassay

Submitted to

Windward Environmental, Inc.
200 West Mercer Street, Suite 401
Seattle, WA 98119

Submitted by

Northwestern Aquatic Sciences
3814 Yaquina Bay Road
P.O. Box 1437
Newport, OR 97365

January 18, 2005

ANC07862
BZTO104(e)007862

TOXICITY TEST REPORT

TEST IDENTIFICATION

Test No.: 686-12

Title: Toxicity of Portland Harbor RI/FS freshwater test sediments (batch 6) using a 10-day midge, *Chironomus tentans*, sediment bioassay.

Protocol No.: NAS-686-CT4b, June 24, 2004. Based on ASTM 2003, Standard Method No. E 1706-00 and U.S. EPA Method 100.2 (EPA/600/R-99/064, 2000) This protocol can be found in Appendix B of the Portland Harbor RI/FS Round 2 Quality Assurance Project Plan, June 24, 2004.

STUDY MANAGEMENT

Study Sponsor: Windward Environmental, Inc., 200 West Mercer Street, Suite 401, Seattle, WA 98119.

Sponsor's Study Monitor: Ms. Helle Andersen

Testing Laboratory: Northwestern Aquatic Sciences, P.O. Box 1437, Newport, OR 97365

Test Location: Newport laboratory

Laboratory's Study Personnel: G.J. Irissarri, B.S., Proj. Man./Study Dir.; L.K. Nemeth, M.B.A., QA Officer; R.S. Caldwell, PhD, Sr. Toxicol.; M.S. Redmond, M.S., Aq. Toxicol.; G.A. Buhler, B.S., Aq. Toxicol.; W.T. Montgomery, A.A., Sr. Tech.; G. Hayes, B.S., Tech.; S.J. Gage, B.A., Tech.; B.B. Pridgeon, Lab Assistant.

Study Schedule:

Test Beginning: 9-10-04, 1300 hrs.

Test Ending: 9-20-04, 1300 hrs.

Disposition of Study Records: All specimens, raw data, reports and other study records are stored according to Good Laboratory Practice regulations at Northwestern Aquatic Sciences, 3814 Yaquina Bay Rd., Newport, OR 97365.

Good Laboratory Practices: The test was conducted following the principles of Good Laboratory Practices (GLP) as defined in the EPA/TSCA Good Laboratory Practice regulations revised August 17, 1989 (40 CFR Part 792).

Statement of Quality Assurance: The test data were reviewed by the Quality Assurance Unit to assure that the study was performed in accordance with the protocol and standard operating procedures. This report is an accurate reflection of the raw data.

TEST MATERIAL

Test Sediments: Portland Harbor RI/FS freshwater test sediments (Batch 6). Details are as follows:

NAS Sample No.	9413F	9414F	9415F	9416F	9417F
Description	LW2-G232	LW2-G263	LW2-G269	LW2-G283	LW2-G264
Collection Date	8-30-04	8-30-04	8-30-04	8-30-04	8-30-04
Receipt Date	9-2-04	9-2-04	9-2-04	9-2-04	9-2-04
NAS Sample No.	9418F	9419F	9420F	9421F	9422F
Description	LW2-G278	LW2-G276	LW2-G284	LW2-G267	LW2-G453
Collection Date	8-30-04	8-30-04	8-30-04	8-30-04	8-31-04
Receipt Date	9-2-04	9-2-04	9-2-04	9-2-04	9-2-04
NAS Sample No.	9423F	9424F	9425F	9426F	9427F
Description	LW2-G456	LW2-G457	LW2-G461	LW2-G468	LW2-G467
Collection Date	8-31-04	8-31-04	8-31-04	8-31-04	9-1-04
Receipt Date	9-2-04	9-2-04	9-2-04	9-2-04	9-2-04
NAS Sample No.	9428F	9429F	9430F	9431F	9432F
Description	LW2-G473	LW2-G477	LW2-G480	LW2-G454	LW2-G386
Collection Date	9-1-04	9-1-04	9-1-04	9-1-04	9-1-04
Receipt Date	9-2-04	9-2-04	9-2-04	9-2-04	9-2-04

ANC07863
BZTO104(e)007863

NAS Sample No.	9433F
Description	LW2-G339
Collection Date	9-1-04
Receipt Date	9-2-04

Control Sediment: The negative control sediment (NAS#9403F) was collected on 8-30-04 from an area approximately one mile east of the Hwy. 101 bridge at Beaver Creek, approx. 8 miles south of Newport, OR.
Treatments: Homogenized at test set up by mixing using stainless steel implements.
Storage: All test and control sediments were stored at 4°C in the dark in capped containers until used.

TEST WATER

Source: Dechlorinated Newport, OR tap water.
Dates of Collection: Seven batches of test water were collected between 9-9-04 and 9-18-04.
Water Quality (mean ± SD):
pH: 7.0 ± 0.2 (n=7)
conductivity: 164 ± 4 µmhos/cm (n=7)
hardness: 34 ± 0 mg/L as $CaCO_3$ (n=7)
alkalinity: 33 ± 5 mg/L as $CaCO_3$. (n=7)
chlorine: All batches were below 0.02 mg/L.
Pretreatment: Dechlorinated and aerated ≥24 hr.

TEST ORGANISMS

Species: *Chironomus tentans*, midge.
Size: 3rd instar, mean initial wt: 0.16 ± 0.01 mg
Source: NAS cultures, originally obtained from EPA, Duluth, MN.
Acclimation: Holding conditions prior to testing averaged: temperature, 23.6 ± 0.5°C; dissolved oxygen, 7.4 ± 0.9 mg/L; pH, 7.1 ± 0.4; conductivity, 297 ± 29 µmhos/cm; hardness, 81 ± 27 mg/L as $CaCO_3$; and alkalinity, 75 ± 13 mg/L as $CaCO_3$. Photoperiod: 16L:8D.

TEST PROCEDURES AND CONDITIONS

The following is an abbreviated statement of the test procedures and a statement of the test conditions actually employed. See the test protocol for a more detailed description of the test procedures used in this study.

Test Chambers: 300 ml high-form glass beakers
Test Volumes: 100 ml sediment layer; 175 ml test water.
Replicates/Treatment: 8
Organisms/Treatment: 80
Water Volume Changes: 2 water volumes per day
Aeration: None.
Feeding: Animals were fed 1.5 ml of Prime Tropical Flakes suspension (1.5 ml contains 6 mg dry solids) per beaker daily.
Effects Criteria: 1) survival after 10 days, and 2) average individual biomass (based on ash-free dry weight) after 10 days. Death is defined as no visible movement or response to tactile stimulation. Missing organisms were considered to be dead.
Water Quality and Other Test Conditions: The temperature, dissolved oxygen, conductivity, pH, hardness, alkalinity and ammonia-nitrogen were measured in the overlying water of one replicate test container per treatment on days 0 and 10 of the test. Temperature and dissolved oxygen were measured daily in the overlying water of one replicate test container per treatment. Interstitial ammonia was measured in the bulk sediment. Hardness and alkalinity were measured with titrimetric methods. Interstitial water samples were obtained by centrifugation, or by settling in the case of very sandy sediments. Total ammonia-N was measured using Hach reagents based on the salicylate (Clin. Chim. Acta 14:403, 1996) colorimetric method; samples were not distilled prior to analysis. The photoperiod was 16:8, L:D.

ANC07864
BZTO104(e)007864

DATA ANALYSIS METHODS

Survival and individual biomass were calculated for each replicate as follows:

percent survival = 100 x (number surviving/initial number tested)
average individual ash-free dry wt. = (final wt. – ashed dry wt.)/number weighed,
where:
ash-free dry wt. = dry weight of organisms recovered on day 10 – ashed dry weight, in mg

Means and standard deviations for the biological endpoints described above, and for water quality data, were computed using Microsoft Excel 2000.

PROTOCOL DEVIATIONS

1. Additional pH measurements were made in the overlying water on test days 3 and 7.

REFERENCE TOXICANT TEST

The reference toxicant test is a multi-concentration toxicity test using potassium chloride, to evaluate the performance of the test organisms used in the sediment toxicity test. The performance is evaluated by comparing the results of this test with historical results obtained at the laboratory. A summary of the reference toxicant test result is given below. The reference toxicant test raw data are found in Appendix II.

Test No.: 999-1839
Reference Toxicant and Source: Potassium chloride (Fisher, Lot No. 006829).
Test Date: 9-10-04
Dilution Water Used: Moderately hard synthetic water prepared from Milli-Q® deionized water.
Result: 96-hr LC50, 6.16 g/L. This result is within the laboratory's control chart warning limits (2.78 to 7.40 g/L).

TEST RESULTS

Observations of water quality in the overlying water throughout the test are summarized in Table 1. A detailed tabulation of the water quality results by sample and test day can be found in Appendix I. Interstitial ammonia and pH measurements are listed in Table 2. The means and standard deviations of percent mortality and growth (ash-free dry weight) of midges exposed for 10 days to sediments are summarized in Table 3. Detailed data organized by sample and replicate, and summary statistics for these observations, are given in Appendix I.

All water quality observations of overlying water temperature and dissolved oxygen were within the protocol specified ranges. Ammonia-N in the overlying water ranged from 0.2 to 2.8 mg/L in all day 0 and day 10 observations. Interstitial bulk sediment values for ammonia-N ranged from 1.0 to 35.1 mg/L. The test met the survival and weight acceptability criteria specified in the test protocol with 91.3% mean control survival (≥70% required) and a control individual mean ash-free dry weight of 0.89 mg per larvae (0.48 mg required). The reference toxicant (positive control) result was within the laboratory's control chart limits (6.16 g/L; control chart mean ± 2 S.D. = 5.09 ± 2.31). It is concluded, therefore, that the test has developed fully acceptable data for use in making management decisions.

REFERENCES

ASTM. 2003. Standard Test Methods for Measuring the Toxicity of Sediment-Associated Contaminants with Fresh Water Invertebrates. ASTM Standard Method No. E 1706-00. Am. Soc. Test. Mat., West Conshohocken, PA.

U.S. EPA. 2000. Section 12, Test Method 100.2, *Chironomus tentans* 10-d Survival and Growth Test for Sediments, pp 55-62 In: Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates (Second Edition). EPA/600/R-99/064.

ANC07865
BZTO104(e)007865

STUDY APPROVAL

Project Manager/Study Director — Date: 1-20-05

Quality Assurance Unit — Date: 1/19/05

Laboratory Director — Date: 1/20/05

ANC07866
BZTO104(e)007866

Table 1. Summary of water quality conditions during tests of the midge, *Chironomus tentans*, exposed to freshwater sediments.

Water Quality Parameter	Mean ± S.D.	Minimum	Maximum	N
Temperature (°C)	22.7 ± 0.3	22.1	23.2	242
Dissolved oxygen (mg/L)	5.6 ± 0.9	3.0	7.6	242
Conductivity (µmhos/cm)	187 ± 53	160	480	44
pH	6.4 ± 0.1	6.2	6.7	88
Hardness (mg/L as $CaCO_3$)	50 ± 8	43	68	44
Alkalinity (mg/L as $CaCO_3$)	44 ± 6	30	60	44
Total ammonia (mg/L)	---	0.2	2.8	44

Table 2. Pore water ammonia-N and pH in bulk test sediments at the time of test setup.

NAS Sample No.	Sample Description	Ammonia (mg/L)	pH
9403F	Control	1.3	7.2
9413F	LW2-G232	4.5	5.9
9414F	LW2-G263	11.4	5.0
9415F	LW2-G269	23.0	6.3
9416F	LW2-G283	10.5	6.3
9417F	LW2-G264	10.2	6.2
9418F	LW2-G278	15.7	6.2
9419F	LW2-G276	16.1	6.2
9420F	LW2-G284	9.9	6.3
9421F	LW2-G267	2.9	6.2
9422F	LW2-G453	35.1	6.3
9423F	LW2-G456	18.9	6.3
9424F	LW2-G457	16.6	6.4
9425F	LW2-G461	14.8	6.4
9426F	LW2-G468	11.9	6.5
9427F	LW2-G467	4.7	6.5
9428F	LW2-G473	9.2	6.5
9429F	LW2-G477	7.8	6.6
9430F	LW2-G480	7.3	6.4
9431F	LW2-G454	1.0	6.4
9432F	LW2-G386	8.2	6.5
9433F	LW2-G339	7.2	6.6

ANC07867
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Table 3. Mortality and growth[1] results of *Chironomus tentans* 10-day sediment toxicity test.

Sample description		Average percent mortality (Mean ± SD)	Average ash-free dry wt/midge (mg)[1] (Mean ± SD)
9403F	Control	8.8 ± 8.3	0.89 ± 0.15
9413F	LW2-G232	7.5 ± 7.1	1.17 ± 0.09
9414F	LW2-G263	17.5 ± 8.9	0.93 ± 0.09
9415F	LW2-G269	31.3 ± 21.0	0.48 ± 0.10
9416F	LW2-G283	96.3 ± 10.6	---
9417F	LW2-G264	51.3 ± 25.9	0.51 ± 0.13
9418F	LW2-G278	37.5 ± 26.0	0.71 ± 0.18
9419F	LW2-G276	25.0 ± 20.7	0.88 ± 0.22
9420F	LW2-G284	8.8 ± 11.3	0.85 ± 0.12
9421F	LW2-G267	6.3 ± 5.2	0.97 ± 0.37
9422F	LW2-G453	95.0 ± 7.6	0.15 ± 0.11
9423F	LW2-G456	6.3 ± 7.4	0.91 ± 0.11
9424F	LW2-G457	11.3 ± 9.9	0.97 ± 0.36
9425F	LW2-G461	12.5 ± 11.6	1.10 ± 0.14
9426F	LW2-G468	20.0 ± 13.1	1.08 ± 0.20
9427F	LW2-G467	11.3 ± 11.3	1.24 ± 0.18
9428F	LW2-G473	7.5 ± 8.9	1.09 ± 0.14
9429F	LW2-G477	13.8 ± 13.0	1.09 ± 0.10
9430F	LW2-G480	10.0 ± 10.7	0.86 ± 0.18
9431F	LW2-G454	12.5 ± 7.1	1.11 ± 0.10
9432F	LW2-G386	6.3 ± 7.4	1.07 ± 0.16
9433F	LW2-G339	22.5 ± 12.8	0.70 ± 0.11

[1]Pupae were not included in the sample to estimate ash-free dry weight (as per EPA/600/R-99/064, p. 59, section 12.3.8.2)

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TEST DESCRIPTION, MONITORING, AND RESULTS BENCHSHEETS

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

REVIEWED PAGES 1-34 -GJI

Test No. 686-12 Client Windward Environmental Investigator

STUDY MANAGEMENT

Client: Windward Enviromental, 200 West Mercer Street, Suite 401, Seattle, WA 98119

Client's Study Monitor: Ms. Helle Anderson GJI

Testing Laboratory: Northwestern Aquatic Sciences

Test Location: Newport Laboratory

Laboratory's Study Personnel:

Proj. Man./Study Dir. G.J. Irissarri GJI

QA Officer L.K. Nemeth JM

1. GA Bohlen VB 2. Susan Gage [illegible]

3. G.C. Hayes [illegible] 4. B.B. Pridgeon BBP

Study Schedule: R.S. Caldwell RSC 5. William T. Montgomery WTM

Test Beginning: 9-10-04 1300 Test Ending: 1300 9-20-04

TEST MATERIAL

General description (see sample logbook/chain-of-custody for details):

NAS Sample No.:	9403F	9413F	9414F	9415F	9416F
Description:	Control	LW2-G232	LW2-G263	LW2-G269	LW2-G283
Collection Date:	8/30/04	8/30/04	8/30/04	8/30/04	8/30/04
Receipt Date:	8/30/04	9/2/04	9/2/04	9/2/04	9/2/04
NAS Sample No.:	9417F	9418F	9419F	9420F	9421F
Description:	LW2-G264	LW2-G278	LW2-G276	LW2-G284	LW2-G267
Collection Date:	8/30/04	8/30/04	8/30/04	8/30/04	8/30/04
Receipt Date:	9/2/04	9/2/04	9/2/04	9/2/04	9/2/04
NAS Sample No.:	9422F	9423F	9424F	9425F	9426F
Description:	LW2-G453	LW2-G456	LW2-G457	LW2-G461	LW2-G468
Collection Date:	8/31/04	8/31/04	8/31/04	8/31/04	8/31/04
Receipt Date:	9/2/04	9/2/04	9/2/04	9/2/04	9/2/04
NAS Sample No.:	9427F	9428F	9429F	9430F	9431F
Description:	LW2-G467	LW2-G473	LW2-G477	LW2-G480	LW2-G454
Collection Date:	9/1/04	9/1/04	9/1/04	9/1/04	9/1/04
Receipt Date:	9/2/04	9/2/04	9/2/04	9/2/04	9/2/04
NAS Sample No.:	9432F	9433F			
Description:	LW2-G386	LW2-G339			
Collection Date:	9/1/04	9/1/04			
Receipt Date:	9/2/04	9/2/04			
NAS Sample No.:					
Description:					
Collection Date:					
Receipt Date:					

Error codes: 1) correction of handwriting error
2) written in wrong location; entry deleted
3) wrong date deleted, replaced with corrrect date
4) error found in measurement; measurement repeated

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b
CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-12 Client Windward Environmental Investigator

SEDIMENT DESCRIPTIONS -- SUPPLEMENTAL NOTES

Sample No.	Description
9403F	Black odorless mud
9413F	Brown sandy mud
9414F	Gray gravel - Sandy mud w/ Naphthalene odor
9415F	Dark gray mud w/ petroleum odor
9416F	Dark gray mud w/ Petroleum odor
9417F	Gray brown mud w/ chunks
9418F	Gray brown Mud, Slight Creasote Odor
9419F	Brown mud
9420F	Dark gray fine mud
9421F	Gray-brown Sandy mud w/ Woody debris (3 Chironomids removed)
9422F	Green - gray mud w/ Petroleum odor & sm. rocks
9423F	Gray brown sandy mud.
9424F	Dark gray fine mud.
9425F	Gray-brown mud
9426F	Gray brown fine Mud
9427F	Dark gray muddy coarse sand
9428F	Gray/Brown mud
9429F	Brown mud w rocks
9430F	Dark gray coarse sandy w/ woody debris & petroleum odor
9431F	Coarse gray sand w rocks
9432F	Gray brown Mud
9433F	Light - Brown fine Sandy mud

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NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-12 Client Windward Environmental Investigator _____

TEST WATER

Source: Dechlorinated Newport, OR tap water

Date of Collection: 9-9-04, 9-10-04, 9-13-04, 9-13-04 (2ND BATCH), 9-15-04, 9-17-04, 9-18-04

pH 6.9, 6.9, 6.9, 6.9, 7.1, 7.3, 7.3 ($\bar{X}$ = 7.0 ± 0.2)

Cond (umhos/cm^2) 160, 170, 165, 170, 165, 160, 160 ($\bar{X}$ = 164 ± 4)

Hardness (mg/L) 34, 34, 34, 34, 34, 34, 34 ($\bar{X}$ = 34 ± 0)

Alkalinity (mg/L) 30, 40, 40, 30, 30, 30, 30 ($\bar{X}$ = 33 ± 5)

Treatments: Aerated ≥ 24 hrs

TEST ORGANISMS

Species: *Chironomus tentans* Age: 3rd instar Date received: —

Source: NAS cultures

Acclimation Data:

Date	Temp. (deg.C)	DO (mg/L)	pH	Cond umhos/cm	Feeding amount (ml)	Feeding description*	Water changes	Hardness (mg/L)	Alkalinity (mg/L)
8-27-04	24.1	8.0	7.4	290	ANIMALS	FED TETRA	CULTURE	—	—
8-30-04	24.0	6.0	6.9	320	FIN AND	SELENASTRUM	TANKS	—	—
9-1-04	24.0	6.6	6.9	315	DETAILS	RECORDED	CHANGED	111	90
9-3-04	23.2	7.4	7.0	280	ON C	HIRONOMID	TWICE	51	70
9-8-04	23.0	8.4	7.7	325	CULTURE	DATA	WEEKLY	94	80
9-10-04	23.1	7.9	6.5	250	SHEETS			68	60
Mean	23.6	7.4	7.1	297				81	75
S.D.	0.5	0.9	0.4	29				27	13
(N)	6	6	6	6				4	4

Photoperiod during acclimation: 16:8, L:D *S=Selenastrum, T=Tetra Fin suspension

TEST PROCEDURES AND CONDITIONS

Test chambers: 300 ml glass beakers

Test volumes: 100 ml of test sediment; 275 ml total volume

Replicates/treatment: (8) 8 Organisms/treatment: (80) 80 (10/REP)

Test water changes: Twice daily

Aeration: only if DO falls below 2.5 mg/L

Feeding: everyday beginning with day zero

Test temperature (deg.C): 23

Beaker placement: Total randomization

Photoperiod: 16:8, L:D

Control Sediment:

Source: From an area approximately one mile east of the Hwy. 101 bridge at Beaver Creek, approx. 8 miles south of Newport, OR.

Date collected: 8/30/04

Sieved through 0.5 -mm screen NAS# 9403F

Storage: 4°C in the dark in closed containers.

MISCELLANEOUS NOTES

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NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-12 Client Windward Environmental Investigator _____

Test conducted in (circle one): room 1 (room 2) trailer water bath other:_____

Randomization chart:

5								175	
4								174	
3							→	173	
2								172	
1								171	176

Randomization chart:

Randomization chart:

Randomization chart:

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NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No 686-12 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 0 (9/10/04) CRP/BBP

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond.* umhos/cm	pH*	Hardness* (mg/L)	Alkalinity* (mg/L)	S (ppm)	NH3* (ppm)	Comments
10	22.9	7.2	185	6.3	60	50			Each beaker fed 1.5 ml
11	22.9	6.6	195	6.3	68	50			Prime Tropical Flakes
22	22.9	7.1	160	6.5	43	40			suspension.
45	22.9	7.9	180	6.4	60	50			Initials: GJL
46	22.9	7.3	180	6.4	51	50			
51	22.9	7.0	175	6.4	51	40			
54	22.9	7.2	185	6.3	51	40			
61	22.8	7.3	180	6.4	43	40			
64	22.8	7.1	165	6.5	51	40			Water changed in all
68	22.8	7.1	200	6.3	60	50			beakers.
77	22.8	7.4	195	6.3	60	60			Time: 0650
84	22.8	7.2	200	6.3	60	50			Initials: GJL
88	22.8	7.5	170	6.4	43	40			
89	22.8	7.3	205	6.2	60	30			
95	22.8	7.1	180	6.3	51	50			
118	22.8	7.0	185	6.3	60	40			
123	22.8	7.2	480	6.4	60	50			Water changed in all
126	22.9	7.2	220	6.4	60	50			beakers.
150	22.9	7.1	170	6.5	51	50			Time: 1735
157	22.9	7.3	210	6.3	60	60			Initials: BBP
165	22.8	7.4	200	6.3	60	50			
166	22.9	7.6	330	6.6	68	50			

*Water quality measurements to be taken.

Day 1 (9/11/04) morning

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. umhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
10	22.8	6.3							Each beaker fed 1.5 ml
11	22.9	6.4							Prime Tropical Flakes
22	22.8	6.8							suspension.
45	22.8	6.8							Initials: GJL
46	22.8	6.7							
51	22.8	7.0							
54	22.8	6.5							
61	22.8	6.8							
64	22.8	7.0							Water changed in all
68	22.8	6.4							beakers.
77	22.8	6.6							Time: 0745
84	22.8	6.9							Initials: GJL
88	22.8	7.3							
89	22.8	7.4							
95	22.9	6.8							
118	22.9	5.9							
123	22.9	6.3							Water changed in all
126	22.9	6.1							beakers.
150	22.9	6.1							Time: 1815
157	22.9	6.3							Initials: GJL
165	22.9	6.3							
166	22.9	6.4							

*Water quality measurements to be taken.

Replicate 118: Animal* found dead on surface and was discarded.

* IDENTIFIED AS A RECENT MOLT, NOT LARVAE -GJL

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NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No 686-12 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 2 (9/12/04 room/lg

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. (mhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
10	22.3	6.7							Each beaker fed 1.5 ml
11	22.4	6.8							Prime Tropical Flakes
22	22.3	6.8							suspension.
45	22.4	6.5							Initials: MM
46	22.4	6.8							
51	22.4	6.9							
54	22.3	6.8							
61	22.4	6.8							
64	22.3	7.1							Water changed in all
68	22.4	6.3							beakers.
77	22.3	6.3							Time: 0745
84	22.3	6.7							Initials: MM
88	22.4	7.3							
89	22.4	7.4							
95	22.4	6.7							
118	22.4	6.2							
123	22.5	6.5							Water changed in all
126	22.5	6.6							beakers.
150	22.4	6.5							Time: 1845
157	22.5	6.5							Initials: BBP
165	22.4	5.9							
166	22.4	6.4							

*Water quality measurements to be taken.

Day 3 (9/13/04 CB/room/lg

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. (mhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
10	23.1	5.6		6.3					Each beaker fed 1.5 ml
11	23.1	5.0		6.3					Prime Tropical Flakes
22	23.1	5.6		6.3					suspension.
45	23.1	4.7		6.3					Initials: MM
46	23.1	5.2		6.3					
51	23.1	5.4		6.3					
54	23.1	5.0		6.3					
61	23.1	5.4		6.3					
64	23.0	5.4		6.3					Water changed in all
68	23.0	5.3		6.4					beakers.
77	23.0	5.2		6.3					Time: 0710
84	23.0	5.3		6.3					Initials: CB
88	23.0	5.3		6.3					
89	23.0	6.1		6.3					
95	23.1	6.2		6.4					
118	23.0	5.1		6.4					
123	23.0	5.5		6.5					Water changed in all
126	23.1	4.8		6.3					beakers.
150	23.0	4.6		6.3					Time: 1720
157	23.0	5.0		6.4					Initials: BBP
165	23.0	4.4		6.3					
166	23.0	4.8		6.4					

*Water quality measurements to be taken.

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NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No 686-12 Client Windward Environmental Investigator _____

DAILY RECORD SHEET

Day 4 (9/14/04) MJ

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. (mhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
10	22.8	5.1							Each beaker fed 1.5 ml
11	22.8	5.1							Prime Tropical Flakes
22	22.8	4.9							suspension.
45	22.7	5.2							Initials: GJL
46	22.8	5.2							
51	22.9	5.0							
54	22.9	4.6							
61	22.9	4.9							
64	22.8	4.5							Water changed in all
68	22.8	4.5							beakers.
77	22.8	4.6							Time: 0630
84	22.8	4.6							Initials: GJL
88	22.8	5.1							
89	22.8	5.7							
95	22.9	5.8							
118	22.8	4.1							
123	22.7	4.9							Water changed in all
126	22.7	4.6							beakers.
150	22.8	4.5							Time: 1735
157	22.8	4.2							Initials: BPP
165	22.7	3.8							
166	22.8	4.1							

*Water quality measurements to be taken.

Day 5 (9/15/04) MB/BPP

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. (mhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
10	23.1	4.2							Each beaker fed 1.5 ml
11	23.1	4.2							Prime Tropical Flakes
22	23.2	4.0							suspension.
45	23.0	4.4							Initials: GJL
46	23.0	4.0							
51	23.0	4.4							
54	23.1	3.9							
61	23.0	4.3							
64	23.0	4.2							Water changed in all
68	22.9	4.2							beakers.
77	22.9	4.6							Time: 0720
84	22.9	4.0							Initials: MB
88	23.0	4.6							
89	23.0	5.2							
95	23.0	4.9							
118	23.1	3.4							
123	23.0	4.1							Water changed in all
126	23.0	4.6							beakers.
150	23.1	4.3							Time: 1745
157	23.1	4.0							Initials: BPP
165	23.0	3.0							
166	23.0	4.2							

*Water quality measurements to be taken.

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NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No 686-12 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 6 (9/16/04) DB

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. µmhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
10	22.9	5.6							Each beaker fed 1.5 ml
11	23.0	5.8							Prime Tropical Flakes
22	23.0	5.8							suspension.
45	23.0	5.2							Initials: GJL
46	23.0	5.7							
51	23.0	5.8							
54	22.9	5.0							
61	23.0	5.2							
64	22.9	5.6							Water changed in all
68	22.9	5.5							beakers.
77	22.9	5.4							Time: 0705
84	22.9	5.2							Initials: DB
88	22.9	5.5							
89	22.9	5.9							
95	23.0	5.8							
118	22.9	4.8							
123	22.9	5.2							Water changed in all
126	23.0	5.3							beakers.
150	23.0	4.8							Time: 1730
157	22.9	4.6							Initials: [illegible]
165	23.0	4.7							
166	23.0	4.5							

*Water quality measurements to be taken.

Day 7 (9/17/04) DB

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. µmhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
10	22.9	4.6		6.6					Each beaker fed 1.5 ml
11	22.9	5.0		6.6					Prime Tropical Flakes
22	22.9	5.6		6.5					suspension.
45	22.9	5.3		6.5					Initials: [illegible]
46	23.0	5.6		6.4					
51	23.0	5.2		6.5					
54	22.9	4.8		6.5					
61	23.0	4.7		6.4					
64	22.9	5.1		6.5					Water changed in all
68	22.9	5.5		6.5					beakers.
77	22.9	5.3		6.5					Time: 0645
84	22.9	5.1		6.6					Initials: GJL
88	22.9	4.7		6.5					
89	22.9	5.3		6.5					
95	23.0	5.3		6.4					
118	22.9	4.8		6.5					
123	22.9	4.9		6.5					Water changed in all
126	23.0	5.2		6.5					beakers.
150	23.0	5.0		6.5					Time: 1725
157	23.0	5.1		6.5					Initials:
165	22.9	5.0		6.5					
166	23.0	4.4		6.6					

*Water quality measurements to be taken.

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NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No 686-12 Client Windward Environmental Investigator _____

DAILY RECORD SHEET

Day 8 (9/19/04 MB

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. umhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
10	22.8	4.9							Each beaker fed 1.5 ml
11	22.8	5.4							Prime Tropical Flakes
22	22.8	5.6							suspension.
45	22.8	5.2							Initials: MB
46	22.9	5.3							
51	22.9	5.5							
54	22.8	5.1							
61	22.9	5.3							
64	22.8	5.2							Water changed in all
68	22.8	5.4							beakers.
77	22.8	5.2							Time: 0710
84	22.8	5.3							Initials: MB
88	22.8	5.0							
89	22.8	5.6							
95	22.8	5.1							
118	22.8	5.7							
123	22.8	5.4							Water changed in all
126	22.9	5.6							beakers.
150	22.8	5.0							Time: 1835
157	22.8	5.5							Initials: [illegible]
165	22.9	5.3							
166	22.8	4.8							

*Water quality measurements to be taken.

Day 9 (9/20/04 MB

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. umhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
10	22.3	5.5							Each beaker fed 1.5 ml
11	22.3	5.7							Prime Tropical Flakes
22	22.2	5.8							suspension.
45	22.2	5.3							Initials: MB
46	22.2	5.7							
51	22.2	5.4							
54	22.2	5.5							
61	22.2	5.0							
64	22.2	5.1							Water changed in all
68	22.2	5.3							beakers.
77	22.2	5.4							Time: 0650
84	22.2	5.6							Initials: MB
88	22.2	5.2							
89	22.1	5.4							
95	22.3	5.2							
118	22.1	5.6							
123	22.1	5.8							Water changed in all
126	22.3	5.9							beakers.
150	22.2	5.1							Time: 1735
157	22.1	5.4							Initials: BBP
165	22.1	5.6							
166	22.1	5.0							

*Water quality measurements to be taken.

ANC07878
BZTO104(e)007878

Test No 686-12 Client Windward Environmental Investigator _____

DAILY RECORD SHEET

Day 10 (9 /20 /04) [illegible]/BBP

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond.* (umhos/cm)	pH*	Hardness* (mg/L)	Alkalinity* (mg/L)	S (ppm)	NH3* (ppm)	Comments
10	22.4	6.2	170	6.6	43	40			Each beaker fed 1.5 ml
11	22.4	6.3	170	6.5	43	40			Prime Tropical Flakes
22	22.4	6.5	165	6.7	43	40			suspension.
45	22.4	6.3	165	6.6	43	40			Initials: [illegible]
46	22.4	6.2 [illegible]	170	6.6	43	40			
51	22.5	6.1	170	6.5	43	40			
54	22.4	5.7	165	6.5	43	40			
61	22.4	6.2	170	6.6	43	40			
64	22.4	6.4	165	6.6	43	40			Water changed in all
68	22.3	6.4	165	6.6	43	40			beakers.
77	22.4	6.6	165	6.6	43	40			Time: 0650
84	22.4	6.8	165	6.6	43	40			Initials: [illegible]
88	22.4	6.7	165	6.6	43	40			
89	22.4	6.3	170	6.6	43	40			
95	22.4	6.4	165	6.6	43	40			
118	22.4	5.9	165	6.6	43	40			
123	22.3	6.1	180	6.6	43	40			Water changed in all
126	22.4	6.6	165	6.6	43	40			beakers.
150	22.4	6.1	165	6.6	43	40			Time:
157	22.4	6.3	165	6.6	43	40			Initials:
165	22.4	5.9	165	6.5	51	40			
166	22.4	5.6	175	6.6	43	50			

*Water quality measurements to be taken.

Day _____(/ /)

Beaker No.	Temp. (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
10									Each beaker fed 1.5 ml
11									Prime Tropical Flakes
22									suspension.
45									Initials:
46									
51									
54									
61									
64									Water changed in all
68									beakers.
77									Time:
84									Initials:
88									
89									
95									
118									
123									Water changed in all
126									beakers.
150									Time:
157									Initials:
165									
166									

*Water quality measurements to be taken.

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-12 Client Windward Enviromental Investigator

DAY 20 TEST TERMINATION SHEET

Beaker No.	Number of survivors	Initials
1	9	CAB
2	9	GJL
3	9	CAB
4	9	GJL
5	10	CAB
6	9	GJL
7	10	CAB
8	10	CAB
9	10	GJL
10	5	CAB
11	6	MTM
12	10	CAB
13	7	GJL
14	8	CAB
15	Ø	GJL
16	8	CAB
17	6	GJL
18	6	CAB
19	10	GJL
20	10	CAB
21	Ø	CAB
22	8	CAB
23	8	GJL
24	4 8	GJL CAB @ 9-20-04
25	4	GJL
26	10	GJL
27	8	CAB
28	10	CAB
29	9	GJL
30	10	CAB
31	Ø	CAB
32	8	CAB
33	9	GJL
34	5	CAB
35	8	GJL
36	Ø	CAB
37	8	CAB
38	9	GJL
39	9	CAB
40	9	MTM
41	9	CAB
42	9	GJL
43	7	CAB
44	8	GJL
45	8	CAB

Beaker No.	Number of survivors	Initials
46	10	MTM
47	8	MTM
48	7	GJL
49	9	GJL
50	Ø	MTM
51	Ø	GJL
52	9	CAB
53	8	MTM
54	10	CAB
55	8	GJL
56	10 11 @ CAB 9-20-04	CAB
57	6	GJL
58	10	CAB
59	9	MTM
60	9	CAB
61	1	GJL
62	7	GJL
63	10	MTM
64	9	MTM
65	8	CAB
66	3	GJL
67	8	GJL
68	9	CAB
69	10	GJL
70	9	MTM
71	9	MTM
72	4	GJL
73	7	GJL
74	Ø	MTM
75	9	CAB
76	4	GJL
77	8	CAB
78	9	MTM
79	6	GJL
80	10	CAB
81	10	GJL
82	9	CAB
83	8	MTM
84	7	GJL
85	9	CAB
86	9	GJL
87	7	CAB
88	9	GJL
89	8	CAB
90	7	MTM

ANC07880
BZTO104(e)007880

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-12 Client Windward Enviromental Investigator

DAY 20 TEST TERMINATION SHEET

Beaker No.	Number of survivors	Initials
91	10	GJL
92	10	CAB
93	8	GJL
94	Ø	MTM
95	10	CAB
96	10	GJL
97	9	MTM
98	9	CAB
99	9	GJL
100	10	MTM
101	10	CAB
102	10	GJL
103	9	CAB
104	10	MTM
105	9	GJL
106	9	GJL
107	9	MTM
108	6	CAB
109	10	GJL
110	8	CAB
111	8	MTM
112	Ø	GJL
113	10	CAB
114	1	GJL
115	1	MTM
116	10	GJL
117	12	CAB
118	9	MTM
119	8	GJL
120	10	CAB
121	4	GJL
122	7	MTM
123	9	GJL
124	10	MTM
125	9	GJL
126	10	GJL
127	9	GJL
128	8	MTM
129	9	GJL
130	9	CAB
131	9	CAB
132	6	GJL
133	8	GJL
134	10	MTM
135	11	CAB

Beaker No.	Number of survivors	Initials
136	8	GJL
137	Ø	CAB
138	9	CAB
139	7	GJL
140	9	MTM
141	2	GJL
142	7	CAB
143	3	MTM
144	4	GJL
145	9	CAB
146	9	MTM
147	10	GJL
148	10	CAB
149	8	GJL
150	8	MTM
151	Ø	CAB
152	9	GJL
153	9	CAB
154	9	GJL
155	10	CAB
156	10	GJL
157	10	MTM
158	Ø	GJL
159	9	CAB
160	7	GJL
161	8	MTM
162	8	CAB
163	3	GJL
164	5	CAB
165	9	MTM
166	9	GJL
167	9	CAB
168	7	CAB
169	2	MTM
170	9	CAB
171	9	MTM
172	9	CAB
173	10	CAB
174	7	MTM
175	9	CAB
176	9	CAB
177		
178		
179		
180		

ANC07881
BZTO104(e)007881

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-12 Client Windward Environmental Investigator _____

Tare: Date 9-10-04 Oven temp (C.) 60 Drying time (hr.) 24 Initials GJL
Standard Weights: 10 mg: 10.006 100mg: 100.018

Final #1 Date 9-12-04 Oven temp (C.) 62 Drying time (hr.) 24 Initials GJL
Standard Weights: 10 mg: 10.006 100mg: 100.018

Final: #2 Date 9-13-04 Oven temp (C.) 62 Drying time (hr.) 24 Initials GJL
Standard Weights: 10 mg: 10.006 100mg: 100.016

Equip. used: Oven: BLUE M #1 Balance: SARTORIUS M3P

(Dry overnight at 60-90 degrees C)

Pan #	Tare wt. (mg)	Total wt. (mg) 1	Total wt. (mg) 2	#weighed	Comments
1	92.03	95.450	95.45	20	
2	85.21	88.50	88.51	20	
3	91.95	94.95	94.95	20	

ANC07882
BZTO104(e)007882

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-12 Client Windward Environmental Investigator

WEIGHING DATA SHEET

Tare: Date 9-13-04 Oven temp (C.) 550 Drying time (hr.) 2 Initials JRF
Standard Weights: 10 mg: 10.003 100mg: 100.017

Final #1: Date 9-26-04 Oven temp (C.) 68 Drying time (hr.) 24 Initials GJL
Standard Weights: 10 mg: 10.007 100mg: 100.018

Final #2: Date 9-27-04 Oven temp (C.) 61 Drying time (hr.) 24 Initials JRF
Standard Weights: 10 mg: 10.006 100mg: 100.016

Final #3: Date 9-30-04 Oven temp (C.) 550 Drying time (hr.) 2 Initials JRF
Standard Weights: 10 mg: 10.007 100mg: 100.021

Equip. used: Oven BLUE M #1 Balance Sartorius M3P
Furnace FISHER MUFFLE FURNACE 650 SERIES

(Dry overnight at 60-90 degrees C) **(Final ashing is at 550 degrees C for 2 hours)**

Bkr. #	Pan #	Tare wt. (mg)	Total wt. (mg) 1	Total wt. (mg) 2	no. weighed	put into pans-initials	Ashed weight (mg)
1	1	101.70	97.76	114.49	9	BBP	106.34
2	2	85.75	98.53	98.32	9	BBP	89.42
3	3	104.98	118.96	118.73	9	BBP	109.05
4	4	103.20	115.99	115.77	9	BBP	106.36
5	5	96.43	97.57	97.51	10	BBP	96.73
6	6	100.20	114.79	114.54	9	BBP	103.60
7	7	105.44	121.47	121.22	10	BBP	110.19
8	8	97.46	114.12	113.86	10	BBP	102.53
9	9	106.14	130.55	130.15	10	BBP	111.81
10	10	93.92	97.22	97.12	5	BBP	94.60
11	11	95.14	99.46	99.35	6	BBP	96.27
12	12	90.29	99.16	98.96	10	BBP	91.51
13	13	96.46	103.48	103.32	7	BBP	97.86
14	14	103.52	111.36	111.19	8	BBP	104.73
15	15	95.83	—	—	0	BBP	—
16	16	91.22	105.72	105.44	8	BBP	94.26
17	17	90.80	95.17	95.06	6	BBP	91.51
18	18	94.09	98.33	98.21	6	BBP	94.73
19	19	96.99	104.52	104.35	10	BBP	98.16
20	20	103.02	112.05	111.86	10	BBP	105.01
21	21	106.95	—	—	0	BBP	—
22	22	97.49	110.03	110.76	8	BBP	101.40
23	23	99.34	108.70	108.52	8	BBP	101.53
24	24	98.36	110.67	110.44	8	BBP	101.28
25	25	89.29	96.67	96.51	4	BBP	91.16
26	26	96.90	108.98	108.76	10	BBP	99.76
27	27	96.08	102.69	102.55	8	BBP	97.43
28	28	101.43	114.91	114.67	10	BBP	105.26
29	29	95.22	103.14	102.98	9	BBP	97.04
30	30	88.89	104.43	104.42	10	BBP	93.51
31	31	100.46	—	—	0	BBP	—
32	32	100.58	113.70	113.69	8	BBP	104.37
33	33	102.67	113.11	113.12	9	BBP	104.83

ANC07883
BZTO104(e)007883

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-12 Client Windward Environmental Investigator

WEIGHING DATA SHEET

See page _____ for information on drying times and temperatures, standard weights,etc.

Bkr. #	Pan #	Tare wt. (mg)	Total wt. (mg)		no. weighed	put into pans-initials	Ash weight (mg)
			1	2			
34	34	94.94	97.76	97.75	5	DM	95.43
35	35	99.47	106.63	106.60	8	DM	101.27
36	36	104.27	—	—	0	DM	—
37	37	93.44	100.86	100.82	8	DM	94.78
38	38	94.03	110.49	110.46	9	DM	98.77
39	39	85.92	102.61	102.59	9	DM	91.32
40	40	83.00	99.20	99.13	9	DM	88.66
41	41	98.15	116.42	116.31	9	DM	104.51
42	42	93.15	105.88	105.82	9	DM	96.50
43	43	100.91	110.53	110.47	7	DM	103.61
44	44	95.57	104.26	104.23	8	DM	97.76
45	45	91.86	108.44	108.31	8	DM	97.54
46	46	91.19	105.14	105.04	10	DM	95.74
47	47	99.43	113.07	112.98	8	DM	103.69
48	48	91.88	100.63	100.57	7	DM	94.05
49	49	94.66	109.73	109.67	9	DM	98.75
50	50	100.26	—	—	0	DM	—
51	51	96.54	—	—	0	DM	—
52	52	94.86	99.47	99.42	9	DM	95.57
53	53	96.44	108.62	108.54	8	DM	100.05
54	54	89.17	104.06	103.98	10	DM	93.54
55	55	93.07	97.24	97.20	8	DM	94.03
56	56	90.11	109.80	109.71	11	DM	96.50
57	57	96.98	99.63	99.59	6	DM	97.35
58	58	89.97	105.12	105.05	10	DM	95.33
59	59	100.62	109.51	109.44	9	DM	102.28
60	60	91.76	102.91	102.85	9	DM	94.92
61	61	91.44	91.61	91.58	1	DM	91.46
62	62	97.51	110.48	110.40	7	DM	100.62
63	63	91.17	99.72	99.65	10	DM	92.67
64	64	91.12	104.56	104.44	9	DM	94.35
65	65	96.66	107.11	107.03	8	DM	99.17
66	66	99.70	101.41	101.37	3	DM	100.05
67	67	90.09	101.52	101.44	8	DM	93.77
68	68	92.27	101.24	101.17	9	DM	94.39
69	69	92.56	107.07	106.95	10	DM	96.25
70	70	94.76	108.79	108.65	9	DM	99.00
71	71	88.96	103.93	103.81	9	DM	93.64
72	72	90.74	92.14	92.10	4	DM	90.92
73	73	95.01	103.76	103.68	7	DM	97.77
74	74	86.20	—	—	0	DM	—
75	75	89.50	100.60	100.51	9	DM	92.81
76	76	90.59	94.65	94.60	4	DM	91.49

ANC07884
BZTO104(e)007884

Test No. 686-12 Client Windward Environmental Investigator

WEIGHING DATA SHEET

See page _____ for information on drying times and temperatures, standard weights,etc.

Bkr. #	Pan #	Tare wt. (mg)	Total wt. (mg) 1	Total wt. (mg) 2	no. weighed	put into pans-initials	Ash weight (mg)
77	77	103.35	115.15	115.04	8	AY	106.72
78	78	92.11	105.21	105.10	9	AY	95.93
79	79	96.22	105.91	105.81	6	AY	98.38
80	80	98.92	111.53	111.41	10	AY	102.47
81	81	92.83	104.13	104.05	10	GOH	96.03
82	82	87.38	100.36	100.27	9	GOH	91.06
83	83	90.22	96.99	103.09	8	GOH	94.79
84	84	91.94	103.32	96.72	7	GOH	92.85
85	85	92.96	104.56	104.52	9	GOH	97.14
86	86	97.18	~~107.41~~ 110.07	109.98	9	GOH	100.97
87	87	96.49	105.14	105.06	7	GOH	98.81
88	88	96.23	110.76	110.65	9	GOH	101.00
89	89	88.05	99.11	99.00	8	GOH	91.60
90	90	97.25	107.51	107.39	7	GOH	99.86
91	91	88.19	105.73	105.60	10	GOH	93.51
92	92	93.86	109.22	109.10	10	GOH	98.89
93	93	96.81	101.90	101.82	8	GOH	97.79
94	94	91.48	—	—	0	GOH	—
95	95	83.20	97.60	97.48	10	GOH	89.02
96	96	102.15	115.17	115.06	10	GOH	106.41
97	97	97.51	103.88	103.80	9	GOH	98.66
98	98	87.67	100.68	100.58	9	GOH	91.36
99	99	90.50	100.77	100.67	9	GOH	93.28
100	100	93.94	103.96	103.86	10	GOH	96.19
101	101	92.40	106.25	106.15	10	GOH	97.47
102	102	96.06	110.62	110.51	10	GOH	100.65
103	103	106.60	115.99	115.92	7	GOH	109.61
104	104	92.41	108.81	108.71	10	GOH	97.70
105	105	99.10	110.47	110.17	9	GOH	102.22
106	106	97.74	113.71	113.63	9	GOH	103.23
107	107	97.35	113.28	113.19	9	GOH	102.81
108	108	90.78	103.14	103.06	6	GOH	94.74
109	109	97.46	113.27	113.18	10	GOH	102.64
110	110	94.88	109.43	109.34	8	GOH	99.60
111	111	93.94	108.21	108.11	8	BBP	98.82
112	112	94.30	—	—	0	BBP	—
113	113	91.22	102.34	102.24	10	BBP	94.86
114	114	98.81	99.54	99.51	1	BBP	99.00
115	115	98.47	98.61	98.56	1	BBP	98.51
116	116	95.00	110.04	109.91	10	BBP	100.70
117	117	91.03	110.15	109.99	12	BBP	98.42
118	118	92.69	106.93	106.83	9	BBP	97.65
119	119	95.19	103.76	103.68	8	BBP	98.00

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-12 Client Windward Environmental Investigator

WEIGHING DATA SHEET

See page _____ for information on drying times and temperatures, standard weights,etc.

Bkr. #	Pan #	Tare wt. (mg)	Total wt. (mg) 1	Total wt. (mg) 2	no. weighed	put into pans-initials	Ash weight (mg)
120	120	91.15	101.37	101.30	10	BBP	93.66
121	121	95.36	98.24	98.19	4	BBP	96.26
122	122	98.59	108.76	108.65	7	BBP	102.18
123	123	94.52	103.86	103.76	9	BBP	97.77
124	124	94.59	110.58	110.43	10	BBP	100.42
125	125	93.83	106.71	106.62	9	BBP	98.52
126	126	88.92	104.06	103.91	10	BBP	94.64
127	127	96.78	109.02	108.89	9	BBP	101.13
128	128	101.59	118.73	118.58	8	BBP	106.38
129	129	93.78	108.95	108.81	9	BBP	98.64
130	130	96.45	109.31	107.22	9	BBP	99.17
131	131	87.66	105.87	105.70	9	AJ	95.37
132	132	88.91	95.18	95.10	6	AJ	90.89
133	133	97.55	110.39	110.25	8	AJ	102.27
134	134	85.50	102.06	101.90	10	AJ	92.09
135	135	87.29	103.47	103.33	11	AJ	92.92
136	136	96.96	104.69	104.57	8	AJ	99.53
137	137	94.20	—	—	0	AJ	—
138	138	95.48	112.99	112.81	9	AJ	101.75
139	139	93.94	105.36	105.24	7	AJ	97.87
140	140	94.08	105.48	105.37	9	AJ	98.09
141	141	92.09	92.94	92.90	2	BBP	92.37
142	142	86.05	91.21	91.16	7	BBP	87.72
143	143	86.73	88.04	88.01	3	BBP	86.97
144	144	96.95	101.70	101.65	4	BBP	98.48
145	145	92.74	110.07	109.96	9	BBP	99.90
146	146	96.50	110.48	110.38	9	BBP	102.14
147	147	88.79	101.24	100.91	10	BBP	93.17
148	148	94.93	111.14	110.80	10	BBP	100.83
149	149	96.14	106.31	106.22	8	BBP	98.91
150	150	89.69	104.90	104.76	8	BBP	93.92
151	151	96.75	—	—	0	AJ	—
152	152	90.06	107.06	106.93	9	AJ	96.72
153	153	94.62	111.10	110.97	9	AJ	100.31
154	154	88.03	102.35	102.23	9	AJ	93.16
155	155	91.42	107.82	107.71	10	AJ	98.15
156	156	90.43	105.19	105.03	10	AJ	94.96
157	157	92.21	105.79	105.65	10	AJ	97.10
158	158	97.44	—	—	0	AJ	—
159	159	97.64	108.72	108.62	9	AJ	101.44
160	160	93.11	101.99	101.92	7	AJ	96.06
161	161	106.46	121.36	121.35	8	BBP	112.41
162	162	87.08	100.35	100.33	8	BBP	91.00

ANC07886
BZTO104(e)007886

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-CT4b

CHIRONOMUS TENTANS 10-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-12 Client Windward Environmental Investigator

WEIGHING DATA SHEET

See page _____ for information on drying times and temperatures, standard weights,etc.

Bkr. #	Pan #	Tare wt. (mg)	Total wt. (mg) 1	Total wt. (mg) 2	no. weighed	put into pans-initials	Ash weight (mg)
163	163	91.25	95.02	95.00	3	BBP	92.29
164	164	100.12	111.87	111.88	5	BBP	104.44
165	165	92.48	109.38	109.37	9	BBP	99.01
166	166	97.60	110.32	110.31	9	BBP	101.36
167	167	95.62	107.61	107.59	9		99.80
168	168	98.96	106.64	106.58	7		101.67
169	~~169~~ 12A	93.91	97.45	97.40	2		95.18
170	~~170~~ 20A	94.59	112.43	112.28	9		102.02
171	~~174~~ 24A	93.42	106.13	105.99	9		97.76
172	~~172~~ 19A	98.05	115.85	115.69	9		105.62
173	~~173~~ 14A	96.87	~~131.82~~ 104.91	104.31	10		99.37
174	~~174~~ 13A	93.02	98.61	98.51	7		94.82
175	~~176~~ 21A	102.00	117.34	117.18	9		108.40
176	~~170~~ 23A	103.58	121.82	121.65	9		111.05
177	177						
178	178						
179	179						
180	180						
181	181						
182	182						
183	183						
184	184						
185	185						
186	186						
187	187						
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192	192						
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197	197						
198	198						
199	199						
200	200						
201	201						
202	202						
203	203						
204	204						
205	205						

ANC07887
BZTO104(e)007887

Test Number: 686-12

Freshwater Sediment Test
10-Day Chironomus tentans

BKR	NAS SMPL	CLIENT DESCRIP	REPL	
63	9403F	Control	1	
120	9403F	Control	2	
130	9403F	Control	3	
162	9403F	Control	4	
100	9403F	Control	5	
149	9403F	Control	6	
33	9403F	Control	7	
166	9403F	Control	8	wq replicate
56	9413F	LW2-G232	1	
24	9413F	LW2-G232	2	
38	9413F	LW2-G232	3	
176	9413F	LW2-G232	4	
41	9413F	LW2-G232	5	
145	9413F	LW2-G232	6	
104	9413F	LW2-G232	7	
54	9413F	LW2-G232	8	wq replicate
161	9414F	LW2-G263	1	
43	9414F	LW2-G263	2	
85	9414F	LW2-G263	3	
175	9414F	LW2-G263	4	
167	9414F	LW2-G263	5	
127	9414F	LW2-G263	6	
87	9414F	LW2-G263	7	
89	9414F	LW2-G263	8	wq replicate
142	9415F	LW2-G269	1	
173	9415F	LW2-G269	2	
136	9415F	LW2-G269	3	
121	9415F	LW2-G269	4	
72	9415F	LW2-G269	5	
93	9415F	LW2-G269	6	
55	9415F	LW2-G269	7	
11	9415F	LW2-G269	8	wq replicate
94	9416F	LW2-G283	1	
66	9416F	LW2-G283	2	
31	9416F	LW2-G283	3	
50	9416F	LW2-G283	4	
74	9416F	LW2-G283	5	
158	9416F	LW2-G283	6	
151	9416F	LW2-G283	7	
51	9416F	LW2-G283	8	wq replicate
174	9417F	LW2-G264	1	
57	9417F	LW2-G264	2	
169	9417F	LW2-G264	3	
114	9417F	LW2-G264	4	
34	9417F	LW2-G264	5	
76	9417F	LW2-G264	6	
52	9417F	LW2-G264	7	
10	9417F	LW2-G264	8	wq replicate
143	9418F	LW2-G278	1	
35	9418F	LW2-G278	2	
14	9418F	LW2-G278	3	
81	9418F	LW2-G278	4	
144	9418F	LW2-G278	5	
160	9418F	LW2-G278	6	
163	9418F	LW2-G278	7	
84	9418F	LW2-G278	8	wq replicate
48	9419F	LW2-G276	1	
140	9419F	LW2-G276	2	
17	9419F	LW2-G276	3	
73	9419F	LW2-G276	4	
25	9419F	LW2-G276	5	
20	9419F	LW2-G276	6	
122	9419F	LW2-G276	7	
126	9419F	LW2-G276	8	wq replicate

ANC07888
BZTO104(e)007888

Test Number: 686-12

Freshwater Sediment Test
10-Day Chironomus tentans

BKR	NAS SMPL	CLIENT DESCRIP	REPL	
44	9420F	LW2-G284	1	
147	9420F	LW2-G284	2	
59	9420F	LW2-G284	3	
101	9420F	LW2-G284	4	
135	9420F	LW2-G284	5	
29	9420F	LW2-G284	6	
139	9420F	LW2-G284	7	
46	9420F	LW2-G284	8	wq replicate
172	9421F	LW2-G267	1	
5	9421F	LW2-G267	2	
58	9421F	LW2-G267	3	
39	9421F	LW2-G267	4	
92	9421F	LW2-G267	5	
152	9421F	LW2-G267	6	
170	9421F	LW2-G267	7	
88	9421F	LW2-G267	8	wq replicate
36	9422F	LW2-G453	1	
137	9422F	LW2-G453	2	
15	9422F	LW2-G453	3	
21	9422F	LW2-G453	4	
112	9422F	LW2-G453	5	
115	9422F	LW2-G453	6	
141	9422F	LW2-G453	7	
61	9422F	LW2-G453	8	wq replicate
80	9423F	LW2-G456	1	
125	9423F	LW2-G456	2	
40	9423F	LW2-G456	3	
116	9423F	LW2-G456	4	
26	9423F	LW2-G456	5	
159	9423F	LW2-G456	6	
23	9423F	LW2-G456	7	
157	9423F	LW2-G456	8	wq replicate
75	9424F	LW2-G457	1	
96	9424F	LW2-G457	2	
65	9424F	LW2-G457	3	
60	9424F	LW2-G457	4	
9	9424F	LW2-G457	5	
105	9424F	LW2-G457	6	
168	9424F	LW2-G457	7	
68	9424F	LW2-G457	8	wq replicate
4	9425F	LW2-G461	1	
78	9425F	LW2-G461	2	
30	9425F	LW2-G461	3	
42	9425F	LW2-G461	4	
108	9425F	LW2-G461	5	
1	9425F	LW2-G461	6	
129	9425F	LW2-G461	7	
165	9425F	LW2-G461	8	wq replicate
111	9426F	LW2-G468	1	
133	9426F	LW2-G468	2	
67	9426F	LW2-G468	3	
99	9426F	LW2-G468	4	
131	9426F	LW2-G468	5	
164	9426F	LW2-G468	6	
154	9426F	LW2-G468	7	
77	9426F	LW2-G468	8	wq replicate
6	9427F	LW2-G467	1	
62	9427F	LW2-G467	2	
156	9427F	LW2-G467	3	
71	9427F	LW2-G467	4	
69	9427F	LW2-G467	5	
91	9427F	LW2-G467	6	
128	9427F	LW2-G467	7	
150	9427F	LW2-G467	8	wq replicate

ANC07889
BZTO104(e)007889

Test Number: 686-12

Freshwater Sediment Test
10-Day Chironomus tentans

BKR	NAS SMPL	CLIENT DESCRIP	REPL	
110	9428F	LW2-G473	1	
109	9428F	LW2-G473	2	
2	9428F	LW2-G473	3	
8	9428F	LW2-G473	4	
98	9428F	LW2-G473	5	
148	9428F	LW2-G473	6	
28	9428F	LW2-G473	7	
45	9428F	LW2-G473	8	wq replicate
47	9429F	LW2-G477	1	
102	9429F	LW2-G477	2	
32	9429F	LW2-G477	3	
79	9429F	LW2-G477	4	
86	9429F	LW2-G477	5	
107	9429F	LW2-G477	6	
124	9429F	LW2-G477	7	
118	9429F	LW2-G477	8	wq replicate
37	9430F	LW2-G480	1	
19	9430F	LW2-G480	2	
171	9430F	LW2-G480	3	
113	9430F	LW2-G480	4	
103	9430F	LW2-G480	5	
12	9430F	LW2-G480	6	
90	9430F	LW2-G480	7	
64	9430F	LW2-G480	8	wq replicate
155	9431F	LW2-G454	1	
153	9431F	LW2-G454	2	
83	9431F	LW2-G454	3	
49	9431F	LW2-G454	4	
53	9431F	LW2-G454	5	
82	9431F	LW2-G454	6	
138	9431F	LW2-G454	7	
22	9431F	LW2-G454	8	wq replicate
70	9432F	LW2-G386	1	
3	9432F	LW2-G386	2	
16	9432F	LW2-G386	3	
117	9432F	LW2-G386	4	
134	9432F	LW2-G386	5	
106	9432F	LW2-G386	6	
7	9432F	LW2-G386	7	
95	9432F	LW2-G386	8	wq replicate
119	9433F	LW2-G339	1	
132	9433F	LW2-G339	2	
27	9433F	LW2-G339	3	
13	9433F	LW2-G339	4	
146	9433F	LW2-G339	5	
18	9433F	LW2-G339	6	
97	9433F	LW2-G339	7	
123	9433F	LW2-G339	8	wq replicate

ANC07890
BZTO104(e)007890

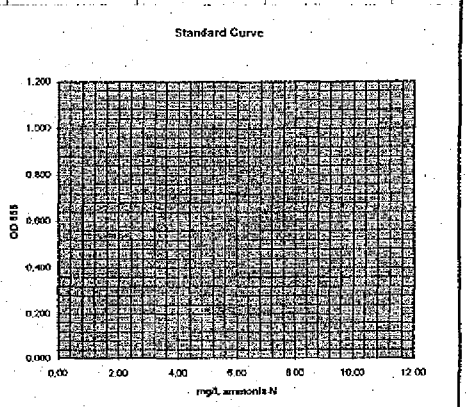
AMMONIA EXPOSURE BENCHSHEETS AND ANALYSIS

Total Ammonia-N in Sediment Pore Water: Computation Worksheet

Salicylate Method (SOP #5492)

Result

	Sample description	Dilution factor	OD_{655}	NH_3-N (mg/L)	pH	Salinity (ppt)
	Blank	-----	----	-----		
	1.0 mg/L NH_3-N Std.	-----	.094	1.00		
	3.0 mg/L NH_3-N Std.	-----	.271	3.00		
	6.0 mg/L NH_3-N Std.	-----	.524	6.00		
	10.0 mg/L NH_3-N Std.	-----	.900	10.00		
	3.0 mg/L spike	-----	.278			
	3.0 mg/L spike dupl.	-----	.272			
1.	9413F	5	.080		5.9	
2.	9414F	5	.203		5.0	
3.	9415F	5	.412		6.3	
4.	9416F	5	.187		6.3	
5.	9417F	5	.182		6.2	
6.	9418F	5	.380		6.2	
7.	9419F	5	.287		6.2	
8.	9420F	5	.177		6.3	
9.	9421F	5	.051		6.2	
10.	9422F	5	.628		6.3	
11.	9423F	5	.337		6.3	
12.	9424F	5	.297		6.4	
13.	9425F	5	.205		6.4	
14.	9426F	5	.212		6.5	
15.	9427F	5	.084		6.5	
16.	9428F	5	.165		6.5	
17.	9429F	5	.139		6.6	
18.	9430F	5	.130		6.4	
19.	9431F	5	.117		6.4	
20.	9432F	5	.147		6.5	
21.	9433F	5	.129		6.6	
22.	9403F	5	.024		7.2	
23.		5				
24.		5				
25.		5				
26.		5				
27.		5				
28.		5				
29.		5				
30.		5				
31.		5				
32.		5				
33.		5				
34.		5				
35.		5				
36.		5				



Reporting limit (mg/L) =	0.5
Recovery (%) =	#VALUE!
Precision (RPD) =	#VALUE!
Sample volume (ml):	0.10
Dilution factor	5

Sample Set Description:

Proj. No.: 686
Bulk sediment porewaters
Batch 6

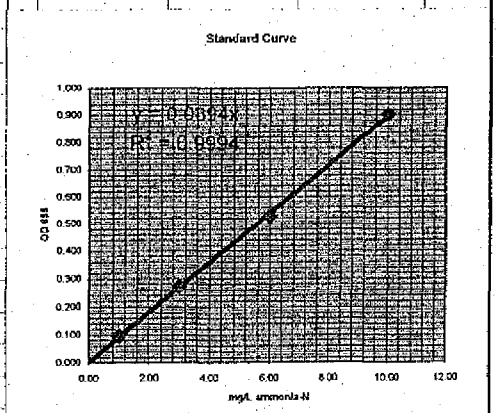
Analyst:	RSC
Date analysed:	9/9/2004

ANC07892
BZTO104(e)007892

Total Ammonia-N in Sediment Pore Water: Computation Worksheet
Salicylate Method (SOP #5492)

Result

	Sample description	Dilution factor	OD_{655}	NH_3-N (mg/L)	pH	Salinity (ppt)
	Blank	-----	-----	-----		
	1.0 mg/L NH_3-N Std.	-----	0.094	1.00		
	3.0 mg/L NH_3-N Std.	-----	0.271	3.00		
	6.0 mg/L NH_3-N Std.	-----	0.524	6.00		
	10.0 mg/L NH_3-N Std.	-----	0.900	10.00		
	3.0 mg/L spike	-----	0.278	3.11		
	3.0 mg/L spike dupl.	-----	0.272	3.04		
1.	9413F	5	0.080	4.47		
2.	9414F	5	0.203	11.35		
3.	9415F	5	0.412	23.04		
4.	9416F	5	0.187	10.46		
5.	9417F	5	0.182	10.18		
6.	9418F	5	0.280	15.66		
7.	9419F	5	0.287	16.05		
8.	9420F	5	0.177	9.90		
9.	9421F	5	0.051	2.85		
10.	9422F	5	0.628	35.12		
11.	9423F	5	0.337	18.85		
12.	9424F	5	0.297	16.61		
13.	9425F	5	0.265	14.82		
14.	9426F	5	0.212	11.86		
15.	9427F	5	0.084	4.70		
16.	9428F	5	0.165	9.23		
17.	9429F	5	0.139	7.77		
18.	9430F	5	0.130	7.27		
19.	9431F	5	0.017	0.95		
20.	9432F	5	0.147	8.22		
21.	9433F	5	0.129	7.21		
22.	9403F	5	0.024	1.34		
23.		5				
24.		5				
25.		5				
26.		5				
27.		5				
28.		5				
29.		5				
30.		5				
31.		5				
32.		5				
33.		5				
34.		5				
35.		5				
36.		5				



Reporting limit (mg/L) =	0.5
Recovery (%) =	102.5
Precision (RPD) =	2.18
Sample volume (ml):	0.10
Dilution factor	5

Sample Set Description:

Proj. No.: 686
Bulk sediment porewaters
Batch 6

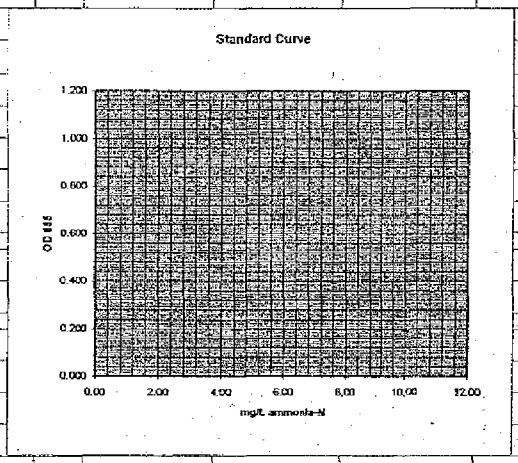
Analyst:	RSC
Date analysed:	9/9/2004

Total Ammonia-N in Water: Computation Worksheet

Salicylate Method (SOP #5492)

Result

	Sample description	Dilution factor	OD655	NH_3-N (mg/L)
	Blank	----	----	-----
	1.0 mg/L NH_3-N Std.	----	.100	1.00
	3.0 mg/L NH_3-N Std.	----	.298	3.00
	6.0 mg/L NH_3-N Std.	----	.545	6.00
	10.0 mg/L NH_3-N Std.	----	.910	10.00
	3.0 mg/L spike	----	.298	
	3.0 mg/L spike dupl.	----	.297	
1.	10	1	.295	
2.	11	1	.242	
3.	22	1	.017	
4.	45	1	.103	
5.	46	1	.116	
6.	51	1	.085	
7.	54	1	.057	
8.	61	1	.260	
9.	64	1	.063	
10.	68	1	.147	
11.	77	1	.132	
12.	84	1	.147	
13.	88	1	.036	
14.	89	1	.085	
15.	95	1	.083	
16.	118	1	.092	
17.	123	1	.044	
18.	126	1	.195	
19.	150	1	.060	
20.	157	1	.180	
21.	165	1	.169	
22.	166	1	.028	
23.		1		
24.		1		
25.		1		
26.		1		
27.		1		
28.		1		
29.		1		
30.		1		
31.		1		
32.		1		
33.		1		
34.		1		
35.		1		
36.		1		



Reporting limit (mg/L) =	0.1
Recovery (%) =	#VALUE!
Precision (RPD) =	#VALUE!
Sample volume (ml):	0.50
Dilution factor	1

Sample Set Description:

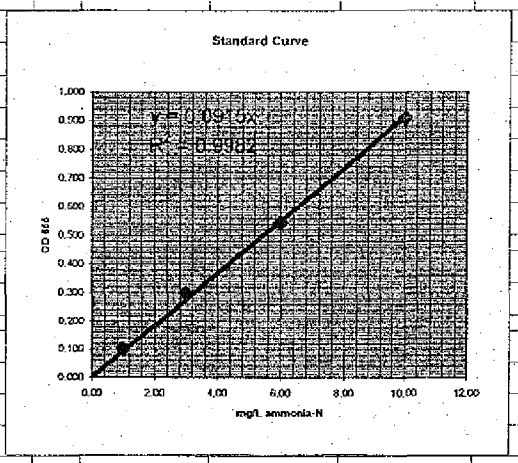
Test No.:	686-12
Test Day:	0 (9-10-04)
Species:	*Chironomus*
Overlying water	
Analyst:	RSC
Date analysed:	9/23/2004

ANC07894
BZTO104(e)007894

Total Ammonia-N in Water: Computation Worksheet
Salicylate Method (SOP #5492)

Result

	Sample description	Dilution factor	OD_{655}	NH_3-N (mg/L)
	Blank	-----	----	----
	1.0 mg/L NH_3-N Std.	-----	0.100	1.00
	3.0 mg/L NH_3-N Std.	-----	0.298	3.00
	6.0 mg/L NH_3-N Std.	-----	0.545	6.00
	10.0 mg/L NH_3-N Std.	-----	0.910	10.00
	3 mg/L spike	-----	0.298	3.25
	3 mg/L spike dupl.	-----	0.297	3.24
1.	10	1	0.235	2.57
2.	11	1	0.242	2.64
3.	22	1	0.017	0.19
4.	45	1	0.103	1.12
5.	46	1	0.116	1.27
6.	51	1	0.085	0.93
7.	54	1	0.051	0.56
8.	61	1	0.260	2.84
9.	64	1	0.063	0.69
10.	68	1	0.147	1.61
11.	77	1	0.132	1.44
12.	84	1	0.147	1.61
13.	88	1	0.036	0.39
14.	89	1	0.085	0.93
15.	95	1	0.083	0.91
16.	118	1	0.092	1.00
17.	123	1	0.044	0.48
18.	126	1	0.195	2.13
19.	150	1	0.060	0.66
20.	157	1	0.180	1.97
21.	165	1	0.169	1.85
22.	166	1	0.028	0.31
23.		1		
24.		1		
25.		1		
26.		1		
27.		1		
28.		1		
29.		1		
30.		1		
31.		1		
32.		1		
33.		1		
34.		1		
35.		1		
36.		1		
37.		1		



Reporting limit (mg/L) =	0.1
Recovery (%) =	108.3
Precision (RPD) =	0.34
Sample volume (ml):	0.50
Dilution factor	1

Sample Set Description:

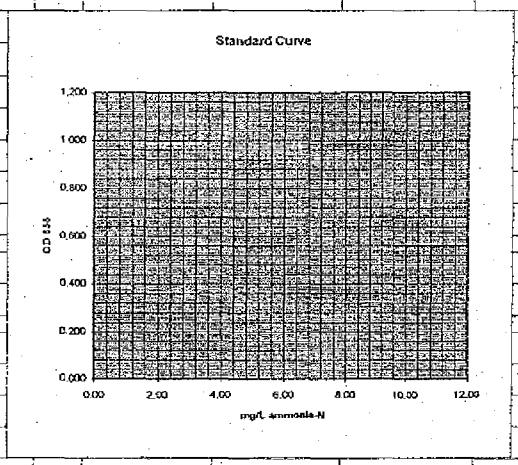
Test No.:	686-12
Test Day:	0 (9-10-04)
Species:	*Chironomus*
Overlying water	
Analyst:	RSC
Date analysed:	9/23/2004

Total Ammonia-N in Water: Computation Worksheet

Salicylate Method (SOP #5492)

Result

	Sample Description	Dilution factor	OD_{655}	NH_3-N (mg/L)
	Blank	-----	-----	-----
	1.0 mg/L NH_3-N Std.	-----	.117	1.00
	3.0 mg/L NH_3-N Std.	-----	.256	3.00
	6.0 mg/L NH_3-N Std.	-----	.565	6.00
	10.0 mg/L NH_3-N Std.	-----	.910	10.00
	mg/L spike	-----	.283	
	mg/L spike dupl.	-----	.282	
1.	10	1	.072	
2.	11	1	.100	
3.	22	1	.098	
4.	45	1	.077	
5.	46	1	.061	
6.	51	1	.090	
7.	54	1	.068	
8.	61	1	.216	
9.	64	1	.060	
10.	68	1	.069	
11.	77	1	.067	
12.	84	1	.067	
13.	88	1	.077	
14.	89	1	.060	
15.	95	1	.059	
16.	118	1	.050	
17.	123	1	.050	
18.	126	1	.077	
19.	150	1	.049	
20.	157	1	.077	
21.	165	1	.081	
22.	166	1	.059	
23.		1		
24.		1		
25.		1		
26.		1		
27.		1		
28.		1		
29.		1		
30.		1		
31.		1		
32.		1		
33.		1		
34.		1		
35.		1		
36.		1		



Reporting limit (mg/L) =	0.1
Recovery (%) =	#VALUE!
Precision (RPD) =	#VALUE!
Sample volume (ml):	0.50
Dilution factor	1

Sample Set Description:

Test No.:	686-12
Test Day:	10 (9-20-04)
Species:	*Chironomus*
Overlying water	
Analyst:	RSC
Date analysed:	9/25/2004

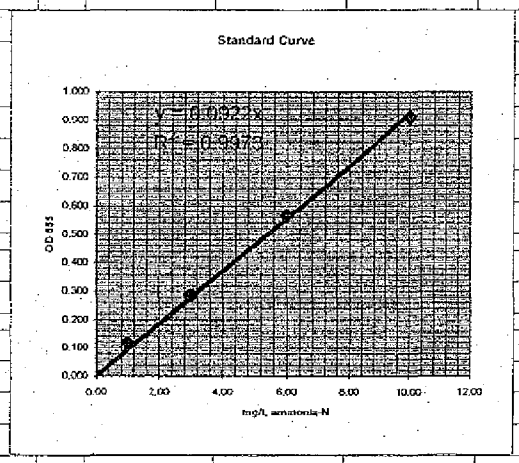
ANC07896
BZTO104(e)007896

Total Ammonia-N in Water: Computation Worksheet

Salicylate Method (SOP #5492)

Result

	Sample description	Dilution factor	OD_{655}	NH_3-N (mg/L)
	Blank	-----	-----	-----
	1.0 mg/L NH_3-N Std.	-----	0.117	1.00
	3.0 mg/L NH_3-N Std.	-----	0.286	3.00
	6.0 mg/L NH_3-N Std.	-----	0.565	6.00
	10.0 mg/L NH_3-N Std.	-----	0.910	10.00
	3.0 mg/L spike	-----	0.283	3.07
	3.0 mg/L spike dupl.	-----	0.282	3.06
1.	10	1	0.072	0.78
2.	11	1	0.106	1.15
3.	22	1	0.048	0.52
4.	45	1	0.077	0.83
5.	46	1	0.061	0.66
6.	51	1	0.070	0.76
7.	54	1	0.068	0.74
8.	61	1	0.116	1.26
9.	64	1	0.060	0.65
10.	68	1	0.069	0.75
11.	77	1	0.067	0.73
12.	84	1	0.067	0.73
13.	88	1	0.037	0.40
14.	89	1	0.060	0.65
15.	95	1	0.059	0.64
16.	118	1	0.050	0.54
17.	123	1	0.050	0.54
18.	126	1	0.071	0.77
19.	150	1	0.049	0.53
20.	157	1	0.077	0.83
21.	165	1	0.081	0.88
22.	166	1	0.059	0.64
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				
31.				
32.				
33.				
34.				
35.				
36.				



Reporting limit (mg/L) =	0.1
Recovery (%) =	102.0
Precision (RPD) =	0.35
Sample volume (ml):	0.50
Dilution factor	1

Sample Set Description:

Test No.:	686-12
Test Day:	10 (9-20-04)
Species:	*Chironomus*
Overlying water	
Analyst:	RSC
Date analysed:	9/25/2004

ANC07897
BZTO104(e)007897

TEST DATA ANALYSIS RECORDS

Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

ASHED DRY WT= weight of ashed pan + weight of ashed test organisms recovered at test termination
TAFDW=DRY WT - ASHED DRY WT= total ash-free organism weight for given replicate
AFDW=average individual ash-free biomass=TAFDW/WT COUNT

INITIAL WEIGHT

pan #	tare wt (mg)	final wt (mg)	wt count	avg. wt/ organism
1	92.03	95.45	20	0.17
2	85.21	88.50	20	0.16
3	91.95	94.95	20	0.15

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)		SURV	MORT	PSURV	PMORT	WT	AFDW
1	63	9403F	Control	1		10	10	0	100.0	0.0	91.17	10	99.65	92.67	8.48	0.85	6.98	0.70							
2	120	9403F	Control	2		10	10	0	100.0	0.0	91.15	10	101.30	93.66	10.15	1.02	7.64	0.76							
3	130	9403F	Control	3		10	9	1	90.0	10.0	96.45	9	107.22	99.17	10.77	1.20	8.05	0.89							
4	182	9403F	Control	4		10	8	2	80.0	20.0	87.08	5	100.33	91.00	13.25	1.66	9.33	1.17							
5	100	9403F	Control	5		10	10	0	100.0	0.0	93.94	10	103.86	96.19	9.92	0.99	7.67	0.77	Mean	9.1	0.9	91.3	8.8	1.19	0.89
6	149	9403F	Control	6		10	8	2	80.0	20.0	96.14	8	106.22	98.91	10.08	1.26	7.31	0.91	SD	0.8	0.8	8.3	8.3	0.26	0.15
7	33	9403F	Control	7		10	9	1	90.0	10.0	102.67	9	113.12	104.83	10.45	1.16	8.29	0.92	n	8	8	8	8	8	8
8	166	9403F	Control	8	wq replicate	10	9	1	90.0	10.0	97.60	9	110.31	101.36	12.71	1.41	8.95	0.99							
9	56	9413F	LW2-G232	1		11	11	0	100.0	0.0	90.11	11	109.71	96.50	19.60	1.78	13.21	1.20							
10	24	9413F	LW2-G232	2		10	8	2	80.0	20.0	98.38	8	110.44	101.28	12.03	1.51	9.16	1.15							
11	38	9413F	LW2-G232	3		10	9	1	90.0	10.0	94.03	9	110.46	96.77	16.43	1.83	11.69	1.30							
12	176	9413F	LW2-G232	4		10	9	1	90.0	10.0	103.58	9	121.65	111.05	18.07	2.01	10.80	1.18							
13	41	9413F	LW2-G232	5		10	9	1	90.0	10.0	98.15	9	116.31	104.51	18.15	2.02	11.80	1.31	Mean	9.4	0.6	92.5	7.5	1.77	1.17
14	145	9413F	LW2-G232	6		10	9	1	90.0	10.0	92.74	9	109.96	99.90	17.22	1.91	10.06	1.12	SD	0.9	0.7	7.1	7.1	0.21	0.09
15	104	9413F	LW2-G232	7		10	10	0	100.0	0.0	92.41	10	108.71	97.70	16.30	1.63	11.01	1.10	n	8	8	8	8	8	8
16	54	9413F	LW2-G232	8	wq replicate	10	10	0	100.0	0.0	89.17	10	103.98	93.54	14.81	1.48	10.44	1.04							
17	161	9414F	LW2-G263	1		10	8	2	80.0	20.0	106.46	8	121.35	112.41	14.89	1.86	8.94	1.12							
18	43	9414F	LW2-G263	2		10	7	3	70.0	30.0	100.91	7	110.47	103.61	9.56	1.37	6.86	0.98							
19	85	9414F	LW2-G263	3		10	9	1	90.0	10.0	92.96	9	104.52	97.14	11.56	1.28	7.38	0.82							
20	175	9414F	LW2-G263	4		10	9	1	90.0	10.0	102.00	9	117.18	108.40	15.18	1.69	8.78	0.98							
21	167	9414F	LW2-G263	5		10	9	1	90.0	10.0	95.62	9	107.59	99.80	11.97	1.33	7.79	0.87	Mean	8.3	1.8	82.5	17.5	1.43	0.93
22	127	9414F	LW2-G263	6		10	9	1	90.0	10.0	96.78	9	108.89	101.13	12.11	1.35	7.76	0.86	SD	0.9	0.9	8.9	8.9	0.22	0.09
23	87	9414F	LW2-G263	7		10	7	3	70.0	30.0	96.49	7	105.06	98.81	8.57	1.22	6.25	0.89	n	8	8	8	8	8	8
24	89	9414F	LW2-G263	8	wq replicate	10	6	2	80.0	20.0	88.05	8	99.00	91.60	10.95	1.37	7.40	0.93							
25	142	9415F	LW2-G269	1		10	7	3	70.0	30.0	86.05	7	91.16	87.72	5.11	0.73	3.44	0.49							
26	173	9415F	LW2-G269	2		10	10	0	100.0	0.0	96.87	10	104.31	99.37	7.44	0.74	4.94	0.49							
27	136	9415F	LW2-G269	3		10	8	2	80.0	20.0	96.96	8	104.57	99.53	7.61	0.95	5.04	0.63							
28	121	9415F	LW2-G269	4		10	4	6	40.0	60.0	95.36	4	98.19	96.28	2.83	0.71	1.91	0.48							
29	72	9415F	LW2-G269	5		10	4	6	40.0	60.0	90.74	4	92.10	90.92	1.36	0.34	1.18	0.29	Mean	6.9	3.1	68.8	31.3	0.66	0.48
30	93	9415F	LW2-G269	6		10	8	2	80.0	20.0	96.81	8	101.82	97.79	5.01	0.63	4.03	0.50	SD	2.1	2.1	21.0	21.0	0.18	0.10
31	55	9415F	LW2-G269	7		10	8	2	80.0	20.0	93.07	8	97.20	94.03	4.13	0.52	3.17	0.40	n	8	8	8	8	8	8
32	11	9415F	LW2-G269	8	wq replicate	10	6	4	60.0	40.0	95.14	6	99.35	96.27	4.21	0.70	3.08	0.51							
33	94	9416F	LW2-G283	1		10	0	10	0.0	100.0	91.48	0													
34	66	9416F	LW2-G283	2		10	3	7	30.0	70.0	99.70	3	101.37	100.05	1.67	0.56	1.32	0.44							
35	31	9416F	LW2-G283	3		10	0	10	0.0	100.0	100.46	0													
36	50	9416F	LW2-G283	4		10	0	10	0.0	100.0	100.26	0													
37	74	9416F	LW2-G283	5		10	0	10	0.0	100.0	86.20	0													
38	158	9416F	LW2-G283	6		10	0	10	0.0	100.0	97.44	0							Mean	0.4	9.6	3.8	96.3	0.56	0.44
39	151	9416F	LW2-G283	7		10	0	10	0.0	100.0	96.75	0							SD	1.1	1.1	10.6	10.6		
40	51	9416F	LW2-G283	8	wq replicate	10	0	10	0.0	100.0	96.54	0							n	8	8	8	8	1	1

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ANC07899
BZTO104(e)007899

Test Number: 686-12

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)		SURV	MORT	PSURV	PMORT	WT	AFDW
41	174	9417F	LW2-G264	1		10	7	3	70.0	30.0	93.02	7	98.51	94.82	5.49	0.78	3.69	0.53							
42	57	9417F	LW2-G264	2		10	6	4	60.0	40.0	96.98	6	99.59	97.35	2.61	0.44	2.24	0.37							
43	169	9417F	LW2-G264	3		10	2	8	20.0	80.0															
44	114	9417F	LW2-G264	4		10	1	9	10.0	90.0	96.81	1	99.51	99.00	0.70	0.70	0.51	0.51							
45	34	9417F	LW2-G264	5		10	5	5	50.0	50.0	94.94	5	97.75	95.43	2.81	0.56	2.32	0.46	Mean	4.9	5.1	48.8	51.3	0.66	0.51
46	78	9417F	LW2-G264	6		10	4	6	40.0	60.0	90.59	4	94.60	91.49	4.01	1.00	3.11	0.78	SD	2.6	2.6	25.9	25.9	0.19	0.13
47	52	9417F	LW2-G264	7		10	9	1	90.0	10.0	94.86	9	99.42	95.57	4.56	0.51	3.85	0.43	n	8	8	8	8	7	7
48	10	9417F	LW2-G264	8	wq replicate	10	5	5	50.0	50.0	93.92	5	97.12	94.60	3.20	0.64	2.52	0.50							
49	143	9418F	LW2-G278	1		10	3	7	30.0	70.0	86.73	3	88.01	86.97	1.28	0.43	1.04	0.35							
50	35	9418F	LW2-G278	2		10	8	2	80.0	20.0	99.47	8	106.60	101.27	7.13	0.89	5.33	0.67							
51	14	9418F	LW2-G278	3		10	8	2	80.0	20.0	103.52	8	111.19	104.73	7.67	0.96	6.46	0.81							
52	81	9418F	LW2-G278	4		10	10	0	100.0	0.0	92.83	10	104.05	96.03	11.22	1.12	8.02	0.80							
53	144	9418F	LW2-G278	5		10	4	6	40.0	60.0	96.95	4	101.65	98.48	4.70	1.18	3.17	0.79	Mean	6.3	3.8	62.5	37.5	0.97	0.71
54	160	9418F	LW2-G278	6		10	7	3	70.0	30.0	93.11	7	101.92	96.06	8.81	1.26	5.86	0.84	SD	2.6	2.6	26.0	26.0	0.30	0.18
55	163	9418F	LW2-G278	7		10	3	7	30.0	70.0	91.25	3	95.00	92.29	3.75	1.25	2.71	0.90	n	8	8	8	8	8	8
56	84	9418F	LW2-G278	8	wq replicate	10	7	3	70.0	30.0	91.94	7	96.72	92.85	4.78	0.68	3.87	0.55							
57	48	9419F	LW2-G276	1		10	7	3	70.0	30.0	91.88	7	100.57	94.05	8.69	1.24	6.52	0.93							
58	140	9419F	LW2-G276	2		10	9	1	90.0	10.0	94.08	9	105.37	98.09	11.29	1.25	7.28	0.81							
59	17	9419F	LW2-G276	3		10	6	4	60.0	40.0	90.80	6	95.06	91.51	4.26	0.71	3.55	0.59							
60	73	9419F	LW2-G276	4		10	7	3	70.0	30.0	95.01	7	103.68	97.77	8.67	1.24	5.91	0.84							
61	25	9419F	LW2-G276	5		10	4	6	40.0	60.0	89.29	4	96.51	91.16	7.22	1.81	5.35	1.34	Mean	7.5	2.5	75.0	25.0	1.26	0.88
62	20	9419F	LW2-G276	6		10	10	0	100.0	0.0	103.02	10	111.86	105.01	8.84	0.88	6.85	0.68	SD	2.1	2.1	20.7	20.7	0.34	0.22
63	122	9419F	LW2-G276	7		10	7	3	70.0	30.0	98.59	7	108.65	102.18	10.06	1.44	6.47	0.92	n	8	8	8	8	8	8
64	126	9419F	LW2-G276	8	wq replicate	10	10	0	100.0	0.0	88.92	10	103.91	94.64	14.99	1.50	9.27	0.93							
65	44	9420F	LW2-G284	1		10	8	2	80.0	20.0	95.57	8	104.23	97.76	8.66	1.08	6.47	0.81							
66	147	9420F	LW2-G284	2		10	10	0	100.0	0.0	88.79	10	100.91	93.17	12.12	1.21	7.74	0.77							
67	59	9420F	LW2-G284	3		10	9	1	90.0	10.0	100.62	9	109.44	102.28	8.82	0.98	7.16	0.80							
68	101	9420F	LW2-G284	4		10	10	0	100.0	0.0	92.40	10	106.15	97.47	13.75	1.38	8.68	0.87							
69	135	9420F	LW2-G284	5		11	11	0	100.0	0.0	87.29	11	103.33	92.92	16.04	1.46	10.41	0.95	Mean	9.3	0.9	91.3	8.8	1.25	0.85
70	29	9420F	LW2-G284	6		10	9	1	90.0	10.0	95.22	9	102.98	97.04	7.76	0.86	5.94	0.66	SD	1.3	1.1	11.3	11.3	0.26	0.12
71	139	9420F	LW2-G284	7		10	7	3	70.0	30.0	93.94	7	105.24	97.87	11.30	1.61	7.37	1.05	n	8	8	8	8	8	8
72	46	9420F	LW2-G284	8	wq replicate	10	10	0	100.0	0.0	91.19	10	105.04	95.74	13.85	1.39	9.30	0.93							
73	172	9421F	LW2-G267	1		10	9	1	90.0	10.0	98.05	9	115.69	105.82	17.64	1.96	9.67	1.10							
74	5	9421F	LW2-G267	2		10	10	0	100.0	0.0	96.43	10	97.51	96.73	1.08	0.11	0.78	0.08							
75	58	9421F	LW2-G267	3		10	10	0	100.0	0.0	89.97	10	105.05	95.33	15.08	1.51	9.72	0.97							
76	39	9421F	LW2-G267	4		10	9	1	90.0	10.0	85.92	9	102.59	91.32	16.67	1.85	11.27	1.25							
77	92	9421F	LW2-G267	5		10	10	0	100.0	0.0	93.86	10	109.10	98.89	15.24	1.52	10.21	1.02	Mean	9.4	0.6	93.8	6.3	1.55	0.97
78	152	9421F	LW2-G267	6		10	9	1	90.0	10.0	90.06	9	106.93	96.72	16.87	1.87	10.21	1.13	SD	0.5	0.5	5.2	5.2	0.61	0.37
79	170	9421F	LW2-G267	7		10	9	1	90.0	10.0	94.59	9	112.28	102.02	17.69	1.97	10.26	1.14	n	8	8	8	8	8	8
80	88	9421F	LW2-G267	8	wq replicate	10	9	1	90.0	10.0	96.23	9	110.65	101.00	14.42	1.60	9.65	1.07							
81	36	9422F	LW2-G453	1		10	0	10	0.0	100.0	104.27	0													
82	137	9422F	LW2-G453	2		10	0	10	0.0	100.0	94.20	0													
83	15	9422F	LW2-G453	3		10	0	10	0.0	100.0	95.83	0													
84	21	9422F	LW2-G453	4		10	0	10	0.0	100.0	108.95	0													
85	112	9422F	LW2-G453	5		10	0	10	0.0	100.0	94.30	0							Mean	0.5	9.5	5.0	95.0	0.21	0.15
86	115	9422F	LW2-G453	6		10	1	9	10.0	90.0	98.47	1	98.56	98.51	0.09	0.09	0.05	0.05	SD	0.8	0.8	7.6	7.6	0.17	0.11
87	141	9422F	LW2-G453	7		10	2	8	20.0	80.0	92.09	2	92.90	92.37	0.81	0.41	0.53	0.27	n	8	8	8	8	3	3
88	61	9422F	LW2-G453	8	wq replicate	10	1	9	10.0	90.0	91.44	1	91.58	91.46	0.14	0.14	0.12	0.12							
89	80	9423F	LW2-G456	1		10	10	0	100.0	0.0	98.92	10	111.41	102.47	12.49	1.25	8.94	0.89							
90	125	9423F	LW2-G456	2		10	9	1	90.0	10.0	93.83	9	106.62	98.52	12.79	1.42	8.10	0.90							
91	40	9423F	LW2-G456	3		10	9	1	90.0	10.0	83.00	9	99.13	88.66	16.13	1.79	10.47	1.16							
92	116	9423F	LW2-G456	4		10	10	0	100.0	0.0	95.00	10	109.91	100.70	14.91	1.49	9.21	0.92							
93	26	9423F	LW2-G456	5		10	10	0	100.0	0.0	96.90	10	108.76	99.76	11.86	1.19	9.00	0.90	Mean	9.4	0.6	93.8	6.3	1.38	0.91
94	159	9423F	LW2-G456	6		10	9	1	90.0	10.0	97.64	9	108.62	101.44	10.98	1.22	7.18	0.80	SD	0.7	0.7	7.4	7.4	0.21	0.11
95	23	9423F	LW2-G456	7		10	8	2	80.0	20.0	99.34	8	108.52	101.53	9.18	1.15	6.99	0.87	n	8	8	8	8	8	8
96	157	9423F	LW2-G456	8	wq replicate	10	10	0	100.0	0.0	92.21	10	105.65	97.10	13.44	1.34	8.55	0.66							

ANC07900
BZTO104(e)007900

Test Number: 686-12

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)		SURV	MORT	PSURV	PMORT	WT	AFDW
97	75	9424F	LW2-G457	1		10	9	1	90.0	10.0	89.50	9	100.51	92.81	11.01	1.22	7.70	0.86							
98	96	9424F	LW2-G457	2		10	10	0	100.0	0.0	102.15	10	115.06	106.41	12.91	1.29	8.65	0.87							
99	65	9424F	LW2-G457	3		10	8	2	80.0	20.0	96.86	8	107.03	99.17	10.37	1.30	7.86	0.98							
100	60	9424F	LW2-G457	4		10	9	1	90.0	10.0	91.76	9	102.85	94.92	11.09	1.23	7.93	0.88							
101	9	9424F	LW2-G457	5		10	10	0	100.0	0.0	106.14	10	130.15	111.81	24.01	2.40	16.34	1.63	Mean	8.9	1.1	88.8	11.3	1.34	0.97
102	105	9424F	LW2-G457	6		10	9	1	90.0	10.0	99.10	9	110.17	102.22	11.07	1.23	7.95	0.88	SD	1.0	1.0	9.9	9.9	0.44	0.36
103	168	9424F	LW2-G457	7		10	7	3	70.0	30.0	98.96	7	106.58	101.67	7.62	1.09	4.91	0.70	n	8	8	8	8	8	8
104	68	9424F	LW2-G457	8	wq replicate	10	9	1	90.0	10.0	92.27	9	101.17	94.39	8.90	0.99	6.78	0.75							
105	4	9425F	LW2-G461	1		10	9	1	90.0	10.0	103.20	9	115.77	106.36	12.57	1.40	9.41	1.05							
106	78	9425F	LW2-G461	2		10	9	1	90.0	10.0	92.11	9	105.10	95.93	12.99	1.44	9.17	1.02							
107	30	9425F	LW2-G461	3		10	10	0	100.0	0.0	88.89	10	104.42	93.51	15.53	1.55	10.91	1.09							
108	42	9425F	LW2-G461	4		10	9	1	90.0	10.0	93.15	9	105.82	96.50	12.67	1.41	9.32	1.04							
109	108	9425F	LW2-G461	5		10	6	4	60.0	40.0	90.78	6	103.06	94.74	12.28	2.05	8.32	1.39	Mean	8.8	1.3	87.5	12.5	1.60	1.10
110	1	9425F	LW2-G461	6		10	9	1	90.0	10.0	101.70	9	114.49	106.34	12.79	1.42	8.15	0.91	SD	1.2	1.2	11.6	11.6	0.24	0.14
111	129	9425F	LW2-G461	7		10	9	1	90.0	10.0	93.78	9	108.81	98.64	15.03	1.67	10.17	1.13	n	8	8	8	8	8	8
112	165	9425F	LW2-G461	8	wq replicate	10	9	1	90.0	10.0	92.48	9	109.37	99.01	16.89	1.88	10.36	1.15							
113	111	9426F	LW2-G466	1		10	8	2	80.0	20.0	93.94	8	108.11	98.82	14.17	1.77	9.29	1.16							
114	133	9426F	LW2-G466	2		10	8	2	80.0	20.0	97.55	8	110.25	102.27	12.70	1.59	7.98	1.00							
115	67	9426F	LW2-G466	3		10	8	2	80.0	20.0	90.09	8	101.44	93.77	11.35	1.42	7.67	0.96							
116	99	9426F	LW2-G466	4		10	9	1	90.0	10.0	90.50	9	100.67	93.28	10.17	1.13	7.39	0.82							
117	131	9426F	LW2-G466	5		10	9	1	90.0	10.0	87.66	9	105.70	95.37	18.04	2.00	10.33	1.15	Mean	8.0	2.0	80.0	20.0	1.66	1.08
118	164	9426F	LW2-G466	6		10	5	5	50.0	50.0	100.12	5	111.88	104.44	11.76	2.35	7.44	1.49	SD	1.3	1.3	13.1	13.1	0.38	0.20
119	154	9426F	LW2-G466	7		10	9	1	90.0	10.0	88.03	9	102.23	93.16	14.20	1.58	9.07	1.01	n	8	8	8	8	8	8
120	77	9426F	LW2-G466	8	wq replicate	10	8	2	80.0	20.0	103.35	8	115.04	106.72	11.69	1.46	8.32	1.04							
121	6	9427F	LW2-G467	1		10	9	1	90.0	10.0	100.20	9	114.54	103.60	14.34	1.59	10.94	1.22							
122	62	9427F	LW2-G467	2		10	7	3	70.0	30.0	97.51	7	110.40	100.62	12.89	1.84	9.78	1.40							
123	156	9427F	LW2-G467	3		10	10	0	100.0	0.0	90.43	10	105.03	94.96	14.60	1.46	10.07	1.01							
124	71	9427F	LW2-G467	4		10	9	1	90.0	10.0	88.96	9	103.81	93.64	14.85	1.65	10.17	1.13							
125	69	9427F	LW2-G467	5		10	10	0	100.0	0.0	92.56	10	106.95	96.25	14.39	1.44	10.70	1.07	Mean	8.9	1.1	88.8	11.3	1.72	1.24
126	91	9427F	LW2-G467	6		10	10	0	100.0	0.0	88.19	10	105.60	93.51	17.41	1.74	12.09	1.21	SD	1.1	1.1	11.3	11.3	0.23	0.18
127	128	9427F	LW2-G467	7		10	8	2	80.0	20.0	101.59	8	118.58	106.38	16.99	2.12	12.20	1.53	n	8	8	8	8	8	8
128	150	9427F	LW2-G467	8	wq replicate	10	8	2	80.0	20.0	89.69	8	104.76	93.92	15.07	1.88	10.64	1.36							
129	110	9428F	LW2-G473	1		10	8	2	80.0	20.0	94.88	8	109.34	99.60	14.46	1.81	9.74	1.22							
130	109	9428F	LW2-G473	2		10	10	0	100.0	0.0	97.46	10	113.18	102.64	15.72	1.57	10.54	1.05							
131	2	9428F	LW2-G473	3		10	9	1	90.0	10.0	85.75	9	98.32	89.42	12.57	1.40	8.90	0.99							
132	8	9428F	LW2-G473	4		10	10	0	100.0	0.0	97.46	10	113.86	102.53	16.40	1.64	11.33	1.13							
133	98	9428F	LW2-G473	5		10	9	1	90.0	10.0	87.67	9	100.58	91.36	12.91	1.43	9.22	1.02	Mean	9.3	0.8	92.5	7.5	1.60	1.09
134	148	9428F	LW2-G473	6		10	10	0	100.0	0.0	94.93	10	110.80	100.83	15.87	1.59	9.97	1.00	SD	0.9	0.9	8.9	8.9	0.24	0.14
135	28	9428F	LW2-G473	7		10	10	0	100.0	0.0	101.43	10	114.67	105.26	13.24	1.32	9.41	0.94	n	8	8	8	8	8	8
136	45	9428F	LW2-G473	8	wq replicate	10	8	2	80.0	20.0	91.86	8	108.31	97.54	16.45	2.06	10.77	1.35							
137	47	9429F	LW2-G477	1		10	8	2	80.0	20.0	99.43	8	112.98	103.69	13.55	1.69	9.29	1.16							
138	102	9429F	LW2-G477	2		10	10	0	100.0	0.0	96.06	10	110.51	100.65	14.45	1.45	9.86	0.99							
139	32	9429F	LW2-G477	3		10	8	2	80.0	20.0	100.58	8	113.69	104.37	13.11	1.64	9.32	1.17							
140	79	9429F	LW2-G477	4		10	6	4	60.0	40.0	96.22	6	105.81	98.38	9.59	1.60	7.43	1.24							
141	86	9429F	LW2-G477	5		10	9	1	90.0	10.0	97.16	9	109.98	100.97	12.80	1.42	9.01	1.00	Mean	8.6	1.4	86.3	13.8	1.59	1.09
142	107	9429F	LW2-G477	6		10	9	1	90.0	10.0	97.35	9	113.19	102.81	15.84	1.76	10.38	1.15	SD	1.3	1.3	13.0	13.0	0.11	0.10
143	124	9429F	LW2-G477	7		10	10	0	100.0	0.0	94.59	10	110.43	100.42	15.84	1.58	10.01	1.00	n	8	8	8	8	8	8
144	118	9429F	LW2-G477	8	wq replicate	10	9	1	90.0	10.0	92.69	9	106.83	97.65	14.14	1.57	9.18	1.02							
145	37	9430F	LW2-G480	1		10	8	2	80.0	20.0	93.44	8	100.82	94.78	7.38	0.92	6.04	0.75							
146	19	9430F	LW2-G480	2		10	10	0	100.0	0.0	96.99	10	104.35	98.16	7.36	0.74	6.19	0.62							
147	171	9430F	LW2-G480	3		10	9	1	90.0	10.0	93.42	9	105.99	97.76	12.57	1.40	8.23	0.91							
148	113	9430F	LW2-G480	4		10	10	0	100.0	0.0	91.22	10	102.24	94.86	11.02	1.10	7.38	0.74							
149	103	9430F	LW2-G480	5		10	9	1	90.0	10.0	106.60	7	115.92	109.61	9.32	1.33	6.31	0.90	Mean	9.0	1.0	90.0	10.0	1.16	0.86
150	12	9430F	LW2-G480	6		10	10	0	100.0	0.0	90.29	10	98.96	91.51	8.67	0.87	7.45	0.74	SD	1.1	1.1	10.7	10.7	0.29	0.18
151	90	9430F	LW2-G480	7		10	7	3	70.0	30.0	97.25	7	107.39	99.86	10.14	1.45	7.53	1.08	n	8	8	8	8	8	8
152	64	9430F	LW2-G480	8	wq replicate	10	9	1	90.0	10.0	91.12	9	104.44	94.35	13.32	1.48	10.09	1.12							

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ANC07901
BZTO104(e)007901

Test Number: 686-12

Freshwater Sediment Test
10-Day Chironomus tentans

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	ASHED DRY WT (mg)	TWT (mg)	WT (mg)	TAFDW (mg)	AFDW (mg)			SURV	MORT	PSURV	PMORT	WT	AFDW
153	155	9431F	LW2-G454	1		10	10	0	100.0	0.0	91.42	10	107.71	98.15	16.29	1.63	9.56	0.96								
154	153	9431F	LW2-G454	2		10	9	1	90.0	10.0	94.62	9	110.97	100.31	16.35	1.82	10.66	1.18								
155	63	9431F	LW2-G454	3		10	8	2	80.0	20.0	90.22	8	103.09	94.79	12.87	1.61	8.30	1.04								
156	49	9431F	LW2-G454	4		10	9	1	90.0	10.0	94.66	9	109.67	98.75	15.01	1.67	10.92	1.21								
157	53	9431F	LW2-G454	5		10	8	2	80.0	20.0	96.44	8	108.54	100.05	12.10	1.51	8.49	1.06	Mean	8.8	1.3	87.5	12.5	1.66	1.11
158	82	9431F	LW2-G454	6		10	9	1	90.0	10.0	87.38	9	100.27	91.06	12.89	1.43	9.21	1.02	SD	0.7	0.7	7.1	7.1	0.16	0.10
159	138	9431F	LW2-G454	7		10	9	1	90.0	10.0	95.48	9	112.81	101.75	17.33	1.93	11.06	1.23	n	8	8	8	8	8	8
160	22	9431F	LW2-G454	8	wq replicate	10	8	2	80.0	20.0	97.49	8	110.76	101.40	13.27	1.66	9.36	1.17								
161	70	9432F	LW2-G386	1		10	9	1	90.0	10.0	94.76	9	108.68	99.00	13.92	1.55	9.68	1.08								
162	3	9432F	LW2-G386	2		10	9	1	90.0	10.0	104.98	9	118.73	109.05	13.75	1.53	9.68	1.08								
163	16	9432F	LW2-G386	3		10	8	2	80.0	20.0	91.22	8	105.44	94.26	14.22	1.78	11.18	1.40								
164	117	9432F	LW2-G386	4		12	12	0	100.0	0.0	91.03	12	109.99	98.42	18.96	1.58	11.57	0.96								
165	134	9432F	LW2-G386	5		10	10	0	100.0	0.0	85.50	10	101.90	92.09	16.40	1.64	9.81	0.98	Mean	9.6	0.6	93.8	6.3	1.61	1.07
166	106	9432F	LW2-G386	6		10	9	1	90.0	10.0	97.74	9	113.63	103.23	15.89	1.77	10.40	1.16	SD	1.2	0.7	7.4	7.4	0.12	0.16
167	7	9432F	LW2-G386	7		10	10	0	100.0	0.0	105.44	10	121.22	110.19	15.78	1.58	11.03	1.10	n	8	8	8	8	8	8
168	95	9432F	LW2-G386	8	wq replicate	10	10	0	100.0	0.0	83.20	10	97.48	89.02	14.28	1.43	8.46	0.85								
169	119	9433F	LW2-G339	1		10	8	2	80.0	20.0	95.19	8	103.68	98.00	8.49	1.06	5.68	0.71								
170	132	9433F	LW2-G339	2		10	6	4	60.0	40.0	88.91	6	95.10	90.89	6.19	1.03	4.21	0.70								
171	27	9433F	LW2-G339	3		10	8	2	80.0	20.0	96.08	8	102.55	97.43	6.47	0.81	5.12	0.64								
172	13	9433F	LW2-G339	4		10	7	3	70.0	30.0	96.46	7	103.32	97.86	6.86	0.98	5.46	0.78								
173	146	9433F	LW2-G339	5		10	9	1	90.0	10.0	96.50	9	110.38	102.14	13.88	1.54	8.24	0.92	Mean	7.8	10.0	77.5	22.5	0.98	0.70
174	18	9433F	LW2-G339	6		10	6	4	60.0	40.0	94.09	6	98.21	94.73	4.12	0.69	3.48	0.58	SD	1.3	0.0	12.8	12.8	0.27	0.11
175	97	9433F	LW2-G339	7		10	9	1	90.0	10.0	97.51	9	103.80	98.66	6.29	0.70	5.14	0.57	n	8	8	8	8	8	8
176	123	9433F	LW2-G339	8	wq replicate	10	9	1	90.0	10.0	94.52	9	103.76	97.77	9.24	1.03	5.99	0.87								

Note: Bkr # 103 lost 2 animals in transfer to weigh pans.
Note: Bkr #169 weight data was eliminated from data set due to illegible tare weight and possible negative weight calculation.

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data entry verified
10/19/04 JM

ANC07902
BZTO104(e)007902

Water Quality Data

NAS SMPL	CLIENT DESCRIP	Bulk Sediment Interstitial water NH3	pH
9413F	LW2-G232	4.5	5.9
9414F	LW2-G263	11.4	5.0
9415F	LW2-G269	23.0	6.3
9416F	LW2-G283	10.5	6.3
9417F	LW2-G264	10.2	6.2
9418F	LW2-G278	15.7	6.2
9419F	LW2-G276	16.1	6.2
9420F	LW2-G284	9.9	6.3
9421F	LW2-G267	2.9	6.2
9422F	LW2-G453	35.1	6.3
9423F	LW2-G456	18.9	6.3
9424F	LW2-G457	16.6	6.4
9425F	LW2-G461	14.8	6.4
9426F	LW2-G468	11.9	6.5
9427F	LW2-G467	4.7	6.5
9428F	LW2-G473	9.2	6.5
9429F	LW2-G477	7.8	6.6
9430F	LW2-G480	7.3	6.4
9431F	LW2-G454	1.0	6.4
9432F	LW2-G386	8.2	6.5
9433F	LW2-G339	7.2	6.6
9403F	Control	1.3	7.2

BKR	NAS SMPL	CLIENT DESCRIP	REPL	DAY	Overlying water TEMP	DO	COND	pH	NH3	HARD	ALK
10	9417F	LW2-G264	8	0	22.9	7.2	185	6.3	2.6	60	50
11	9415F	LW2-G269	8	0	22.9	6.6	195	6.3	2.6	68	50
22	9431F	LW2-G454	8	0	22.9	7.1	160	6.5	0.2	43	40
45	9428F	LW2-G473	8	0	22.9	7.4	180	6.4	1.1	60	50
46	9420F	LW2-G284	8	0	22.9	7.3	180	6.4	1.3	51	50
51	9416F	LW2-G283	8	0	22.9	7.0	175	6.4	0.9	51	40
54	9413F	LW2-G232	8	0	22.9	7.2	185	6.3	0.6	51	40
61	9442F	LW2-G453	8	0	22.8	7.3	180	6.4	2.8	43	40
64	9430F	LW2-G480	8	0	22.8	7.1	165	6.5	0.7	51	40
68	9424F	LW2-G457	8	0	22.8	7.1	200	6.3	1.6	60	50
77	9426F	LW2-G468	8	0	22.8	7.4	195	6.3	1.4	60	60
84	9418F	LW2-G278	8	0	22.8	7.2	200	6.3	1.6	60	50
88	9421F	LW2-G267	8	0	22.8	7.5	170	6.4	0.4	43	40
89	9414F	LW2-G263	8	0	22.8	7.3	205	6.2	0.9	60	30
95	9432F	LW2-G386	8	0	22.8	7.1	180	6.3	0.9	51	50
118	9429F	LW2-G477	8	0	22.8	7.0	185	6.3	1.0	60	40
123	9433F	LW2-G339	8	0	22.8	7.2	480	6.4	0.5	60	50
126	9419F	LW2-G276	8	0	22.9	7.2	220	6.4	2.1	60	50
150	9427F	LW2-G467	8	0	22.9	7.1	170	6.5	0.7	51	50
157	9423F	LW2-G456	8	0	22.9	7.3	210	6.3	2.0	60	60
165	9425F	LW2-G461	8	0	22.8	7.4	200	6.3	1.9	60	50
166	9403F	Control	8	0	22.9	7.6	330	6.6	0.3	68	50
10	9417F	LW2-G264	8	1	22.8	6.3					
11	9415F	LW2-G269	8	1	22.9	6.4					
22	9431F	LW2-G454	8	1	22.8	6.8					
45	9428F	LW2-G473	8	1	22.8	6.8					
46	9420F	LW2-G284	8	1	22.8	6.7					
51	9416F	LW2-G283	8	1	22.8	7.0					
54	9413F	LW2-G232	8	1	22.8	6.5					
61	9442F	LW2-G453	8	1	22.8	6.8					
64	9430F	LW2-G480	8	1	22.8	7.0					
68	9424F	LW2-G457	8	1	22.8	6.4					
77	9426F	LW2-G468	8	1	22.8	6.6					
84	9418F	LW2-G278	8	1	22.8	6.9					
88	9421F	LW2-G267	8	1	22.8	7.3					
89	9414F	LW2-G263	8	1	22.8	7.4					
95	9432F	LW2-G386	8	1	22.9	6.8					
118	9429F	LW2-G477	8	1	22.9	5.9					
123	9433F	LW2-G339	8	1	22.9	6.3					
126	9419F	LW2-G276	8	1	22.9	6.1					
150	9427F	LW2-G467	8	1	22.9	6.1					
157	9423F	LW2-G456	8	1	22.9	6.3					
165	9425F	LW2-G461	8	1	22.9	6.3					
166	9403F	Control	8	1	22.9	6.4					
10	9417F	LW2-G264	8	2	22.3	6.7					
11	9415F	LW2-G269	8	2	22.4	6.8					
22	9431F	LW2-G454	8	2	22.3	6.8					
45	9428F	LW2-G473	8	2	22.4	6.5					
46	9420F	LW2-G284	8	2	22.4	6.8					

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51	9416F	LW2-G283	8	2	22.4	6.9								
54	9413F	LW2-G232	8	2	22.3	6.8								
61	9442F	LW2-G453	8	2	22.4	6.8								
64	9430F	LW2-G480	8	2	22.3	7.1								
68	9424F	LW2-G457	8	2	22.4	6.3								
77	9426F	LW2-G468	8	2	22.3	6.3								
84	9418F	LW2-G278	8	2	22.3	6.7								
88	9421F	LW2-G267	8	2	22.4	7.3								
89	9414F	LW2-G263	8	2	22.4	7.4								
95	9432F	LW2-G386	8	2	22.4	6.7								
118	9429F	LW2-G477	8	2	22.4	6.2								
123	9433F	LW2-G339	8	2	22.5	6.5								
126	9419F	LW2-G276	8	2	22.5	6.6								
150	9427F	LW2-G467	8	2	22.4	6.5								
157	9423F	LW2-G456	8	2	22.5	6.5								
165	9425F	LW2-G461	8	2	22.4	5.9								
166	9403F	Control	8	2	22.4	6.4								
10	9417F	LW2-G264	8	3	23.1	5.6		6.3						
11	9415F	LW2-G269	8	3	23.1	5.0		6.3						
22	9431F	LW2-G454	8	3	23.1	5.6		6.3						
45	9428F	LW2-G473	8	3	23.1	4.7		6.3						
46	9420F	LW2-G284	8	3	23.1	5.2		6.3						
51	9416F	LW2-G283	8	3	23.1	5.4		6.3						
54	9413F	LW2-G232	8	3	23.1	5.0		6.3						
61	9442F	LW2-G453	8	3	23.1	5.4		6.3						
64	9430F	LW2-G480	8	3	23.0	5.4		6.3						
68	9424F	LW2-G457	8	3	23.0	5.3		6.4						
77	9426F	LW2-G468	8	3	23.0	5.2		6.3						
84	9418F	LW2-G278	8	3	23.0	5.3		6.3						
88	9421F	LW2-G267	8	3	23.0	5.3		6.3						
89	9414F	LW2-G263	8	3	23.0	6.1		6.3						
95	9432F	LW2-G386	8	3	23.1	6.2		6.4						
118	9429F	LW2-G477	8	3	23.0	5.1		6.4						
123	9433F	LW2-G339	8	3	23.0	5.5		6.5						
126	9419F	LW2-G276	8	3	23.1	4.8		6.3						
150	9427F	LW2-G467	8	3	23.0	4.6		6.3						
157	9423F	LW2-G456	8	3	23.0	5.0		6.4						
165	9425F	LW2-G461	8	3	23.0	4.4		6.3						
166	9403F	Control	8	3	23.0	4.8		6.4						
10	9417F	LW2-G264	8	4	22.8	5.1								
11	9415F	LW2-G269	8	4	22.8	5.1								
22	9431F	LW2-G454	8	4	22.8	4.9								
45	9428F	LW2-G473	8	4	22.7	5.2								
46	9420F	LW2-G284	8	4	22.8	5.2								
51	9416F	LW2-G283	8	4	22.9	5.0								
54	9413F	LW2-G232	8	4	22.9	4.6								
61	9442F	LW2-G453	8	4	22.9	4.9								
64	9430F	LW2-G480	8	4	22.8	4.5								
68	9424F	LW2-G457	8	4	22.8	4.5								
77	9426F	LW2-G468	8	4	22.8	4.6								
84	9418F	LW2-G278	8	4	22.8	4.6								
88	9421F	LW2-G267	8	4	22.8	5.1								
89	9414F	LW2-G263	8	4	22.8	5.7								
95	9432F	LW2-G386	8	4	22.9	5.8								
118	9429F	LW2-G477	8	4	22.8	4.1								
123	9433F	LW2-G339	8	4	22.7	4.9								
126	9419F	LW2-G276	8	4	22.7	4.6								
150	9427F	LW2-G467	8	4	22.8	4.5								
157	9423F	LW2-G456	8	4	22.8	4.2								
165	9425F	LW2-G461	8	4	22.7	3.8								
166	9403F	Control	8	4	22.8	4.1								
10	9417F	LW2-G264	8	5	23.1	4.2								
11	9415F	LW2-G269	8	5	23.1	4.2								
22	9431F	LW2-G454	8	5	23.2	4.0								
45	9428F	LW2-G473	8	5	23.0	4.4								
46	9420F	LW2-G284	8	5	23.0	4.0								
51	9416F	LW2-G283	8	5	23.0	4.4								
54	9413F	LW2-G232	8	5	23.1	3.9								
61	9442F	LW2-G453	8	5	23.0	4.3								
64	9430F	LW2-G480	8	5	23.0	4.2								
68	9424F	LW2-G457	8	5	22.9	4.2								
77	9426F	LW2-G468	8	5	22.9	4.6								
84	9418F	LW2-G278	8	5	22.9	4.0								
88	9421F	LW2-G267	8	5	23.0	4.6								
89	9414F	LW2-G263	8	5	23.0	5.2								
95	9432F	LW2-G386	8	5	23.0	4.9								
118	9429F	LW2-G477	8	5	23.1	3.4								
123	9433F	LW2-G339	8	5	23.0	4.1								
126	9419F	LW2-G276	8	5	23.0	4.6								
150	9427F	LW2-G467	8	5	23.1	4.3								

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157	9423F	LW2-G456	8	5	23.1	4.0								
165	9425F	LW2-G461	8	5	23.0	3.0								
166	9403F	Control	8	5	23.0	4.2								
10	9417F	LW2-G264	8	6	22.9	5.6								
11	9415F	LW2-G269	8	6	23.0	5.8								
22	9431F	LW2-G454	8	6	23.0	5.8								
45	9428F	LW2-G473	8	6	23.0	5.2								
46	9420F	LW2-G284	8	6	23.0	5.7								
51	9416F	LW2-G283	8	6	23.0	5.8								
54	9413F	LW2-G232	8	6	22.9	5.0								
61	9442F	LW2-G453	8	6	23.0	5.2								
64	9430F	LW2-G480	8	6	22.9	5.6								
68	9424F	LW2-G457	8	6	22.9	5.5								
77	9426F	LW2-G468	8	6	22.9	5.4								
84	9418F	LW2-G278	8	6	22.9	5.2								
88	9421F	LW2-G267	8	6	22.9	5.5								
89	9414F	LW2-G263	8	6	22.9	5.9								
95	9432F	LW2-G386	8	6	23.0	5.8								
118	9429F	LW2-G477	8	6	22.9	4.8								
123	9433F	LW2-G339	8	6	22.9	5.2								
126	9419F	LW2-G276	8	6	23.0	5.3								
150	9427F	LW2-G467	8	6	23.0	4.8								
157	9423F	LW2-G456	8	6	22.9	4.6								
165	9425F	LW2-G461	8	6	23.0	4.7								
166	9403F	Control	8	6	23.0	4.5								
10	9417F	LW2-G264	8	7	22.9	4.6	6.6							
11	9415F	LW2-G269	8	7	22.9	5.0	6.6							
22	9431F	LW2-G454	8	7	22.9	5.6	6.5							
45	9428F	LW2-G473	8	7	22.9	5.3	6.5							
46	9420F	LW2-G284	8	7	23.0	5.6	6.4							
51	9416F	LW2-G283	8	7	23.0	5.2	6.5							
54	9413F	LW2-G232	8	7	22.9	4.8	6.5							
61	9442F	LW2-G453	8	7	23.0	4.9	6.4							
64	9430F	LW2-G480	8	7	22.9	5.1	6.5							
68	9424F	LW2-G457	8	7	22.9	5.5	6.5							
77	9426F	LW2-G468	8	7	22.9	5.3	6.5							
84	9418F	LW2-G278	8	7	22.9	5.1	6.6							
88	9421F	LW2-G267	8	7	22.9	4.7	6.5							
89	9414F	LW2-G263	8	7	22.9	5.3	6.5							
95	9432F	LW2-G386	8	7	23.0	5.3	6.4							
118	9429F	LW2-G477	8	7	22.9	4.8	6.5							
123	9433F	LW2-G339	8	7	22.9	4.9	6.5							
126	9419F	LW2-G276	8	7	23.0	5.2	6.5							
150	9427F	LW2-G467	8	7	23.0	5.0	6.5							
157	9423F	LW2-G456	8	7	23.0	5.1	6.5							
165	9425F	LW2-G461	8	7	22.9	5.0	6.5							
166	9403F	Control	8	7	23.0	4.4	6.6							
10	9417F	LW2-G264	8	8	22.8	4.9								
11	9415F	LW2-G269	8	8	22.8	5.4								
22	9431F	LW2-G454	8	8	22.8	5.6								
45	9428F	LW2-G473	8	8	22.8	5.2								
46	9420F	LW2-G284	8	8	22.9	5.3								
51	9416F	LW2-G283	8	8	22.9	5.5								
54	9413F	LW2-G232	8	8	22.8	5.1								
61	9442F	LW2-G453	8	8	22.9	5.3								
64	9430F	LW2-G480	8	8	22.8	5.2								
68	9424F	LW2-G457	8	8	22.8	5.4								
77	9426F	LW2-G468	8	8	22.8	5.2								
84	9418F	LW2-G278	8	8	22.8	5.3								
88	9421F	LW2-G267	8	8	22.8	5.0								
89	9414F	LW2-G263	8	8	22.8	5.6								
95	9432F	LW2-G386	8	8	22.8	5.1								
118	9429F	LW2-G477	8	8	22.8	5.7								
123	9433F	LW2-G339	8	8	22.8	5.4								
126	9419F	LW2-G276	8	8	22.9	5.6								
150	9427F	LW2-G467	8	8	22.8	5.0								
157	9423F	LW2-G456	8	8	22.8	5.5								
165	9425F	LW2-G461	8	8	22.9	5.3								
166	9403F	Control	8	8	22.8	4.8								
10	9417F	LW2-G264	8	9	22.3	5.5								
11	9415F	LW2-G269	8	9	22.3	5.7								
22	9431F	LW2-G454	8	9	22.2	5.8								
45	9428F	LW2-G473	8	9	22.2	5.3								
46	9420F	LW2-G284	8	9	22.2	5.7								
51	9416F	LW2-G283	8	9	22.2	5.4								
54	9413F	LW2-G232	8	9	22.2	5.5								
61	9442F	LW2-G453	8	9	22.2	5.0								
64	9430F	LW2-G480	8	9	22.2	5.1								
68	9424F	LW2-G457	8	9	22.2	5.3								
77	9426F	LW2-G468	8	9	22.2	5.4								

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84	9418F	LW2-G278	8	9	22.2	5.5								
88	9421F	LW2-G267	8	9	22.2	5.2								
89	9414F	LW2-G263	8	9	22.1	5.4								
95	9432F	LW2-G386	8	9	22.3	5.2								
118	9429F	LW2-G477	8	9	22.1	5.6								
123	9433F	LW2-G339	8	9	22.1	5.8								
126	9419F	LW2-G276	8	9	22.3	5.9								
150	9427F	LW2-G467	8	9	22.2	5.1								
157	9423F	LW2-G456	8	9	22.1	5.4								
165	9425F	LW2-G461	8	9	22.1	5.6								
166	9403F	Control	8	9	22.1	5.0								
10	9417F	LW2-G264	8	10	22.4	6.2	170	6.6	0.8	43	40			
11	9415F	LW2-G269	8	10	22.4	6.3	170	6.5	1.2	43	40			
22	9431F	LW2-G454	8	10	22.4	6.5	165	6.7	0.5	43	40			
45	9428F	LW2-G473	8	10	22.4	6.3	165	6.6	0.8	43	40			
46	9420F	LW2-G284	8	10	22.4	6.2	170	6.6	0.7	43	40			
51	9416F	LW2-G283	8	10	22.5	6.1	170	6.5	0.8	43	40			
54	9413F	LW2-G232	8	10	22.4	5.7	165	6.5	0.7	43	40			
61	9442F	LW2-G453	8	10	22.4	6.2	170	6.6	1.3	43	40			
64	9430F	LW2-G480	8	10	22.4	6.4	165	6.6	0.7	43	40			
68	9424F	LW2-G457	8	10	22.3	6.4	165	6.6	0.8	43	40			
77	9426F	LW2-G468	8	10	22.4	6.6	165	6.6	0.7	43	40			
84	9418F	LW2-G278	8	10	22.4	6.8	165	6.6	0.7	43	40			
88	9421F	LW2-G267	8	10	22.4	6.7	165	6.6	0.4	43	40			
89	9414F	LW2-G263	8	10	22.4	6.3	170	6.6	0.7	43	40			
95	9432F	LW2-G386	8	10	22.4	6.4	165	6.6	0.6	43	40			
118	9429F	LW2-G477	8	10	22.4	5.9	165	6.6	0.5	43	40			
123	9433F	LW2-G339	8	10	22.3	6.1	180	6.6	0.5	43	40			
126	9419F	LW2-G276	8	10	22.4	6.6	165	6.6	0.8	43	40			
150	9427F	LW2-G467	8	10	22.4	6.1	165	6.6	0.5	43	40			
157	9423F	LW2-G456	8	10	22.4	6.3	165	6.6	0.8	43	40			
165	9425F	LW2-G461	8	10	22.4	5.9	165	6.5	0.9	51	40			
166	9403F	Control	8	10	22.4	5.6	175	6.6	0.6	43	50			
				Mean	22.7	5.6	187	6.4	---	50	44		11.3	6.3
				SD	0.3	0.9	53	0.1	---	8	6		7.8	0.4
				n	242	242	44	88	44	44	44		22	22
				Min	22.1	3.0	160	6.2	0.2	43	30		1.0	5.0
				Max	23.2	7.6	480	6.7	2.8	68	60		35.1	7.2

Data entry verified
10/19/04 fr

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CHAIN-OF-CUSTODY RECORDS

1 of 2

Windward Environmental

CHAIN-OF-CUSTODY/TEST REQUEST FORM

1196

Project/Client Name: PORTLAND HARBOR RI/FS
Windward Project No:
Contact Name: HELLE ANDERSEN
Sampled By: ANGELITA RODRIQUEZ

Ship to: NORTHWESTERN AQUATIC SCIENCES
Attn: GERALD IRISSARRI
Shipping address: 3814 YAQUINA BAY RD
NEWPORT OR

Shipping Date: 9/2/2004
Airbill Number:

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required) 10-DAY CHIRONOMID	28-DAY HYALELLA			NAS Sample #		Comments / Instructions [Jar tag number(s)]
9/30/2004	10:06	LW2-G232	4/1L	Sediment					9413	F	INTERNAL TEMP OF
	10:43	LW2-G263	4/1L	Sediment					9414	F	ICE CHESTS AT LAB
	11:03	LW2-G269	4/1L	Sediment					9415	F	RECEIPT:
	11:40	LW2-G283	4/1L	Sediment					9416	F	#1 0.5°C
	12:17	LW2-G264	4/1L	Sediment					9417	F	#2 1.5°C
	12:37	LW2-G278	4/1L	Sediment					9418	F	#3 2.0°C
	12:54	LW2-G276	4/1L	Sediment					9419	F	#4 3.5°C
	13:14	LW2-G284	4/1L	Sediment					9420	F	#5 4.0°C
	13:35	LW2-G267	4/1L	Sediment					9421	F	#6 4°C
9/31/2004	10:38	LW2-G453	4/1L	Sediment					9422	F	#7 2.5°C
	11:15	LW2-G456	4/1L	Sediment					9423	F	
	11:57	LW2-G457	4/1L	Sediment					9424	F	
	12:13	LW2-G461	4/1L	Sediment					9425	F	
		Total Number of Containers	84	Purchase Order / Statement of Work #							

1) Released by:	1) Rec'd by:	2) Released by:	1) Rec'd by:
Print name: ANGELITA RODRIQUEZ	GERALD IRISSARRI	Print name:	
Signature:		Signature:	
Company: WINDWARD ENVIRONMENTAL	Company: NORTHWESTERN AQUATIC SCIENCES	Company:	Company:
Date/Time: 9/2/2004 10:43	Date/Time: 9/2/04 10:43	Date/Time:	Date/Time:

* Distribution: White and yellow copies accompany shipment; pink-consignor's copy; white-consignee return with results; yellow-consignee's copy.
* Instructions for completion of Chain-of-Custody/Test Request Form on back.

Wind Ward environmental LLC
200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: 206.378.1364
Fax: 206.217.0089

To be completed by Laboratory upon sample receipt:

Date of receipt:	Laboratory W.O. #
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

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ANC07908
BZTO104(e)007908

Windward Environmental

CHAIN-OF-CUSTODY/TEST REQUEST FORM

1353

Project/Client Name: PORTLAND HARBOR RI/FS
Windward Project No:
Contact Name: HELLE ANDERSEN
Sampled By: ANGELITA RODRIQUEZ

Ship to: GERALD IRISSARRI
Attn: 3814 YAQUINA BAY RD
Shipping address: NEWPORT OR 97365

Shipping Date: 9/2/2004
Airbill Number:

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required): 10-DAY CHIRONOMID	28-DAY HYALELLA			NAS	Smpl #		Comments / Instructions [Jar tag number(s)]
8/31/04	1311	LW2-G468	4/1L	Sediment					9426	F		
9/1/04	0935	LW2-G467	4/1L	Sediment					9427	F		
	1013	LW2-G473	4/1L	Sediment					9428	F		
	1039	LW2-G477	4/1L	Sediment					9429	F		
	1056	LW2-G480	4/1L	Sediment					9430	F		
	1143	LW2-G454	4/1L	Sediment					9431	F		
	1501	LW2-G386	4/1L	Sediment					9432	F		
	1531	LW2-G339	4/1L	Sediment					9433	F		
* 9/1/04	1112	LW2-G475	4/1L	SEDIMENT					9434	F		* MISTAKE IN FIELD, NOT A BIOASSAY STATION
												RSL 9/2/04 1130
												AR 9/2/04 1130

Total Number of Containers: 84

Purchase Order / Statement of Work #

1) Released by:	1) Rec'd by:	2) Released by:	1) Rec'd by:
Print name: ANGELITA RODRIQUEZ	GERALD IRISSARRI	Print name:	
Signature: Angelita R	Gerald Irissarri	Signature:	Company:
Company: WINDWARD ENVIRONMENTAL	Company: NORTHWESTERN AQUATIC SCIENCES	Company:	
Date/Time: 9/2/2004 10:43	Date/Time: 9/2/04 10:43	Date/Time:	Date/Time:

* Distribution: White and yellow copies accompany shipment; pink-consignor's copy; white-consignee return with results; yellow-consignee's copy.
* Instructions for completion of Chain-of-Custody/Test Request Form on back.

To be completed by Laboratory upon sample receipt:

Date of receipt:	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

Windward environmental LLC
200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: 206.378.1364
Fax: 206.217.0089

APPENDIX II

RAW DATA – REFERENCE TOXICANT TEST

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-

ACUTE TOXICITY TEST (ALL SPECIES)

REVIEWED PAGES 1-7 -GJI 11-14-04

Test No. 999-1839 Client: QC Test Investigator

Test Type (rangefinding/definitive) Test Length (hr) 96

Species *Chironomus tentans*

STUDY MANAGEMENT

Client: QC test

Client's Study Monitor: QC test

Testing Laboratory: Northwestern Aquatic Sciences

Test Location: Newport Laboratory

Laboratory's Study Personnel:

Proj. Man./Study Dir. G.J. Irissarri GJI

QA Officer L. K. Nemeth

1. GA Butler GAB 2. William J. Montgomery WJM

3. M.S. Redmond MSR 4. Susan Cage SC

Study Schedule:

Test Beginning: 9-10-04 1330 Test Ending: 9-14-04 1520

TEST MATERIAL

Description: Potassium Chloride Crystals - Lot No.: 006829 Fisher

NAS Sample No.				
Date of Collection:				
Date of Receipt:				
Temperature (deg C):				
Dissolved oxygen (mg/L):				
pH:				
Conductivity (umhos/cm):				
Hardness (mg/L):				
Alkalinity (mg/L):				
Salinity (ppt):				
Total chlorine (mg/L):				
Total ammonia-N (mg/L):				

DILUTION WATER

Description: Moderately hard synthetic water

Date of Preparation/Collection: 9-2-04

Water Quality: Cond. (umhos/cm): 290 Salinity (ppt) pH 7.5

Hardness (mg/L as $CaCO_3$): 85 Alkalinity (mg/L as $CaCO_3$): 70

Treatments: Aerated ≥ 24 hrs

TEST LOCATION

Test conducted in (circle one): room 1 (room 2) trailer water bath other:

Randomization chart:

2.5	20	ϕ	10	5	1.25	2.5	20	1.25	10
ϕ	2.5	20	5	20	5	10	ϕ	5	1.25
1.25	1.25	5	ϕ	2.5	20	1.25	5	20	5
20	ϕ	10	1.25	ϕ	2.5	20	1.25	ϕ	2.5
10	10	2.5	2.5	1.25	10	ϕ	2.5	10	20
5	5	1.25	20	10	ϕ	5	10	2.5	ϕ

Error codes: 1) Correction of handwriting error
2) Written in wrong location; entry deleted
3) Wrong date deleted; replaced with correct date
4) Error found in measurement; measurement repeated

Revised 12-5-01

ANC07911
BZTO104(e)007911

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-_____

ACUTE TOXICITY TEST (ALL SPECIES)

Test No. 999-1839 Client QC Test Investigator _____

TEST ORGANISMS

Species: *Chironomus tentans* Age: – Size: 3rd instar

Source: NAS CULTURES Date received: –

Acclimation Data:

Date	Temp. (deg.C)	DO (mg/L)	pH	Cond. umhos/cm	Hardness (mg/L)	Alkalinity (mg/L)	Feeding Amount	Feeding description*	Water changes
8-27-04	24.1	8.0	7.4	290	–	–	ANIMALS FED		YES
8-30-04	24.0	6.0	6.9	320	–	–	TETRA FIN AND		YES (TAPWATER)
9-1-04	24.0	6.6	6.9	315	111	90	SELENASTRUM		
9-3-04	23.2	7.4	7.0	280	51	70			
9-8-04	23.0	8.1	7.7	325	94	80	DETAILS RECORDED		
9-10-04	23.1	7.9	6.5	250	68	60	IN CHIRONOMID		
Mean	23.6	7.4	7.1	297	81	75	CULTURES DATA		
S.D.	6.5	0.9	0.4	29	27	13	SHEETS		
(N)	6	6	6	6	4	4			

Photoperiod during acclimation: 16:8 L:D *S=*Selenastrum*, T=Tetra Fin suspension

TEST PROCEDURES AND CONDITIONS

Test concentrations (50% series recommended): 20, 10, 5, 2.5, 1.25, 0 g/L

Test chamber: 30 ml plastic cups Test volume: 20 ml

Replicates/treatment: 10 Organisms/treatment: 10 (1/rep)

Test water changes: None Aeration during test: None

Feeding: 0.25 ml Prime Tropical Flakes (4g/L) suspension per cup on days 0 and 2

Duration: 24-hr, 48-hr, 96-hr Test temperature (deg.C): 23 ± 1

Beaker placement: Stratified randomization Photoperiod: 16:8, L:D

MISCELLANEOUS NOTES

Test solution preparation:

Working stock: Dissolve 10g KCl crystals in dilution water and dilute to 500 mL.
Final conc.: 20 g/L.

Test concentration (g/L)	KCl working stock (ml/200ml)	ml of dilution water per 200 ml
20	200	0
10	100	100
5	50	150
2.5	25	175
1.25	12.5	187.5
0	0	0

631
9-10-04

ANC07912
BZTO104(e)007912

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-_____

ACUTE TOXICITY TEST (ALL SPECIES)

Test No. 999-1839 Client QC Test

DAILY RECORD SHEET

Day 0 (9 / 10 / 04) JB Temp Beaker (°C): 23.3

Conc. (g/L)	Temp. (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	Comments
1. 20	23.6	8.7	>20,000	7.7	85	80	
2. 10	23.5	8.7	14,100	7.5			
3. 5	23.5	8.8	7,470	7.5			
4. 2.5	23.6	8.9	4260	7.5			
5. 1.25	23.6	8.8	2,340	7.5			
6. 0	23.6	8.8	280	7.5	85	70	

All animals fed 0.25 ml Prime Tropical Flakes suspension. Initials: GJ1

Day 1 (9 / 11 / 04) AF Temp Beaker (°C): 23.0

Conc. (g/L)	Temp. (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	Comments
1. 20							
2. 10							
3. 5							
4. 2.5							
5. 1.25							
6. 0							

Day 2 (9 / 12 / 04) AF Temp Beaker (°C): 23.0

Conc. (g/L)	Temp. (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	Comments
1. 20							
2. 10							
3. 5							
4. 2.5							
5. 1.25							
6. 0							

All animals fed 0.25 ml Prime Tropical Flakes suspension. Initials: GJ1

Day 3 (9 / 13 / 04) MM Temp Beaker (°C): 23.5

Conc. (g/L)	Temp. (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	Comments
1. 20							
2. 10							
3. 5							
4. 2.5							
5. 1.25							
6. 0							

Day 4 (9 / 14 / 04) AF Temp Beaker (°C): 23.5

Conc. (g/L)	Temp. (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	Comments
1. 20	—	—	—	—	—	—	
2. 10	—	—	—	—			
3. 5	23.6	7.6	7,470	7.7			
4. 2.5	23.6	7.6	4200	7.6			
5. 1.25	23.6	7.4	2270	7.4			
6. 0	23.5	7.2	290	7.1	85	80	
Mean	23.6	8.2	285 (control)	7.5	85	77	
SD	0.05	0.7	-	0.2	0	6	
n	10	10	2	10	3	3	

mrk 10-21-04

Revised 12-5-01

ANC07913

BZTO104(e)007913

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-_____

ACUTE TOXICITY TEST (ALL SPECIES)

Test No. 999-1839 Client QC Test Investigator _____

DAILY RECORD SHEET - Survivors

Day 0 (9/10/04) WB/632

Conc. (g/L)	Survivors in Replicate: 1	2	3	4	5	6	7	8	9	10	Total
1. 20	1	1	1	1	1	1	1	1	1	1	10
2. 10	1	1	1	1	1	1	1	1	1	1	10
3. 5	1	1	1	1	1	1	1	1	1	1	10
4. 2.5	1	1	1	1	1	1	1	1	1	1	10
5. 1.25	1	1	1	1	1	1	1	1	1	1	10
6. 0	1	1	1	1	1	1	1	1	1	1	10

Day 1 (9/11/04) 632

Conc. (g/L)	Survivors in Replicate: 1	2	3	4	5	6	7	8	9	10	Total
1. 20	X	X	X	X	X	X	X	X	X	X	Ø (0D)
2. 10	X	X	X	X	X	X	X	X	X	X	Ø (10D)
3. 5	1	1	X	1	1	1	1	1	X	1	8 (2D)
4. 2.5	1	1	1	1	1	1	1	1	1	1	10
5. 1.25	1	1	1	1	1	1	1	1	1	1	10
6. 0	1	1	1	1	1	1	1	1	1	1	10

Day 2 (9/12/04) 632

Conc. (g/L)	Survivors in Replicate: 1	2	3	4	5	6	7	8	9	10	Total
1. 20	X	X	X	X	X	X	X	X	X	X	Ø
2. 10	X	X	X	X	X	X	X	X	X	X	Ø
3. 5	1	1	X	1	1	1	1	1	X	1	8
4. 2.5	1	1	1	1	1	1	1	1	1	1	10
5. 1.25	1	1	1	1	1	1	1	1	1	1	10
6. 0	1	1	1	1	1	1	1	1	1	1	10

Day 3 (9/13/04) 632

Conc. (g/L)	Survivors in Replicate: 1	2	3	4	5	6	7	8	9	10	Total
1. 20	X	X	X	X	X	X	X	X	X	X	Ø
2. 10	X	X	X	X	X	X	X	X	X	X	Ø
3. 5	1	1	X	1	1	1	1	1	X	1	8
4. 2.5	1	1	1	1	1	1	1	1	1	1	10
5. 1.25	1	1	1	1	1	1	1	1	1	1	10
6. 0	1	1	1	1	1	1	1	1	1	1	10

Day 4 (9/14/04) 632

Conc. (g/L)	Survivors in Replicate: 1	2	3	4	5	6	7	8	9	10	Total
1. 20	X	X	X	X	X	X	X	X	X	X	Ø
2. 10	X	X	X	X	X	X	X	X	X	X	Ø
3. 5	1	1	X	1	1	1	1	1	X	1	8
4. 2.5	1	1	1	1	1	1	1	1	1	1	10
5. 1.25	1	1	1	1	1	1	1	1	1	1	10
6. 0	1	1	1	1	1	1	1	1	1	1	10

ANC07914
BZTO104(e)007914

Acute 96-hr Toxicity Test-96 Hr Survival

Start Date:	9/10/04 13:30	Test ID:	999-1839	Sample ID:	REF-Ref Toxicant
End Date:	9/14/04 15:20	Lab ID:	ORNAS-Northwestern Aquati	Sample Type:	KCL-Potassium chloride
Sample Date:		Protocol:	EPAF 91-EPA Freshwater	Test Species:	CT-Chironomus tentans
Comments:					

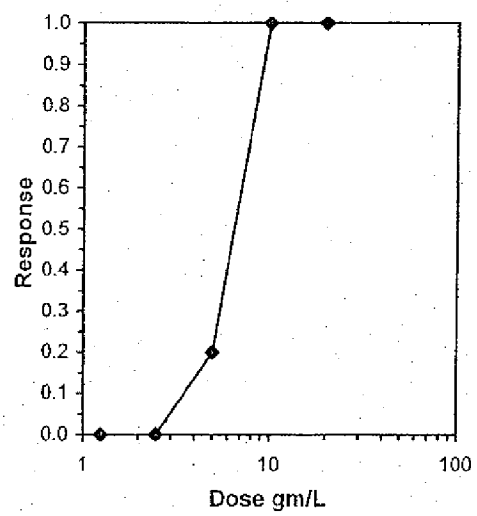
Conc-gm/L	1
D-Control	1.0000
1.25	1.0000
2.5	1.0000
5	0.8000
10	0.0000
20	0.0000

Conc-gm/L	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's Exact P	1-Tailed Critical	Number Resp	Total Number
D-Control	1.0000	1.0000	0	10	10	1			0	10
1.25	1.0000	1.0000	0	10	10	1	1.0000	0.0500	0	10
2.5	1.0000	1.0000	0	10	10	1	1.0000	0.0500	0	10
5	0.8000	0.8000	2	8	10	1	0.2368	0.0500	2	10
10	0.0000	0.0000	10	0	10	1			10	10
20	0.0000	0.0000	10	0	10	1			10	10

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Fisher's Exact Test	5	10	7.07107	

Trimmed Spearman-Karber

Trim Level	EC50	95% CL	
0.0%	6.1557	5.1656	7.3356
5.0%	6.2769	5.1363	7.6708
10.0%	6.3797	4.9940	8.1499
20.0%	6.4842	5.6541	7.4362
Auto-0.0%	6.1557	5.1656	7.3356

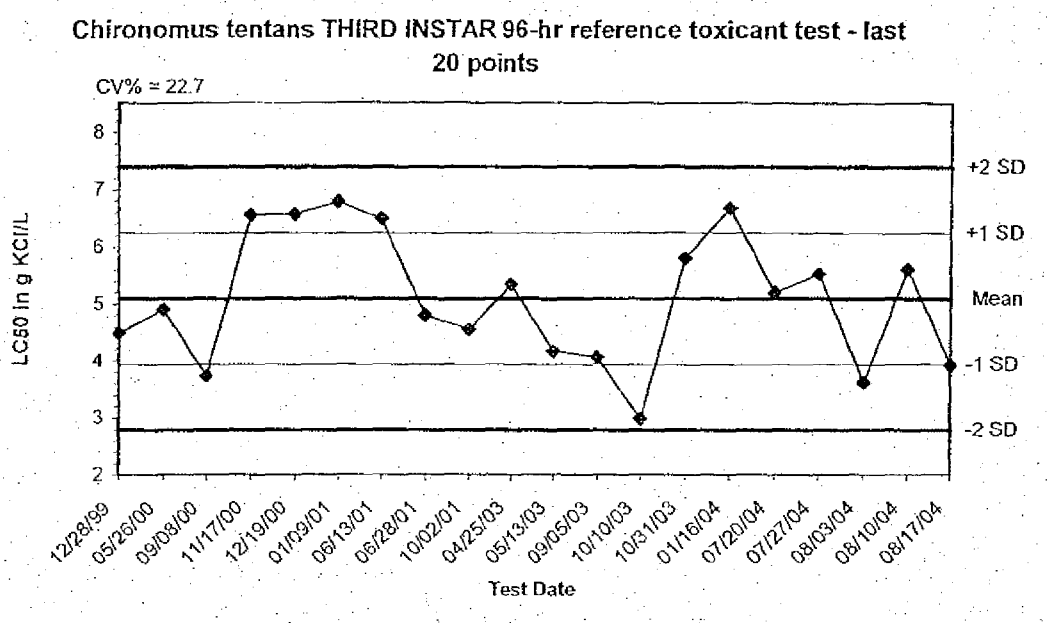


ANC07915
BZTO104(e)007915

Test: AT-Acute 96-hr Toxicity Test							Test ID: 999-1839		
Species: CT-Chironomus tentans							Protocol: EPAF 91-EPA Freshwater		
Sample ID: REF-Ref Toxicant							Sample Type: KCL-Potassium chloride		
Start Date: 9/10/04 13:30			End Date: 9/14/04 15:20				Lab ID: ORNAS-Northwestern Aquatic Sciences		
Pos	ID	Rep	Group	Start	24 Hr	48 Hr	72 Hr	96 Hr	Notes
	1	1	D-Control	10				10	
	2	1	1.250	10				10	
	3	1	2.500	10				10	
	4	1	5.000	10				8	
	5	1	10.000	10				0	
	6	1	20.000	10				0	

Comments: Data entry verified against laboratory bench sheets
MSR
9-17-04

ANC07916
BZTO104(e)007916



Dates	Values	Mean	-1 SD	-2 SD	+1 SD	+2 SD
12/28/99	4.4900	5.0895	3.9361	2.7826	6.2429	7.3964
05/26/00	4.9000	5.0895	3.9361	2.7826	6.2429	7.3964
09/08/00	3.7300	5.0895	3.9361	2.7826	6.2429	7.3964
11/17/00	6.5600	5.0895	3.9361	2.7826	6.2429	7.3964
12/19/00	6.5700	5.0895	3.9361	2.7826	6.2429	7.3964
01/09/01	6.7900	5.0895	3.9361	2.7826	6.2429	7.3964
06/13/01	6.4900	5.0895	3.9361	2.7826	6.2429	7.3964
06/28/01	4.8000	5.0895	3.9361	2.7826	6.2429	7.3964
10/02/01	4.5500	5.0895	3.9361	2.7826	6.2429	7.3964
04/25/03	5.3400	5.0895	3.9361	2.7826	6.2429	7.3964
05/13/03	4.1600	5.0895	3.9361	2.7826	6.2429	7.3964
09/05/03	4.0600	5.0895	3.9361	2.7826	6.2429	7.3964
10/10/03	2.9800	5.0895	3.9361	2.7826	6.2429	7.3964
10/31/03	5.8000	5.0895	3.9361	2.7826	6.2429	7.3964
01/16/04	6.6800	5.0895	3.9361	2.7826	6.2429	7.3964
07/20/04	5.2000	5.0895	3.9361	2.7826	6.2429	7.3964
07/27/04	5.5300	5.0895	3.9361	2.7826	6.2429	7.3964
08/03/04	3.6200	5.0895	3.9361	2.7826	6.2429	7.3964
08/10/04	5.6100	5.0895	3.9361	2.7826	6.2429	7.3964
08/17/04	3.9300	5.0895	3.9361	2.7826	6.2429	7.3964

MSR
9-17-04

ANC07917
BZTO104(e)007917

Report

of

Test No. 686-13

Toxicity of Portland Harbor RI/FS Freshwater Test Sediments (Batch 7) using a 28-day Amphipod, *Hyalella azteca*, Sediment Bioassay

Submitted to

Windward Environmental, Inc.
200 West Mercer Street, Suite 401
Seattle, WA 98119

Submitted by

Northwestern Aquatic Sciences
3814 Yaquina Bay Road
P.O. Box 1437
Newport, OR 97365

January 18, 2005

ANC07918
BZTO104(e)007918

U.S. EPA. 2000. Section 11, Test Method 100.1, *Hyalella azteca* 10-d Survival and Growth Test for Sediments, pp 47-54 In: Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates (Second Edition). EPA/600/R-99/064.

STUDY APPROVAL

Project Manager/Study Director — Date: 1-20-05

Quality Assurance Unit — Date: 1/19/05

Laboratory Director — Date: 1/20/05

ANC07919
BZTO104(e)007919

TEST DESCRIPTION, MONITORING, AND RESULTS BENCHSHEETS

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-13 Client Windward Environmental Investigator

STUDY MANAGEMENT

Client: Windward Enviromental, 200 West Mercer Street, Suite 401, Seattle, WA 98119

Client's Study Monitor: Ms. Helle Andersen

Testing Laboratory: Northwestern Aquatic Sciences

Test Location: Newport Laboratory

Laboratory's Study Personnel:

Proj. Man./Study Dir. G.J. Irissarri

QA Officer L.K. Nemeth

1. [illegible] 2. William T. Montgomery

3. G.C. Hayes 4. Susan Cage

Study Schedule: 5. M.S. Redmond 6. B.B. Pridgeon, T.R.S. Caldwell

Test Beginning: 9-17-04 1300 Test Ending: 10-15-04 1330

TEST MATERIAL

General description (see sample logbook/chain-of-custody for details):

NAS Sample No.:	9454F	9435F	9436F	9437F	9438F
Description:	Control	LW2-G207	LW2-G209	LW2-G198	LW2-G199
Collection Date:	9/14/04	9/7/04	9/7/04	9/7/04	9/7/04
Receipt Date:	9/14/04	9/9/04	9/9/04	9/9/04	9/9/04

NAS Sample No.:	9439F	9440F	9441F	9442F	9443F
Description:	LW2-G204	LW2-G202	LW2-G231	LW2-G234	LW2-G155
Collection Date:	9/7/04	9/7/04	9/7/04	9/7/04	9/8/04
Receipt Date:	9/9/04	9/9/04	9/9/04	9/9/04	9/9/04

NAS Sample No.:	9444F	9445F	9446F	9447F	9448F
Description:	LW2-G166	LW2-G163	LW2-G161	LW2-G160	LW2-G157
Collection Date:	9/8/04	9/8/04	9/8/04	9/8/04	9/8/04
Receipt Date:	9/9/04	9/9/04	9/9/04	9/9/04	9/9/04

NAS Sample No.:	9449F	9450F	9451F	9452F	9453F
Description:	LW2-G038	LW2-G123	LW2-G244	LW2-G247	LW2-G254
Collection Date:	9/8/04	9/8/04	9/8/04	9/8/04	9/8/04
Receipt Date:	9/9/04	9/9/04	9/9/04	9/9/04	9/9/04

NAS Sample No.:					
Description:					
Collection Date:					
Receipt Date:					

NAS Sample No.:					
Description:					
Collection Date:					
Receipt Date:					

Error codes: 1) correction of handwriting error
2) written in wrong location; entry deleted
3) wrong date deleted, replaced with corrrect date
4) error found in measurement; measurement repeated

ANC07921
BZTO104(e)007921

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-13 Client Windward Environmental Investigator

SEDIMENT DESCRIPTIONS -- SUPPLEMENTAL NOTES

Sample No.	Description
9454F	Black Fine Mud
9435F	Dark Brown Mud with wood chips.
9436F	Dark Gray Sandy Mud
9437F	Dark brown sandy mud.
9438F	Gray-Brown Sandy mud @ moth ball odor
9439F	Dark gray muddy Clay, one Chironomid found
9440F	Dark Brown Mud with organic debris
9441F	Dark brown sandy mud
9442F	Dark gray-Brown Sand @ petroleum odor
9443F	Gray Mud
9444F	Gray mud w/ chunks of clay
9445F	Brown coarse sand
9446F	Dark gray Sandy mud @ rocks(sm) and petroleum odor
9447F	Dark gray sandy mud with petroleum odor
9448F	Gray mud with many rocks
9449F	Gray brown muddy sand w/ woody debris
9450F	Dark gray hard clay
9451F	Gray sandy mud
9452F	Brown sandy mud w/ wood debris.
9453F	Brown Mud w/ wood debris

ANC07922
BZTO104(e)007922

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-13 Client Windward Environmental Investigator

TEST WATER

Source: Dechlorinated Newport, OR Tap Water

Date of Collection:

pH (See attached chart)

Cond (umhos/cm2)

Hardness (mg/La0

Alkalinity (mg/L)

Treatments: Aerated ≥24 hrs

TEST ORGANISMS

Species: *Hyalella azteca* Age: ~~7-8~~ 6-7 DAYS Date received: 9-15-04

Source: Chesapeake Cultures, Hayes, VA

Acclimation Data:

Date	Temp. (deg.C)	DO (mg/L)	pH	Cond umhos/cm	Feeding amount	Feeding description	Water changes	Hardness (mg/L)	Alkalinity (mg/L)
9-15-04	23.1	>15.0	7.2	370	10ml/pan*	YTC	yes	153	200
9-16-04	22.1	8.5	7.6	280	"	"	yes	102	100
9-17-04	21.6	8.0	7.4	240	"	"	yes	68	60
Mean	22.3	10.5	7.4	297				108	120
S.D.	0.8	3.9	0.2	67				43	72
(N)	3	3	3	3				3	3

* animals divided into 3 pans

Photoperiod during acclimation: 16:8, L:D

TEST PROCEDURES AND CONDITIONS

Test chambers: 300 ml glass beakers

Test volumes: 100 ml of test sediment; 275 ml total volume

Replicates/treatment: (8) 8 Organisms/treatment: (80) 80 (10/REP)

Test water changes: Twice daily

Aeration: only if DO falls below 2.5 mg/L

Feeding: everyday beginning with day zero

Test temperature (deg.C): 23

Beaker placement: Total randomization

Photoperiod: 16:8, L:D

Control Sediment:

Source: From an area approximately one mile east of the Hwy. 101 bridge at Beaver Creek, approx. 8 miles south of Newport, OR.

Date collected: 9/14/04

Sieved through 0.5 -mm screen NAS# 9454F

Storage: 4°C in the dark in closed containers.

MISCELLANEOUS NOTES

LIGHT INTENSITY MEASUREMENTS:

	SITE A	SITE B
10-3-04	27 FT-CANDLES (~~290~~ 291 LUX)	68 FT-CANDLES (732 LUX)

ANC07923
BZTO104(e)007923

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4b

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-13 Client Windward Environmental Investigator

Test Dilution Water: Dechlorinated Newport, OR Tap Water

Date of Collection	Total Chlorine (mg/L)	Hardness (mg/L)	Alkalinity (mg/L)	Conductivity (µmhos/cm)	pH
9/15/04	<0.02	34	30	165	7.1
9/17/04	<0.02	34	30	160	7.3
9/18/04	<0.02	34	30	160	7.3
9/20/04	<0.02	34	30	165	6.9
9/22/04	<0.02	34	30	160	6.9
9/23/04	<0.02	34	30	160	6.9
9/25/04	<0.02	34	40	160	6.9
9/26/04	<0.02	34	40	160	6.9
9/27/04	<0.02	34	30	165	6.9
9/29/04	<0.02	34	40	160	6.9
9/30/04	<0.02	34	40	160	6.9
10/2/04	<0.02	34	30	170	6.9
10/4/04	<0.02	34	40	165	~~6.9~~ 6.9 RSE
10/7/04	<0.02	34	30	165	6.9
10/8/04	<0.02	34	30	160	7.0
10/12/04	<0.02	34	30	165	~~7.0~~
	$\bar{x}$	34	33	163	7.0
	SD	0	5	3	0.1
	n	16	16	16	16
	Data transcribed from lab master record 10/20/04 RSE				

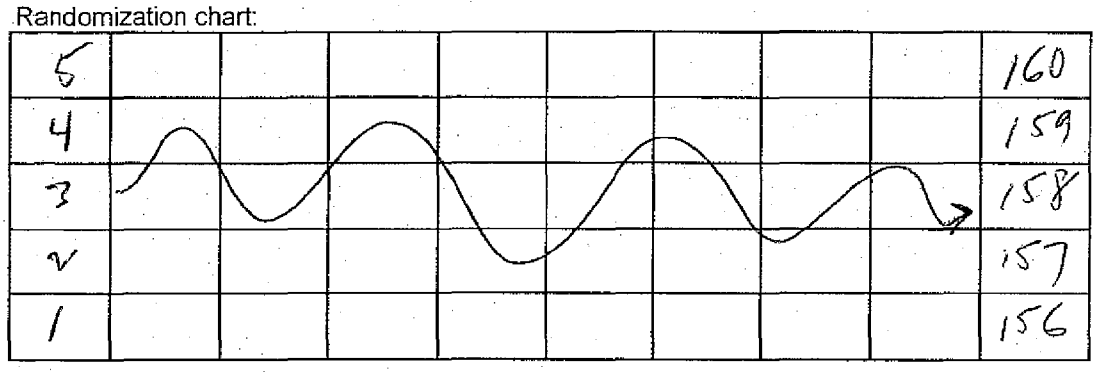
ANC07924
BZTO104(e)007924

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-13 Client Windward Environmental Investigator _____

Test conducted in (circle one): room 1 (room 2) trailer water bath other:_____

Randomization chart:



Randomization chart:

Randomization chart:

Randomization chart:

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 686-13 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 0 (9/17/14) UB/[illegible]

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond.* umhos/cm	pH*	Hardness* (mg/L)	Alkalinity* (mg/L)	S (ppm)	NH3* (ppm)	Comments
1	22.9	7.1	170	6.8	51	40			Each beaker fed 1.0 ml
2	22.9	7.2	165	6.6	43	50			YTC suspension
8	22.9	7.4	170	6.6	51	50			Initials: UB
18	22.9	7.3	160	6.6	43	40			
19	22.9	7.1	170	6.5	51	40			
22	22.9	7.2	180	6.4	60	50			
33	22.9	7.2	160	6.6	43	40			
49	22.9	7.4	170	6.6	51	50			
55	22.9	7.0	165	6.5	43	40			Water changed in all
58	22.9	7.1	180	6.6	60	50			beakers.
61	23.0	7.1	160	6.5	43	40			Time: 0645
63	22.9	7.2	165	6.5	43	40			Initials: GSI
68	22.9	7.2	165	6.5	51	40			
79	22.9	7.3	175	6.5	51	50			
101	23.0	7.5	165	6.6	43	40			
138	23.0	7.2	170	6.5	43	40			
147	23.0	7.2	160	6.4	60	50			Water changed in all
150	23.0	7.3	170	6.5	43	50			beakers.
154	23.0	6.8	280	6.8	43	40			Time: 1725
156	23.0	7.0	175	6.7	51	50			Initials: [illegible]

*Water quality measurements to be taken.

Day 1 (9/18/14) UB

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. umhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1	22.8								Each beaker fed 1.0 ml
2	22.8								YTC suspension
8	22.8								Initials: UB
18	22.8								
19	22.8								
22	22.8								
33	22.8								
49	22.8								
55	22.9								Water changed in all
58	22.9								beakers.
61	22.9								Time: 0710
63	22.9								Initials: UB
68	22.9								
79	22.8								
101	22.9								
138	22.9								
147	22.9								Water changed in all
150	22.9								beakers.
154	22.9								Time: 1835
156	23.0								Initials: [illegible]

*Water quality measurements to be taken.

ANC07926
BZTO104(e)007926

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-13 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 2 (9/19/04) CB

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. umhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1	22.4								Each beaker fed 1.0 ml
2	22.4								YTC suspension
8	22.4								Initials: CB
18	22.3								
19	22.3								
22	22.3								
33	22.2								
49	22.2								
55	22.2								Water changed in all
58	22.2								beakers.
61	23.3								Time: 0650
63	22.2								Initials: CB
68	22.2								
79	22.2								
101	22.3								
138	22.4								
147	22.4								Water changed in all
150	22.4								beakers.
154	22.3								Time: 1735
156	22.3								Initials: BBP

*Water quality measurements to be taken.

Day 3 (9/20/04) arm

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. umhos/cm	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1	22.5	7.2		6.8					Each beaker fed 1.0 ml
2	22.4	7.3		6.7					YTC suspension
8	22.4	7.3		6.7					Initials: CB
18	22.3	7.5		6.7					
19	22.3	7.7		6.6					
22	22.3	7.6		6.6					
33	22.3	7.5		6.6					
49	22.3	7.8		6.6					
55	22.4	7.6		6.6					Water changed in all
58	22.3	7.9		6.6					beakers.
61	22.4	7.3		6.6					Time: 0650
63	22.3	7.5		6.6					Initials: CB
68	22.3	7.5		6.6					
79	22.3	7.8		6.6					
101	22.5	7.8		6.6					
138	22.4	7.3		6.6					
147	22.3	7.7		6.6					Water changed in all
150	22.4	7.8		6.6					beakers.
154	22.4	7.7		6.6					Time: 1710
156	22.5	7.5		6.6					Initials: BBP

*Water quality measurements to be taken.

ANC07927
BZTO104(e)007927

Test No 686-13 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 4 (9/21/04) WTM

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1	22.7								Each beaker fed 1.0 ml
2	22.7								YTC suspension
8	22.7								Initials: WTM
18	22.6								
19	22.6								
22	22.6								
33	22.6								
49	22.7								
55	22.8								Water changed in all
58	22.7								beakers.
61	22.8								Time: 0710
63	22.7								Initials: GJL
68	22.7								
79	22.7								
101	22.9								
138	22.8								
147	22.8								Water changed in all
150	22.9								beakers.
154	22.9								Time: 1725
156	22.9								Initials: [illegible]

*Water quality measurements to be taken.

Day 5 (9/22/04) AJ/WTM

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond.* umhos/cm)	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1	23.1	5.7	170	6.8					Each beaker fed 1.0 ml
2	23.0	5.9	165	6.7					YTC suspension
8	22.9	6.1	170	6.8					Initials: CB
18	22.9	6.2	160	6.8					
19	22.9	5.9	165	6.7					
22	22.9	6.0	160	6.7					
33	22.9	6.1	160	6.7					
49	22.9	6.1	160	6.8					
55	23.0	7.4	160	6.8					Water changed in all
58	22.9	6.3	160	6.8					beakers.
61	23.0	6.7	160	6.8					Time: 0705
63	22.9	5.7	160	6.7					Initials: GJL
68	22.9	6.5	160	6.8					
79	22.9	6.1	165	6.8					
101	23.0	6.1	160	6.7					
138	22.9	6.2	160	6.7					
147	22.9	5.6	160	6.7					Water changed in all
150	23.0	5.7	165	6.7					beakers.
154	23.0	5.9	180	6.7					Time: 1725
156	23.1	6.1	165	6.7					Initials: AJ

*Water quality measurements to be taken.

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 686-13 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 6 (9/23/04) MM

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. mhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1	23.0								Each beaker fed 1.0 ml
2	23.0								YTC suspension
8	22.8								Initials: MM
18	22.6								
19	22.7								
22	22.6								
33	22.6								
49	22.6								
55	22.7								Water changed in all
58	22.6								beakers.
61	22.7								Time: 0705
63	22.6								Initials: GJ
68	22.6								
79	22.6								
101	22.8								
138	22.7								
147	22.6								Water changed in all
150	22.7								beakers.
154	22.7								Time: 1705
156	22.8								Initials: GJ

*Water quality measurements to be taken.

Day 7 (9/24/04) MB

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. mhos/cm	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1	22.4	6.0		6.8					Each beaker fed 1.0 ml
2	22.5	5.9		6.5					YTC suspension
8	22.5	6.1		6.4					Initials: GJ
18	22.5	6.2		6.4					
19	22.5	6.0		6.3					
22	22.5	5.8		6.3					
33	22.5	6.0		6.2					
49	22.6	5.9		6.2					
55	22.7	6.1		6.3					Water changed in all
58	22.6	6.2		6.2					beakers.
61	22.7	5.9		6.3					Time: 0645
63	22.6	6.2		6.3					Initials: MB
68	22.6	6.8		6.3					
79	22.6	5.6		6.3					
101	22.8	5.9		6.3					
138	22.8	5.2		6.2					
147	22.7	5.5		6.1					Water changed in all
150	22.6	5.8		6.3					beakers.
154	22.7	5.7		6.2					Time: 1800
156	22.7	6.4		6.2					Initials: GJ

*Water quality measurements to be taken.

ANC07929
BZTO104(e)007929

Test No 686-13 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 8 (9/25/04) VB/AJ

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1	23.1								Each beaker fed 1.0 ml
2	23.1								YTC suspension
8	23.2								Initials: AJ
18	23.2								
19	23.2								
22	23.1								
33	23.1								
49	23.1								
55	23.2								Water changed in all
58	23.1								beakers.
61	23.2								Time: 0715
63	23.2								Initials: VB
68	23.1								
79	23.1								
101	23.2								
138	23.1								
147	23.1								Water changed in all
150	23.1								beakers.
154	23.2								Time: 1905
156	23.1								Initials: GDB

*Water quality measurements to be taken.

Day 9 (9/26/04) WM/GJL

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1	22.7								Each beaker fed 1.0 ml
2	22.6								YTC suspension
8	22.6								Initials: WM
18	22.5								
19	22.6								
22	22.6								
33	22.6								
49	22.6								
55	22.7								Water changed in all
58	22.7								beakers.
61	22.7								Time: 0730
63	22.6								Initials: WM
68	22.6								
79	22.6								
101	22.7								
138	22.6								
147	22.5								Water changed in all
150	22.6								beakers.
154	22.7								Time: 1730
156	22.8								Initials: MJR

*Water quality measurements to be taken.

Test No 686-13 Client Windward Environmental Investigator _____

DAILY RECORD SHEET

Day 10 (9/27/04) NB/AJ

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. (umhos/cm)	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1	23.0	6.0		6.5					Each beaker fed 1.0 ml
2	22.9	6.2		6.5					YTC suspension
8	22.8	6.2		6.5					Initials: AJ
18	22.8	6.2		6.5					
19	22.9	6.3		6.4					
22	22.8	5.5		6.4					
33	22.8	6.0		6.4					
49	22.9	6.4		6.4					
55	22.9	6.4		6.5					Water changed in all
58	22.9	5.9		6.4					beakers. 0650 @ 9-27-04
61	22.9	6.4		6.4					Time: 0715
63	22.9	5.1		6.4					Initials: NB
68	22.9	5.6		6.4					
79	22.9	5.6		6.4					
101	22.9	5.3		6.4					
138	22.9	5.3		6.4					
147	22.9	5.5		6.5					Water changed in all
150	23.0	6.0		6.5					beakers.
154	23.0	6.2		6.5					Time: 1725
156	23.2	6.1		6.5					Initials: BBP

*Water quality measurements to be taken.

Day 11 (9/28/04) WTM

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1	22.9								Each beaker fed 1.0 ml
2	22.8								YTC suspension
8	22.7								Initials: WTM
18	22.7								
19	22.7								
22	22.7								
33	22.7								
49	22.8								
55	22.8								Water changed in all
58	22.7								beakers.
61	22.8								Time: 0705
63	22.7								Initials: GJ
68	22.7								
79	22.7								
101	22.8								
138	22.7								
147	22.7								Water changed in all
150	22.7								beakers.
154	22.7								Time: 1725
156	22.9								Initials: BBP

*Water quality measurements to be taken.

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 686-13 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 12 (9/29/04) SJ

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond.* (umhos/cm)	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1	23.1	5.7	215	6.2					Each beaker fed 1.0 ml
2	23.0	5.6	215	6.1					YTC suspension
8	23.0	5.9	220	6.0					Initials: CB
18	23.0	6.1	215	6.0					
19	23.1	5.6	215	6.1	Per Conductivity				
22	23.0	5.4	220	6.1					
33	23.0	5.6	215	6.0					
49	23.0	5.9	220	6.0	See Attached				
55	23.1	6.2	220	6.2					Water changed in all
58	23.1	5.9	215	6.1	Deviation Form				beakers.
61	23.1	6.3	220	6.1					Time: 0720
63	23.1	5.4	220	6.1	Page 30 of 62				Initials: GSI
68	23.1	5.6	220	6.2					
79	23.2	5.7	215	6.1			Rse		
101	23.1	5.8	215	6.1					
138	23.1	5.2	220	6.1			11/22/04		
147	23.1	5.9	215	6.2					Water changed in all
150	23.1	6.0	215	6.1					beakers.
154	23.1	6.0	225	6.2					Time: 1725
156	23.2	6.3	215	6.2					Initials: [illegible]

*Water quality measurements to be taken.

Day 13 (9/30/04) CB/SJ

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1	22.5								Each beaker fed 1.0 ml
2	22.5								YTC suspension
8	22.4								Initials: GSI
18	22.4								
19	22.4								
22	22.4								
33	22.4								
49	22.5								
55	22.6								Water changed in all
58	22.5								beakers.
61	22.6								Time: 0720
63	22.5								Initials: CB
68	22.5								
79	22.5								
101	22.7								
138	22.6								
147	22.5								Water changed in all
150	22.6								beakers.
154	22.6								Time: 1735
156	22.6								Initials: [illegible]

*Water quality measurements to be taken.

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 686-13 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 14 (10 / 1 /04) 09/1602

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. (mhos/cm)	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1	23.0	5.8		6.2					Each beaker fed 1.0 ml
2	22.9	5.8		6.0					YTC suspension
8	22.8	6.0		6.1					Initials: nam
18	22.9	5.8		6.1					
19	22.9	5.2		6.1					
22	22.8	5.4		6.1					
33	22.8	5.4		6.1					
49	22.9	5.6		6.2					
55	23.0	6.0		6.1					Water changed in all
58	22.9	5.4		6.1					beakers.
61	22.9	6.1		6.1					Time: 0635
63	22.9	5.4		6.2					Initials: BJL
68	22.9	5.6		6.2					
79	22.8	5.6		6.2					
101	23.0	5.3		6.2					
138	22.9	5.1		6.2					
147	23.0	5.7		6.2					Water changed in all
150	23.1	5.7		6.2					beakers.
154	23.1	6.0		6.3					Time: 1750
156	23.2	5.8		6.3					Initials: BBP

*Water quality measurements to be taken.

Day 15 (10/2 1000 BB

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. (mhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1	22.4								Each beaker fed 1.0 ml
2	22.4								YTC suspension
8	22.3								Initials: nam
18	22.4								
19	22.4								
22	22.3								
33	22.3								
49	22.3								
55	22.4								Water changed in all
58	22.4								beakers.
61	22.4								Time: 0620
63	22.3								Initials: US
68	22.3								
79	22.3								
101	22.4								
138	22.4								
147	22.4								Water changed in all
150	22.4								beakers.
154	22.4								Time: 1800
156	22.5								Initials: BBP

*Water quality measurements to be taken.

ANC07933
BZTO104(e)007933

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 686-13 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 16 (10/3 04) 6J1

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. umhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1	23.1								Each beaker fed 1.0 ml
2	23.0								YTC suspension
8	23.0								Initials: 6J1
18	22.9								
19	22.9								
22	22.9								
33	22.9								
49	23.0								
55	23.0								Water changed in all
58	22.9								beakers.
61	23.0								Time: 0750
63	22.9								Initials: 6J1
68	22.9								
79	23.0								
101	23.1								
138	23.3								
147	23.2								Water changed in all
150	23.4								beakers.
154	23.4								Time: 1740
156	23.3								Initials: ~~6J1~~

*Water quality measurements to be taken.

Day 17 (10/4/04) JJ

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. umhos/cm	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1	22.8	5.6		6.4					Each beaker fed 1.0 ml
2	22.7	5.5		6.3					YTC suspension
8	22.7	6.1		6.3					Initials: JB
18	22.6	5.9		6.3					
19	22.6	5.7		6.3					
22	22.6	5.8		6.3					
33	22.6	5.6		6.3					
49	22.6	5.7		6.3					
55	22.7	5.7		6.4					Water changed in all
58	22.6	5.8		6.4					beakers.
61	22.7	6.2		6.3					Time: 0635
63	22.7	5.6		6.3					Initials: 6J1
68	22.6	5.7		6.3					
79	22.7	5.6		6.4					
101	22.9	5.3		6.4					
138	22.8	5.6		6.3					
147	22.8	5.7		6.3					Water changed in all
150	22.7	5.7		6.3					beakers.
154	22.8	6.0		6.3					Time: 1720
156	22.9	5.8		6.4					Initials: JJ

*Water quality measurements to be taken.

ANC07934
BZTO104(e)007934

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 686-13 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 18 (10/5 lab/AS/BBP

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. umhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1	22.9								Each beaker fed 1.0 ml
2	22.9								YTC suspension
8	22.7								Initials: GJ
18	22.8								
19	22.8								
22	22.8								
33	22.8								
49	22.8								
55	22.8								Water changed in all
58	22.9								beakers.
61	22.8								Time: 0700
63	22.8								Initials: CB
68	22.8								
79	22.8								
101	22.8								
138	22.9								
147	22.9								Water changed in all
150	22.9								beakers.
154	23.0								Time: 1735
156	23.0								Initials: BBP

*Water quality measurements to be taken.

Day 19 (10 16 104) umhos/cm

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond.* umhos/cm	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1	23.2	5.4	160	6.2					Each beaker fed 1.0 ml
2	23.1	5.3	160	6.1					YTC suspension
8	23.1	6.2	160	6.1					Initials: GJ
18	23.0	5.8	160	6.1					
19	23.1	5.6	160	6.1					
22	23.1	5.3	165	6.1					
33	23.0	5.5	160	6.1					
49	23.1	5.6	165	6.1					
55	23.2	5.1	165	6.1					Water changed in all
58	23.1	4.8	165	6.1					beakers.
61	23.1	6.0	160	6.1					Time: 0645
63	23.1	6.1	165	6.1					Initials: GJ
68	23.0	5.5	165	6.2					
79	23.1	5.3	165	6.2					
101	23.2	4.8	160	6.1					
138	23.1	5.5	160	6.1					
147	23.0	6.0	160	6.1					Water changed in all
150	23.0	5.6	160	6.1					beakers.
154	23.1	5.8	170	6.2					Time: 1715
156	23.1	6.0	165	6.2					Initials: BBP

*Water quality measurements to be taken.

ANC07935
BZTO104(e)007935

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 686-13 Client Windward Environmental Investigator _____

DAILY RECORD SHEET

Day 20 (10/7/04) AJ

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. umhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1	23.2								Each beaker fed 1.0 ml
2	23.2								YTC suspension
8	23.1								Initials: AJM
18	23.1								
19	23.1								
22	23.1								
33	23.1								
49	23.1								
55	23.2								Water changed in all
58	23.1								beakers.
61	23.1								Time: 0705
63	23.1								Initials: GSJ
68	23.1								
79	23.1								
101	23.2								
138	23.1								
147	23.0								Water changed in all
150	23.1								beakers.
154	23.1								Time: 1730
156	23.0								Initials: AJ

*Water quality measurements to be taken.

Day 21 (10/8/04) JB/AJ

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. umhos/cm	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1	23.0	7.1		6.7					Each beaker fed 1.0 ml
2	22.9	6.8		6.6					YTC suspension
8	22.9	7.0		6.6					Initials: JB
18	22.9	7.2		6.6					
19	22.9	7.3		6.5					
22	22.9	6.7		6.6					
33	22.9	6.9		6.6					
49	22.9	7.1		6.6					
55	22.9	7.1		6.7					Water changed in all
58	22.9	6.6		6.6					beakers.
61	22.9	6.9		6.6					Time: 0600
63	23.0	6.5		6.6					Initials: JB
68	22.9	6.7		6.7					
79	23.0	6.8		6.7					
101	23.1	6.5		6.7					
138	23.0	6.7		6.6					
147	22.9	6.9		6.6					Water changed in all
150	22.9	7.0		6.7					beakers.
154	22.9	7.0		6.7					Time: 1745
156	23.0	7.2		6.8					Initials: GSJ

*Water quality measurements to be taken.

ANC07936
BZTO104(e)007936

Test No 686-13 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 22 (10/9/04) UB

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1	23.0								Each beaker fed 1.0 ml
2	23.0								YTC suspension
8	23.0								Initials: UB
18	22.9								
19	22.9								
22	22.9								
33	22.9								
49	22.9								
55	22.9								Water changed in all
58	23.0								beakers.
61	23.0								Time: 0655
63	23.0								Initials: UB
68	22.9								
79	23.0								
101	23.1								
138	23.0								
147	23.0								Water changed in all
150	23.0								beakers.
154	23.1								Time: 1730
156	23.1								Initials: [illegible]

*Water quality measurements to be taken.

Day 23 (10/10/04) [illegible]

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1	22.9								Each beaker fed 1.0 ml
2	22.7								YTC suspension
8	22.7								Initials: [illegible]
18	22.7								
19	22.7								
22	22.7								
33	22.6								
49	22.7								
55	22.7								Water changed in all
58	22.7								beakers.
61	22.7								Time: 0700
63	22.7								Initials: [illegible]
68	22.7								
79	22.7								
101	22.8								
138	22.7								
147	22.7								Water changed in all
150	22.7								beakers.
154	22.8								Time: 1800
156	22.8								Initials: BBP

*Water quality measurements to be taken.

Test No 686-13 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 24 (10/11/00 AB/AJ/BBP

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond. (µmhos/cm)	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1	22.7	6.0		6.1					Each beaker fed 1.0 ml
2	22.6	6.2		6.1					YTC suspension
8	22.5	6.1		6.1					Initials: AB
18	22.5	6.4		6.1					
19	22.5	6.4		6.1					
22	22.5	6.2		6.2					
33	22.5	6.2		6.2					
49	22.5	6.2		6.2					
55	22.6	6.5		6.2					Water changed in all
58	22.5	6.1		6.2					beakers.
61	22.6	6.6		6.2					Time: 0710
63	22.5	6.0		6.2					Initials: AB
68	22.4	6.1		6.3					
79	22.5	5.8		6.4					
101	22.7	6.0		6.3					
138	22.7	6.2		6.3					
147	22.6	6.4		6.5					Water changed in all
150	22.7	6.2		6.5					beakers.
154	22.8	6.0		6.9					Time: 1720
156	23.0	6.6		6.6					Initials: AJ

*Water quality measurements to be taken.

Day 25 (10/12/00 AB/AJ

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. (µmhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1	23.0								Each beaker fed 1.0 ml
2	22.9								YTC suspension
8	22.8								Initials: AB
18	22.8								
19	22.7								
22	22.8								
33	22.7								
49	22.7								
55	22.9								Water changed in all
58	22.8								beakers.
61	22.9								Time: 0650
63	22.9								Initials: AB
68	22.8								
79	22.8								
101	22.9								
138	22.8								
147	22.8								Water changed in all
150	23.0								beakers.
154	23.1								Time: 1715
156	23.1								Initials: BBP

*Water quality measurements to be taken.

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 686-13 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 26 (10/13/04 AS/AF/BBP

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond.* umhos/cm	pH*	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1	23.0	6.0	160	6.1					Each beaker fed 1.0 ml
2	23.0	5.5	160	6.2					YTC suspension
8	22.9	5.4	165	6.1					Initials: JD
18	22.9	5.8	160	6.1					
19	22.9	5.6	160	6.2					
22	22.9	5.1	165	6.1					
33	22.9	5.4	160	6.2					
49	22.9	5.5	170	6.2					
55	23.0	6.2	165	6.3					Water changed in all
58	22.9	5.1	160	6.2					beakers.
61	22.9	5.8	165	6.2					Time: 0640
63	22.9	4.8	165	6.2					Initials: AS
68	22.9	4.8	170	6.2					
79	23.0	5.0	170	6.4					
101	23.0	5.0	160	6.3					
138	23.0	5.0	165	6.2					
147	22.9	6.2	160	6.3					Water changed in all
150	22.9	5.1	175	6.3					beakers.
154	23.1	4.8	215	8.0					Time: 1715
156	23.2	6.1	165	6.5					Initials: BBP

*Water quality measurements to be taken.

Day 27 (10/14/04 BBP

Beaker No.	Temp.* (deg.C)	DO (ppm)	Cond. umhos/cm	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1	23.0								Each beaker fed 1.0 ml
2	22.9								YTC suspension
8	22.8								Initials: JD
18	22.8								
19	22.8								
22	22.8								
33	22.8								
49	22.9								
55	22.9								Water changed in all
58	22.8								beakers.
61	23.0								Time: 0710
63	22.9								Initials: AS
68	22.8								
79	22.9								
101	23.0								
138	23.0								
147	22.8								Water changed in all
150	23.0								beakers.
154	23.0								Time: 1710
156	23.0								Initials: BBP

*Water quality measurements to be taken.

ANC07939
BZTO104(e)007939

Test No 686-13 Client Windward Environmental Investigator

DAILY RECORD SHEET

Day 28 (10/15/[illegible]/BBP

Beaker No.	Temp.* (deg.C)	DO* (ppm)	Cond.* (umhos/cm)	pH*	Hardness* (mg/L)	Alkalinity* (mg/L)	S (ppm)	NH3* (ppm)	Comments
1	23.0	6.7	160	6.3	34	40			Each beaker fed 1.0 ml
2	23.0	6.2	160	6.1	34	40			YTC suspension
8	23.0	6.7	160	6.3	51	40			Initials: ⟶
18	22.9	6.9	160	6.2	43	40			
19	22.9	7.1	160	6.2	43	40			
22	22.8	6.9	160	6.3	43	40			
33	22.8	6.9	160	6.2	43	40			
49	22.8	7.2	160	6.3	51	40			
55	22.8	7.3	160	6.3	34	40			Water changed in all
58	22.8	6.9	160	6.3	34	40			beakers.
61	22.9	7.3	160	6.3	43	40			Time: 0630
63	22.8	7.1	160	6.3	43	40			Initials: [illegible]
68	22.8	7.1	160	6.4	43	40			
79	22.9	7.0	160	6.4	43	40			
101	22.9	7.1	160	6.3	34	40			
138	22.8	7.3	160	6.4	43	40			
147	22.8	7.4	160	6.4	51	40			Water changed in all
150	22.8	7.0	160	6.5	43	40			beakers.
154	22.8	7.1	170	7.3	43	50			Time:
156	22.9	7.3	160	6.7	43	40			Initials:

*Water quality measurements to be taken.

Day (/ /)

Beaker No.	Temp. (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	S (ppm)	NH3 (ppm)	Comments
1									Each beaker fed 1.0 ml
2									YTC suspension
8									Initials:
18									
19									
22									
33									
49									
55									Water changed in all
58									beakers.
61									Time:
63									Initials:
68									
79									
101									
138									
147									Water changed in all
150									beakers.
154									Time:
156									Initials:

*Water quality measurements to be taken.

ANC07940
BZTO104(e)007940

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-13 Client Windward Environmental Investigator

DAY 28 TEST TERMINATION SHEET

Beaker No.	Number of survivors	Initials
1	7	UB
2	10	UB
3	9	UB
4	10	UB
5	10	LATM
6	10	UB
7	6	UB
8	6	UB
9	8	LATM
10	10	UB
11	10	UB
12	7	UB
13	8	LATM
14	10	UB
15	9	UB
16	10	UB
17	9	LATM
18	7	UB
19	2	UB
20	10	LATM
21	10	UB
22	6	UB
23	10	LATM
24	7	LATM
25	9	LATM
26	9	LATM
27	9	LATM
28	10	GBH
29	10	LATM
30	10	GBH
31	10	LATM
32	10	LATM
33	9	GBH
34	9	UB
35	9	LATM
36	9	UB
37	9	LATM
38	10	GBH
39	9	UB
40	10	GBH
41	10	LATM
42	9	UB
43	9	GBH
44	10	LATM
45	10	UB

Beaker No.	Number of survivors	Initials
46	10	BBP
47	10	LATM
48	10	BBP
49	10	GBH
50	10	UB
51	9	GBH
52	8	BBP
53	10	UB
54	10	GBH
55	10	LATM
56	9	BBP
57	6	GBH
58	9	LATM
59	10	UB
60	9	UB
61	10	BBP
62	10	LATM
63	10	UB
64	10	GBH
65	4	LATM
66	10	UB
67	9	GBH
68	10	UB
69	6	BBP
70	10	LATM
71	10	UB
72	10	LATM
73	10	GBH
74	8	LATM
75	7	BBP
76	10	GBH
77	10	GBH
78	9	GBH (lost 3 animals)
79	8	BBP
80	10	UB
81	7	UB
82	8	LATM
83	10	UB
84	9	GBH
85	10	UB
86	7	LATM
87	10	BBP
88	10	UB
89	9	GBH
90	9	LATM

ANC07941
BZTO104(e)007941

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686- Client Windward Environmental Investigator

DAY 28 TEST TERMINATION SHEET

Beaker No.	Number of survivors	Initials
91	4	UB
92	9	BBP
93	6	UB
94	9	[illegible]
95	9	LWM
96	10	UB
97	9	[illegible]
98	10	LWM
99	10	UB
100	9	BBP
101	8	LWM
102	9	LWM
103	7	UB
104	9	UB
105	10	[illegible]
106	8	UB
107	7	LWM
108	13	[illegible]
109	10	UB
110	10	LWM
111	9	UB
112	8	[illegible]
113	9	UB
114	10	LWM
115	10	LWM
116	9	UB
117	5	[illegible]
118	8	LWM
119	9	UB
120	10	UB
121	9	UB
122	10	LWM
123	3	[illegible]
124	8	UB
125	10	LWM
126	9	[illegible]
127	10	UB
128	9	[illegible]
129	8	LWM
130	9	UB
131	9	UB
132	10	[illegible]
133	10	UB
134	6	LWM
135	9	[illegible]

Beaker No.	Number of survivors	Initials
136	10	LWM
137	9	UB
138	10	[illegible]
139	7	LWM
140	9	UB
141	9	[illegible]
142	9	UB
143	10	UB
144	7	LWM
145	8	UB
146	9	[illegible]
147	8	UB
148	10	LWM
149	9	[illegible]
150	10	UB
151	8	LWM
152	10	UB
153	9	UB
154	9	LWM
155	10	UB
156	10	[illegible]
157	10	LWM
158	10	[illegible]
159	10	LWM
160	10	UB
161		
162		
163		
164		
165		
166		
167		
168		
169		
170		
171		
172		
173		
174		
175		
176		
177		
178		
179		
180		

ANC07942
BZTO104(e)007942

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-13 Client Windward Environmental Investigator

WEIGHING DATA SHEET

Tare: Date 10-6-04 Oven temp (C.) 64 Drying time (hr.) 24 Initials JRF
Standard Weights: 10 mg: 10.006 100mg: 100.022

Final #1: Date 10-18-04 Oven temp (C.) mar 63 ~60 Drying time (hr.) mar 18 26 Initials JRF
Standard Weights: 10 mg: 10.007 100mg: 100.017

Final #2: Date 10-20-04 Oven temp (C.) 63 Drying time (hr.) 18 Initials JRF
Standard Weights: 10 mg: 10.007 100mg: 100.012

Equip. used: Oven BLUE M #1 Balance SARTORIUS M3P

(Dry overnight at 60-90 degrees C)

Bkr. #	Pan #	Tare wt. (mg)	Total wt. (mg) 1	Total wt. (mg) 2	no. weighed	put into pans-initials	Comments
1	1	29.163	31.547	31.536	~~8~~ 7		
2	2	29.740	31.963	31.955	10		
3	3	27.066	29.244	29.237	9		
4	4	27.770	30.152	30.146	10		
5	5	29.550	31.781	31.767	10		
6	6	28.526	31.257	31.254	10		
7	7	28.125	29.694	29.686	6		
8	8	28.763	30.473	30.478	6		
9	9	29.996	32.590	32.580	8		
10	10	27.479	30.525	30.512	10		
11	11	29.350	32.202	32.188	10		
12	12	29.175	31.084	31.070	7		
13	13	28.630	31.239	31.222	8		
14	14	27.742	29.577	29.566	10		
15	15	26.927	29.566	29.555	9		
16	16	30.111	32.620	32.616	10		
17	17	28.530	31.113	31.100	9		
18	18	29.594	32.203	31.961	7		
19	19	29.636	30.219	30.230	2		
20	20	25.969	28.679	28.666	10		
21	21	27.698	31.313	31.314	10		
22	22	28.684	30.357	30.355	6		
23	23	27.710	30.415	30.397	10		
24	24	28.583	30.631	30.629	7		
25	25	29.203	31.259	31.245	9		
26	26	27.915	30.201	30.196	9		
27	27	28.524	31.563	31.551	9		
28	28	29.530	31.947	31.942	10		
29	29	28.113	31.109	31.104	10		
30	30	27.859	30.748	30.743	10		
31	31	27.055	30.030	30.026	10		
32	32	29.162	31.710	31.705	10		
33	33	28.128	30.763	30.770	9		

ANC07943
BZTO104(e)007943

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-13 Client Windward Environmental Investigator

WEIGHING DATA SHEET

See page _____ for information on drying times and temperatures, standard weights,etc.

Bkr. #	Pan #	Tare wt. (mg)	Total wt. (mg) 1	Total wt. (mg) 2	no. weighed	put into pans-initials	Comments
34	34	29.199	31.740	31.756	9		
35	35	29.185	32.429	32.447	9		
36	36	28.676	31.340	31.357	9		
37	37	28.734	31.477	31.486	9		
38	38	26.344	28.593	28.612	10		
39	39	29.648	32.314	32.332	9		
40	40	25.078	28.575	28.586	10		
41	41	27.564	29.413	29.426	10		
42	42	28.076	30.858	30.875	9		
43	43	27.787	29.289	29.299	9		
44	44	27.901	30.446	30.453	10		
45	45	29.697	32.546	32.557	10		
46	46	27.454	30.290	30.295	10		
47	47	30.878	33.539	33.542	10		
48	48	25.836	28.656	28.641	10		
49	49	26.834	29.842	29.844	10		
50	50	27.990	30.402	30.410	10		
51	51	31.619	34.386	34.393	9		
52	52	27.884	31.001	31.009	8		
53	53	28.406	31.860	31.858	10		
54	54	29.666	32.822	32.823	10		
55	55	27.706	30.674	30.668	10		
56	56	29.696	~~29.682~~ 31.833	31.829	9		
57	57	27.615	29.602	29.617	6		
58	58	28.317	31.036	31.036	9		
59	59	30.749	32.923	32.917	10		
60	60	27.268	29.601	29.602	9		
61	61	30.339	33.689	33.682	10		
62	62	31.529	35.093	35.098	10		
63	63	30.963	34.474	34.464	10		
64	64	29.543	31.939	31.938	10		
65	65	24.624	25.572	25.574	4		
66	66	30.005	32.834	32.822	10		
67	67	27.423	29.225	29.220	9		
68	68	28.822	31.414	31.386	10		
69	69	28.094	29.945	29.943	6		
70	70	28.919	31.375	31.360	10		
71	71	30.409	33.172	33.159	10		
72	72	26.988	29.902	29.947	10		
73	73	28.667	32.391	32.355	10		
74	74	28.424	30.407	30.409	8		
75	75	28.234	30.282	30.260	7		
76	76	27.127	30.245	30.214	10		

ANC07944
BZTO104(e)007944

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-13 Client Windward Environmental Investigator

WEIGHING DATA SHEET

See page _____ for information on drying times and temperatures, standard weights,etc.

Bkr. #	Pan #	Tare wt. (mg)	Total wt. (mg) 1	Total wt. (mg) 2	no. weighed	put into pans-initials	Comments
77	77	30.194	32.041	32.022	10		
78	78	29.918	31.778	31.750	6		
79	79	28.712	30.880	30.850	8		
80	80	28.513	31.057	31.014	10		
81	81	27.150	29.266	29.230	7		
82	82	30.165	31.978	31.951	8		
83	83	27.984	31.143	31.099	10		
84	84	30.929	32.852	32.822	9		
85	85	28.468	30.674	30.638	10		
86	86	29.593	31.836	31.797	7		
87	87	29.153	32.073	32.026	10		
88	88	28.314	30.470	30.430	10		
89	89	26.948	29.718	29.671	9		
90	90	28.776	31.506	31.462	9		
91	91	28.737	29.915	29.885	4		
92	92	29.276	32.050	32.004	9		
93	93	26.959	28.569	28.544	6		
94	94	27.492	29.792	29.757	9		
95	95	30.510	33.304	33.259	9		
96	96	27.852	30.320	30.266	10		
97	97	27.797	30.566	30.520	9		
98	98	29.033	32.246	32.195	10		
99	99	27.122	30.490	30.440	10		
100	100	26.154	28.963	28.927	9		
101	101	27.291	30.082	30.036	8	BBP	
102	102	27.545	29.941	29.900	9	BBP	
103	103	29.066	31.568	31.521	7	BBP	
104	104	29.613	32.369	32.362	9	BBP	
105	105	28.622	31.373	31.374	10	BBP	
106	106	29.038	31.325	31.330	8	BBP	
107	107	28.091	30.261	30.260	7	BBP	
108	108	28.153	31.772	~~32.061~~ 31.765	13	BBP	
109	109	29.060	32.681	32.661	10	BBP	
110	110	27.770	30.967	30.952	10	BBP	
111	111	29.402	32.440	32.427	9	BBP	
112	112	29.969	32.889	32.873	8	BBP	
113	113	28.636	31.261	31.246	9	BBP	
114	114	27.801	30.553	30.529	10	BBP	
115	115	28.406	28.30.882	30.882	10	BBP	
116	116	25.822	28.500	28.484	9	BBP	
117	117	27.616	29.330	29.323	5	BBP	
118	118	30.850	33.892	33.872	8	BBP	
119	119	32.179	35.747	35.734	9	BBP	

ANC07945
BZTO104(e)007945

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-13 Client Windward Environmental Investigator

WEIGHING DATA SHEET

See page _____ for information on drying times and temperatures, standard weights,etc.

Bkr. #	Pan #	Tare wt. (mg)	Total wt. (mg) 1	Total wt. (mg) 2	no. weighed	put into pans-initials	Comments
120	120	27.379	30.390	30.860	10	BBP	
121	121	28.544	30.619	JR 30.610	9	BBP	
122	122	28.024	30.780	30.776	10	BBP	
123	123	28.657	29.690	29.699	3	BBP	
124	124	31.020	33.303	33.302	8	BBP	
125	125	28.690	32.808	32.800	10	BBP	
126	126	27.740	30.437	30.422	9	BBP	
127	127	29.451	31.186	31.185	10	BBP	
128	128	27.541	29.924	29.920	9	BBP	
129	129	28.608	30.230	30.244	8	BBP	
130	130	28.880	32.631	32.624	9	BBP	
131	131	28.782	31.974	31.976	9	BBP	
132	132	29.896	33.410	33.404	10	BBP	
133	133	27.768	31.630	31.031	10	BBP	
134	134	28.259	29.867	29.876	6	BBP	
135	135	29.850	32.935	32.933	9	BBP	
136	136	29.287	33.561	33.558	10	BBP	
137	137	27.889	31.020	31.014	9	BBP	
138	138	29.024	31.388	31.391	10	BBP	
139	139	26.626	28.489	28.479	7	BBP	
140	140	28.407	31.037	31.026	9	BBP	
141	141	28.640	31.739	31.711	9	BBP	
142	142	JR 28.0657	30.619	30.600	9	BBP	
143	143	29.150	32.599	32.589	10	BBP	
144	144	29.882	31.763	31.710	7	BBP	
145	145	28.542	30.970	30.909	8	BBP	
146	146	28.789	31.804	31.743	9	BBP	
147	147	29.026	30.443	30.386	7	BBP	
148	148	28.958	31.354	31.285	10	BBP	
149	149	30.071	32.764	32.694	9	BBP	
150	150	28.443	31.658	31.574	10	BBP	
151	151	29.708	32.439	32.342	8	BBP	
152	152	28.973	30.917	30.833	10	BBP	
153	153	27.042	30.017	29.456	9	BBP	
154	154	27.525	30.810	30.737	9	BBP	
155	155	28.412	31.499	31.424	10	BBP	
156	156	26.402	29.378	29.312	10	BBP	
157	157	28.100	31.384	31.314	10	BBP	
158	158	28.320	31.253	31.164	10	BBP	
159	159	28.859	30.756	30.690	10	BBP	
160	160	29.953	35.028	34.906	10	BBP	
161	161	29.495					
162	162	30.904					

ANC07946
BZTO104(e)007946

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c

HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-13 Client Windward Environmental Investigator

WEIGHING DATA SHEET

See page _____ for information on drying times and temperatures, standard weights,etc.

Bkr. #	Pan #	Tare wt. (mg)	Total wt. (mg) 1	Total wt. (mg) 2	no. weighed	put into pans-initials	Comments
163	163	26.990					
164	164	28.206 23*					
165	165	27.231					
166	166	28.492					
167	167	29.614					
168	168	26.995					
169	169						
170	170						
171	171						
172	172						
173	173						
174	174						
175	175						
176	176						
177	177						
178	178						
179	179						
180	180						
181	181						
182	182						
183	183						
184	184						
185	185						
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189	189						
190	190						
191	191						
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193	193						
194	194						
195	195						
196	196						
197	197						
198	198						
199	199						
200	200						
201	201						
202	202						
203	203						
204	204						
205	205						

ANC07947
BZTO104(e)007947

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-XXX-HA4c
HYALELLA AZTECA 14-DAY SOLID PHASE SEDIMENT TEST

Test No. 686-13 Client Windward Environmental Investigator

ZERO-TIME WEIGHING DATA SHEET

Tare: Date 9-17-04 Oven temp (C.) 62 Drying time (hr.) 24 Initials GJL
Standard Weights: 10 mg: 10.008 100mg: 100.019

Final: Date 9-18-04 Oven temp (C.) 66 Drying time (hr.) 24 Initials GJL
Standard Weights: 10 mg: 10.005 100mg: 100.010

Equip. used: Oven: BLUE M #1 Balance: SARTORIUS M3P

(Dry overnight at 60-90 degrees C)

Pan #	Tare wt. (mg)	Total wt. (mg)	#weighed	Comments
1	30.857	31.489	20	
2	27.722	28.368	20	
3	28.424	29.053	20	
4	28.685	29.279	20	
5	29.117	29.808	20	

ANC07948
BZTO104(e)007948

Chesapeake Cultures

P.O. Box 507 Hayes, VA 23072 (804) 693-4046 (804)694-4704 fax
www.c-cultures.com
e-mail growfish@c-cultures.com

NAS

Shipment Information

Species Hyalella azteca Date 9/14/04

Age/Size 43-4d; 1.2-1.5mm P.O. No. verbal

Quanitity 2400+ Invoice No. 4824

Temperature 24°C Salinity — pH 7.95

Notes Thank you!

Received by WTM 9-15-04

Biologist

Please inspect shipment and report any problem immediately

29 of 62

ANC07949
BZTO104(e)007949

DEVIATION FORM

Project Number 686 **Test Number &Description** 686-9, 686-11, 686-13, 686-15

Study Director or Project Manager G.J. Irissarri

Recorded By R.S. Caldwell **Date** 10-21-04

Description of Deviation (attach additional pages and/or documentation as needed)
Routine conductivity readings taken on 9-29-04 in Tests No. 686-9 686-11, 686-13, and 686-15 all were found to be 50-60 µmhos/cm higher than all other readings for these tests. All batches of test water prepared on or around 9-29-04 were found to have a normal level of conductivity. We conclude, therefore, that the 9-29-04 conductance readings in test containers are all erroneous, probably due to the calibration setting having been accidentally altered and unnoticed. Because test water batches were normal, it is concluded that the actual test container conductances were also normal.

Potential Impact on Project
None

Corrective Action
Test container conductance readings in Tests No. 686-9 686-11, 686-13, and 686-15 were invalidated and not used in the water quality summary statistics for these tests.

Anticipated Completion Date NA Actual Completion Date NA

Approval: Richard D. Caldwell Date: 10-20-04
SD/PM (R.S. Caldwell for G.J. Irissarri)

QA Representative Comments

Approval: Linda K. Hemelt Date: 10/21/04
QA Representative

ANC07950
BZTO104(e)007950

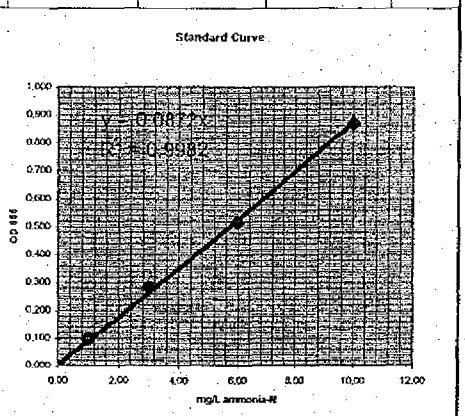
AMMONIA EXPOSURE BENCHSHEETS AND ANALYSIS

Total Ammonia-N in Sediment Pore Water: Computation Worksheet

Salicylate Method (SOP #5492)

Result

	Sample description	Dilution factor	OD655	NH_3-N (mg/L)	pH	Salinity (ppt)
	Blank	----	----	----		
	1.0 mg/L NH_3-N Std.	----	0.097	1.00		
	3.0 mg/L NH_3-N Std.	----	0.282	3.00		
	6.0 mg/L NH_3-N Std.	----	0.514	6.00		
	10.0 mg/L NH_3-N Std.	----	0.870	10.00		
	3.0 mg/L spike	----	0.280	3.21		
	3.0 mg/L spike dupl.	----	0.272	3.12		
1.	9435F	5	0.155	8.89		
2.	9436F	5	0.025	1.43		
3.	9437F	5	0.057	3.27		
4.	9438F	5	0.071	4.07		
5.	9439F	5	0.047	2.69		
6.	9440F	5	0.068	3.90		
7.	9441F	5	0.064	3.67		
8.	9442F	5	0.057	3.27		
9.	9443F	5	0.135	7.74		
10.	9444F	5	0.064	3.67		
11.	9445F	5	--*	--*		
12.	9446F	5	0.050	2.87		
13.	9447F	5	0.127	7.28		
14.	9448F	5	0.162	9.29		
15.	9449F	5	0.078	4.47		
16.	9450F	5	0.062	3.55		
17.	9451F	5	0.150	8.60		
18.	9452F	5	0.030	1.72		
19.	9453F	5	0.021	1.20		
20.		5				
21.		5				
22.		5				
23.		5	* insufficient sample size for analysis			
24.		5				
25.		5				
26.		5				
27.		5				
28.		5				
29.		5				
30.		5				
31.		5				
32.		5				
33.		5				
34.		5				
35.		5				
36.		5				



Reporting limit (mg/L) =	0.5
Recovery (%) =	105.5
Precision (RPD) =	2.90
Sample volume (ml):	0.10
Dilution factor	5

Sample Set Description:

Proj. No.: 686

Bulk sediment porewaters

Batch 7

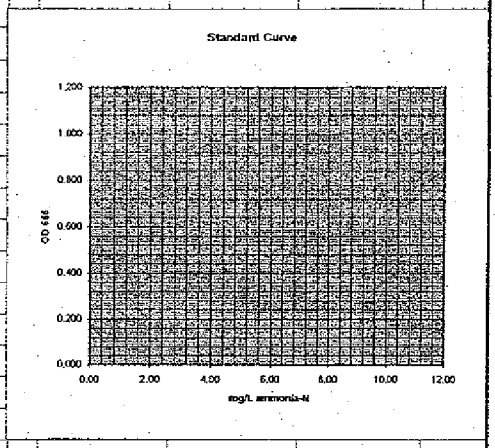
Analyst:	RSC
Date analysed:	9/16/2004

ANC07952
BZTO104(e)007952

Total Ammonia-N in Sediment Pore Water: Computation Worksheet
Salicylate Method (SOP #5492)

Result

	Sample description	Dilution factor	OD_{655}	NH_3-N (mg/L)	pH	Salinity (ppt)
	Blank	-----	-----	-----		
	1.0 mg/L NH_3-N Std.	-----	.097	1.00		
	3.0 mg/L NH_3-N Std.	-----	.282	3.00		
	6.0 mg/L NH_3-N Std.	-----	.514	6.00		
	10.0 mg/L NH_3-N Std.	-----	.870	10.00		
	3.0 mg/L spike	-----	.280			
	3.0 mg/L spike dupl.	-----	.272			
1.	9435F	5	.155		5.6	
2.	9436F	5	.025		5.8	
3.	9437F	5	.057		5.9	
4.	9438F	5	.071		6.0	
5.	9439F	5	.047		6.4	
6.	9440F	5	.068		6.3	
7.	9441F	5	.064		6.3	
8.	9442F	5	.057		6.1	
9.	9443F	5	.135		6.2	
10.	9444F	5	.064		6.2	
11.	9445F	5	- *		- *	
12.	9446F	5	.050		6.3	
13.	9447F	5	.127		6.7	
14.	9448F	5	.162		6.5	
15.	9449F	5	.078		6.2	
16.	9450F	5	.062		6.3	
17.	9451F	5	.150		6.2	
18.	9452F	5	.032		6.4	
19.	9453F	5	.021		6.1	
20.		5				
21.		5				
22.	* Insufficient sample for analysis	5				
23.		5				
24.		5	BBZ 11/24/04			
25.		5				
26.		5				
27.		5				
28.		5				
29.		5				
30.		5				
31.		5				
32.		5				
33.		5				
34.		5				
35.		5				
36.		5				



Reporting limit (mg/L) =	0.5
Recovery (%) =	#VALUE!
Precision (RPD) =	#VALUE!
Sample volume (ml):	0.10
Dilution factor	5

Sample Set Description:

Proj. No.: 686

Bulk sediment porewaters

Batch 7

Analyst: RSC

Date analysed: 9/16/2004

Total Ammonia-N in Water: Computation Worksheet

Salicylate Method (SOP #5492)

Result

	Sample description	Dilution factor	OD_{655}	NH_3-N (mg/L)
	Blank	-----	-----	-----
	1.0 mg/L NH_3-N Std.	-----	0.117	1.00
	3.0 mg/L NH_3-N Std.	-----	0.286	3.00
	6.0 mg/L NH_3-N Std.	-----	0.565	6.00
	10.0 mg/L NH_3-N Std.	-----	0.910	10.00
	3.0 mg/L spike	-----	0.283	3.07
	3.0 mg/L spike dupl.	-----	0.282	3.06
1.	1	1	0.028	0.30
2.	2	1	0.016	0.17
3.	8	1	0.034	0.37
4.	18	1	0.038	0.41
5.	19	1	0.069	0.75
6.	22	1	0.096	1.04
7.	33	1	0.058	0.63
8.	49	1	0.027	0.29
9.	55	1	0.008	ND
10.	58	1	0.092	1.00
11.	61	1	0.031	0.34
12.	63	1	0.062	0.67
13.	68	1	0.064	0.69
14.	79	1	0.071	0.77
15.	101	1	0.197	2.13
16.	138	1	0.117	1.27
17.	147	1	0.068	0.74
18.	150	1	0.041	0.44
19.	154	1	0.042	0.46
20.	156	1	0.048	0.52
21.				
22.				
23.				
24.				
25.				
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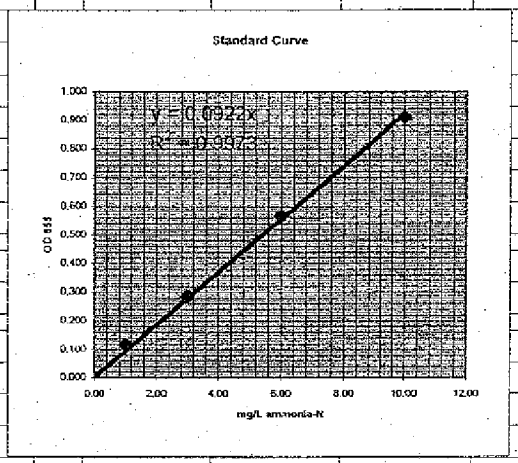
30.				
31.				
32.				
33.				
34.				
35.				
36.				



Reporting limit (mg/L) =	0.1
Recovery (%) =	102.0
Precision (RPD) =	0.35
Sample volume (ml):	0.50
Dilution factor	1

Sample Set Description:

Test No.:	686-13
Test Day:	0 (9-17-04)
Species:	*Hyalella*
Overlying water	
Analyst:	RSC
Date analysed:	9/25/2004

ANC07954
BZTO104(e)007954

Total Ammonia-N in Water: Computation Worksheet

Salicylate Method (SOP #5492)

Result

	Sample description	Dilution factor	OD655	NH_3-N (mg/L)
	Blank	----	----	----
	1.0 mg/L NH_3-N Std.	----	.117	1.00
	3.0 mg/L NH_3-N Std.	----	.286	3.00
	6.0 mg/L NH_3-N Std.	----	.565	6.00
	10.0 mg/L NH_3-N Std.	----	.910	10.00
	3.0 mg/L spike	----	.283	
	3.0 mg/L spike dupl.	----	.282	
1.	1	1	.028	
2.	2	1	.016	
3.	8	1	.029	
4.	18	1	.038	
5.	19	1	.069	
6.	22	1	.096	
7.	33	1	.058	
8.	49	1	.027	
9.	55	1	.008	
10.	58	1	.092	
11.	61	1	.031	
12.	63	1	.062	
13.	68	1	.064	
14.	79	1	.071	
15.	101	1	.197	
16.	138	1	.217	
17.	147	1	.068	
18.	150	1	.041	
19.	154	1	.042	
20.	156	1	.048	
21.				
22.				
23.				
24.				
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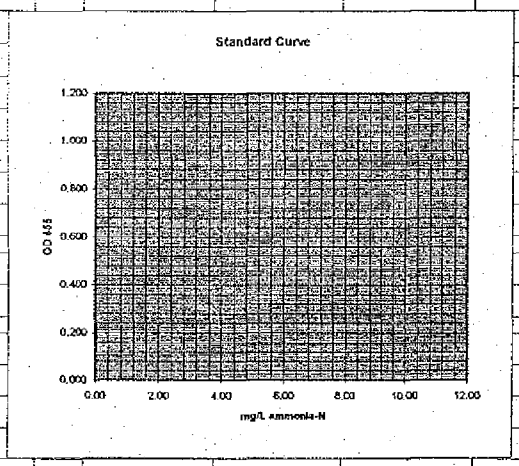
35.				
36.				



Reporting limit (mg/L) =	0.1
Recovery (%) =	#VALUE!
Precision (RPD) =	#VALUE!
Sample volume (ml):	0.50
Dilution factor	1

Sample Set Description:

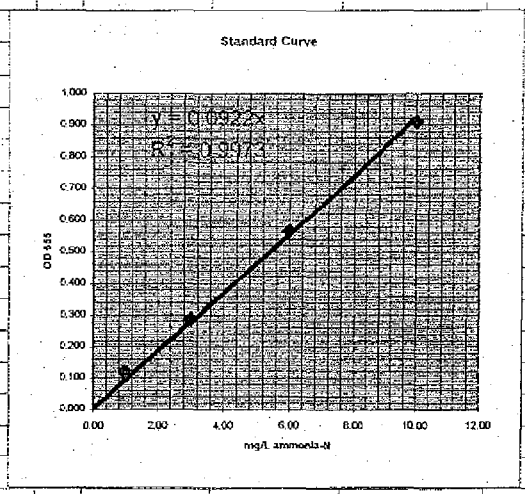
Test No.:	686-13
Test Day:	0 (9-17-04)
Species:	*Hyalella*
Overlying water	
Analyst:	RSC
Date analysed:	9/25/2004

Total Ammonia-N in Water: Computation Worksheet

Salicylate Method (SOP #5492)

Result

	Sample description	Dilution factor	OD655	NH_3-N (mg/L)
	Blank	----	----	----
	1.0 mg/L NH_3-N Std.	----	0.139	1.00
	3.0 mg/L NH_3-N Std.	----	0.279	3.00
	6.0 mg/L NH_3-N Std.	----	0.582	6.00
	10.0 mg/L NH_3-N Std.	----	0.930	10.00
	3.0 mg/L spike	----	0.280	2.96
	3.0 mg/L spike dupl.	----	0.277	2.93
1.	1	1	0.000	ND
2.	2	1	0.000	ND
3.	8	1	0.007	ND
4.	18	1	0.008	ND
5.	19	1	0.007	ND
6.	22	1	0.007	ND
7.	33	1	0.007	ND
8.	49	1	0.008	ND
9.	55	1	0.009	ND
10.	58	1	0.010	0.11
11.	61	1	0.007	ND
12.	63	1	0.010	0.11
13.	68	1	0.003	ND
14.	79	1	0.005	ND
15.	101	1	0.008	ND
16.	138	1	0.006	ND
17.	147	1	0.007	ND
18.	150	1	0.008	ND
19.	154	1	0.007	ND
20.	156	1	0.005	ND
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				
31.				
32.				
33.				
34.				
35.				



Reporting limit (mg/L) =	0.1
Recovery (%) =	98.3
Precision (RPD) =	1.08
Sample volume (ml):	0.50
Dilution factor	1

Sample Set Description:

Test No.:	686-13
Test Day:	28 (10-15-04)
Species:	*Hyalella*
Overlying water	
Analyst:	RSC
Date analysed:	10/19/2004

ANC07956
BZTO104(e)007956

Total Ammonia-N in Water: Computation Worksheet

Salicylate Method (SOP #5492)

Result

	Sample description	Dilution factor	OD655	NH_3-N (mg/L)
	Blank	-----	-----	-----
	1.0 mg/L NH_3-N Std.	-----	.139	1.00
	3.0 mg/L NH_3-N Std.	-----	.279	3.00
	6.0 mg/L NH_3-N Std.	-----	.558	6.00
	10.0 mg/L NH_3-N Std.	-----	.930	10.00
	3.0 mg/L spike	-----	.280	
	3.0 mg/L spike dupl.	-----	.277	
1.	1	1	0	
2.	2	1	0	
3.	8	1	.007	
4.	18	1	.008	
5.	19	1	.007	
6.	22	1	.007	
7.	33	1	.007	
8.	49	1	.008	
9.	55	1	.009	
10.	58	1	.010	
11.	61	1	.007	
12.	63	1	.010	
13.	68	1	.003	
14.	79	1	.005	
15.	101	1	.008	
16.	138	1	.006	
17.	147	1	.007	
18.	150	1	.008	
19.	154	1	.007	
20.	156	1	.005	
21.				
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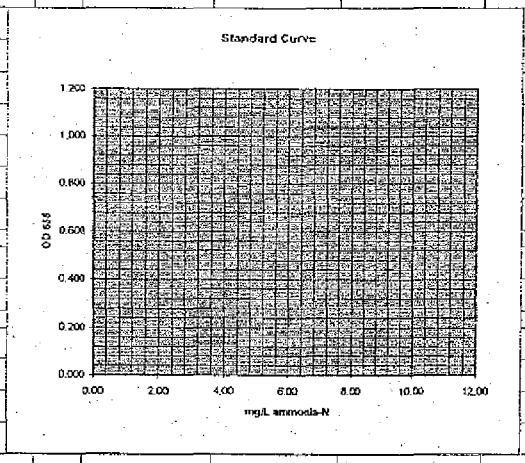
33.				
34.				
35.				
36.				



Reporting limit (mg/L) =	0.1
Recovery (%) =	#VALUE!
Precision (RPD) =	#VALUE!
Sample volume (ml):	0.50
Dilution factor	1

Sample Set Description:

Test No.:	686-13
Test Day:	28 (10-15-04)
Species:	*Hyalella*
Overlying water	
Analyst:	RSC
Date analysed:	10/19/2004

ANC07957
BZTO104(e)007957

TEST DATA ANALYSIS RECORDS

Test Number: P686-13

Freshwater Sediment Test
28-day Hyalella azteca

Randomization Chart

BKR	NAS SMPL	CLIENT DESCRIP	REPL	
120	9454F	Control	1	
137	9454F	Control	2	
98	9454F	Control	3	
10	9454F	Control	4	
45	9454F	Control	5	
126	9454F	Control	6	
143	9454F	Control	7	
154	9454F	Control	8	wq replicate
146	9435F	LW2-G207	1	
9	9435F	LW2-G207	2	
3	9435F	LW2-G207	3	
86	9435F	LW2-G207	4	
72	9435F	LW2-G207	5	
80	9435F	LW2-G207	6	
32	9435F	LW2-G207	7	
101	9435F	LW2-G207	8	wq replicate
40	9436F	LW2-G209	1	
119	9436F	LW2-G209	2	
130	9436F	LW2-G209	3	
160	9436F	LW2-G209	4	
62	9436F	LW2-G209	5	
136	9436F	LW2-G209	6	
35	9436F	LW2-G209	7	
49	9436F	LW2-G209	8	wq replicate
141	9437F	LW2-G198	1	
16	9437F	LW2-G198	2	
71	9437F	LW2-G198	3	
64	9437F	LW2-G198	4	
78	9437F	LW2-G198	5	
53	9437F	LW2-G198	6	
23	9437F	LW2-G198	7	
68	9437F	LW2-G198	8	wq replicate
66	9438F	LW2-G199	1	
12	9438F	LW2-G199	2	
89	9438F	LW2-G199	3	
51	9438F	LW2-G199	4	
153	9438F	LW2-G199	5	
48	9438F	LW2-G199	6	
95	9438F	LW2-G199	7	
79	9438F	LW2-G199	8	wq replicate
148	9439F	LW2-G204	1	
20	9439F	LW2-G204	2	
88	9439F	LW2-G204	3	
114	9439F	LW2-G204	4	
85	9439F	LW2-G204	5	
14	9439F	LW2-G204	6	
60	9439F	LW2-G204	7	
33	9439F	LW2-G204	8	wq replicate
149	9440F	LW2-G202	1	
94	9440F	LW2-G202	2	
108	9440F	LW2-G202	3	
46	9440F	LW2-G202	4	
157	9440F	LW2-G202	5	
92	9440F	LW2-G202	6	
44	9440F	LW2-G202	7	
150	9440F	LW2-G202	8	wq replicate

ANC07959
BZTO104(e)007959

Test Number: P686-13

Freshwater Sediment Test
28-day Hyalella azteca

BKR	NAS SMPL	CLIENT DESCRIP	REPL	
133	9441F	LW2-G231	1	
112	9441F	LW2-G231	2	
131	9441F	LW2-G231	3	
38	9441F	LW2-G231	4	
124	9441F	LW2-G231	5	
28	9441F	LW2-G231	6	
39	9441F	LW2-G231	7	
156	9441F	LW2-G231	8	wq replicate
30	9442F	LW2-G234	1	
132	9442F	LW2-G234	2	
135	9442F	LW2-G234	3	
155	9442F	LW2-G234	4	
111	9442F	LW2-G234	5	
142	9442F	LW2-G234	6	
25	9442F	LW2-G234	7	
18	9442F	LW2-G234	8	wq replicate
96	9443F	LW2-G155	1	
56	9443F	LW2-G155	2	
129	9443F	LW2-G155	3	
41	9443F	LW2-G155	4	
159	9443F	LW2-G155	5	
59	9443F	LW2-G155	6	
5	9443F	LW2-G155	7	
138	9443F	LW2-G155	8	wq replicate
4	9444F	LW2-G166	1	
100	9444F	LW2-G166	2	
13	9444F	LW2-G166	3	
17	9444F	LW2-G166	4	
103	9444F	LW2-G166	5	
128	9444F	LW2-G166	6	
37	9444F	LW2-G166	7	
1	9444F	LW2-G166	8	wq replicate
104	9445F	LW2-G163	1	
118	9445F	LW2-G163	2	
27	9445F	LW2-G163	3	
122	9445F	LW2-G163	4	
11	9445F	LW2-G163	5	
73	9445F	LW2-G163	6	
31	9445F	LW2-G163	7	
61	9445F	LW2-G163	8	wq replicate
144	9446F	LW2-G161	1	
69	9446F	LW2-G161	2	
139	9446F	LW2-G161	3	
57	9446F	LW2-G161	4	
134	9446F	LW2-G161	5	
75	9446F	LW2-G161	6	
43	9446F	LW2-G161	7	
8	9446F	LW2-G161	8	wq replicate
140	9447F	LW2-G160	1	
24	9447F	LW2-G160	2	
36	9447F	LW2-G160	3	
107	9447F	LW2-G160	4	
145	9447F	LW2-G160	5	
15	9447F	LW2-G160	6	
106	9447F	LW2-G160	7	
22	9447F	LW2-G160	8	wq replicate

ANC07960
BZTO104(e)007960

Test Number: P686-13

Freshwater Sediment Test
28-day Hyalella azteca

BKR	NAS SMPL	CLIENT DESCRIP	REPL	
74	9448F	LW2-G157	1	
91	9448F	LW2-G157	2	
81	9448F	LW2-G157	3	
7	9448F	LW2-G157	4	
123	9448F	LW2-G157	5	
65	9448F	LW2-G157	6	
117	9448F	LW2-G157	7	
19	9448F	LW2-G157	8	wq replicate
83	9449F	LW2-G038	1	
125	9449F	LW2-G038	2	
109	9449F	LW2-G038	3	
70	9449F	LW2-G038	4	
110	9449F	LW2-G038	5	
21	9449F	LW2-G038	6	
34	9449F	LW2-G038	7	
63	9449F	LW2-G038	8	wq replicate
84	9450F	LW2-G123	1	
102	9450F	LW2-G123	2	
152	9450F	LW2-G123	3	
77	9450F	LW2-G123	4	
93	9450F	LW2-G123	5	
82	9450F	LW2-G123	6	
67	9450F	LW2-G123	7	
147	9450F	LW2-G123	8	wq replicate
47	9451F	LW2-G244	1	
97	9451F	LW2-G244	2	
52	9451F	LW2-G244	3	
76	9451F	LW2-G244	4	
99	9451F	LW2-G244	5	
26	9451F	LW2-G244	6	
6	9451F	LW2-G244	7	
58	9451F	LW2-G244	8	wq replicate
116	9452F	LW2-G247	1	
105	9452F	LW2-G247	2	
127	9452F	LW2-G247	3	
87	9452F	LW2-G247	4	
113	9452F	LW2-G247	5	
115	9452F	LW2-G247	6	
54	9452F	LW2-G247	7	
2	9452F	LW2-G247	8	wq replicate
42	9453F	LW2-G254	1	
158	9453F	LW2-G254	2	
121	9453F	LW2-G254	3	
29	9453F	LW2-G254	4	
151	9453F	LW2-G254	5	
50	9453F	LW2-G254	6	
90	9453F	LW2-G254	7	
55	9453F	LW2-G254	8	wq replicate

ANC07961
BZTO104(e)007961

Test Number: P686-13

Freshwater Sediment Test
28-day Hyalella azteca

Endpoints Data Entry and Calculations File

BKR=beaker number
INIT=initial number
SURV=number survivors
MORT=number dead=INIT-SURV
PSURV=%survival=100(SURV/INIT)
PMORT=%mortality=100(MORT/INIT)

TARE WT= ashed weight of pan used for that replicate at test termination (mg), or
dry weight of pan if ash-free dry weight is not an endpoint
WT COUNT= number of test organisms weighed at test end
DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)
TWT=total biomass=DRY WT-TARE WT
WT=average individual biomass=TWT/WT COUNT

INITIAL WEIGHT

pan #	tare wt (mg)	final wt (mg)	wt count	avg. wt/ organism
1	30.857	31.489	20	0.032
2	27.722	28.368	20	0.032
3	28.424	29.053	20	0.031
4	28.685	29.279	20	0.030
5	29.117	29.808	20	0.035

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)
1	120	9454F	Control	1		10	10	0	100.0	0.0	27.379	10	30.860	3.48	0.35
2	137	9454F	Control	2		10	9	1	90.0	10.0	27.889	9	31.014	3.13	0.35
3	98	9454F	Control	3		10	10	0	100.0	0.0	29.033	10	32.195	3.16	0.32
4	10	9454F	Control	4		10	10	0	100.0	0.0	27.479	10	30.512	3.03	0.30
5	45	9454F	Control	5		10	10	0	100.0	0.0	29.697	10	32.557	2.86	0.29
6	126	9454F	Control	6		10	9	1	90.0	10.0	27.740	9	30.422	2.68	0.30
7	143	9454F	Control	7		10	10	0	100.0	0.0	29.150	10	32.589	3.44	0.34
8	154	9454F	Control	8	wq replicate	10	9	1	90.0	10.0	27.525	9	30.737	3.21	0.36
9	146	9435F	LW2-G207	1		10	9	1	90.0	10.0	28.789	9	31.743	2.95	0.33
10	9	9435F	LW2-G207	2		10	8	2	80.0	20.0	29.996	8	32.580	2.58	0.32
11	3	9435F	LW2-G207	3		10	9	1	90.0	10.0	27.066	9	29.237	2.17	0.24
12	86	9435F	LW2-G207	4		10	7	3	70.0	30.0	29.593	7	31.797	2.20	0.31
13	72	9435F	LW2-G207	5		10	10	0	100.0	0.0	26.988	10	29.947	2.96	0.30
14	80	9435F	LW2-G207	6		10	10	0	100.0	0.0	28.513	10	31.014	2.50	0.25
15	32	9435F	LW2-G207	7		10	10	0	100.0	0.0	29.162	10	31.705	2.54	0.25
16	101	9435F	LW2-G207	8	wq replicate	10	8	2	80.0	20.0	27.291	8	30.036	2.75	0.34
17	40	9436F	LW2-G209	1		10	10	0	100.0	0.0	25.078	10	28.586	3.51	0.35
18	119	9436F	LW2-G209	2		10	9	1	90.0	10.0	32.179	9	35.734	3.56	0.40
19	130	9436F	LW2-G209	3		10	9	1	90.0	10.0	28.880	9	32.624	3.74	0.42
20	160	9436F	LW2-G209	4		10	10	0	100.0	0.0	29.953	10	34.906	4.95	0.50
21	62	9436F	LW2-G209	5		10	10	0	100.0	0.0	31.529	10	35.098	3.57	0.36
22	136	9436F	LW2-G209	6		10	10	0	100.0	0.0	29.287	10	33.558	4.27	0.43
23	35	9436F	LW2-G209	7		10	9	1	90.0	10.0	29.185	9	32.447	3.26	0.36
24	49	9436F	LW2-G209	8	wq replicate	10	10	0	100.0	0.0	26.834	10	29.844	3.01	0.30
25	141	9437F	LW2-G198	1		10	9	1	90.0	10.0	28.640	9	31.711	3.07	0.34
26	16	9437F	LW2-G198	2		10	10	0	100.0	0.0	30.111	10	32.616	2.51	0.25
27	71	9437F	LW2-G198	3		10	10	0	100.0	0.0	30.409	10	33.159	2.75	0.28
28	64	9437F	LW2-G198	4		10	10	0	100.0	0.0	29.543	10	31.938	2.40	0.24
29	78	9437F	LW2-G198	5		10	9	1	90.0	10.0	29.918	6	31.750	1.83	0.31
30	53	9437F	LW2-G198	6		10	10	0	100.0	0.0	28.406	10	31.858	3.45	0.35
31	23	9437F	LW2-G198	7		10	10	0	100.0	0.0	27.710	10	30.397	2.69	0.27
32	68	9437F	LW2-G198	8	wq replicate	10	10	0	100.0	0.0	28.822	10	31.386	2.56	0.26

	SURV	MORT	PSURV	PMORT	WT
Mean	9.6	0.4	96.3	3.8	0.32
SD	0.5	0.5	5.2	5.2	0.03
n	8	8	8	8	8
Mean	8.9	1.1	88.8	11.3	0.29
SD	1.1	1.1	11.3	11.3	0.04
n	8	8	8	8	8
Mean	9.6	0.4	96.3	3.8	0.39
SD	0.5	0.5	5.2	5.2	0.06
n	8	8	8	8	8
Mean	9.8	0.3	97.5	2.5	0.29
SD	0.5	0.5	4.6	4.6	0.04
n	8	8	8	8	8

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ANC07962
BZTO104(e)007962

Test Number: P686-13

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
33	66	9438F	LW2-G199	1		10	10	0	100.0	0.0	30.005	10	32.822	2.82	0.28						
34	12	9438F	LW2-G199	2		10	7	3	70.0	30.0	29.175	7	31.070	1.90	0.27						
35	89	9438F	LW2-G199	3		10	9	1	90.0	10.0	26.948	9	29.671	2.72	0.30						
36	51	9438F	LW2-G199	4		10	9	1	90.0	10.0	31.619	9	34.393	2.77	0.31						
37	153	9438F	LW2-G199	5		10	9	1	90.0	10.0	27.042	9	29.956	2.91	0.32	Mean	8.9	1.1	88.8	11.3	0.29
38	48	9438F	LW2-G199	6		10	10	0	100.0	0.0	25.836	10	28.641	2.81	0.28	SD	1.0	1.0	9.9	9.9	0.02
39	95	9438F	LW2-G199	7		10	9	1	90.0	10.0	30.510	9	33.259	2.75	0.31	n	8	8	8	8	8
40	79	9438F	LW2-G199	8	wq replicate	10	8	2	80.0	20.0	28.712	8	30.850	2.14	0.27						
41	148	9439F	LW2-G204	1		10	10	0	100.0	0.0	28.958	10	31.285	2.33	0.23						
42	20	9439F	LW2-G204	2		10	10	0	100.0	0.0	25.969	10	28.666	2.70	0.27						
43	88	9439F	LW2-G204	3		10	10	0	100.0	0.0	28.314	10	30.430	2.12	0.21						
44	114	9439F	LW2-G204	4		10	10	0	100.0	0.0	27.801	10	30.529	2.73	0.27						
45	85	9439F	LW2-G204	5		10	10	0	100.0	0.0	28.468	10	30.638	2.17	0.22	Mean	9.8	0.3	97.5	2.5	0.24
46	14	9439F	LW2-G204	6		10	10	0	100.0	0.0	27.742	10	29.566	1.82	0.18	SD	0.5	0.5	4.6	4.6	0.04
47	60	9439F	LW2-G204	7		10	9	1	90.0	10.0	27.268	9	29.602	2.33	0.26	n	8	8	8	8	8
48	33	9439F	LW2-G204	8	wq replicate	10	9	1	90.0	10.0	28.128	9	30.770	2.64	0.29						
49	149	9440F	LW2-G202	1		10	9	1	90.0	10.0	30.071	9	32.694	2.62	0.29						
50	94	9440F	LW2-G202	2		10	9	1	90.0	10.0	27.492	9	29.757	2.27	0.25						
51	108	9440F	LW2-G202	3		13	13	0	100.0	0.0	28.153	13	31.765	3.61	0.28						
52	46	9440F	LW2-G202	4		10	10	0	100.0	0.0	27.454	10	30.296	2.84	0.28						
53	157	9440F	LW2-G202	5		10	10	0	100.0	0.0	28.100	10	31.314	3.21	0.32	Mean	10.0	0.4	96.3	3.8	0.29
54	92	9440F	LW2-G202	6		10	9	1	90.0	10.0	29.276	9	32.004	2.73	0.30	SD	1.3	0.5	5.2	5.2	0.03
55	44	9440F	LW2-G202	7		10	10	0	100.0	0.0	27.901	10	30.453	2.55	0.26	n	8	8	8	8	8
56	150	9440F	LW2-G202	8	wq replicate	10	10	0	100.0	0.0	28.443	10	31.574	3.13	0.31						
57	133	9441F	LW2-G231	1		10	10	0	100.0	0.0	27.768	10	31.031	3.26	0.33						
58	112	9441F	LW2-G231	2		10	8	2	80.0	20.0	29.969	8	32.873	2.90	0.36						
59	131	9441F	LW2-G231	3		10	9	1	90.0	10.0	28.782	9	31.976	3.19	0.35						
60	38	9441F	LW2-G231	4		10	10	0	100.0	0.0	26.344	10	28.612	2.27	0.23						
61	124	9441F	LW2-G231	5		10	8	2	80.0	20.0	31.020	8	33.302	2.28	0.29	Mean	9.3	0.8	92.5	7.5	0.30
62	28	9441F	LW2-G231	6		10	10	0	100.0	0.0	29.530	10	31.942	2.41	0.24	SD	0.9	0.9	8.9	8.9	0.05
63	39	9441F	LW2-G231	7		10	9	1	90.0	10.0	29.648	9	32.332	2.68	0.30	n	8	8	8	8	8
64	156	9441F	LW2-G231	8	wq replicate	10	10	0	100.0	0.0	26.402	10	29.312	2.91	0.29						
65	30	9442F	LW2-G234	1		10	10	0	100.0	0.0	27.859	10	30.743	2.88	0.29						
66	132	9442F	LW2-G234	2		10	10	0	100.0	0.0	29.896	10	33.404	3.51	0.35						
67	135	9442F	LW2-G234	3		10	9	1	90.0	10.0	29.850	9	32.933	3.08	0.34						
68	155	9442F	LW2-G234	4		10	10	0	100.0	0.0	28.412	10	31.424	3.01	0.30						
69	111	9442F	LW2-G234	5		10	9	1	90.0	10.0	29.402	9	32.427	3.03	0.34	Mean	9.1	0.9	91.3	8.8	0.31
70	142	9442F	LW2-G234	6		10	9	1	90.0	10.0	28.057	9	30.600	2.54	0.28	SD	1.0	1.0	9.9	9.9	0.04
71	25	9442F	LW2-G234	7		10	9	1	90.0	10.0	29.203	9	31.245	2.04	0.23	n	8	8	8	8	8
72	18	9442F	LW2-G234	8	wq replicate	10	7	3	70.0	30.0	29.594	7	31.961	2.37	0.34						

4/1 to 4/29

ANC07963
BZTO104(e)007963

Test Number: P686-13

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
73	96	9443F	LW2-G155	1		10	10	0	100.0	0.0	27.852	10	30.266	2.41	0.24						
74	56	9443F	LW2-G155	2		10	9	1	90.0	10.0	29.696	9	31.829	2.13	0.24						
75	129	9443F	LW2-G155	3		10	8	2	80.0	20.0	28.608	8	30.244	1.64	0.20						
76	41	9443F	LW2-G155	4		10	10	0	100.0	0.0	27.564	10	29.426	1.86	0.19						
77	159	9443F	LW2-G155	5		10	10	0	100.0	0.0	28.859	10	30.690	1.83	0.18	Mean	9.6	0.4	96.3	3.8	0.22
78	59	9443F	LW2-G155	6		10	10	0	100.0	0.0	30.749	10	32.917	2.17	0.22	SD	0.7	0.7	7.4	7.4	0.02
79	5	9443F	LW2-G155	7		10	10	0	100.0	0.0	29.550	10	31.767	2.22	0.22	n	8	8	8	8	8
80	138	9443F	LW2-G155	8	wq replicate	10	10	0	100.0	0.0	29.024	10	31.391	2.37	0.24						
81	4	9444F	LW2-G166	1		10	10	0	100.0	0.0	27.770	10	30.146	2.38	0.24						
82	100	9444F	LW2-G166	2		10	9	1	90.0	10.0	26.154	9	28.927	2.77	0.31						
83	13	9444F	LW2-G166	3		10	8	2	80.0	20.0	28.630	8	31.222	2.59	0.32						
84	17	9444F	LW2-G166	4		10	9	1	90.0	10.0	28.530	9	31.100	2.57	0.29						
85	103	9444F	LW2-G166	5		10	7	3	70.0	30.0	29.066	7	31.521	2.46	0.35	Mean	8.5	1.5	85.0	15.0	0.30
86	128	9444F	LW2-G166	6		10	9	1	90.0	10.0	27.541	9	29.920	2.38	0.26	SD	1.1	1.1	10.7	10.7	0.04
87	37	9444F	LW2-G166	7		10	9	1	90.0	10.0	28.734	9	31.486	2.75	0.31	n	8	8	8	8	8
88	1	9444F	LW2-G166	8	wq replicate	10	7	3	70.0	30.0	29.163	7	31.536	2.37	0.34						
89	104	9445F	LW2-G163	1		10	9	1	90.0	10.0	29.613	9	32.362	2.75	0.31						
90	118	9445F	LW2-G163	2		10	8	2	80.0	20.0	30.850	8	33.872	3.02	0.38						
91	27	9445F	LW2-G163	3		10	9	1	90.0	10.0	28.524	9	31.551	3.03	0.34						
92	122	9445F	LW2-G163	4		10	10	0	100.0	0.0	28.024	10	30.776	2.75	0.28						
93	11	9445F	LW2-G163	5		10	10	0	100.0	0.0	29.350	10	32.188	2.84	0.28	Mean	9.5	0.5	95.0	5.0	0.32
94	73	9445F	LW2-G163	6		10	10	0	100.0	0.0	28.667	10	32.355	3.69	0.37	SD	0.8	0.8	7.6	7.6	0.04
95	31	9445F	LW2-G163	7		10	10	0	100.0	0.0	27.055	10	30.028	2.97	0.30	n	8	8	8	8	8
96	61	9445F	LW2-G163	8	wq replicate	10	10	0	100.0	0.0	30.339	10	33.682	3.34	0.33						
97	144	9446F	LW2-G161	1		10	7	3	70.0	30.0	29.882	7	31.710	1.83	0.26						
98	69	9446F	LW2-G161	2		10	6	4	60.0	40.0	28.094	6	29.934	1.84	0.31						
99	139	9446F	LW2-G161	3		10	7	3	70.0	30.0	26.626	7	28.479	1.85	0.26						
100	57	9446F	LW2-G161	4		10	6	4	60.0	40.0	27.615	6	29.617	2.00	0.33						
101	134	9446F	LW2-G161	5		10	6	4	60.0	40.0	28.259	6	29.876	1.62	0.27	Mean	6.8	3.3	67.5	32.5	0.27
102	75	9446F	LW2-G161	6		10	7	3	70.0	30.0	28.234	7	30.260	2.03	0.29	SD	1.0	1.0	10.4	10.4	0.05
103	43	9446F	LW2-G161	7		10	9	1	90.0	10.0	27.787	9	29.299	1.51	0.17	n	8	8	8	8	8
104	8	9446F	LW2-G161	8	wq replicate	10	6	4	60.0	40.0	28.763	6	30.478	1.72	0.29						
105	140	9447F	LW2-G160	1		10	9	1	90.0	10.0	28.407	9	31.026	2.62	0.29						
106	24	9447F	LW2-G160	2		10	7	3	70.0	30.0	28.583	7	30.629	2.05	0.29						
107	36	9447F	LW2-G160	3		10	9	1	90.0	10.0	28.676	9	31.357	2.68	0.30						
108	107	9447F	LW2-G160	4		10	7	3	70.0	30.0	28.091	7	30.260	2.17	0.31						
109	145	9447F	LW2-G160	5		10	8	2	80.0	20.0	28.542	8	30.909	2.37	0.30	Mean	7.9	2.1	78.8	21.3	0.29
110	15	9447F	LW2-G160	6		10	9	1	90.0	10.0	26.927	9	29.555	2.63	0.29	SD	1.1	1.1	11.3	11.3	0.02
111	106	9447F	LW2-G160	7		10	8	2	80.0	20.0	29.038	8	31.330	2.29	0.29	n	8	8	8	8	8
112	22	9447F	LW2-G160	8	wq replicate	10	6	4	60.0	40.0	28.884	6	30.355	1.47	0.25						

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Test Number: P686-13

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
113	74	9448F	LW2-G157	1		10	8	2	80.0	20.0	28.424	8	30.409	1.99	0.25						
114	91	9448F	LW2-G157	2		10	4	6	40.0	60.0	28.737	4	29.885	1.15	0.29						
115	81	9448F	LW2-G157	3		10	7	3	70.0	30.0	27.150	7	29.230	2.08	0.30						
116	7	9448F	LW2-G157	4		10	6	4	60.0	40.0	28.125	6	29.686	1.56	0.26						
117	123	9448F	LW2-G157	5		10	3	7	30.0	70.0	28.657	3	29.699	1.04	0.35	Mean	4.9	5.1	48.8	51.3	0.29
118	65	9448F	LW2-G157	6		10	4	6	40.0	60.0	24.624	4	25.574	0.95	0.24	SD	2.0	2.0	20.3	20.3	0.04
119	117	9448F	LW2-G157	7		10	5	5	50.0	50.0	27.616	5	29.323	1.71	0.34	n	8	8	8	8	8
120	19	9448F	LW2-G157	8	wq replicate	10	2	8	20.0	80.0	29.636	2	30.230	0.59	0.30						
121	83	9449F	LW2-G038	1		10	10	0	100.0	0.0	27.984	10	31.099	3.12	0.31						
122	125	9449F	LW2-G038	2		10	10	0	100.0	0.0	28.890	10	32.800	3.91	0.39						
123	109	9449F	LW2-G038	3		10	10	0	100.0	0.0	29.060	10	32.661	3.60	0.36						
124	70	9449F	LW2-G038	4		10	10	0	100.0	0.0	28.919	10	31.380	2.46	0.25						
125	110	9449F	LW2-G038	5		10	10	0	100.0	0.0	27.770	10	30.952	3.18	0.32	Mean	9.9	0.1	98.8	1.3	0.33
126	21	9449F	LW2-G038	6		10	10	0	100.0	0.0	27.698	10	31.314	3.62	0.36	SD	0.4	0.4	3.5	3.5	0.05
127	34	9449F	LW2-G038	7		10	9	1	90.0	10.0	29.199	9	31.756	2.56	0.28	n	8	8	8	8	8
128	63	9449F	LW2-G038	8	wq replicate	10	10	0	100.0	0.0	30.963	10	34.464	3.50	0.35						
129	84	9450F	LW2-G123	1		10	9	1	90.0	10.0	30.929	9	32.822	1.89	0.21						
130	102	9450F	LW2-G123	2		10	9	1	90.0	10.0	27.545	9	29.900	2.36	0.26						
131	152	9450F	LW2-G123	3		10	10	0	100.0	0.0	28.973	10	30.833	1.86	0.19						
132	77	9450F	LW2-G123	4		10	10	0	100.0	0.0	30.194	10	32.022	1.83	0.18						
133	93	9450F	LW2-G123	5		10	6	4	60.0	40.0	26.959	6	28.544	1.59	0.26	Mean	8.6	1.4	86.3	13.8	0.22
134	82	9450F	LW2-G123	6		10	8	2	80.0	20.0	30.165	8	31.951	1.79	0.22	SD	1.3	1.3	13.0	13.0	0.03
135	67	9450F	LW2-G123	7		10	9	1	90.0	10.0	27.423	9	29.220	1.80	0.20	n	8	8	8	8	8
136	147	9450F	LW2-G123	8	wq replicate	10	8	2	80.0	20.0	29.026	7	30.386	1.36	0.19						
137	47	9451F	LW2-G244	1		10	10	0	100.0	0.0	30.878	10	33.542	2.66	0.27						
138	97	9451F	LW2-G244	2		10	9	1	90.0	10.0	27.797	9	30.520	2.72	0.30						
139	52	9451F	LW2-G244	3		10	8	2	80.0	20.0	27.884	8	31.009	3.13	0.39						
140	76	9451F	LW2-G244	4		10	10	0	100.0	0.0	27.127	10	30.214	3.09	0.31						
141	99	9451F	LW2-G244	5		10	10	0	100.0	0.0	27.122	10	30.440	3.32	0.33	Mean	9.4	0.6	93.8	6.3	0.30
142	26	9451F	LW2-G244	6		10	9	1	90.0	10.0	27.915	9	30.196	2.28	0.25	SD	0.7	0.7	7.4	7.4	0.04
143	6	9451F	LW2-G244	7		10	10	0	100.0	0.0	28.528	10	31.254	2.73	0.27	n	8	8	8	8	8
144	58	9451F	LW2-G244	8	wq replicate	10	9	1	90.0	10.0	28.317	9	31.036	2.72	0.30						
145	116	9452F	LW2-G247	1		10	9	1	90.0	10.0	25.822	9	28.484	2.66	0.30						
146	105	9452F	LW2-G247	2		10	10	0	100.0	0.0	28.622	10	31.374	2.75	0.28						
147	127	9452F	LW2-G247	3		10	10	0	100.0	0.0	29.451	10	31.185	1.73	0.17						
148	87	9452F	LW2-G247	4		10	10	0	100.0	0.0	29.153	10	32.026	2.87	0.29						
149	113	9452F	LW2-G247	5		10	9	1	90.0	10.0	28.636	9	31.246	2.61	0.29	Mean	9.8	0.3	97.5	2.5	0.26
150	115	9452F	LW2-G247	6		10	10	0	100.0	0.0	28.406	10	30.882	2.48	0.25	SD	0.5	0.5	4.6	4.6	0.05
151	54	9452F	LW2-G247	7		10	10	0	100.0	0.0	29.666	10	32.823	3.16	0.32	n	8	8	8	8	8
152	2	9452F	LW2-G247	8	wq replicate	10	10	0	100.0	0.0	29.740	10	31.955	2.22	0.22						

ANC07965
BZTO104(e)007965

Test Number: P686-13

Freshwater Sediment Test
28-day Hyalella azteca

INDEX	BKR	NAS SMPL	CLIENT DESCRIP	REPL		INIT	SURV	MORT	PSURV	PMORT	TARE WT (mg)	WT COUNT	DRY WT (mg)	TWT (mg)	WT (mg)		SURV	MORT	PSURV	PMORT	WT
153	42	9453F	LW2-G254	1		10	9	1	90.0	10.0	28.076	9	30.875	2.80	0.31						
154	158	9453F	LW2-G254	2		10	10	0	100.0	0.0	28.320	10	31.164	2.84	0.28						
155	121	9453F	LW2-G254	3		10	9	1	90.0	10.0	28.544	9	30.610	2.07	0.23						
156	29	9453F	LW2-G254	4		10	10	0	100.0	0.0	28.113	10	31.104	2.99	0.30						
157	151	9453F	LW2-G254	5		10	8	2	80.0	20.0	29.708	8	32.342	2.63	0.33	Mean	9.4	0.6	93.8	6.3	0.29
158	50	9453F	LW2-G254	6		10	10	0	100.0	0.0	27.990	10	30.410	2.42	0.24	SD	0.7	0.7	7.4	7.4	0.03
159	90	9453F	LW2-G254	7		10	9	1	90.0	10.0	28.776	9	31.462	2.69	0.30	n	8	8	8	8	8
160	55	9453F	LW2-G254	8	wq replicate	10	10	0	100.0	0.0	27.706	10	30.668	2.96	0.30						

Note: Beaker #78 lost 3 animals in transfer to weigh pan. Beaker #147 lost 1 animal in transfer to weigh pan.

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ANC07966
BZTO104(e)007966

Water Quality Data

	NAS	CLIENT			Overlying water							Interstitial water	
BKR	SMPL	DESCRIP	REPL	DAY	TEMP	DO	COND	pH	HARD	ALK	NH3	NH3	pH
BULK SEDIMENT POREWATER													
	9435F	LW2-G207										8.9	5.6
	9436F	LW2-G209										1.4	5.8
	9437F	LW2-G198										3.3	5.9
	9438F	LW2-G199										4.1	6.0
	9439F	LW2-G204										2.7	6.4
	9440F	LW2-G202										3.9	6.3
	9441F	LW2-G231										3.7	6.3
	9442F	LW2-G234										3.3	6.1
	9443F	LW2-G155										7.7	6.2
	9444F	LW2-G166										3.7	6.2
	9445F	LW2-G163										---*	---*
	9446F	LW2-G161										2.9	6.3
	9447F	LW2-G160										7.3	6.7
	9448F	LW2-G157										9.3	6.5
	9449F	LW2-G038										4.5	6.2
	9450F	LW2-G123										3.6	6.3
	9451F	LW2-G244										8.6	6.2
	9452F	LW2-G247										1.7	6.4
	9453F	LW2-G254										1.2	6.1
	9454F	Control											

* insufficient sample size for analysis

ANC07967
BZTO104(e)007967

TEST OVERLYING WATER													
1	9444F	LW2-G166	8	0	22.9	7.1	170	6.8	51	40	0.3		
2	9452F	LW2-G247	8	0	22.9	7.2	165	6.6	43	50	0.2		
8	9446F	LW2-G161	8	0	22.9	7.4	170	6.6	51	50	0.4		
18	9442F	LW2-G234	8	0	22.9	7.3	160	6.6	43	40	0.4		
19	9448F	LW2-G157	8	0	22.9	7.1	170	6.5	51	40	0.8		
22	9447F	LW2-G160	8	0	22.9	7.2	180	6.4	60	50	1.0		
33	9439F	LW2-G204	8	0	22.9	7.2	160	6.6	43	40	0.6		
49	9436F	LW2-G209	8	0	22.9	7.4	170	6.6	51	50	0.3		
55	9453F	LW2-G254	8	0	22.9	7.0	165	6.5	43	40	<0.1		
58	9451F	LW2-G244	8	0	22.9	7.1	180	6.6	60	50	1.0		
61	9445F	LW2-G163	8	0	23.0	7.1	160	6.5	43	40	0.3		
63	9449F	LW2-G038	8	0	22.9	7.2	165	6.5	43	40	0.7		
68	9437F	LW2-G198	8	0	22.9	7.2	165	6.5	51	40	0.7		
79	9438F	LW2-G199	8	0	22.9	7.3	175	6.5	51	50	0.8		
101	9435F	LW2-G207	8	0	23.0	7.5	165	6.6	43	40	2.1		
138	9443F	LW2-G155	8	0	23.0	7.2	170	6.5	43	40	1.3		
147	9450F	LW2-G123	8	0	23.0	7.2	160	6.4	60	50	0.7		
150	9440F	LW2-G202	8	0	23.0	7.3	170	6.5	43	50	0.4		
154	9454F	Control	8	0	23.0	6.8	280	6.8	43	40	0.5		
156	9441F	LW2-G231	8	0	23.0	7.0	175	6.7	51	50	0.5		
1	9444F	LW2-G166	8	1	22.8								
2	9452F	LW2-G247	8	1	22.8								
8	9446F	LW2-G161	8	1	22.8								
18	9442F	LW2-G234	8	1	22.8								
19	9448F	LW2-G157	8	1	22.8								
22	9447F	LW2-G160	8	1	22.8								
33	9439F	LW2-G204	8	1	22.8								
49	9436F	LW2-G209	8	1	22.8								
55	9453F	LW2-G254	8	1	22.9								
58	9451F	LW2-G244	8	1	22.8								
61	9445F	LW2-G163	8	1	22.9								
63	9449F	LW2-G038	8	1	22.8								
68	9437F	LW2-G198	8	1	22.8								
79	9438F	LW2-G199	8	1	22.8								
101	9435F	LW2-G207	8	1	22.9								
138	9443F	LW2-G155	8	1	22.9								
147	9450F	LW2-G123	8	1	22.9								
150	9440F	LW2-G202	8	1	22.9								
154	9454F	Control	8	1	22.9								
156	9441F	LW2-G231	8	1	23.0								

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1	9444F	LW2-G166	8	2	22.4									
2	9452F	LW2-G247	8	2	22.4									
8	9446F	LW2-G161	8	2	22.4									
18	9442F	LW2-G234	8	2	22.3									
19	9448F	LW2-G157	8	2	22.3									
22	9447F	LW2-G160	8	2	22.3									
33	9439F	LW2-G204	8	2	22.2									
49	9436F	LW2-G209	8	2	22.2									
55	9453F	LW2-G254	8	2	22.2									
58	9451F	LW2-G244	8	2	22.2									
61	9445F	LW2-G163	8	2	22.3									
63	9449F	LW2-G038	8	2	22.2									
68	9437F	LW2-G198	8	2	22.2									
79	9438F	LW2-G199	8	2	22.2									
101	9435F	LW2-G207	8	2	22.3									
138	9443F	LW2-G155	8	2	22.4									
147	9450F	LW2-G123	8	2	22.4									
150	9440F	LW2-G202	8	2	22.4									
154	9454F	Control	8	2	22.3									
156	9441F	LW2-G231	8	2	22.3									
1	9444F	LW2-G166	8	3	22.5	7.2		6.8						
2	9452F	LW2-G247	8	3	22.4	7.3		6.7						
8	9446F	LW2-G161	8	3	22.4	7.3		6.7						
18	9442F	LW2-G234	8	3	22.3	7.5		6.7						
19	9448F	LW2-G157	8	3	22.3	7.7		6.6						
22	9447F	LW2-G160	8	3	22.3	7.6		6.6						
33	9439F	LW2-G204	8	3	22.3	7.5		6.6						
49	9436F	LW2-G209	8	3	22.3	7.8		6.6						
55	9453F	LW2-G254	8	3	22.4	7.6		6.6						
58	9451F	LW2-G244	8	3	22.3	7.9		6.6						
61	9445F	LW2-G163	8	3	22.4	7.3		6.6						
63	9449F	LW2-G038	8	3	22.3	7.5		6.6						
68	9437F	LW2-G198	8	3	22.3	7.5		6.6						
79	9438F	LW2-G199	8	3	22.3	7.8		6.6						
101	9435F	LW2-G207	8	3	22.5	7.8		6.6						
138	9443F	LW2-G155	8	3	22.4	7.3		6.6						
147	9450F	LW2-G123	8	3	22.3	7.7		6.6						
150	9440F	LW2-G202	8	3	22.4	7.8		6.6						
154	9454F	Control	8	3	22.4	7.7		6.6						
156	9441F	LW2-G231	8	3	22.5	7.5		6.6						

ANC07969
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1	9444F	LW2-G166	8	4	22.7									
2	9452F	LW2-G247	8	4	22.7									
8	9446F	LW2-G161	8	4	22.7									
18	9442F	LW2-G234	8	4	22.6									
19	9448F	LW2-G157	8	4	22.6									
22	9447F	LW2-G160	8	4	22.6									
33	9439F	LW2-G204	8	4	22.6									
49	9436F	LW2-G209	8	4	22.7									
55	9453F	LW2-G254	8	4	22.8									
58	9451F	LW2-G244	8	4	22.7									
61	9445F	LW2-G163	8	4	22.8									
63	9449F	LW2-G038	8	4	22.7									
68	9437F	LW2-G198	8	4	22.7									
79	9438F	LW2-G199	8	4	22.7									
101	9435F	LW2-G207	8	4	22.9									
138	9443F	LW2-G155	8	4	22.8									
147	9450F	LW2-G123	8	4	22.8									
150	9440F	LW2-G202	8	4	22.9									
154	9454F	Control	8	4	22.9									
156	9441F	LW2-G231	8	4	22.9									
1	9444F	LW2-G166	8	5	23.1	5.7	170	6.8						
2	9452F	LW2-G247	8	5	23.0	5.9	165	6.7						
8	9446F	LW2-G161	8	5	22.9	6.1	170	6.8						
18	9442F	LW2-G234	8	5	22.9	6.2	160	6.8						
19	9448F	LW2-G157	8	5	22.9	5.9	165	6.7						
22	9447F	LW2-G160	8	5	22.9	6.0	160	6.7						
33	9439F	LW2-G204	8	5	22.9	6.1	160	6.7						
49	9436F	LW2-G209	8	5	22.9	6.1	160	6.8						
55	9453F	LW2-G254	8	5	23.0	7.4	160	6.8						
58	9451F	LW2-G244	8	5	22.9	6.3	160	6.8						
61	9445F	LW2-G163	8	5	23.0	6.7	160	6.8						
63	9449F	LW2-G038	8	5	22.9	5.7	160	6.7						
68	9437F	LW2-G198	8	5	22.9	6.5	160	6.8						
79	9438F	LW2-G199	8	5	22.9	6.1	165	6.8						
101	9435F	LW2-G207	8	5	23.0	6.1	160	6.7						
138	9443F	LW2-G155	8	5	22.9	6.2	160	6.7						
147	9450F	LW2-G123	8	5	22.9	5.6	160	6.7						
150	9440F	LW2-G202	8	5	23.0	5.7	165	6.7						
154	9454F	Control	8	5	23.0	5.9	180	6.7						
156	9441F	LW2-G231	8	5	23.1	6.1	165	6.7						

ANC07970
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1	9444F	LW2-G166	8	6	23.0									
2	9452F	LW2-G247	8	6	23.0									
8	9446F	LW2-G161	8	6	22.8									
18	9442F	LW2-G234	8	6	22.6									
19	9448F	LW2-G157	8	6	22.7									
22	9447F	LW2-G160	8	6	22.6									
33	9439F	LW2-G204	8	6	22.6									
49	9436F	LW2-G209	8	6	22.6									
55	9453F	LW2-G254	8	6	22.7									
58	9451F	LW2-G244	8	6	22.6									
61	9445F	LW2-G163	8	6	22.7									
63	9449F	LW2-G038	8	6	22.6									
68	9437F	LW2-G198	8	6	22.6									
79	9438F	LW2-G199	8	6	22.6									
101	9435F	LW2-G207	8	6	22.8									
138	9443F	LW2-G155	8	6	22.7									
147	9450F	LW2-G123	8	6	22.6									
150	9440F	LW2-G202	8	6	22.7									
154	9454F	Control	8	6	22.7									
156	9441F	LW2-G231	8	6	22.8									
1	9444F	LW2-G166	8	7	22.4	6.0		6.8						
2	9452F	LW2-G247	8	7	22.5	5.9		6.5						
8	9446F	LW2-G161	8	7	22.5	6.1		6.4						
18	9442F	LW2-G234	8	7	22.5	6.2		6.4						
19	9448F	LW2-G157	8	7	22.5	6.0		6.3						
22	9447F	LW2-G160	8	7	22.5	5.8		6.3						
33	9439F	LW2-G204	8	7	22.5	6.0		6.2						
49	9436F	LW2-G209	8	7	22.6	5.9		6.2						
55	9453F	LW2-G254	8	7	22.7	6.1		6.3						
58	9451F	LW2-G244	8	7	22.6	6.2		6.2						
61	9445F	LW2-G163	8	7	22.7	5.9		6.3						
63	9449F	LW2-G038	8	7	22.6	6.2		6.3						
68	9437F	LW2-G198	8	7	22.6	6.8		6.3						
79	9438F	LW2-G199	8	7	22.6	5.6		6.3						
101	9435F	LW2-G207	8	7	22.8	5.9		6.3						
138	9443F	LW2-G155	8	7	22.8	5.2		6.2						
147	9450F	LW2-G123	8	7	22.7	5.5		6.1						
150	9440F	LW2-G202	8	7	22.6	5.8		6.3						
154	9454F	Control	8	7	22.7	5.7		6.2						
156	9441F	LW2-G231	8	7	22.7	6.4		6.2						

ANC07971
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1	9444F	LW2-G166	8	8	23.1									
2	9452F	LW2-G247	8	8	23.1									
8	9446F	LW2-G161	8	8	23.2									
18	9442F	LW2-G234	8	8	23.2									
19	9448F	LW2-G157	8	8	23.2									
22	9447F	LW2-G160	8	8	23.1									
33	9439F	LW2-G204	8	8	23.1									
49	9436F	LW2-G209	8	8	23.1									
55	9453F	LW2-G254	8	8	23.2									
58	9451F	LW2-G244	8	8	23.1									
61	9445F	LW2-G163	8	8	23.2									
63	9449F	LW2-G038	8	8	23.2									
68	9437F	LW2-G198	8	8	23.1									
79	9438F	LW2-G199	8	8	23.1									
101	9435F	LW2-G207	8	8	23.2									
138	9443F	LW2-G155	8	8	23.1									
147	9450F	LW2-G123	8	8	23.1									
150	9440F	LW2-G202	8	8	23.1									
154	9454F	Control	8	8	23.2									
156	9441F	LW2-G231	8	8	23.1									
1	9444F	LW2-G166	8	9	22.7									
2	9452F	LW2-G247	8	9	22.6									
8	9446F	LW2-G161	8	9	22.6									
18	9442F	LW2-G234	8	9	22.5									
19	9448F	LW2-G157	8	9	22.6									
22	9447F	LW2-G160	8	9	22.6									
33	9439F	LW2-G204	8	9	22.6									
49	9436F	LW2-G209	8	9	22.6									
55	9453F	LW2-G254	8	9	22.7									
58	9451F	LW2-G244	8	9	22.7									
61	9445F	LW2-G163	8	9	22.7									
63	9449F	LW2-G038	8	9	22.6									
68	9437F	LW2-G198	8	9	22.6									
79	9438F	LW2-G199	8	9	22.6									
101	9435F	LW2-G207	8	9	22.7									
138	9443F	LW2-G155	8	9	22.6									
147	9450F	LW2-G123	8	9	22.5									
150	9440F	LW2-G202	8	9	22.6									
154	9454F	Control	8	9	22.7									
156	9441F	LW2-G231	8	9	22.8									

ANC07972
BZTO104(e)007972

1	9444F	LW2-G166	8	10	23.0	6.0	6.5							
2	9452F	LW2-G247	8	10	22.9	6.2	6.5							
8	9446F	LW2-G161	8	10	22.8	6.2	6.5							
18	9442F	LW2-G234	8	10	22.8	6.2	6.5							
19	9448F	LW2-G157	8	10	22.9	6.3	6.4							
22	9447F	LW2-G160	8	10	22.8	5.5	6.4							
33	9439F	LW2-G204	8	10	22.8	6.0	6.4							
49	9436F	LW2-G209	8	10	22.9	6.4	6.4							
55	9453F	LW2-G254	8	10	22.9	6.4	6.5							
58	9451F	LW2-G244	8	10	22.9	5.9	6.4							
61	9445F	LW2-G163	8	10	22.9	6.4	6.4							
63	9449F	LW2-G038	8	10	22.9	5.1	6.4							
68	9437F	LW2-G198	8	10	22.9	5.6	6.4							
79	9438F	LW2-G199	8	10	22.9	5.6	6.4							
101	9435F	LW2-G207	8	10	22.9	5.3	6.4							
138	9443F	LW2-G155	8	10	22.9	5.3	6.4							
147	9450F	LW2-G123	8	10	22.9	5.5	6.5							
150	9440F	LW2-G202	8	10	23.0	6.0	6.5							
154	9454F	Control	8	10	23.0	6.2	6.5							
156	9441F	LW2-G231	8	10	23.2	6.1	6.5							
1	9444F	LW2-G166	8	11	22.9									
2	9452F	LW2-G247	8	11	22.8									
8	9446F	LW2-G161	8	11	22.7									
18	9442F	LW2-G234	8	11	22.7									
19	9448F	LW2-G157	8	11	22.7									
22	9447F	LW2-G160	8	11	22.7									
33	9439F	LW2-G204	8	11	22.7									
49	9436F	LW2-G209	8	11	22.8									
55	9453F	LW2-G254	8	11	22.8									
58	9451F	LW2-G244	8	11	22.7									
61	9445F	LW2-G163	8	11	22.8									
63	9449F	LW2-G038	8	11	22.7									
68	9437F	LW2-G198	8	11	22.7									
79	9438F	LW2-G199	8	11	22.7									
101	9435F	LW2-G207	8	11	22.8									
138	9443F	LW2-G155	8	11	22.7									
147	9450F	LW2-G123	8	11	22.7									
150	9440F	LW2-G202	8	11	22.7									
154	9454F	Control	8	11	22.7									
156	9441F	LW2-G231	8	11	22.9									

ANC07973
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1	9444F	LW2-G166	8	12	23.1	5.7		6.2						
2	9452F	LW2-G247	8	12	23.0	5.6		6.1						
8	9446F	LW2-G161	8	12	23.0	5.9		6.0						
18	9442F	LW2-G234	8	12	23.0	6.1		6.0						
19	9448F	LW2-G157	8	12	23.1	5.6		6.1						
22	9447F	LW2-G160	8	12	23.0	5.4		6.1						
33	9439F	LW2-G204	8	12	23.0	5.6		6.0						
49	9436F	LW2-G209	8	12	23.0	5.9		6.0						
55	9453F	LW2-G254	8	12	23.1	6.2		6.2						
58	9451F	LW2-G244	8	12	23.1	5.9		6.1						
61	9445F	LW2-G163	8	12	23.1	6.3		6.1						
63	9449F	LW2-G038	8	12	23.1	5.4		6.1						
68	9437F	LW2-G198	8	12	23.1	5.6		6.2						
79	9438F	LW2-G199	8	12	23.2	5.7		6.1						
101	9435F	LW2-G207	8	12	23.1	5.8		6.1						
138	9443F	LW2-G155	8	12	23.1	5.2		6.1						
147	9450F	LW2-G123	8	12	23.1	5.9		6.2						
150	9440F	LW2-G202	8	12	23.1	6.0		6.1						
154	9454F	Control	8	12	23.1	6.0		6.2						
156	9441F	LW2-G231	8	12	23.2	6.3		6.2						
1	9444F	LW2-G166	8	13	22.5									
2	9452F	LW2-G247	8	13	22.5									
8	9446F	LW2-G161	8	13	22.4									
18	9442F	LW2-G234	8	13	22.4									
19	9448F	LW2-G157	8	13	22.4									
22	9447F	LW2-G160	8	13	22.4									
33	9439F	LW2-G204	8	13	22.4									
49	9436F	LW2-G209	8	13	22.5									
55	9453F	LW2-G254	8	13	22.6									
58	9451F	LW2-G244	8	13	22.5									
61	9445F	LW2-G163	8	13	22.6									
63	9449F	LW2-G038	8	13	22.5									
68	9437F	LW2-G198	8	13	22.5									
79	9438F	LW2-G199	8	13	22.5									
101	9435F	LW2-G207	8	13	22.7									
138	9443F	LW2-G155	8	13	22.6									
147	9450F	LW2-G123	8	13	22.5									
150	9440F	LW2-G202	8	13	22.6									
154	9454F	Control	8	13	22.6									
156	9441F	LW2-G231	8	13	22.6									

ANC07974
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1	9444F	LW2-G166	8	14	23.0	5.8		6.2						
2	9452F	LW2-G247	8	14	22.9	5.8		6.0						
8	9446F	LW2-G161	8	14	22.8	6.0		6.1						
18	9442F	LW2-G234	8	14	22.9	5.8		6.1						
19	9448F	LW2-G157	8	14	22.9	5.2		6.1						
22	9447F	LW2-G160	8	14	22.8	5.4		6.1						
33	9439F	LW2-G204	8	14	22.8	5.4		6.1						
49	9436F	LW2-G209	8	14	22.9	5.6		6.2						
55	9453F	LW2-G254	8	14	23.0	6.0		6.1						
58	9451F	LW2-G244	8	14	22.9	5.4		6.1						
61	9445F	LW2-G163	8	14	22.9	6.1		6.1						
63	9449F	LW2-G038	8	14	22.9	5.4		6.2						
68	9437F	LW2-G198	8	14	22.9	5.6		6.2						
79	9438F	LW2-G199	8	14	22.8	5.6		6.2						
101	9435F	LW2-G207	8	14	23.0	5.3		6.2						
138	9443F	LW2-G155	8	14	22.9	5.1		6.2						
147	9450F	LW2-G123	8	14	23.0	5.7		6.2						
150	9440F	LW2-G202	8	14	23.1	5.7		6.2						
154	9454F	Control	8	14	23.1	6.0		6.3						
156	9441F	LW2-G231	8	14	23.2	5.8		6.3						
1	9444F	LW2-G166	8	15	22.4									
2	9452F	LW2-G247	8	15	22.4									
8	9446F	LW2-G161	8	15	22.3									
18	9442F	LW2-G234	8	15	22.4									
19	9448F	LW2-G157	8	15	22.4									
22	9447F	LW2-G160	8	15	22.3									
33	9439F	LW2-G204	8	15	22.3									
49	9436F	LW2-G209	8	15	22.3									
55	9453F	LW2-G254	8	15	22.4									
58	9451F	LW2-G244	8	15	22.4									
61	9445F	LW2-G163	8	15	22.4									
63	9449F	LW2-G038	8	15	22.3									
68	9437F	LW2-G198	8	15	22.3									
79	9438F	LW2-G199	8	15	22.3									
101	9435F	LW2-G207	8	15	22.4									
138	9443F	LW2-G155	8	15	22.4									
147	9450F	LW2-G123	8	15	22.4									
150	9440F	LW2-G202	8	15	22.4									
154	9454F	Control	8	15	22.4									
156	9441F	LW2-G231	8	15	22.5									

ANC07975
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1	9444F	LW2-G166	8	16	23.1									
2	9452F	LW2-G247	8	16	23.0									
8	9446F	LW2-G161	8	16	23.0									
18	9442F	LW2-G234	8	16	22.9									
19	9448F	LW2-G157	8	16	22.9									
22	9447F	LW2-G160	8	16	22.9									
33	9439F	LW2-G204	8	16	22.9									
49	9436F	LW2-G209	8	16	23.0									
55	9453F	LW2-G254	8	16	23.0									
58	9451F	LW2-G244	8	16	22.9									
61	9445F	LW2-G163	8	16	23.0									
63	9449F	LW2-G038	8	16	22.9									
68	9437F	LW2-G198	8	16	22.9									
79	9438F	LW2-G199	8	16	23.0									
101	9435F	LW2-G207	8	16	23.1									
138	9443F	LW2-G155	8	16	23.3									
147	9450F	LW2-G123	8	16	23.2									
150	9440F	LW2-G202	8	16	23.4									
154	9454F	Control	8	16	23.4									
156	9441F	LW2-G231	8	16	23.3									
1	9444F	LW2-G166	8	17	22.8	5.6		6.4						
2	9452F	LW2-G247	8	17	22.7	5.5		6.3						
8	9446F	LW2-G161	8	17	22.7	6.1		6.3						
18	9442F	LW2-G234	8	17	22.6	5.9		6.3						
19	9448F	LW2-G157	8	17	22.6	5.7		6.3						
22	9447F	LW2-G160	8	17	22.6	5.8		6.3						
33	9439F	LW2-G204	8	17	22.6	5.6		6.3						
49	9436F	LW2-G209	8	17	22.6	5.7		6.3						
55	9453F	LW2-G254	8	17	22.7	5.7		6.4						
58	9451F	LW2-G244	8	17	22.6	5.8		6.4						
61	9445F	LW2-G163	8	17	22.7	6.2		6.3						
63	9449F	LW2-G038	8	17	22.7	5.6		6.3						
68	9437F	LW2-G198	8	17	22.6	5.7		6.3						
79	9438F	LW2-G199	8	17	22.7	5.6		6.4						
101	9435F	LW2-G207	8	17	22.9	5.3		6.4						
138	9443F	LW2-G155	8	17	22.8	5.6		6.3						
147	9450F	LW2-G123	8	17	22.8	5.7		6.3						
150	9440F	LW2-G202	8	17	22.7	5.7		6.3						
154	9454F	Control	8	17	22.8	6.0		6.3						
156	9441F	LW2-G231	8	17	22.9	5.8		6.4						

ANC07976
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1	9444F	LW2-G166	8	18	22.9									
2	9452F	LW2-G247	8	18	22.9									
8	9446F	LW2-G161	8	18	22.7									
18	9442F	LW2-G234	8	18	22.8									
19	9448F	LW2-G157	8	18	22.8									
22	9447F	LW2-G160	8	18	22.8									
33	9439F	LW2-G204	8	18	22.8									
49	9436F	LW2-G209	8	18	22.8									
55	9453F	LW2-G254	8	18	22.8									
58	9451F	LW2-G244	8	18	22.9									
61	9445F	LW2-G163	8	18	22.8									
63	9449F	LW2-G038	8	18	22.8									
68	9437F	LW2-G198	8	18	22.8									
79	9438F	LW2-G199	8	18	22.8									
101	9435F	LW2-G207	8	18	22.8									
138	9443F	LW2-G155	8	18	22.9									
147	9450F	LW2-G123	8	18	22.9									
150	9440F	LW2-G202	8	18	22.9									
154	9454F	Control	8	18	23.0									
156	9441F	LW2-G231	8	18	23.0									
1	9444F	LW2-G166	8	19	23.2	5.4	160	6.2						
2	9452F	LW2-G247	8	19	23.1	5.3	160	6.1						
8	9446F	LW2-G161	8	19	23.1	6.2	160	6.1						
18	9442F	LW2-G234	8	19	23.0	5.8	160	6.1						
19	9448F	LW2-G157	8	19	23.1	5.6	160	6.1						
22	9447F	LW2-G160	8	19	23.1	5.3	165	6.1						
33	9439F	LW2-G204	8	19	23.0	5.5	160	6.1						
49	9436F	LW2-G209	8	19	23.1	5.6	165	6.1						
55	9453F	LW2-G254	8	19	23.2	5.1	165	6.1						
58	9451F	LW2-G244	8	19	23.1	4.8	165	6.1						
61	9445F	LW2-G163	8	19	23.1	6.0	160	6.1						
63	9449F	LW2-G038	8	19	23.1	6.1	165	6.1						
68	9437F	LW2-G198	8	19	23.0	5.5	165	6.2						
79	9438F	LW2-G199	8	19	23.1	5.3	165	6.2						
101	9435F	LW2-G207	8	19	23.2	4.8	160	6.1						
138	9443F	LW2-G155	8	19	23.1	5.5	160	6.1						
147	9450F	LW2-G123	8	19	23.0	6.0	160	6.1						
150	9440F	LW2-G202	8	19	23.0	5.6	160	6.1						
154	9454F	Control	8	19	23.1	5.8	170	6.2						
156	9441F	LW2-G231	8	19	23.1	6.0	165	6.2						

ANC07977
BZTO104(e)007977

1	9444F	LW2-G166	8	20	23.2									
2	9452F	LW2-G247	8	20	23.2									
8	9446F	LW2-G161	8	20	23.1									
18	9442F	LW2-G234	8	20	23.1									
19	9448F	LW2-G157	8	20	23.1									
22	9447F	LW2-G160	8	20	23.1									
33	9439F	LW2-G204	8	20	23.1									
49	9436F	LW2-G209	8	20	23.1									
55	9453F	LW2-G254	8	20	23.2									
58	9451F	LW2-G244	8	20	23.1									
61	9445F	LW2-G163	8	20	23.1									
63	9449F	LW2-G038	8	20	23.1									
68	9437F	LW2-G198	8	20	23.1									
79	9438F	LW2-G199	8	20	23.1									
101	9435F	LW2-G207	8	20	23.2									
138	9443F	LW2-G155	8	20	23.1									
147	9450F	LW2-G123	8	20	23.0									
150	9440F	LW2-G202	8	20	23.1									
154	9454F	Control	8	20	23.1									
156	9441F	LW2-G231	8	20	23.0									
1	9444F	LW2-G166	8	21	23.0	7.1		6.7						
2	9452F	LW2-G247	8	21	22.9	6.8		6.6						
8	9446F	LW2-G161	8	21	22.9	7.0		6.6						
18	9442F	LW2-G234	8	21	22.9	7.2		6.6						
19	9448F	LW2-G157	8	21	22.9	7.3		6.5						
22	9447F	LW2-G160	8	21	22.9	6.7		6.6						
33	9439F	LW2-G204	8	21	22.9	6.9		6.6						
49	9436F	LW2-G209	8	21	22.9	7.1		6.6						
55	9453F	LW2-G254	8	21	22.9	7.1		6.7						
58	9451F	LW2-G244	8	21	22.9	6.6		6.6						
61	9445F	LW2-G163	8	21	22.9	6.9		6.6						
63	9449F	LW2-G038	8	21	23.0	6.5		6.6						
68	9437F	LW2-G198	8	21	22.9	6.7		6.7						
79	9438F	LW2-G199	8	21	23.0	6.8		6.7						
101	9435F	LW2-G207	8	21	23.1	6.5		6.7						
138	9443F	LW2-G155	8	21	23.0	6.7		6.6						
147	9450F	LW2-G123	8	21	22.9	6.9		6.6						
150	9440F	LW2-G202	8	21	22.9	7.0		6.7						
154	9454F	Control	8	21	22.9	7.0		6.7						
156	9441F	LW2-G231	8	21	23.0	7.2		6.8						

ANC07978
BZTO104(e)007978

1	9444F	LW2-G166	8	22	23.0										
2	9452F	LW2-G247	8	22	23.0										
8	9446F	LW2-G161	8	22	23.0										
18	9442F	LW2-G234	8	22	22.9										
19	9448F	LW2-G157	8	22	22.9										
22	9447F	LW2-G160	8	22	22.9										
33	9439F	LW2-G204	8	22	22.9										
49	9436F	LW2-G209	8	22	22.9										
55	9453F	LW2-G254	8	22	22.9										
58	9451F	LW2-G244	8	22	23.0										
61	9445F	LW2-G163	8	22	23.0										
63	9449F	LW2-G038	8	22	23.0										
68	9437F	LW2-G198	8	22	22.9										
79	9438F	LW2-G199	8	22	23.0										
101	9435F	LW2-G207	8	22	23.1										
138	9443F	LW2-G155	8	22	23.0										
147	9450F	LW2-G123	8	22	23.0										
150	9440F	LW2-G202	8	22	23.0										
154	9454F	Control	8	22	23.1										
156	9441F	LW2-G231	8	22	23.1										
1	9444F	LW2-G166	8	23	22.9										
2	9452F	LW2-G247	8	23	22.7										
8	9446F	LW2-G161	8	23	22.7										
18	9442F	LW2-G234	8	23	22.7										
19	9448F	LW2-G157	8	23	22.7										
22	9447F	LW2-G160	8	23	22.7										
33	9439F	LW2-G204	8	23	22.6										
49	9436F	LW2-G209	8	23	22.7										
55	9453F	LW2-G254	8	23	22.7										
58	9451F	LW2-G244	8	23	22.7										
61	9445F	LW2-G163	8	23	22.7										
63	9449F	LW2-G038	8	23	22.7										
68	9437F	LW2-G198	8	23	22.7										
79	9438F	LW2-G199	8	23	22.7										
101	9435F	LW2-G207	8	23	22.8										
138	9443F	LW2-G155	8	23	22.7										
147	9450F	LW2-G123	8	23	22.7										
150	9440F	LW2-G202	8	23	22.7										
154	9454F	Control	8	23	22.8										
156	9441F	LW2-G231	8	23	22.8										

ANC07979
BZTO104(e)007979

1	9444F	LW2-G166	8	24	22.7	6.0		6.1						
2	9452F	LW2-G247	8	24	22.6	6.2		6.1						
8	9446F	LW2-G161	8	24	22.5	6.1		6.1						
18	9442F	LW2-G234	8	24	22.5	6.4		6.1						
19	9448F	LW2-G157	8	24	22.5	6.4		6.1						
22	9447F	LW2-G160	8	24	22.5	6.2		6.2						
33	9439F	LW2-G204	8	24	22.5	6.2		6.2						
49	9436F	LW2-G209	8	24	22.5	6.2		6.2						
55	9453F	LW2-G254	8	24	22.6	6.5		6.2						
58	9451F	LW2-G244	8	24	22.5	6.1		6.2						
61	9445F	LW2-G163	8	24	22.6	6.6		6.2						
63	9449F	LW2-G038	8	24	22.5	6.0		6.2						
68	9437F	LW2-G198	8	24	22.4	6.1		6.3						
79	9438F	LW2-G199	8	24	22.5	5.8		6.4						
101	9435F	LW2-G207	8	24	22.7	6.0		6.3						
138	9443F	LW2-G155	8	24	22.7	6.2		6.3						
147	9450F	LW2-G123	8	24	22.6	6.4		6.5						
150	9440F	LW2-G202	8	24	22.7	6.2		6.5						
154	9454F	Control	8	24	22.8	6.0		6.9						
156	9441F	LW2-G231	8	24	23.0	6.6		6.6						
1	9444F	LW2-G166	8	25	23.0									
2	9452F	LW2-G247	8	25	22.9									
8	9446F	LW2-G161	8	25	22.8									
18	9442F	LW2-G234	8	25	22.8									
19	9448F	LW2-G157	8	25	22.7									
22	9447F	LW2-G160	8	25	22.8									
33	9439F	LW2-G204	8	25	22.7									
49	9436F	LW2-G209	8	25	22.7									
55	9453F	LW2-G254	8	25	22.9									
58	9451F	LW2-G244	8	25	22.8									
61	9445F	LW2-G163	8	25	22.9									
63	9449F	LW2-G038	8	25	22.9									
68	9437F	LW2-G198	8	25	22.8									
79	9438F	LW2-G199	8	25	22.8									
101	9435F	LW2-G207	8	25	22.9									
138	9443F	LW2-G155	8	25	22.8									
147	9450F	LW2-G123	8	25	22.8									
150	9440F	LW2-G202	8	25	23.0									
154	9454F	Control	8	25	23.1									
156	9441F	LW2-G231	8	25	23.1									

ANC07980
BZTO104(e)007980

1	9444F	LW2-G166	8	26	23.0	6.0	160	6.1						
2	9452F	LW2-G247	8	26	23.0	5.5	160	6.2						
8	9446F	LW2-G161	8	26	22.9	5.4	165	6.1						
18	9442F	LW2-G234	8	26	22.9	5.8	160	6.1						
19	9448F	LW2-G157	8	26	22.9	5.6	160	6.2						
22	9447F	LW2-G160	8	26	22.9	5.1	165	6.1						
33	9439F	LW2-G204	8	26	22.9	5.4	160	6.2						
49	9436F	LW2-G209	8	26	22.9	5.5	170	6.2						
55	9453F	LW2-G254	8	26	23.0	6.2	165	6.3						
58	9451F	LW2-G244	8	26	22.9	5.1	160	6.2						
61	9445F	LW2-G163	8	26	22.9	5.8	165	6.2						
63	9449F	LW2-G038	8	26	22.9	4.8	165	6.2						
68	9437F	LW2-G198	8	26	22.9	4.8	170	6.2						
79	9438F	LW2-G199	8	26	23.0	5.0	170	6.4						
101	9435F	LW2-G207	8	26	23.0	5.0	160	6.3						
138	9443F	LW2-G155	8	26	23.0	5.0	165	6.2						
147	9450F	LW2-G123	8	26	22.9	6.2	160	6.3						
150	9440F	LW2-G202	8	26	22.9	5.1	175	6.3						
154	9454F	Control	8	26	23.1	4.8	215	8.0						
156	9441F	LW2-G231	8	26	23.2	6.1	165	6.5						
1	9444F	LW2-G166	8	27	23.0									
2	9452F	LW2-G247	8	27	22.9									
8	9446F	LW2-G161	8	27	22.8									
18	9442F	LW2-G234	8	27	22.8									
19	9448F	LW2-G157	8	27	22.8									
22	9447F	LW2-G160	8	27	22.8									
33	9439F	LW2-G204	8	27	22.8									
49	9436F	LW2-G209	8	27	22.9									
55	9453F	LW2-G254	8	27	22.9									
58	9451F	LW2-G244	8	27	22.8									
61	9445F	LW2-G163	8	27	23.0									
63	9449F	LW2-G038	8	27	22.9									
68	9437F	LW2-G198	8	27	22.8									
79	9438F	LW2-G199	8	27	22.9									
101	9435F	LW2-G207	8	27	23.0									
138	9443F	LW2-G155	8	27	23.0									
147	9450F	LW2-G123	8	27	22.8									
150	9440F	LW2-G202	8	27	23.0									
154	9454F	Control	8	27	23.0									
156	9441F	LW2-G231	8	27	23.0									

ANC07981
BZTO104(e)007981

1	9444F	LW2-G166	8	28	23.0	6.7	160	6.3	34	40	<0.1		
2	9452F	LW2-G247	8	28	23.0	6.2	160	6.1	34	40	<0.1		
8	9446F	LW2-G161	8	28	23.0	6.7	160	6.3	51	40	<0.1		
18	9442F	LW2-G234	8	28	22.9	6.9	160	6.2	43	40	<0.1		
19	9448F	LW2-G157	8	28	22.9	7.1	160	6.2	43	40	<0.1		
22	9447F	LW2-G160	8	28	22.8	6.9	160	6.3	43	40	<0.1		
33	9439F	LW2-G204	8	28	22.8	6.9	160	6.2	43	40	<0.1		
49	9436F	LW2-G209	8	28	22.8	7.2	160	6.3	51	40	<0.1		
55	9453F	LW2-G254	8	28	22.8	7.3	160	6.3	34	40	<0.1		
58	9451F	LW2-G244	8	28	22.8	6.9	160	6.3	34	40	0.1		
61	9445F	LW2-G163	8	28	22.9	7.3	160	6.3	43	40	<0.1		
63	9449F	LW2-G038	8	28	22.8	7.1	160	6.3	43	40	0.1		
68	9437F	LW2-G198	8	28	22.8	7.1	160	6.4	43	40	<0.1		
79	9438F	LW2-G199	8	28	22.9	7.0	160	6.4	43	40	<0.1		
101	9435F	LW2-G207	8	28	22.9	7.1	160	6.3	34	40	<0.1		
138	9443F	LW2-G155	8	28	22.8	7.3	160	6.4	43	40	<0.1		
147	9450F	LW2-G123	8	28	22.8	7.4	160	6.4	51	40	<0.1		
150	9440F	LW2-G202	8	28	22.8	7.0	160	6.5	43	40	<0.1		
154	9454F	Control	8	28	22.8	7.1	170	7.3	43	50	<0.1		
156	9441F	LW2-G231	8	28	22.9	7.3	160	6.7	43	40	<0.1		
				Mean	22.8	6.2	165	6.4	45	43	---	4.5	6.2
				SD	0.2	0.7	14	0.3	7	4	---	2.6	0.3
				n	580	260	100	260	40	40	40	19	19
				Min	22.2	4.8	160	6.0	34	40	<0.1	1.2	5.6
				Max	23.4	7.9	280	8.0	60	50	2.1	9.3	6.7

ANC07982
BZTO104(e)007982

CHAIN-OF-CUSTODY RECORDS

Windward Environmental

CHAIN-OF-CUSTODY/TEST REQUEST FORM

1327

Project/Client Name: PORTLAND HARBOR RI/FS ROUND 2
Windward Project No: 03.28.04.28
Contact Name: HELLE ANDERSEN
Sampled By: THAI DO

Ship to: NORTHWESTERN AQUATIC SCIENCES
Attn: GERALD IRISSARRI
Shipping address: NEWPORT, OREGON

Shipping Date: HAND DEL'D
Airbill Number:

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required)							Comments / Instructions [Jar tag number(s)]
					10-d Chir.	28-d Hya.		NAS Sample #				
09.07.04	10:48	LW2-G207	4L/4	SEDIMENT	✓	✓		94	35F			INTERNAL TEMP OF
09.07.04	11:16	LW2-G209	4L/4	SEDIMENT	✓	✓		94	36F			ICE SHEETS UPON
09.07.04	11:57	LW2-G198	4L/4	SEDIMENT	✓	✓		94	37F			ARRIVAL AT LAB:
09.07.04	12:15	LW2-G199	4L/4	SEDIMENT	✓	✓		94	38F			#1 0.5°C
09.07.04	12:32	LW2-G204	4L/4	SEDIMENT	✓	✓		94	39F			#2 0.5°C
09.07.04	13:02	LW2-G202	4L/4	SEDIMENT	✓	✓		94	40F			#3 0.0°C
09.07.04	13:23	LW2-G231	4L/4	SEDIMENT	✓	✓		94	41F			#4 1.0°C
09.07.04	13:39	LW2-G234	4L/4	SEDIMENT	✓	✓		94	42F			#5 1.0°C
09.08.04	09:01	LW2-G155	4L/4	SEDIMENT	✓	✓		94	43F			#6 0.5°C
09.08.04	10:09	LW2-G166	4L/4	SEDIMENT	✓	✓		94	44F			
09.08.04	10:51	LW2-G163	4L/4	SEDIMENT	✓	✓		94	45F			
09.08.04	11:24	LW2-G161	4L/4	SEDIMENT	✓	✓		94	46F			
09.08.04	11:44	LW2-G160	4L/4	SEDIMENT	✓	✓		94	47F			
		Total Number of Containers	52/76	Purchase Order / Statement of Work #								

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1) Released by:	1) Rec'd by:	2) Released by:	1) Rec'd by:
Print name: THAI DO	Print name: GERALD IRISSARRI	Print name:	
Signature:	Signature:	Signature:	
Company: WINDWARD ENVIRONMENTAL LLC	Company: NORTHWESTERN AQUATIC SCIENCES	Company:	Company:
Date/Time: 09.09.04/10:05	Date/Time: 9-9-04 10:05	Date/Time:	Date/Time:

* Distribution: White and yellow copies accompany shipment; pink-consignor's copy; white-consignee return with results; yellow-consignee's copy.

* Instructions for completion of Chain-of-Custody/Test Request Form on back.

Wind Ward environmental LLC
- 200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: 206.378.1364
Fax: 206.217.0089

To be completed by Laboratory upon sample receipt:

Date of receipt:	Laboratory W.O.#:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

ANC07984
BZTO104(e)007984

2 of 2

Windward Environmental

CHAIN-OF-CUSTODY/TEST REQUEST FORM

1328

Project/Client Name: PORTLAND HARBOR RI/FS ROUND 2
Windward Project No: 03.28.04.28
Contact Name: HELLE ANDERSEN
Sampled By: THAI DO

Ship to: NORTHWESTERN AQUATIC SCIENCES
Attn: GERALD IRISSARRI
Shipping address: NEWPORT, OREGON

Shipping Date: HAND DELD
Airbill Number:

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required) 10-d Chir	28-d Hya		MAS Sample #				Comments / Instructions [Jar tag number(s)]
09.08.04	12:09	LW2-G157	4L/4	SEDIMENT	✓	✓		9448F				
09.08.04	13:35	LW2-G038	4L/4	SEDIMENT	✓	✓		9449F				
09.08.04	14:10	LW2-G123	4L/4	SEDIMENT	✓	✓		9450F				
09.08.04	15:41	LW2-G244	4L/4	SEDIMENT	✓	✓		9451F				
09.08.04	15:55	LW2-G247	4L/4	SEDIMENT	✓	✓		9452F				
09.08.04	17:09	LW2 G254	4L/4	SEDIMENT	✓	✓		9453F				
		Total Number of Containers	24/76	Purchase Order / Statement of Work #								

09 90 12 9

1) Released by:	1) Rec'd by:	2) Released by:	1) Rec'd by:
Print name: THAI DO	GERALD IRISSARRI	Print name:	
Signature:	Signature:	Signature:	
Company: WINDWARD ENVIRONMENTAL LLC	Company: NORTHWESTERN AQUATIC SCIENCES	Company:	Company:
Date/Time: 09.09.04/10:05	Date/Time: 09-09-04 10:05	Date/Time:	Date/Time:

* Distribution: White and yellow copies accompany shipment; pink-consignor's copy; white-consignee return with results; yellow-consignee's copy.
* Instructions for completion of Chain-of-Custody/Test Request Form on back.

Wind Ward environmental LLC
- 200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: 206.378.1364
Fax: 206.217.0089

To be completed by Laboratory upon sample receipt:

Date of receipt:	Laboratory W.O. #
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

ANC07985
BZTO104(e)007985

APPENDIX II

RAW DATA – REFERENCE TOXICANT TEST

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS- _____

ACUTE TOXICITY TEST (ALL SPECIES)

Test No. 999-1842 Client: QC Test Investigator _____

Test Type (rangefinding/definitive) _____ Test Length (hr) 96

Species *Hyalella azteca*

STUDY MANAGEMENT

Client: QC test

Client's Study Monitor: QC test

Testing Laboratory: Northwestern Aquatic Sciences

Test Location: Newport Laboratory

Laboratory's Study Personnel:

Proj. Man./Study Dir. G.J. Irissarri GJI

QA Officer L. K. Nemeth

1. GA Butler GB 2. M.S. Redmond MSR

3. Susan Gage [illegible] 4. William T. Montgomery [illegible]

Test Beginning: 9-17-04 1145 Test Ending: 9-21-04 1330

TEST MATERIAL Lot No.: MALINCKRODT TNZ

Description: Cadmium as $CdCl_2 \cdot 2.5H_2O$ (1.0 mg/ml) Prepared: 4-2-03

NAS Sample No.				
Date of Collection:				
Date of Receipt:				
Temperature (deg C):				
Dissolved oxygen (mg/L):				
pH:				
Conductivity (umhos/cm):				
Hardness (mg/L):				
Alkalinity (mg/L):				
Salinity (ppt):				
Total chlorine (mg/L):				
Total ammonia-N (mg/L):				
:				

DILUTION WATER

Description: Moderately hard synthetic water

Date of Preparation/Collection: 9-2-04

Water Quality: Cond. (umhos/cm): 290 Salinity (ppt) _____ pH 7.5

Hardness (mg/L as $CaCO_3$): 85 Alkalinity (mg/L as $CaCO_3$): 70

Treatments: Aerated ≥ 24 hrs

Age of dilu water slightly exceeded EPA Specifications

TEST LOCATION

Test conducted in (circle one): room 1 room 2 trailer water bath other: _____

Randomization chart:

A	60	7.5	Ø	30	3.75	15				
B	Ø	30	3.75	7.5	15	60				

Error codes: 1) Correction of handwriting error
2) Written in wrong location; entry deleted
3) Wrong date deleted; replaced with correct date
4) [illegible] found in measurement; measurement repeated

Revised 12-5-01

ANC07987
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NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-_____

ACUTE TOXICITY TEST (ALL SPECIES)

Test No. 999-1842 Client QC Test Investigator _____

TEST ORGANISMS

Species: *Hyalella azteca* Age: 6-7 days Size: _____

Source: Chesapeake Cultures, Hayes, VA Date received: 9-15-04

Acclimation Data:

Date	Temp. (deg.C)	DO (mg/L)	pH	Cond. umhos/cm	Hardness (mg/L)	Alkalinity (mg/L)	Feeding Amount	Feeding description	Water changes
9-15-04	23.1	>15.0	7.2	370	157	20[illegible]	1 ml/beaker	YTC	yes
9-16-04	22.1	8.5	7.6	280	102	105	1	1	yes
9-17-04	21.6	8.0	7.4	240	68	60	1	1	yes
Mean	22.3	10.5	7.4	297	108	120			
S.D.	0.8	3.9	0.2	67	43	72			
(N)	3	3	3	3	3	3			

Photoperiod during acclimation: 16:8, L:D

TEST PROCEDURES AND CONDITIONS

Test concentrations (50% series recommended): 60, 30, 15, 7.5, 3.75, 0 ug/L

Test chamber: 250 ml glass beakers Test volume: 100 ml

Replicates/treatment: 10 Organisms/treatment: 20 (10/rep)

Test water changes: None Aeration during test: None

Feeding: 0.5 ml YTC suspension per beaker on days 0 and 2

Duration: 24-hr, 48-hr, 96-hr Test temperature (deg.C): 23 ± 1 or 20 ± 1

Beaker placement: Stratified randomization Photoperiod: 16:8, L:D

MISCELLANEOUS NOTES

Test solution preparation:

1st working stock made by 1:99 (1ml ↑ 100 ml) dilution of concentrated 1.0 mg/ml Cd stock.
Final conc.: 10 ug/L.

2nd working stock made by 10:90 (10ml ↑ 100 ml) dilution of concentrated 1st working stock.
Final conc.: 1ug/L.

Test concentration (ug/L)	ml of 2nd working stock per **200** ml	Dilution water
60	12	Brought up to final volume of 200 ml with dilution water and distributed evenly between two replicates
30	6	
15	3	
7.5	1.5	
3.75	0.75	
0	0	

6J1 9-17-04

ANC07988
BZTO104(e)007988

NORTHWESTERN AQUATIC SCIENCES PROTOCOL NO. NAS-_____

ACUTE TOXICITY TEST (ALL SPECIES)

Test No. 999-1842 Client QC Test

DAILY RECORD SHEET

Day 0 (9/17/04) MB

Conc. (ug/L)	Temp. (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	Survivors A	Survivors B
1. 60	23.6	8.6	275	7.6	85	70	10	10
2. 30	23.6	8.6	275	7.7			10	10
3. 15	23.6	8.7	280	7.7			10	10
4. 7.5	23.6	8.6	280	7.7			10	10
5. 3.75	23.6	8.6	280	7.7			10	10
6. 0	23.6	8.6	280	7.7	85	70	10	10
All animals fed 0.5 ml YTC suspension. Initials:								

Day 1 (9/18/04) MB/GJ

Conc. (ug/L)	Temp. (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	Survivors A	Survivors B
1. 60	22.9	8.4	280	7.6			10	10
2. 30	22.9	8.3	290	7.6			10	10
3. 15	22.9	8.4	290	7.6			10	10
4. 7.5	22.9	8.6	290	7.6			10	10
5. 3.75	22.9	8.5	290	7.6			10	10
6. 0	22.8	8.3	290	7.6			10	10

Day 2 (9/19/04) MB/GJ

Conc. (ug/L)	Temp. (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	Survivors A	Survivors B
1. 60	23.6	8.3	285	7.6			Ø (1DD)	Ø (1DD)
2. 30	23.6	8.2	290	7.6			Ø (1DD)	Ø (1DD)
3. 15	23.6	8.2	290	7.7			5 (5D)	4 (6D)
4. 7.5	23.6	8.1	290	7.7			10	10
5. 3.75	23.6	8.3	290	7.7			10	10
6. 0	23.6	8.2	290	7.7			10	10
All animals fed 0.5 ml YTC suspension. Initials: MB								

Day 3 (9/20/04) MB/GJ

Conc. (ug/L)	Temp. (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	Survivors A	Survivors B
1. 60	—	—	—	—			Ø	Ø
2. 30	—	—	—	—			Ø	Ø
3. 15	22.8	8.6	300	7.4			Ø (5D)	2 (2D)
4. 7.5	22.8	8.6	300	7.4			5 (5D)	8 (2D)
5. 3.75	22.7	8.5	300	7.4			10	10
6. 0	22.7	8.5	300	7.4			10	10

Day 4 (9/21/04) MB/GJ

Conc. (ug/L)	Temp. (deg.C)	DO (ppm)	Cond. (umhos/cm)	pH	Hardness (mg/L)	Alkalinity (mg/L)	Survivors A	Survivors B
1. 60	—	—	—	—	—	—	Ø	Ø
2. 30	—	—	—	—			Ø	Ø
3. 15	23.6	8.6	315	7.3			Ø	1 (1D)
4. 7.5	23.6	8.5	320	7.3			3 (2D)	6 (2D)
5. 3.75	23.6	8.5	315	7.4			9 (1D)	8 (2D)
6. 0	23.6	8.4	320	7.4	85	70	10	10
Mean	23.3	8.5	293	7.6				
SD	0.4	0.2	13	2.6	3	3		
n	26	26	26					

Revised 12-5-01

ANC07989
BZTO104(e)007989

Chesapeake Cultures

P.O. Box 507 Hayes, VA 23072 (804) 693-4046 (804)694-4704 fax
www.c-cultures.com
e-mail growfish@c-cultures.com

NAS

Shipment Information

Species *Hyalella azteca* Date *9/14/04*

Age / Size *43-4d, 1.2-1.5mm* P.O. No. *verbal*

Quanitity *2400+* Invoice No. *4824*

Temperature *24°C* Salinity *–* pH *7.95*

Notes *Thank you!*

Received by WTM 9-15-04

Biologist *Elizabeth Williams*

* *Please inspect shipment and report any problem immediately* *

ANC07990
BZTO104(e)007990

Acute 96-hr Toxicity Test-96 Hr Survival

Start Date:	9/17/04 11:45	Test ID:	999-1842	Sample ID:	REF-Ref Toxicant
End Date:	9/21/04 13:30	Lab ID:	ORNAS-Northwestern Aquati	Sample Type:	CDCL-Cadmium chloride
Sample Date:		Protocol:	EPAA 91-EPA Acute	Test Species:	HA-Hyalella azteca
Comments:					

Conc-ug/L	1	2
D-Control	1.0000	1.0000
3.75	0.9000	0.8000
7.5	0.3000	0.6000
15	0.0000	0.1000
30	0.0000	0.0000
60	0.0000	0.0000

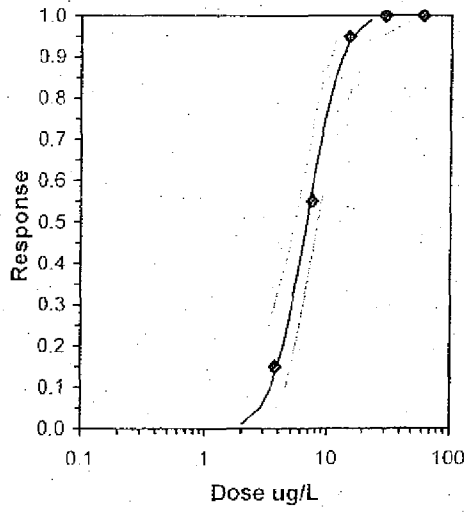
			Transform: Arcsin Square Root					Number	Total
Conc-ug/L	Mean	N-Mean	Mean	Min	Max	CV%	N	Resp	Number
D-Control	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0	20
3.75	0.8500	0.8500	1.1781	1.1071	1.2490	8.517	2	3	20
7.5	0.4500	0.4500	0.7329	0.5796	0.8861	29.567	2	11	20
15	0.0500	0.0500	0.2403	0.1588	0.3218	47.963	2	19	20
30	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2	20	20
60	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2	20	20

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Normality of the data set cannot be confirmed				
Equality of variance cannot be confirmed				

Maximum Likelihood-Probit

Parameter	Value	SE	95% Fiducial Limits		Control	Chi-Sq	Critical	P-value	Mu	Sigma	Iter
Slope	4.43839	0.87484	2.7237	6.15307	0	0.2417	7.81472	0.97	0.82538	0.22531	3
Intercept	1.33663	0.76893	-0.1705	2.84372							
TSCR											

Point	Probits	ug/L	95% Fiducial Limits	
EC01	2.674	2.00097	0.86847	2.95982
EC05	3.355	2.84962	1.52393	3.87277
EC10	3.718	3.44065	2.0475	4.48945
EC15	3.964	3.90722	2.49125	4.97543
EC20	4.158	4.32275	2.90384	5.41328
EC25	4.326	4.71429	3.3033	5.83458
EC40	4.747	5.86547	4.49719	7.1628
EC50	5.000	6.68935	5.32598	8.23785
EC60	5.253	7.62895	6.20838	9.62553
EC75	5.674	9.49185	7.74932	12.8886
EC80	5.842	10.3516	8.38829	14.5989
EC85	6.036	11.4525	9.16062	16.9533
EC90	6.282	13.0055	10.1858	20.5595
EC95	6.645	15.7029	11.8444	27.5377
EC99	7.326	22.3628	15.5431	48.1801



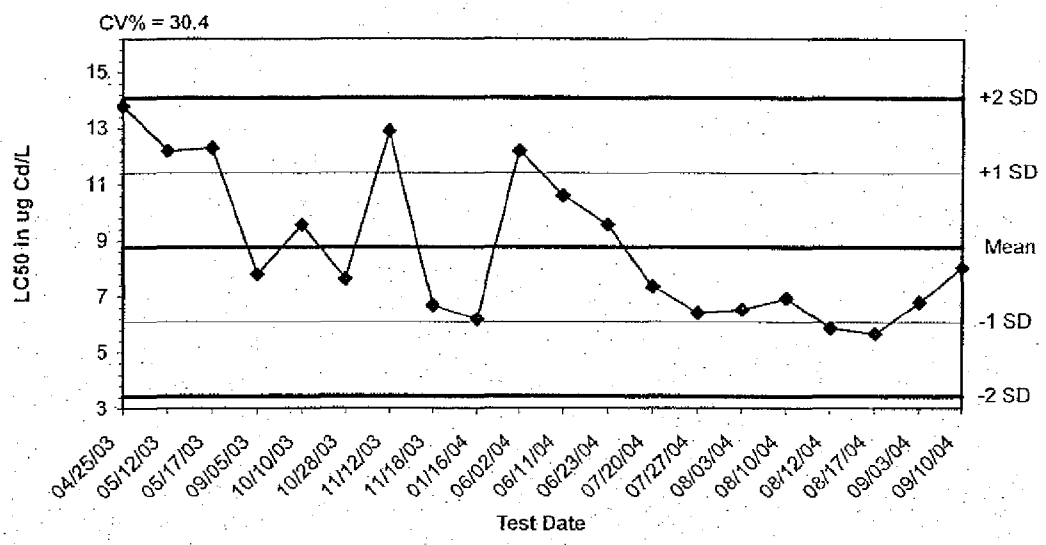
ANC07991
BZTO104(e)007991

Test: AT-Acute 96-hr Toxicity Test							Test ID: 999-1842		
Species: HA-Hyalella azteca							Protocol: EPAA 91-EPA Acute		
Sample ID: REF-Ref Toxicant							Sample Type: CDCL-Cadmium chloride		
Start Date: 9/17/04 11:45			End Date: 9/21/04 13:30				Lab ID: ORNAS-Northwestern Aquatic Sciences		
Pos	ID	Rep	Group	Start	24 Hr	48 Hr	72 Hr	96 Hr	Notes
	1	1	D-Control	10				10	
	2	2	D-Control	10				10	
	3	1	3.750	10				9	
	4	2	3.750	10				8	
	5	1	7.500	10				3	
	6	2	7.500	10				6	
	7	1	15.000	10				0	
	8	2	15.000	10				1	
	9	1	30.000	10				0	
	10	2	30.000	10				0	
	11	1	60.000	10				0	
	12	2	60.000	10				0	

Comments: Data entry verified against laboratory bench sheets.
MSR
9-29-04

ANC07992
BZTO104(e)007992

Hyalella azteca 96-hr reference toxicant test - last 20 points



Dates	Values	Mean	-1 SD	-2 SD	+1 SD	+2 SD
04/25/03	13.8000	8.7500	6.0883	3.4267	11.4117	14.0733
05/12/03	12.2000	8.7500	6.0883	3.4267	11.4117	14.0733
05/17/03	12.3000	8.7500	6.0883	3.4267	11.4117	14.0733
09/05/03	7.7900	8.7500	6.0883	3.4267	11.4117	14.0733
10/10/03	9.5600	8.7500	6.0883	3.4267	11.4117	14.0733
10/28/03	7.6200	8.7500	6.0883	3.4267	11.4117	14.0733
11/12/03	12.9000	8.7500	6.0883	3.4267	11.4117	14.0733
11/18/03	6.6700	8.7500	6.0883	3.4267	11.4117	14.0733
01/16/04	6.1900	8.7500	6.0883	3.4267	11.4117	14.0733
06/02/04	12.2000	8.7500	6.0883	3.4267	11.4117	14.0733
06/11/04	10.6000	8.7500	6.0883	3.4267	11.4117	14.0733
06/23/04	9.5600	8.7500	6.0883	3.4267	11.4117	14.0733
07/20/04	7.3500	8.7500	6.0883	3.4267	11.4117	14.0733
07/27/04	6.4100	8.7500	6.0883	3.4267	11.4117	14.0733
08/03/04	6.5300	8.7500	6.0883	3.4267	11.4117	14.0733
08/10/04	6.9300	8.7500	6.0883	3.4267	11.4117	14.0733
08/12/04	5.8800	8.7500	6.0883	3.4267	11.4117	14.0733
08/17/04	5.6800	8.7500	6.0883	3.4267	11.4117	14.0733
09/03/04	6.8000	8.7500	6.0883	3.4267	11.4117	14.0733
09/10/04	8.0300	8.7500	6.0883	3.4267	11.4117	14.0733

mrk
9-20-04

ANC07993
BZTO104(e)007993