WATER QUALITY ANALYSES - HRM LAKE SAMPLING PROGRAM

See NOTES below

Spring 2009	Units	RDL	CCME Guideline Level	ALBRO LAKE	BARRETT LAKE	BELL LAKE	BISSETT LAKE	BLACK DUCK POND
Community				Dartmouth	Beaverbank	Dartmouth	Cole Harbour	Lakeside
Sampling Date & Time	DD/MM/YYYY 24hr time			02/06/2009 8:15	11/05/2009 13:21	01/06/2009 10:25	03/06/2009 12:05	26/05/2009 10:15
FIELD DATA								
Secchi Depth	Meters	N/A		3.0	N/A	N/A	3.2	N/A
Temp	Celsius	N/A		15.89	13.04	15.13	16.16	15.54
Dissolved Oxygen	mg/L	0.2	6-9.5	10.63	--	10.80	10.91	102.20
pH	pH	N/A	6.5-9.0	7.41	8.08	7.77	7.17	5.58
Specific Conductance	mS/cm	0.001		0.492	0.247	0.058	0.728	0.748
TDS	g/L	0.01		0.320	--	0.035	0.473	0.486
Salinity	ppt	0.01		0.24	--	0.02	0.36	0.37
INORGANICS								
Total Alkalinity (Total as CaCO3)	mg/L	5		8	14	ND	16	ND
Dissolved Chloride (Cl)	mg/L	1		131	65	11	152	209
Colour	TCU	5		14	28	9	13	5
Total Kjeldahl Nitrogen (TKN)	mg/L	0.4		0.5	ND	0.4	0.5	0.5
Nitrate + Nitrite	mg/L	0.05	13000	ND	0.12	ND	0.13	0.07
Nitrate (N)	mg/L	0.05		ND	0.12	ND	0.13	0.07
Nitrite (N)	mg/L	0.05		ND	ND	ND	ND	ND
Nitrogen (Ammonia Nitrogen)	mg/L	0.05	19	0.06	ND	ND	ND	ND
Total Organic Carbon (C)	mg/L	0.5		24.2	5	2.6	4.4	3.2
Orthophosphate (P)	mg/L	0.01		ND	ND	ND	ND	ND
pH (Lab)	pH	N/A	6.5-9.0	7.3	7.4	6.8	7.7	5.2
Total Phosphorus (1M depth)	mg/L	0.001		0.008	0.008	0.008	0.015	0.005
Reactive Silica (SiO2)	mg/L	0.5		0.5	2.5	1.7	ND	3.2
Total Suspended Solids	mg/L	5		ND	14	ND	ND	ND
Dissolved Sulphate (SO4)	mg/L	2		13	9	5	17	30

Spring 2009	Units	RDL	CCME Guideline Level	ALBRO LAKE	BARRETT LAKE	BELL LAKE	BISSETT LAKE	BLACK DUCK POND
Community				Dartmouth	Beaverbank	Dartmouth	Cole Harbour	Lakeside
Sampling Date & Time	DD/MM/YYYY 24hr time			02/06/2009 8:15	11/05/2009 13:21	01/06/2009 10:25	03/06/2009 12:05	26/05/2009 10:15
Turbidity	NTU	0.1		0.9	1.6	0.8	1.3	1
Conductivity	uS/cm	1		500	287	62	141	829
Calculated Parameters								
Anion Sum	me/L	N/A		4.13	2.31	0.41	4.97	6.62
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	1		8	14	ND	16	ND
Calculated TDS	mg/L	1		249	143	26	323	388
Carb. Alkalinity (calc. as CaCO3)	mg/L	1		ND	ND	ND	ND	ND
Cation Sum	me/L	N/A		4.66	2.81	0.47	6.42	6.54
Hardness (CaCO3)	mg/L	1		102	62.5	10	53	56
Ion Balance (% Difference)	%	N/A		6.1	9.9	6.8	12.8	0.6
Langelier Index (@ 20C)	N/A	N/A		-1.87	-1.72	-3.69	-1.49	-4.48
Langelier Index (@ 4C)	N/A	N/A		-2.19	-2.04	-4.01	-1.81	-4.8
Saturation pH (@ 20C)	N/A	N/A		9.17	9.12	10.5	9.19	9.68
Saturation pH (@ 4C)	N/A	N/A		9.49	9.44	10.8	9.51	10
Metals (ICP-MS)								
Total Calcium (Ca)	mg/L	0.1		36.1	21.9	2.2	17.6	18.5
Total Copper (Cu)	µg/L	2		2	ND	4	5	3
Total Iron (Fe)	µg/L	50		250	290	250	120	140
Total Magnesium (Mg)	mg/L	0.1		2.9	1.9	1	2.3	2.4
Total Manganese (Mn)	µg/L	2		81	87	52	89	240
Total Potassium (K)	mg/L	0.1		1.1	0.8	0.7	1.7	1.5
Total Sodium (Na)	mg/L	0.1		58.3	34.8	5.4	122	123
Total Zinc (Zn)	µg/L	5		1240	295	611	ND	83
MICROBIOLOGICAL								
Fecal coliform Lake	CFU/100mL	1	200	10	2	2	ND	ND
Fecal coliform Outlet	CFU/100mL	1	200	22	4	360.00	10	--
Fecal coliform Inlet	CFU/100mL	1	200	--	--	--	--	--

HRM Water Quality Monitoring Program Results - Spring 2009

Spring 2009	Units	RDL	CCME Guideline Level	ALBRO LAKE	BARRETT LAKE	BELL LAKE	BISSETT LAKE	BLACK DUCK POND
Community				Dartmouth	Beaverbank	Dartmouth	Cole Harbour	Lakeside
Sampling Date & Time	DD/MM/YYYY 24hr time			02/06/2009 8:15	11/05/2009 13:21	01/06/2009 10:25	03/06/2009 12:05	26/05/2009 10:15
Chlorophyll A - Acidification method	µg/L	N/A		4.35	0.73	4.64	5.29	0.94
Chlorophyll A - Welschmeyer method	µg/L	N/A		4.25	0.74	4.33	5.29	0.85

Notes:

-- Not Analysed
NC Not Calculable
ND Not Detected
N/A Not Applicable
MPN Most Probable Number
RDL Reportable Detection Limit
ug Micrograms
mg Milligrams
L Litre

Russell Lake - sampled by JWL for Clayton Developments; North Inlet data shown
Morris Lake - sampled by JWL for HRM

CCME - Canadian Council of Ministers of Environment Guidelines for the Protection of Aquatic Life
Fecal Coliform Guideline: for Contact Recreation
Dissolved Oxygen Guideline: lowest acceptable level depending on temperature and life stage
Bacterial level of concern for swimming (≥ 200 but < 400)
Bacterial level unsuitable for swimming (≥ 400)
PRESENT - numerical count unavailable

* 'Lake' = @ Hwy 102; 'Outlet' = mouth; Fecal coliform data collected June 2 2009
** 'Lake' = @ mouth; 'Outlet' = at Roaches Pond site

WATER QUALITY ANALYSES - HRM LAKE SAMPLING PROGRAM

See NOTES below

Spring 2009	Units	RDL	CCME Guideline Level	BLACK POINT LAKE	CHOCOLATE LAKE	CRANBERRY LAKE	DENT'S PUNCH BOWL	DE SAID LAKE
Community				Hubley	Mainland South	Dartmouth	Cowie Hill	Dartmouth
Sampling Date & Time	DD/MM/YYYY 24hr time			28/05/2009 13:20	26/05/2009 8:55	01/06/2009 12:00	27/05/2009 9:00	03/06/2009 12:45
FIELD DATA								
Secchi Depth	Meters	N/A		1.6	6.4	N/A	N/A	N/A
Temp	Celsius	N/A		15.26	15.47	16.25	15.93	17.75
Dissolved Oxygen	mg/L	0.2	6-9.5	9.76	10.42	10.89	11.05	10.13
pH	pH	N/A	6.5-9.0	5.64	5.75	7.68	7.04	7.47
Specific Conductance	mS/cm	0.001		0.164	0.707	0.668	1.034	0.131
TDS	g/L	0.01		0.106	0.459	0.434	0.672	0.085
Salinity	ppt	0.01		0.08	0.35	0.33	0.51	0.06
INORGANICS								
Total Alkalinity (Total as CaCO3)	mg/L	5		ND	ND	25	43	31
Dissolved Chloride (Cl)	mg/L	1		44	182	173	270	24
Colour	TCU	5		63	ND	14	ND	19
Total Kjeldahl Nitrogen (TKN)	mg/L	0.4		0.6	ND	0.7	1.2	0.7
Nitrate + Nitrite	mg/L	0.05	13000	ND	0.1	0.06	0.23	ND
Nitrate (N)	mg/L	0.05		ND	0.1	0.06	0.23	ND
Nitrite (N)	mg/L	0.05		ND	ND	ND	ND	ND
Nitrogen (Ammonia Nitrogen)	mg/L	0.05	19	ND	ND	0.06	ND	ND
Total Organic Carbon (C)	mg/L	0.5		7.2	ND	3.6	3.9	3.3
Orthophosphate (P)	mg/L	0.01		ND	ND	ND	ND	ND
pH (Lab)	pH	N/A	6.5-9.0	5.1	5	7.8	7.9	7.9
Total Phosphorus (1M depth)	mg/L	0.001		0.011	0.005	0.011	0.012	0.009
Reactive Silica (SiO2)	mg/L	0.5		ND	3.7	ND	ND	0.5
Total Suspended Solids	mg/L	5		ND	ND	ND	ND	ND
Dissolved Sulphate (SO4)	mg/L	2		4	34	18	35	6

Spring 2009	Units	RDL	CCME Guideline Level	BLACK POINT LAKE	CHOCOLATE LAKE	CRANBERRY LAKE	DENT'S PUNCH BOWL	DE SAID LAKE
Community				Hubley	Mainland South	Dartmouth	Cowie Hill	Dartmouth
Sampling Date & Time	DD/MM/YYYY 24hr time			28/05/2009 13:20	26/05/2009 8:55	01/06/2009 12:00	27/05/2009 9:00	03/06/2009 12:45
Turbidity	NTU	0.1		0.8	0.5	0.4	0.8	1.2
Conductivity	uS/cm	1		174	785	724	1190	776
Calculated Parameters								
Anion Sum	me/L	N/A		1.32	5.94	5.76	9.22	1.42
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	1		ND	ND	25	43	31
Calculated TDS	mg/L	1		82	354	326	532	77
Carb. Alkalinity (calc. as CaCO3)	mg/L	1		ND	ND	ND	ND	<1
Cation Sum	me/L	N/A		1.53	6.01	5.38	8.99	1.3
Hardness (CaCO3)	mg/L	1		12	41	55	99	27
Ion Balance (% Difference)	%	N/A		7.1	0.6	3.4	1.2	4.3
Langelier Index (@ 20C)	N/A	N/A		-5.25	-4.82	-1.18	-0.58	-1.25
Langelier Index (@ 4C)	N/A	N/A		-5.57	-5.14	-1.5	-0.9	-1.57
Saturation pH (@ 20C)	N/A	N/A		10.3	9.82	8.98	8.48	9.15
Saturation pH (@ 4C)	N/A	N/A		10.7	10.14	9.3	8.8	9.47
Metals (ICP-MS)								
Total Calcium (Ca)	mg/L	0.1		3.4	13.3	18.2	35.1	8.5
Total Copper (Cu)	µg/L	2		ND	ND	7	6	2
Total Iron (Fe)	µg/L	50		280	160	120	490	240
Total Magnesium (Mg)	mg/L	0.1		0.8	1.9	2.4	2.7	1.5
Total Manganese (Mn)	µg/L	2		69	160	94	59	66
Total Potassium (K)	mg/L	0.1		0.6	1.3	1.5	2.5	1.1
Total Sodium (Na)	mg/L	0.1		28.9	118	97	159	16.5
Total Zinc (Zn)	µg/L	5		7	35	22	689	ND
MICROBIOLOGICAL								
Fecal coliform Lake	CFU/100mL	1	200	ND	ND	2	24	ND
Fecal coliform Outlet	CFU/100mL	1	200	ND	ND	82	--	18
Fecal coliform Inlet	CFU/100mL	1	200	--	--	--	--	--

Spring 2009	Units	RDL	CCME Guideline Level	BLACK POINT LAKE	CHOCOLATE LAKE	CRANBERRY LAKE	DENT'S PUNCH BOWL	DE SAID LAKE
Community				Hubley	Mainland South	Dartmouth	Cowie Hill	Dartmouth
Sampling Date & Time	DD/MM/YYYY 24hr time			28/05/2009 13:20	26/05/2009 8:55	01/06/2009 12:00	27/05/2009 9:00	03/06/2009 12:45
Chlorophyll A - Acidification method	µg/L	N/A		1.35	0.29	0.65	1.43	2.50
Chlorophyll A - Welschmeyer method	µg/L	N/A		1.52	0.28	0.56	1.35	2.56

Notes:

-- Not Analysed
NC Not Calculable
ND Not Detected
N/A Not Applicable
MPN Most Probable Number
RDL Reportable Detection Limit
ug Micrograms
mg Milligrams
L Litre

Russell Lake - sampled by JWL
Morris Lake - sampled by JWL

CCME - Canadian Council of M
Fecal Coliform Guideline: for C
Dissolved Oxygen Guideline: lc
Bacterial level of concern for s
Bacterial level unsuitable for s
PRESENT - numerical count un

* 'Lake' = @ Hwy 102; 'Outlet' = mouth; Fecal coliform data collected June 2 2009
** 'Lake' = @ mouth; 'Outlet' = at Roaches Pond site

WATER QUALITY ANALYSES - HRM LAKE SAMPLING PROGRAM

See NOTES below

Spring 2009	Units	RDL	CCME Guideline Level	DRAIN LAKE	DUCK LAKE	FENERTY LAKE	FIRST CHAIN LAKE	FIRST LAKE
Community				Middle Sackville	Beaverbank	Beaverbank	Halifax	Lower Sackville
Sampling Date & Time	DD/MM/YYYY 24hr time			21/05/2009 14:15	11/05/2009 12:30	12/05/2009 13:25	26/05/2009 9:25	21/05/2009 11:20
FIELD DATA								
Secchi Depth	Meters	N/A		N/A	N/A	2.5	N/A	8.1
Temp	Celsius	N/A		20.22	13.19	12.62	14.92	13.82
Dissolved Oxygen	mg/L	0.2	6-9.5	10.55	--	10.46	10.48	11.25
pH	pH	N/A	6.5-9.0	7.27	8.16	7.62	5.12	7.40
Specific Conductance	mS/cm	0.001		0.280	0.450	0.059	0.553	0.555
TDS	g/L	0.01		0.182	--	0.038	0.359	0.361
Salinity	ppt	0.01		0.13	--	0.03	0.27	0.27
INORGANICS								
Total Alkalinity (Total as CaCO3)	mg/L	5		22	22	12	ND	45
Dissolved Chloride (Cl)	mg/L	1		71	120	13	155	144
Colour	TCU	5		15	20	36	12	ND
Total Kjeldahl Nitrogen (TKN)	mg/L	0.4		2.6	1	0.5	0.4	0.6
Nitrate + Nitrite	mg/L	0.05	13000	0.09	ND	0.05	ND	0.13
Nitrate (N)	mg/L	0.05		0.09	ND	0.05	ND	0.13
Nitrite (N)	mg/L	0.05		ND	ND	ND	ND	ND
Nitrogen (Ammonia Nitrogen)	mg/L	0.05	19	0.11	ND	0.13	ND	ND
Total Organic Carbon (C)	mg/L	0.5		8.4	6.4	5.6	0.5	3
Orthophosphate (P)	mg/L	0.01		ND	ND	ND	ND	ND
pH (Lab)	pH	N/A	6.5-9.0	6.8	7.6	6.6	4.9	8
Total Phosphorus (1M depth)	mg/L	0.001		0.21	0.045	0.017	0.004	0.008
Reactive Silica (SiO2)	mg/L	0.5		0.6	0.6	1.9	2.6	ND
Total Suspended Solids	mg/L	5		ND	6	ND	ND	ND
Dissolved Sulphate (SO4)	mg/L	2		16	11	5	18	17

Spring 2009	Units	RDL	CCME Guideline Level	DRAIN LAKE	DUCK LAKE	FENERTY LAKE	FIRST CHAIN LAKE	FIRST LAKE
Community				Middle Sackville	Beaverbank	Beaverbank	Halifax	Lower Sackville
Sampling Date & Time	DD/MM/YYYY 24hr time			21/05/2009 14:15	11/05/2009 12:30	12/05/2009 13:25	26/05/2009 9:25	21/05/2009 11:20
Turbidity	NTU	0.1		11.3	6.7	1.3	0.3	0.5
Conductivity	uS/cm	1		296	506	62	627	574
Calculated Parameters								
Anion Sum	me/L	N/A		2.78	4.05	0.66	4.84	5.32
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	1		22	22	12	ND	45
Calculated TDS	mg/L	1		154	232	37	290	294
Carb. Alkalinity (calc. as CaCO3)	mg/L	1		ND	ND	ND	ND	ND
Cation Sum	me/L	N/A		2.41	3.97	0.52	5.04	4.74
Hardness (CaCO3)	mg/L	1		25	47.1	9	21	50.4
Ion Balance (% Difference)	%	N/A		7.2	1.1	11.7	1.9	5.7
Langelier Index (@ 20C)	N/A	N/A		-2.58	-1.52	-3.43	-5.21	-0.75
Langelier Index (@ 4C)	N/A	N/A		-2.9	-1.84	-3.75	-5.53	-1.07
Saturation pH (@ 20C)	N/A	N/A		9.38	9.12	10.03	10.11	8.75
Saturation pH (@ 4C)	N/A	N/A		9.7	9.44	10.35	10.43	9.07
Metals (ICP-MS)								
Total Calcium (Ca)	mg/L	0.1		7.7	14.4	2.7	6.7	17.2
Total Copper (Cu)	µg/L	2		5	3	ND	ND	2
Total Iron (Fe)	µg/L	50		1480	720	170	70	80
Total Magnesium (Mg)	mg/L	0.1		1.4	2.7	0.6	1.1	1.8
Total Manganese (Mn)	µg/L	2		305	521	59	96	35
Total Potassium (K)	mg/L	0.1		1.4	1.8	0.6	0.8	1.5
Total Sodium (Na)	mg/L	0.1		41.3	67	6.9	105	84.8
Total Zinc (Zn)	µg/L	5		19	469	5	26	ND
MICROBIOLOGICAL								
Fecal coliform Lake	CFU/100mL	1	200	18	280.00	--	ND	2
Fecal coliform Outlet	CFU/100mL	1	200	--	302.00	--	--	ND
Fecal coliform Inlet	CFU/100mL	1	200	--	--	--	--	--

Spring 2009	Units	RDL	CCME Guideline Level	DRAIN LAKE	DUCK LAKE	FENERTY LAKE	FIRST CHAIN LAKE	FIRST LAKE
Community				Middle Sackville	Beaverbank	Beaverbank	Halifax	Lower Sackville
Sampling Date & Time	DD/MM/YYYY 24hr time			21/05/2009 14:15	11/05/2009 12:30	12/05/2009 13:25	26/05/2009 9:25	21/05/2009 11:20
Chlorophyll A - Acidification method	µg/L	N/A		38.49	21.1	3.47	0.2	0.67
Chlorophyll A - Welschmeyer method	µg/L	N/A		47.31	21.6	3.69	0.2	0.53

Notes:

-- Not Analysed
NC Not Calculable
ND Not Detected
N/A Not Applicable
MPN Most Probable Number
RDL Reportable Detection Limit
ug Micrograms
mg Milligrams
L Litre

Russell Lake - sampled by JWL
Morris Lake - sampled by JWL

CCME - Canadian Council of M
Fecal Coliform Guideline: for C
Dissolved Oxygen Guideline: lc
Bacterial level of concern for s
Bacterial level unsuitable for s
PRESENT - numerical count un

* 'Lake' = @ Hwy 102; 'Outlet' = mouth; Fecal coliform data collected June 2 2009
** 'Lake' = @ mouth; 'Outlet' = at Roaches Pond site

WATER QUALITY ANALYSES - HRM LAKE SAMPLING PROGRAM

See NOTES below

Spring 2009	Units	RDL	CCME Guideline Level	FLETCHERS LAKE	FRENCHMAN LAKE	FROG POND	GOVERNOR'S LAKE	GRAND LAKE
Community				Fall River	Burnside	Halifax	Timberlea	Enfield
Sampling Date & Time	DD/MM/YYYY 24hr time			20/05/2009 12:00	01/06/2009 14:25	02/06/2009 9:40	26/05/2009 10:45	20/05/2009 11:05
FIELD DATA								
Secchi Depth	Meters	N/A		2.9	N/A	3.5	2.3	3.5
Temp	Celsius	N/A		13.42	18.01	16.74	--	10.40
Dissolved Oxygen	mg/L	0.2	6-9.5	10.68	10.95	9.99	10.48	11.92
pH	pH	N/A	6.5-9.0	6.86	7.54	7.32	6.10	6.87
Specific Conductance	mS/cm	0.001		0.165	0.609	0.700	0.647	0.098
TDS	g/L	0.01		0.108	0.396	0.455	0.421	0.064
Salinity	ppt	0.01		0.08	0.30	0.34	0.32	0.05
INORGANICS								
Total Alkalinity (Total as CaCO3)	mg/L	5		27	9	22	ND	25
Dissolved Chloride (Cl)	mg/L	1		39	125	184	180	21
Colour	TCU	5		28	40	26	27	26
Total Kjeldahl Nitrogen (TKN)	mg/L	0.4		0.5	0.5	0.6	0.6	0.6
Nitrate + Nitrite	mg/L	0.05	13000	0.26	ND	0.11	0.22	0.13
Nitrate (N)	mg/L	0.05		0.26	ND	0.11	0.22	0.13
Nitrite (N)	mg/L	0.05		ND	ND	ND	ND	ND
Nitrogen (Ammonia Nitrogen)	mg/L	0.05	19	ND	0.05	0.06	ND	ND
Total Organic Carbon (C)	mg/L	0.5		4.2	6.4	4.5	4.3	4.4
Orthophosphate (P)	mg/L	0.01		ND	ND	ND	ND	ND
pH (Lab)	pH	N/A	6.5-9.0	7.2	7.3	7.6	6.6	7
Total Phosphorus (1M depth)	mg/L	0.001		0.009	0.009	0.011	0.011	0.007
Reactive Silica (SiO2)	mg/L	0.5		2.1	ND	ND	3.1	1.9
Total Suspended Solids	mg/L	5		ND	ND	ND	ND	ND
Dissolved Sulphate (SO4)	mg/L	2		8	18	23	19	8

Spring 2009	Units	RDL	CCME Guideline Level	FLETCHERS LAKE	FRENCHMAN LAKE	FROG POND	GOVERNOR'S LAKE	GRAND LAKE
Community				Fall River	Burnside	Halifax	Timberlea	Enfield
Sampling Date & Time	DD/MM/YYYY 24hr time			20/05/2009 12:00	01/06/2009 14:25	02/06/2009 9:40	26/05/2009 10:45	20/05/2009 11:05
Turbidity	NTU	0.1		0.9	0.6	0.4	1.8	0.5
Conductivity	uS/cm	1		173	663	698	708	105
Calculated Parameters								
Anion Sum	me/L	N/A		1.82	4.08	6.12	5.58	1.27
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	1		27	9	22	ND	25
Calculated TDS	mg/L	1		95	253	359	330	62.9
Carb. Alkalinity (calc. as CaCO3)	mg/L	1		ND	ND	<1	ND	ND
Cation Sum	me/L	N/A		1.38	4.74	6.26	5.63	0.85
Hardness (CaCO3)	mg/L	1		18.7	52	84	35	16.3
Ion Balance (% Difference)	%	N/A		13.7	7.4	1.2	0.4	19.6
Langelier Index (@ 20C)	N/A	N/A		-2.18	-2.16	-1.23	-3.28	-2.45
Langelier Index (@ 4C)	N/A	N/A		-2.5	-2.48	-1.55	-3.6	-2.77
Saturation pH (@ 20C)	N/A	N/A		9.38	9.46	8.83	9.88	9.45
Saturation pH (@ 4C)	N/A	N/A		9.7	9.78	9.15	10.2	9.77
Metals (ICP-MS)								
Total Calcium (Ca)	mg/L	0.1		6	16.5	29.6	11.5	5.2
Total Copper (Cu)	µg/L	2		ND	7	<2	2	ND
Total Iron (Fe)	µg/L	50		120	180	190	200	90
Total Magnesium (Mg)	mg/L	0.1		0.9	2.6	2.4	1.6	0.8
Total Manganese (Mn)	µg/L	2		50	26	58	97	21
Total Potassium (K)	mg/L	0.1		1	1.7	1.7	1.4	0.7
Total Sodium (Na)	mg/L	0.1		22.4	83.6	104	112	11.5
Total Zinc (Zn)	µg/L	5		5	262	264	30	5
MICROBIOLOGICAL								
Fecal coliform Lake	CFU/100mL	1	200	26	26	102	22	ND
Fecal coliform Outlet	CFU/100mL	1	200	31	30	82	12	--
Fecal coliform Inlet	CFU/100mL	1	200	--	--	--	--	--

Spring 2009	Units	RDL	CCME Guideline Level	FLETCHERS LAKE	FRENCHMAN LAKE	FROG POND	GOVERNOR'S LAKE	GRAND LAKE
Community				Fall River	Burnside	Halifax	Timberlea	Enfield
Sampling Date & Time	DD/MM/YYYY 24hr time			20/05/2009 12:00	01/06/2009 14:25	02/06/2009 9:40	26/05/2009 10:45	20/05/2009 11:05
Chlorophyll A - Acidification method	µg/L	N/A		1.83	1.53	1.18	1.44	1.15
Chlorophyll A - Welschmeyer method	µg/L	N/A		2.03	1.53	1.22	1.54	1.27

Notes:

-- Not Analysed
NC Not Calculable
ND Not Detected
N/A Not Applicable
MPN Most Probable Number
RDL Reportable Detection Limit
ug Micrograms
mg Milligrams
L Litre

Russell Lake - sampled by JWL
Morris Lake - sampled by JWL

CCME - Canadian Council of M
Fecal Coliform Guideline: for C
Dissolved Oxygen Guideline: lc
Bacterial level of concern for s
Bacterial level unsuitable for s
PRESENT - numerical count un

* 'Lake' = @ Hwy 102; 'Outlet' = mouth; Fecal coliform data collected June 2 2009
** 'Lake' = @ mouth; 'Outlet' = at Roaches Pond site

WATER QUALITY ANALYSES - HRM LAKE SAMPLING PROGRAM

See NOTES below

Spring 2009	Units	RDL	CCME Guideline Level	HALF MILE LAKE	HUBLEY BIG LAKE	KEARNEY LAKE	KIDSTON LAKE	KINSAC LAKE
Community				Timberlea	Hubley	Bedford	Spryfield	Fall River
Sampling Date & Time	DD/MM/YYYY 24hr time			26/05/2009 12:20	29/05/2009 8:45	29/05/2009 10:20	27/05/2009 11:45	21/05/2009 9:45
FIELD DATA								
Secchi Depth	Meters	N/A		1.4	2.1	3.0	N/A	3.0
Temp	Celsius	N/A		15.48	15.16	13.99	16.82	13.95
Dissolved Oxygen	mg/L	0.2	6-9.5	10.62	10.30	10.77	10.16	10.79
pH	pH	N/A	6.5-9.0	6.41	5.47	6.20	6.33	7.27
Specific Conductance	mS/cm	0.001		0.432	0.077	0.263	0.046	0.095
TDS	g/L	0.01		0.281	0.050	0.171	0.030	0.062
Salinity	ppt	0.01		0.21	0.04	0.13	0.02	0.04
INORGANICS								
Total Alkalinity (Total as CaCO3)	mg/L	5		8	ND	ND	9	33
Dissolved Chloride (Cl)	mg/L	1		115	19	68	7	21
Colour	TCU	5		38	71	30	100	49
Total Kjeldahl Nitrogen (TKN)	mg/L	0.4		0.9	0.6	0.8	0.7	0.6
Nitrate + Nitrite	mg/L	0.05	13000	ND	ND	0.12	ND	0.1
Nitrate (N)	mg/L	0.05		ND	ND	0.12	ND	0.1
Nitrite (N)	mg/L	0.05		ND	ND	ND	ND	ND
Nitrogen (Ammonia Nitrogen)	mg/L	0.05	19	ND	ND	ND	ND	ND
Total Organic Carbon (C)	mg/L	0.5		7.3	6	3.7	8.2	2.6
Orthophosphate (P)	mg/L	0.01		ND	ND	ND	ND	ND
pH (Lab)	pH	N/A	6.5-9.0	7.2	4.8	6.5	7	7.2
Total Phosphorus (1M depth)	mg/L	0.001		0.037	0.011	0.004	0.01	0.012
Reactive Silica (SiO2)	mg/L	0.5		ND	0.7	2.9	ND	2
Total Suspended Solids	mg/L	5		ND	ND	ND	ND	ND
Dissolved Sulphate (SO4)	mg/L	2		11	3	11	4	5

Spring 2009	Units	RDL	CCME Guideline Level	HALF MILE LAKE	HUBLEY BIG LAKE	KEARNEY LAKE	KIDSTON LAKE	KINSAC LAKE
Community				Timberlea	Hubley	Bedford	Spryfield	Fall River
Sampling Date & Time	DD/MM/YYYY 24hr time			26/05/2009 12:20	29/05/2009 8:45	29/05/2009 10:20	27/05/2009 11:45	21/05/2009 9:45
Turbidity	NTU	0.1		3.8	0.6	0.6	0.7	1.1
Conductivity	uS/cm	1		471	84	280	54	102
Calculated Parameters								
Anion Sum	me/L	N/A		3.63	0.6	2.16	0.46	1.36
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	1		8	ND	ND	9	33
Calculated TDS	mg/L	1		217	44	142	26	77
Carb. Alkalinity (calc. as CaCO3)	mg/L	1		ND	ND	ND	ND	ND
Cation Sum	me/L	N/A		3.83	1.07	2.93	0.43	1.47
Hardness (CaCO3)	mg/L	1		26	27	64	12	46.9
Ion Balance (% Difference)	%	N/A		2.7	28.3	15.2	3.8	3.9
Langelier Index (@ 20C)	N/A	N/A		-2.62	-5.07	-3.05	-3.01	-1.63
Langelier Index (@ 4C)	N/A	N/A		-2.94	-5.39	-3.37	-3.33	-1.95
Saturation pH (@ 20C)	N/A	N/A		9.82	9.87	9.55	10	8.83
Saturation pH (@ 4C)	N/A	N/A		10.14	10.2	9.87	10.3	9.15
Metals (ICP-MS)								
Total Calcium (Ca)	mg/L	0.1		7.9	9.6	22.7	3.7	16.8
Total Copper (Cu)	µg/L	2		ND	ND	ND	ND	ND
Total Iron (Fe)	µg/L	50		440	190	190	340	200
Total Magnesium (Mg)	mg/L	0.1		1.5	0.8	1.8	0.6	1.2
Total Manganese (Mn)	µg/L	2		71	39	82	28	46
Total Potassium (K)	mg/L	0.1		1.3	0.7	0.9	0.6	0.9
Total Sodium (Na)	mg/L	0.1		74.9	10.4	36.1	3.5	11.3
Total Zinc (Zn)	µg/L	5		8	110	303	401	209
MICROBIOLOGICAL								
Fecal coliform Lake	CFU/100mL	1	200	36	ND	ND	ND	12
Fecal coliform Outlet	CFU/100mL	1	200	32	ND	2	2	--
Fecal coliform Inlet	CFU/100mL	1	200	--	--	--	--	--

Spring 2009	Units	RDL	CCME Guideline Level	HALF MILE LAKE	HUBLEY BIG LAKE	KEARNEY LAKE	KIDSTON LAKE	KINSAC LAKE
Community				Timberlea	Hubley	Bedford	Spryfield	Fall River
Sampling Date & Time	DD/MM/YYYY 24hr time			26/05/2009 12:20	29/05/2009 8:45	29/05/2009 10:20	27/05/2009 11:45	21/05/2009 9:45
Chlorophyll A - Acidification method	µg/L	N/A		9.69	1.81	1.92	1.24	2.05
Chlorophyll A - Welschmeyer method	µg/L	N/A		11.30	1.93	2.01	1.29	2.2

Notes:

-- Not Analysed
NC Not Calculable
ND Not Detected
N/A Not Applicable
MPN Most Probable Number
RDL Reportable Detection Limit
ug Micrograms
mg Milligrams
L Litre

Russell Lake - sampled by JWL
Morris Lake - sampled by JWL

CCME - Canadian Council of M
Fecal Coliform Guideline: for C
Dissolved Oxygen Guideline: lc
Bacterial level of concern for s
Bacterial level unsuitable for s
PRESENT - numerical count un

* 'Lake' = @ Hwy 102; 'Outlet' = mouth; Fecal coliform data collected June 2 2009
** 'Lake' = @ mouth; 'Outlet' = at Roaches Pond site

WATER QUALITY ANALYSES - HRM LAKE SAMPLING PROGRAM

See NOTES below

Spring 2009	Units	RDL	CCME Guideline Level	LAKE BANOOK	LAKE CHARLES	LAKE ECHO	LAKE MICMAC	LAKE THOMAS NORTH BASIN
Community				Dartmouth	Dartmouth	Eastern Shore	Dartmouth	Waverley
Sampling Date & Time	DD/MM/YYYY 24hr time			19/05/2009 10:30	19/05/2009 13:15	03/06/2009 9:20	19/05/2009 10:50	20/05/2009 13:00
FIELD DATA								
Secchi Depth	Meters	N/A		2.0	3.8	1.7	2.2	3.2
Temp	Celsius	N/A		13.35	11.82	16.66	13.11	13.37
Dissolved Oxygen	mg/L	0.2	6-9.5	10.87	11.44	10.01	10.84	10.85
pH	pH	N/A	6.5-9.0	8.00	7.98	6.57	7.88	6.93
Specific Conductance	mS/cm	0.001		0.771	0.194	0.037	0.723	0.160
TDS	g/L	0.01		0.501	0.182	0.024	0.470	0.104
Salinity	ppt	0.01		0.38	0.13	0.02	0.36	0.08
INORGANICS								
Total Alkalinity (Total as CaCO3)	mg/L	5		43	30	ND	39	25
Dissolved Chloride (Cl)	mg/L	1		205	67	7	194	38
Colour	TCU	5		ND	30	54	18	27
Total Kjeldahl Nitrogen (TKN)	mg/L	0.4		0.5	1	ND	ND	0.5
Nitrate + Nitrite	mg/L	0.05	13000	0.2	0.42	ND	0.2	0.25
Nitrate (N)	mg/L	0.05		0.2	0.42	ND	0.2	0.25
Nitrite (N)	mg/L	0.05		ND	ND	ND	ND	ND
Nitrogen (Ammonia Nitrogen)	mg/L	0.05	19	ND	ND	0.06	ND	ND
Total Organic Carbon (C)	mg/L	0.5		2.9	2.9	6.2	3.1	4.4
Orthophosphate (P)	mg/L	0.01		ND	ND	ND	ND	ND
pH (Lab)	pH	N/A	6.5-9.0	7.7	7.5	5.8	7.7	7.1
Total Phosphorus (1M depth)	mg/L	0.001		0.012	0.008	0.013	0.012	0.008
Reactive Silica (SiO2)	mg/L	0.5		1.2	2.9	0.5	1.3	2.1
Total Suspended Solids	mg/L	5		ND	ND	ND	ND	ND
Dissolved Sulphate (SO4)	mg/L	2		23	11	4	22	7

Spring 2009	Units	RDL	CCME Guideline Level	LAKE BANOOK	LAKE CHARLES	LAKE ECHO	LAKE MICMAC	LAKE THOMAS NORTH BASIN
Community				Dartmouth	Dartmouth	Eastern Shore	Dartmouth	Waverley
Sampling Date & Time	DD/MM/YYYY 24hr time			19/05/2009 10:30	19/05/2009 13:15	03/06/2009 9:20	19/05/2009 10:50	20/05/2009 13:00
Turbidity	NTU	0.1		1	0.6	1.2	1.2	0.7
Conductivity	uS/cm	1		803	291	40	759	169
Calculated Parameters								
Anion Sum	me/L	N/A		7.13	2.75	0.28	6.72	1.73
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	1		43	30	ND	39	25
Calculated TDS	mg/L	1		392	150	19	369	89
Carb. Alkalinity (calc. as CaCO3)	mg/L	1		ND	ND	ND	ND	ND
Cation Sum	me/L	N/A		6.26	2.35	0.35	5.79	1.29
Hardness (CaCO3)	mg/L	1		92.7	30.3	7	60.7	18
Ion Balance (% Difference)	%	N/A		6.4	7.9	11.1	7.4	14.8
Langelier Index (@ 20C)	N/A	N/A		-0.79	-1.63	-4.77	-1.03	-2.31
Langelier Index (@ 4C)	N/A	N/A		-1.11	-1.95	-5.09	-1.35	-2.63
Saturation pH (@ 20C)	N/A	N/A		8.49	9.13	10.6	8.73	9.41
Saturation pH (@ 4C)	N/A	N/A		8.81	9.45	10.9	9.05	9.73
Metals (ICP-MS)								
Total Calcium (Ca)	mg/L	0.1		33	10	1.8	21	5.9
Total Copper (Cu)	µg/L	2		3	ND	ND	2	ND
Total Iron (Fe)	µg/L	50		170	60	230	90	120
Total Magnesium (Mg)	mg/L	0.1		2.5	1.3	0.5	2	0.8
Total Manganese (Mn)	µg/L	2		66	22	51	40	46
Total Potassium (K)	mg/L	0.1		2	1.4	0.5	1.7	0.9
Total Sodium (Na)	mg/L	0.1		99.7	39	4.4	104	20.5
Total Zinc (Zn)	µg/L	5		256	ND	ND	ND	6
MICROBIOLOGICAL								
Fecal coliform Lake	CFU/100mL	1	200	6	8	14	30	8
Fecal coliform Outlet	CFU/100mL	1	200	18	4	2	--	10
Fecal coliform Inlet	CFU/100mL	1	200	--	--	--	--	--

Spring 2009	Units	RDL	CCME Guideline Level	LAKE BANOOK	LAKE CHARLES	LAKE ECHO	LAKE MICMAC	LAKE THOMAS NORTH BASIN
Community				Dartmouth	Dartmouth	Eastern Shore	Dartmouth	Waverley
Sampling Date & Time	DD/MM/YYYY 24hr time			19/05/2009 10:30	19/05/2009 13:15	03/06/2009 9:20	19/05/2009 10:50	20/05/2009 13:00
Chlorophyll A - Acidification method	µg/L	N/A		5.53	2.05	5.11	4.44	1.55
Chlorophyll A - Welschmeyer method	µg/L	N/A		5.94	2.13	5.49	4.75	1.7

Notes:

-- Not Analysed
NC Not Calculable
ND Not Detected
N/A Not Applicable
MPN Most Probable Number
RDL Reportable Detection Limit
ug Micrograms
mg Milligrams
L Litre

Russell Lake - sampled by JWL
Morris Lake - sampled by JWL

CCME - Canadian Council of M
Fecal Coliform Guideline: for C
Dissolved Oxygen Guideline: lc
Bacterial level of concern for s
Bacterial level unsuitable for s
PRESENT - numerical count un

* 'Lake' = @ Hwy 102; 'Outlet' = mouth; Fecal coliform data collected June 2 2009
** 'Lake' = @ mouth; 'Outlet' = at Roaches Pond site

WATER QUALITY ANALYSES - HRM LAKE SAMPLING PROGRAM

See NOTES below

Spring 2009	Units	RDL	CCME Guideline Level	LAKE THOMAS SOUTH BASIN	LAKE WILLIAM	LITTLE ALBRO LAKE	LONG LAKE	LONG POND
Community				Waverley	Waverley	Dartmouth	Mainland South	Herring Cove
Sampling Date & Time	DD/MM/YYYY 24hr time			20/05/2009 13:15	19/05/2009 14:05	02/06/2009 8:40	27/05/2009 9:50	27/05/2009 13:10
FIELD DATA								
Secchi Depth	Meters	N/A		3.7	3.5	N/A	2.1	1.2
Temp	Celsius	N/A		12.99	11.57	16.26	14.46	16.15
Dissolved Oxygen	mg/L	0.2	6-9.5	11.07	11.35	10.30	10.69	10.08
pH	pH	N/A	6.5-9.0	7.01	7.83	7.41	6.98	6.34
Specific Conductance	mS/cm	0.001		0.194	0.194	0.500	0.369	0.102
TDS	g/L	0.01		0.125	0.126	0.325	0.240	0.066
Salinity	ppt	0.01		0.09	0.09	0.24	0.18	0.05
INORGANICS								
Total Alkalinity (Total as CaCO3)	mg/L	5		30	29	10	ND	ND
Dissolved Chloride (Cl)	mg/L	1		45	45	105	101	25
Colour	TCU	5		25	20	11	42	101
Total Kjeldahl Nitrogen (TKN)	mg/L	0.4		0.6	0.8	0.6	0.6	0.7
Nitrate + Nitrite	mg/L	0.05	13000	0.19	0.2	ND	0.09	ND
Nitrate (N)	mg/L	0.05		0.19	0.2	ND	0.09	ND
Nitrite (N)	mg/L	0.05		ND	ND	ND	ND	ND
Nitrogen (Ammonia Nitrogen)	mg/L	0.05	19	ND	ND	0.06	ND	ND
Total Organic Carbon (C)	mg/L	0.5		3.8	4	3.5	5.9	9.3
Orthophosphate (P)	mg/L	0.01		ND	ND	ND	ND	ND
pH (Lab)	pH	N/A	6.5-9.0	7.4	7.5	7.3	5.9	6
Total Phosphorus (1M depth)	mg/L	0.001		0.009	0.007	0.015	0.006	0.01
Reactive Silica (SiO2)	mg/L	0.5		2.5	2.5	ND	3.1	1.4
Total Suspended Solids	mg/L	5		ND	ND	8	ND	ND
Dissolved Sulphate (SO4)	mg/L	2		8	8	13	11	5

Spring 2009	Units	RDL	CCME Guideline Level	LAKE THOMAS SOUTH BASIN	LAKE WILLIAM	LITTLE ALBRO LAKE	LONG LAKE	LONG POND
Community				Waverley	Waverley	Dartmouth	Mainland South	Herring Cove
Sampling Date & Time	DD/MM/YYYY 24hr time			20/05/2009 13:15	19/05/2009 14:05	02/06/2009 8:40	27/05/2009 9:50	27/05/2009 13:10
Turbidity	NTU	0.1		0.7	0.5	2	0.8	0.7
Conductivity	uS/cm	1		202	205	514	429	120
Calculated Parameters								
Anion Sum	me/L	N/A		2.05	2.03	3.43	3.08	0.81
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	1		30	29	10	ND	ND
Calculated TDS	mg/L	1		113	106	203	188	50
Carb. Alkalinity (calc. as CaCO3)	mg/L	1		ND	ND	ND	ND	ND
Cation Sum	me/L	N/A		1.9	1.57	3.52	3.36	0.89
Hardness (CaCO3)	mg/L	1		42.1	22.4	29	25	10
Ion Balance (% Difference)	%	N/A		3.7	12.8	1.2	4.3	5
Langelier Index (@ 20C)	N/A	N/A		-1.55	-1.75	-2.33	-4.11	-4.43
Langelier Index (@ 4C)	N/A	N/A		-1.87	-2.07	-2.65	-4.43	-4.75
Saturation pH (@ 20C)	N/A	N/A		8.95	9.25	9.63	10	10.4
Saturation pH (@ 4C)	N/A	N/A		9.27	9.57	9.95	10.3	10.7
Metals (ICP-MS)								
Total Calcium (Ca)	mg/L	0.1		14.7	7.5	9.8	8.1	2.7
Total Copper (Cu)	µg/L	2		ND	ND	ND	3	ND
Total Iron (Fe)	µg/L	50		110	70	140	200	310
Total Magnesium (Mg)	mg/L	0.1		1.3	0.9	1.1	1.2	0.8
Total Manganese (Mn)	µg/L	2		26	16	61	45	37
Total Potassium (K)	mg/L	0.1		1.2	1.3	0.9	1	0.6
Total Sodium (Na)	mg/L	0.1		23.3	24.8	66.8	64.9	14.9
Total Zinc (Zn)	µg/L	5		140	ND	ND	44	545
MICROBIOLOGICAL								
Fecal coliform Lake	CFU/100mL	1	200	2	ND	18	4	14
Fecal coliform Outlet	CFU/100mL	1	200	--	8	--	4	--
Fecal coliform Inlet	CFU/100mL	1	200	--	--	--	--	34

Spring 2009	Units	RDL	CCME Guideline Level	LAKE THOMAS SOUTH BASIN	LAKE WILLIAM	LITTLE ALBRO LAKE	LONG LAKE	LONG POND
Community				Waverley	Waverley	Dartmouth	Mainland South	Herring Cove
Sampling Date & Time	DD/MM/YYYY 24hr time			20/05/2009 13:15	19/05/2009 14:05	02/06/2009 8:40	27/05/2009 9:50	27/05/2009 13:10
Chlorophyll A - Acidification method	µg/L	N/A		1.39	1.04	9.63	3.49	1.51
Chlorophyll A - Welschmeyer method	µg/L	N/A		1.52	1.03	9.3	3.45	1.42

Notes:

-- Not Analysed
NC Not Calculable
ND Not Detected
N/A Not Applicable
MPN Most Probable Number
RDL Reportable Detection Limit
ug Micrograms
mg Milligrams
L Litre

Russell Lake - sampled by JWL
Morris Lake - sampled by JWL

CCME - Canadian Council of M
Fecal Coliform Guideline: for C
Dissolved Oxygen Guideline: lc
Bacterial level of concern for s
Bacterial level unsuitable for s
PRESENT - numerical count un

* 'Lake' = @ Hwy 102; 'Outlet' = mouth; Fecal coliform data collected June 2 2009
** 'Lake' = @ mouth; 'Outlet' = at Roaches Pond site

WATER QUALITY ANALYSES - HRM LAKE SAMPLING PROGRAM

See NOTES below

Spring 2009	Units	RDL	CCME Guideline Level	LOON LAKE	LOVETT LAKE	MAYNARD LAKE	McCABE LAKE	MCINTOSH RUN at Mouth**
Community				Dartmouth	Lakeside	Dartmouth	Lucasville	Herring Cove
Sampling Date & Time	DD/MM/YYYY 24hr time			01/06/2009 13:40	26/05/2009 9:55	01/06/2009 9:50	28/05/2009 9:35	27/05/2009 13:35
FIELD DATA								
Secchi Depth	Meters	N/A		3.8	N/A	3.0	2.1	N/A
Temp	Celsius	N/A		15.75	15.02	15.58	14.74	16.86
Dissolved Oxygen	mg/L	0.2	6-9.5	10.95	10.29	10.94	10.19	10.39
pH	pH	N/A	6.5-9.0	7.69	5.81	7.58	6.85	6.23
Specific Conductance	mS/cm	0.001		0.393	0.865	0.383	0.057	0.244
TDS	g/L	0.01		0.256	0.562	0.249	0.037	0.158
Salinity	ppt	0.01		0.19	0.43	0.18	0.03	0.12
INORGANICS								
Total Alkalinity (Total as CaCO3)	mg/L	5		12	ND	16	ND	ND
Dissolved Chloride (Cl)	mg/L	1		102	242	96	12	64
Colour	TCU	5		16	12	6	44	65
Total Kjeldahl Nitrogen (TKN)	mg/L	0.4		ND	0.9	0.4	ND	0.6
Nitrate + Nitrite	mg/L	0.05	13000	0.06	0.22	ND	ND	ND
Nitrate (N)	mg/L	0.05		0.06	0.22	ND	ND	ND
Nitrite (N)	mg/L	0.05		ND	ND	ND	ND	ND
Nitrogen (Ammonia Nitrogen)	mg/L	0.05	19	ND	ND	ND	ND	ND
Total Organic Carbon (C)	mg/L	0.5		2.6	3.3	2.7	5.2	7.3
Orthophosphate (P)	mg/L	0.01		ND	ND	ND	ND	ND
pH (Lab)	pH	N/A	6.5-9.0	7.5	6.8	7.6	6.1	6.2
Total Phosphorus (1M depth)	mg/L	0.001		0.006	0.008	0.007	0.01	0.012
Reactive Silica (SiO2)	mg/L	0.5		1.1	2.9	ND	1.4	0.7
Total Suspended Solids	mg/L	5		ND	ND	ND	ND	ND
Dissolved Sulphate (SO4)	mg/L	2		13	29	14	4	8

Spring 2009	Units	RDL	CCME Guideline Level	LOON LAKE	LOVETT LAKE	MAYNARD LAKE	McCABE LAKE	MCINTOSH RUN at Mouth**
Community				Dartmouth	Lakeside	Dartmouth	Lucasville	Herring Cove
Sampling Date & Time	DD/MM/YYYY 24hr time			01/06/2009 13:40	26/05/2009 9:55	01/06/2009 9:50	28/05/2009 9:35	27/05/2009 13:35
Turbidity	NTU	0.1		0.8	1.6	0.8	0.9	0.8
Conductivity	uS/cm	1		432	966	423	60	286
Calculated Parameters								
Anion Sum	me/L	N/A		3.39	7.54	3.32	0.42	1.97
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	1		12	ND	16	ND	ND
Calculated TDS	mg/L	1		208	452	202	28	119
Carb. Alkalinity (calc. as CaCO3)	mg/L	1		ND	ND	ND	ND	ND
Cation Sum	me/L	N/A		3.82	7.89	3.87	0.53	2.09
Hardness (CaCO3)	mg/L	1		33	63	85	8	17
Ion Balance (% Difference)	%	N/A		6	2.3	7.7	11.4	2.8
Langelier Index (@ 20C)	N/A	N/A		-2.02	-2.83	-1.35	-4.39	-4.01
Langelier Index (@ 4C)	N/A	N/A		-2.34	-3.15	-1.67	-4.71	-4.33
Saturation pH (@ 20C)	N/A	N/A		9.52	9.63	8.95	10.5	10.2
Saturation pH (@ 4C)	N/A	N/A		9.84	9.95	9.27	10.8	10.5
Metals (ICP-MS)								
Total Calcium (Ca)	mg/L	0.1		10.4	21.1	28.8	2.2	4.9
Total Copper (Cu)	µg/L	2		5	3	7	20	ND
Total Iron (Fe)	µg/L	50		140	160	250	220	260
Total Magnesium (Mg)	mg/L	0.1		1.6	2.4	3.1	0.6	1.1
Total Manganese (Mn)	µg/L	2		89	94	56	56	17
Total Potassium (K)	mg/L	0.1		1.3	2	1.6	0.6	0.9
Total Sodium (Na)	mg/L	0.1		72	151	48.6	7.9	39.5
Total Zinc (Zn)	µg/L	5		5	53	464	17	8
MICROBIOLOGICAL								
Fecal coliform Lake	CFU/100mL	1	200	2	176	18	ND	4
Fecal coliform Outlet	CFU/100mL	1	200	8	--	--	ND	20
Fecal coliform Inlet	CFU/100mL	1	200	--	--	--	--	--

Spring 2009	Units	RDL	CCME Guideline Level	LOON LAKE	LOVETT LAKE	MAYNARD LAKE	McCABE LAKE	MCINTOSH RUN at Mouth**
Community				Dartmouth	Lakeside	Dartmouth	Lucasville	Herring Cove
Sampling Date & Time	DD/MM/YYYY 24hr time			01/06/2009 13:40	26/05/2009 9:55	01/06/2009 9:50	28/05/2009 9:35	27/05/2009 13:35
Chlorophyll A - Acidification method	µg/L	N/A		1.51	2.22	1.9	2.5	1.94
Chlorophyll A - Welschmeyer method	µg/L	N/A		1.47	2.29	1.86	2.75	2.12

Notes:

-- Not Analysed
NC Not Calculable
ND Not Detected
N/A Not Applicable
MPN Most Probable Number
RDL Reportable Detection Limit
ug Micrograms
mg Milligrams
L Litre

Russell Lake - sampled by JWL
Morris Lake - sampled by JWL

CCME - Canadian Council of M
Fecal Coliform Guideline: for C
Dissolved Oxygen Guideline: lc
Bacterial level of concern for s
Bacterial level unsuitable for s
PRESENT - numerical count un

* 'Lake' = @ Hwy 102; 'Outlet' = mouth; Fecal coliform data collected June 2 2009
** 'Lake' = @ mouth; 'Outlet' = at Roaches Pond site

WATER QUALITY ANALYSES - HRM LAKE SAMPLING PROGRAM

See NOTES below

Spring 2009	Units	RDL	CCME Guideline Level	MOODY LAKE	MORRIS LAKE (North Basin)	MORRIS LAKE (South Basin)	NINE MILE RIVER AT HWY 103	NINE MILE RIVER AT MOUTH
Community				Williamswood	Dartmouth	Dartmouth	Timberlea	Shad Bay
Sampling Date & Time	DD/MM/YYYY 24hr time			27/05/2009 10:55	14/05/2009	14/05/2009	28/05/2009 12:35	10/11/2008 14:45
FIELD DATA					** Some msmts taken May 24			Sampled at mid falling tide
Secchi Depth	Meters	N/A		1.40	--	--	N/A	N/A
Temp	Celsius	N/A		15.45	16.1	13.6	14.60	17.90
Dissolved Oxygen	mg/L	0.2	6-9.5	10.05	10.69	8.78	9.59	10.65
pH	pH	N/A	6.5-9.0	6.49	6.78	6.11	6.33	6.23
Specific Conductance	mS/cm	0.001		0.056	0.450	0.450	0.179	3.780
TDS	g/L	0.01		0.037	--	--	0.117	2.400
Salinity	ppt	0.01		0.03	--	--	0.09	1.97
INORGANICS								
Total Alkalinity (Total as CaCO3)	mg/L	5		ND	--	--	6	6
Dissolved Chloride (Cl)	mg/L	1		12	110	110	41	1050
Colour	TCU	5		106	--	--	67	104
Total Kjeldahl Nitrogen (TKN)	mg/L	0.4		0.7	0.4	0.4	0.9	0.5
Nitrate + Nitrite	mg/L	0.05	13000	ND	--	--	0.66	0.06
Nitrate (N)	mg/L	0.05		ND	0.2	0.22	0.66	0.06
Nitrite (N)	mg/L	0.05		ND	ND	ND	ND	ND
Nitrogen (Ammonia Nitrogen)	mg/L	0.05	19	ND	--	--	0.33	ND
Total Organic Carbon (C)	mg/L	0.5		9.3	--	--	69.7	3.3
Orthophosphate (P)	mg/L	0.01		ND	--	--	0.02	ND
pH (Lab)	pH	N/A	6.5-9.0	5.5	--	--	6.8	6.9
Total Phosphorus (1M depth)	mg/L	0.001		0.01	0.035	0.039	0.062	0.018
Reactive Silica (SiO2)	mg/L	0.5		0.5	--	--	1.1	1.8
Total Suspended Solids	mg/L	5		ND	ND	ND	ND	ND
Dissolved Sulphate (SO4)	mg/L	2		5	--	--	7	145

Spring 2009	Units	RDL	CCME Guideline Level	MOODY LAKE	MORRIS LAKE (North Basin)	MORRIS LAKE (South Basin)	NINE MILE RIVER AT HWY 103	NINE MILE RIVER AT MOUTH
Community				Williamswood	Dartmouth	Dartmouth	Timberlea	Shad Bay
Sampling Date & Time	DD/MM/YYYY 24hr time			27/05/2009 10:55	14/05/2009	14/05/2009	28/05/2009 12:35	10/11/2008 14:45
Turbidity	NTU	0.1		1.1	0.7	0.3	1.2	1.1
Conductivity	uS/cm	1		66	--	--	190	4650
Calculated Parameters								
Anion Sum	me/L	N/A		0.44	--	--	1.47	32.72
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	1		ND	--	--	6	6
Calculated TDS	mg/L	1		28	--	--	91	1890
Carb. Alkalinity (calc. as CaCO3)	mg/L	1		ND	--	--	ND	ND
Cation Sum	me/L	N/A		0.5	--	--	1.62	33.06
Hardness (CaCO3)	mg/L	1		8	--	--	19	380
Ion Balance (% Difference)	%	N/A		6.6	--	--	5	0.5
Langelier Index (@ 20C)	N/A	N/A		-4.98	--	--	-3.21	-2.61
Langelier Index (@ 4C)	N/A	N/A		-5.3	--	--	-3.53	-2.93
Saturation pH (@ 20C)	N/A	N/A		10.5	--	--	10	9.51
Saturation pH (@ 4C)	N/A	N/A		10.8	--	--	10.3	9.83
Metals (ICP-MS)								
Total Calcium (Ca)	mg/L	0.1		2.3	--	--	6.2	27
Total Copper (Cu)	µg/L	2		ND	--	--	ND	7
Total Iron (Fe)	µg/L	50		230	--	--	220	250
Total Magnesium (Mg)	mg/L	0.1		0.6	--	--	0.9	75.8
Total Manganese (Mn)	µg/L	2		19	--	--	53	18
Total Potassium (K)	mg/L	0.1		0.6	--	--	1.3	18.1
Total Sodium (Na)	mg/L	0.1		7.2	--	--	27	573
Total Zinc (Zn)	µg/L	5		7	--	--	11	81
MICROBIOLOGICAL								
Fecal coliform Lake	CFU/100mL	1	200	ND	1	ND	154	ND
Fecal coliform Outlet	CFU/100mL	1	200	2	--	--	--	--
Fecal coliform Inlet	CFU/100mL	1	200	--	--	--	--	--

HRM Water Quality Monitoring Program Results - Spring 2009

Spring 2009	Units	RDL	CCME Guideline Level	MOODY LAKE	MORRIS LAKE (North Basin)	MORRIS LAKE (South Basin)	NINE MILE RIVER AT HWY 103	NINE MILE RIVER AT MOUTH
Community				Williamswood	Dartmouth	Dartmouth	Timberlea	Shad Bay
Sampling Date & Time	DD/MM/YYYY 24hr time			27/05/2009 10:55	14/05/2009	14/05/2009	28/05/2009 12:35	10/11/2008 14:45
Chlorophyll A - Acidification method	µg/L	N/A		0.93	0.51	0.40	1.07	2.59
Chlorophyll A - Welschmeyer method	µg/L	N/A		0.91	0.45	0.34	1.16	3.14

Notes:

-- Not Analysed
NC Not Calculable
ND Not Detected
N/A Not Applicable
MPN Most Probable Number
RDL Reportable Detection Limit
ug Micrograms
mg Milligrams
L Litre

Russell Lake - sampled by JWL
Morris Lake - sampled by JWL

CCME - Canadian Council of M
Fecal Coliform Guideline: for C
Dissolved Oxygen Guideline: lc
Bacterial level of concern for s
Bacterial level unsuitable for s
PRESENT - numerical count un

* 'Lake' = @ Hwy 102; 'Outlet' = mouth; Fecal coliform data collected June 2 2009
** 'Lake' = @ mouth; 'Outlet' = at Roaches Pond site

WATER QUALITY ANALYSES - HRM LAKE SAMPLING PROGRAM

See NOTES below

Spring 2009	Units	RDL	CCME Guideline Level	OATHILL LAKE	PAPER MILL LAKE	PENHORN LAKE	POWDER MILL LAKE	RED BRIDGE POND
Community				Dartmouth	Bedford	Dartmouth	Waverley	Dartmouth
Sampling Date & Time	DD/MM/YYYY 24hr time			01/06/2009 9:10	29/05/2009 11:15	01/06/2009 8:35	12/05/2009 10:15	19/05/2009 12:05
FIELD DATA								
Secchi Depth	Meters	N/A		3.2	2.8	2.3	4.2	N/A
Temp	Celsius	N/A		15.71	14.75	16.00	12.60	12.50
Dissolved Oxygen	mg/L	0.2	6-9.5	10.56	10.20	11.28	10.60	7.13
pH	pH	N/A	6.5-9.0	7.39	6.36	6.93	7.75	7.72
Specific Conductance	mS/cm	0.001		0.561	0.267	0.941	0.233	0.599
TDS	g/L	0.01		0.364	0.171	0.612	0.152	0.389
Salinity	ppt	0.01		0.27	0.13	0.47	0.11	0.29
INORGANICS								
Total Alkalinity (Total as CaCO3)	mg/L	5		28	ND	27	26	53
Dissolved Chloride (Cl)	mg/L	1		138	67	260	55	149
Colour	TCU	5		21	27	16	14	18
Total Kjeldahl Nitrogen (TKN)	mg/L	0.4		0.9	ND	ND	0.5	0.6
Nitrate + Nitrite	mg/L	0.05	13000	0.26	0.08	ND	0.18	ND
Nitrate (N)	mg/L	0.05		0.26	0.08	ND	0.18	ND
Nitrite (N)	mg/L	0.05		ND	ND	ND	ND	ND
Nitrogen (Ammonia Nitrogen)	mg/L	0.05	19	0.07	ND	ND	ND	ND
Total Organic Carbon (C)	mg/L	0.5		3.5	3.5	3.2	4.3	7.1
Orthophosphate (P)	mg/L	0.01		ND	ND	ND	ND	ND
pH (Lab)	pH	N/A	6.5-9.0	7.9	6.7	7.9	7.5	7.7
Total Phosphorus (1M depth)	mg/L	0.001		0.01	0.006	0.011	0.007	0.084
Reactive Silica (SiO2)	mg/L	0.5		ND	2.5	ND	1.3	0.5
Total Suspended Solids	mg/L	5		ND	ND	ND	ND	5
Dissolved Sulphate (SO4)	mg/L	2		19	11	19	9	18

Spring 2009	Units	RDL	CCME Guideline Level	OATHILL LAKE	PAPER MILL LAKE	PENHORN LAKE	POWDER MILL LAKE	RED BRIDGE POND
Community				Dartmouth	Bedford	Dartmouth	Waverley	Dartmouth
Sampling Date & Time	DD/MM/YYYY 24hr time			01/06/2009 9:10	29/05/2009 11:15	01/06/2009 8:35	12/05/2009 10:15	19/05/2009 12:05
Turbidity	NTU	0.1		0.8	1	1.6	0.6	4.4
Conductivity	uS/cm	1		608	279	1030	238	630
Calculated Parameters								
Anion Sum	me/L	N/A		4.87	2.12	8.27	1.93	5.64
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	1		28	ND	27	26	53
Calculated TDS	mg/L	1		279	144	450	121	310
Carb. Alkalinity (calc. as CaCO3)	mg/L	1		ND	ND	ND	ND	ND
Cation Sum	me/L	N/A		4.84	3.01	6.86	1.84	5.01
Hardness (CaCO3)	mg/L	1		94	51	49	29	61.7
Ion Balance (% Difference)	%	N/A		0.2	17.2	9.4	2.5	5.9
Langelier Index (@ 20C)	N/A	N/A		-0.79	-2.95	-1.1	-1.69	-0.88
Langelier Index (@ 4C)	N/A	N/A		-1.11	-3.27	-1.42	-2.01	-1.2
Saturation pH (@ 20C)	N/A	N/A		8.69	9.65	9	9.19	8.58
Saturation pH (@ 4C)	N/A	N/A		9.01	9.97	9.32	9.51	8.9
Metals (ICP-MS)								
Total Calcium (Ca)	mg/L	0.1		30.9	17.8	16.5	9.7	21.4
Total Copper (Cu)	µg/L	2		6	ND	6	ND	3
Total Iron (Fe)	µg/L	50		270	210	130	70	1170
Total Magnesium (Mg)	mg/L	0.1		4	1.6	2	1.2	2
Total Manganese (Mn)	µg/L	2		78	89	123	26	339
Total Potassium (K)	mg/L	0.1		2.3	1	2.9	1.6	1.7
Total Sodium (Na)	mg/L	0.1		66.3	44.1	133	27.7	84.5
Total Zinc (Zn)	µg/L	5		365	219	13	ND	9
MICROBIOLOGICAL								
Fecal coliform Lake	CFU/100mL	1	200	44	8	8	4	14
Fecal coliform Outlet	CFU/100mL	1	200	58	--	PRESENT	2	18
Fecal coliform Inlet	CFU/100mL	1	200	--	--	--	--	--

Spring 2009	Units	RDL	CCME Guideline Level	OATHILL LAKE	PAPER MILL LAKE	PENHORN LAKE	POWDER MILL LAKE	RED BRIDGE POND
Community				Dartmouth	Bedford	Dartmouth	Waverley	Dartmouth
Sampling Date & Time	DD/MM/YYYY 24hr time			01/06/2009 9:10	29/05/2009 11:15	01/06/2009 8:35	12/05/2009 10:15	19/05/2009 12:05
Chlorophyll A - Acidification method	µg/L	N/A		1.67	1.55	8.62	1.98	5.02
Chlorophyll A - Welschmeyer method	µg/L	N/A		1.66	1.54	8.35	2	5.86

Notes:

-- Not Analysed
NC Not Calculable
ND Not Detected
N/A Not Applicable
MPN Most Probable Number
RDL Reportable Detection Limit
ug Micrograms
mg Milligrams
L Litre

Russell Lake - sampled by JWL
Morris Lake - sampled by JWL

CCME - Canadian Council of M
Fecal Coliform Guideline: for C
Dissolved Oxygen Guideline: lc
Bacterial level of concern for s
Bacterial level unsuitable for s
PRESENT - numerical count un

* 'Lake' = @ Hwy 102; 'Outlet' = mouth; Fecal coliform data collected June 2 2009
** 'Lake' = @ mouth; 'Outlet' = at Roaches Pond site

WATER QUALITY ANALYSES - HRM LAKE SAMPLING PROGRAM

See NOTES below

Spring 2009	Units	RDL	CCME Guideline Level	ROCKY LAKE	RUSSELL LAKE	SACKVILLE RIVER*	SANDY LAKE BEDFORD	SANDY LAKE GLEN ARBOUR
Community				Bedford	Dartmouth	Below Fish Hatchery PS	Bedford	Glen Arbour
Sampling Date & Time	DD/MM/YYYY 24hr time			12/05/2009 11:15	13/04/2009	12/05/2009 9:15	02/06/2009 11:50	28/05/2009 10:50
FIELD DATA								
Secchi Depth	Meters	N/A		5.4	1.30	N/A	2.7	7.0
Temp	Celsius	N/A		12.96	5.3	11.34	15.53	15.38
Dissolved Oxygen	mg/L	0.2	6-9.5	10.24	76.4	11.15	10.71	10.11
pH	pH	N/A	6.5-9.0	7.70	7.3	8.06	7.36	6.88
Specific Conductance	mS/cm	0.001		0.383	1.031	0.117	0.178	0.048
TDS	g/L	0.01		0.249	--	0.076	0.116	0.029
Salinity	ppt	0.01		0.18	--	0.05	0.08	0.02
INORGANICS								
Total Alkalinity (Total as CaCO3)	mg/L	5		51	27	21	ND	ND
Dissolved Chloride (Cl)	mg/L	1		89	270	28	45	8
Colour	TCU	5		28	16	52	26	11
Total Kjeldahl Nitrogen (TKN)	mg/L	0.4		0.7	--	0.4	ND	0.6
Nitrate + Nitrite	mg/L	0.05	13000	0.45	0.2	0.09	0.13	ND
Nitrate (N)	mg/L	0.05		0.45	--	0.09	0.13	ND
Nitrite (N)	mg/L	0.05		ND	--	ND	ND	ND
Nitrogen (Ammonia Nitrogen)	mg/L	0.05	19	ND	ND	ND	ND	ND
Total Organic Carbon (C)	mg/L	0.5		4.4	3.3	6.4	4.6	2.6
Orthophosphate (P)	mg/L	0.01		0.02	ND	ND	ND	ND
pH (Lab)	pH	N/A	6.5-9.0	7.8	7.1	7	6.8	6.8
Total Phosphorus (1M depth)	mg/L	0.001		0.024	--	0.009	0.008	0.004
Reactive Silica (SiO2)	mg/L	0.5		1.2	2.2	2.2	2.5	1.6
Total Suspended Solids	mg/L	5		ND	3	ND	ND	ND
Dissolved Sulphate (SO4)	mg/L	2		16	25	6	8	4

Spring 2009	Units	RDL	CCME Guideline Level	ROCKY LAKE	RUSSELL LAKE	SACKVILLE RIVER*	SANDY LAKE BEDFORD	SANDY LAKE GLEN ARBOUR
Community				Bedford	Dartmouth	Below Fish Hatchery PS	Bedford	Glen Arbour
Sampling Date & Time	DD/MM/YYYY 24hr time			12/05/2009 11:15	13/04/2009	12/05/2009 9:15	02/06/2009 11:50	28/05/2009 10:50
Turbidity	NTU	0.1		0.4	1.4	1.3	1.3	0.4
Conductivity	uS/cm	1		402	1000	120	188	50
Calculated Parameters								
Anion Sum	me/L	N/A		3.36	--	1.18	1.45	0.31
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	1		51	27	21	ND	ND
Calculated TDS	mg/L	1		212	518	72	82	22
Carb. Alkalinity (calc. as CaCO3)	mg/L	1		ND	ND	ND	ND	ND
Cation Sum	me/L	N/A		3.35	--	1.16	1.29	0.48
Hardness (CaCO3)	mg/L	1		53	70	16	14	12
Ion Balance (% Difference)	%	N/A		0	--	0.7	5.6	21.6
Langelier Index (@ 20C)	N/A	N/A		-0.85	--	-2.53	-3.47	-3.52
Langelier Index (@ 4C)	N/A	N/A		-1.17	--	-2.85	-3.79	-3.84
Saturation pH (@ 20C)	N/A	N/A		8.65	--	9.53	10.3	10.3
Saturation pH (@ 4C)	N/A	N/A		8.97	--	9.85	10.6	10.6
Metals (ICP-MS)								
Total Calcium (Ca)	mg/L	0.1		18.2	24	5.3	4.1	3.2
Total Copper (Cu)	µg/L	2		ND	--	ND	ND	ND
Total Iron (Fe)	µg/L	50		130	--	290	170	110
Total Magnesium (Mg)	mg/L	0.1		1.8	2.4	0.8	0.9	0.9
Total Manganese (Mn)	µg/L	2		74	--	74	52	32
Total Potassium (K)	mg/L	0.1		4.1	2.6	0.7	0.9	0.9
Total Sodium (Na)	mg/L	0.1		50.1	180	18.3	22.6	5
Total Zinc (Zn)	µg/L	5		21	--	9	ND	6
MICROBIOLOGICAL								
Fecal coliform Lake	CFU/100mL	1	200	4	150	152	2	ND
Fecal coliform Outlet	CFU/100mL	1	200	--	--	390.00	2	2
Fecal coliform Inlet	CFU/100mL	1	200	--	--	--	--	--

Spring 2009	Units	RDL	CCME Guideline Level	ROCKY LAKE	RUSSELL LAKE	SACKVILLE RIVER*	SANDY LAKE BEDFORD	SANDY LAKE GLEN ARBOUR
Community				Bedford	Dartmouth	Below Fish Hatchery PS	Bedford	Glen Arbour
Sampling Date & Time	DD/MM/YYYY 24hr time			12/05/2009 11:15	13/04/2009	12/05/2009 9:15	02/06/2009 11:50	28/05/2009 10:50
Chlorophyll A - Acidification method	µg/L	N/A		1.90	--	1.53	3.64	0.93
Chlorophyll A - Welschmeyer method	µg/L	N/A		1.93	--	1.62	3.47	0.84

Notes:

-- Not Analysed
NC Not Calculable
ND Not Detected
N/A Not Applicable
MPN Most Probable Number
RDL Reportable Detection Limit
ug Micrograms
mg Milligrams
L Litre

Russell Lake - sampled by JWL
Morris Lake - sampled by JWL

CCME - Canadian Council of M
Fecal Coliform Guideline: for C
Dissolved Oxygen Guideline: lc
Bacterial level of concern for s
Bacterial level unsuitable for s
PRESENT - numerical count un

* 'Lake' = @ Hwy 102; 'Outlet' = mouth; Fecal coliform data collected June 2 2009
** 'Lake' = @ mouth; 'Outlet' = at Roaches Pond site

WATER QUALITY ANALYSES - HRM LAKE SAMPLING PROGRAM

See NOTES below

Spring 2009	Units	RDL	CCME Guideline Level	SECOND LAKE	SETTLE LAKE	SHELDRAKE LAKE	SMELT BROOK	SPRINGFIELD LAKE
Community				Middle Sackville	Dartmouth	Hubley	Dartmouth	Middle Sackville
Sampling Date & Time	DD/MM/YYYY 24hr time			20/05/2009 14:15	01/06/2009 11:05	28/05/2009 14:00	03/06/2009 13:30	21/05/2009 13:20
FIELD DATA								
Secchi Depth	Meters	N/A		--	1.9	1.7	N/A	2.0
Temp	Celsius	N/A		14.27	15.72	15.17	13.21	15.16
Dissolved Oxygen	mg/L	0.2	6-9.5	11.20	10.55	9.91	11.14	10.79
pH	pH	N/A	6.5-9.0	7.09	7.46	5.49	7.45	7.73
Specific Conductance	mS/cm	0.001		0.174	0.633	0.220	0.149	0.098
TDS	g/L	0.01		0.113	0.412	0.143	0.097	0.064
Salinity	ppt	0.01		0.08	0.31	0.10	0.07	0.05
INORGANICS								
Total Alkalinity (Total as CaCO3)	mg/L	5		28	29	ND	17	23
Dissolved Chloride (Cl)	mg/L	1		42	164	59	28	21
Colour	TCU	5		22	17	48	144	19
Total Kjeldahl Nitrogen (TKN)	mg/L	0.4		<0.4	0.6	0.7	0.4	ND
Nitrate + Nitrite	mg/L	0.05	13000	<0.05	ND	ND	0.07	ND
Nitrate (N)	mg/L	0.05		<0.05	ND	ND	0.07	ND
Nitrite (N)	mg/L	0.05		<0.05	ND	ND	ND	ND
Nitrogen (Ammonia Nitrogen)	mg/L	0.05	19	<0.05	ND	ND	ND	ND
Total Organic Carbon (C)	mg/L	0.5		4.1	5.6	6.8	14.7	4.1
Orthophosphate (P)	mg/L	0.01		<0.01	ND	ND	ND	ND
pH (Lab)	pH	N/A	6.5-9.0	7.4	7.8	5.1	7.4	7.3
Total Phosphorus (1M depth)	mg/L	0.001		0.007	0.022	0.017	0.011	0.011
Reactive Silica (SiO2)	mg/L	0.5		1.2	ND	0.5	3.3	1.2
Total Suspended Solids	mg/L	5		<5	ND	ND	ND	33
Dissolved Sulphate (SO4)	mg/L	2		6	15	6	8	8

Spring 2009	Units	RDL	CCME Guideline Level	SECOND LAKE	SETTLE LAKE	SHELDRAKE LAKE	SMELT BROOK	SPRINGFIELD LAKE
Community				Middle Sackville	Dartmouth	Hubley	Dartmouth	Middle Sackville
Sampling Date & Time	DD/MM/YYYY 24hr time			20/05/2009 14:15	01/06/2009 11:05	28/05/2009 14:00	03/06/2009 13:30	21/05/2009 13:20
Turbidity	NTU	0.1		1	2.6	1.2	68.5	2.4
Conductivity	uS/cm	1		183	689	230	162	106
Calculated Parameters								
Anion Sum	me/L	N/A		1.87	5.52	1.79	1.3	1.22
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	1		183	29	ND	17	23
Calculated TDS	mg/L	1		99	333	107	77	62
Carb. Alkalinity (calc. as CaCO3)	mg/L	1		<1	ND	ND	ND	ND
Cation Sum	me/L	N/A		1.56	6.12	1.89	1.43	0.87
Hardness (CaCO3)	mg/L	1		25.3	55	19	29	15.9
Ion Balance (% Difference)	%	N/A		9.2	5.2	2.8	4.7	16.7
Langelier Index (@ 20C)	N/A	N/A		-1.82	-1.12	-5.05	-1.99	-2.23
Langelier Index (@ 4C)	N/A	N/A		-2.14	-1.44	-5.37	-2.31	-2.55
Saturation pH (@ 20C)	N/A	N/A		9.22	8.92	10.2	9.39	9.53
Saturation pH (@ 4C)	N/A	N/A		9.54	9.24	10.5	9.71	9.85
Metals (ICP-MS)								
Total Calcium (Ca)	mg/L	0.1		8.3	18	5.5	9.1	4.7
Total Copper (Cu)	µg/L	2		<2	6	ND	2	ND
Total Iron (Fe)	µg/L	50		100	220	340	350	180
Total Magnesium (Mg)	mg/L	0.1		1.1	2.5	1.3	1.6	1
Total Manganese (Mn)	µg/L	2		19	206	105	46	27
Total Potassium (K)	mg/L	0.1		0.9	1.6	1	1	0.8
Total Sodium (Na)	mg/L	0.1		23.4	114	33.6	18.5	12
Total Zinc (Zn)	µg/L	5		19	6	22	ND	6
MICROBIOLOGICAL								
Fecal coliform Lake	CFU/100mL	1	200	ND	72	ND	26	2
Fecal coliform Outlet	CFU/100mL	1	200	6	PRESENT	6	--	2
Fecal coliform Inlet	CFU/100mL	1	200	--	--	--	--	--

Spring 2009	Units	RDL	CCME Guideline Level	SECOND LAKE	SETTLE LAKE	SHELDRAKE LAKE	SMELT BROOK	SPRINGFIELD LAKE
Community				Middle Sackville	Dartmouth	Hubley	Dartmouth	Middle Sackville
Sampling Date & Time	DD/MM/YYYY 24hr time			20/05/2009 14:15	01/06/2009 11:05	28/05/2009 14:00	03/06/2009 13:30	21/05/2009 13:20
Chlorophyll A - Acidification method	µg/L	N/A		1.43	1.18	3.77	0.60	3.15
Chlorophyll A - Welschmeyer method	µg/L	N/A		1.7	1.3	4.12	0.58	3.38

Notes:

-- Not Analysed
NC Not Calculable
ND Not Detected
N/A Not Applicable
MPN Most Probable Number
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Russell Lake - sampled by JWL
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Fecal Coliform Guideline: for C
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Bacterial level of concern for s
Bacterial level unsuitable for s
PRESENT - numerical count un

* 'Lake' = @ Hwy 102; 'Outlet' = mouth; Fecal coliform data collected June 2 2009
** 'Lake' = @ mouth; 'Outlet' = at Roaches Pond site

WATER QUALITY ANALYSES - HRM LAKE SAMPLING PROGRAM

See NOTES below

Spring 2009	Units	RDL	CCME Guideline Level	STILLWATER LAKE	THE MILL POND (THREE MILE POND)	THIRD LAKE	TUCKER LAKE	UPPER PORTERS LAKE
Community				Upper Tantallon	Timberlea	Windsor Junction	Beaverbank	Porters Lake
Sampling Date & Time	DD/MM/YYYY 24hr time			28/05/2009 11:35	26/05/2009 12:50	21/05/2009 10:25	11/05/2009 14:10	03/06/2009 8:35
FIELD DATA								
Secchi Depth	Meters	N/A		2.9	N/A	2.1	2.1	2.0
Temp	Celsius	N/A		15.03	17.06	13.70	12.56	14.76
Dissolved Oxygen	mg/L	0.2	6-9.5	10.41	10.64	12.06	--	10.78
pH	pH	N/A	6.5-9.0	6.70	6.62	7.45	7.94	6.60
Specific Conductance	mS/cm	0.001		0.057	0.078	0.140	0.211	0.582
TDS	g/L	0.01		0.037	0.051	0.091	--	0.378
Salinity	ppt	0.01		0.03	0.04	0.07	--	0.28
INORGANICS								
Total Alkalinity (Total as CaCO3)	mg/L	5		ND	ND	34	21	ND
Dissolved Chloride (Cl)	mg/L	1		13	19	31	49	122
Colour	TCU	5		38	62	21	28	72
Total Kjeldahl Nitrogen (TKN)	mg/L	0.4		0.4	0.6	0.5	ND	0.4
Nitrate + Nitrite	mg/L	0.05	13000	0.07	ND	ND	0.07	ND
Nitrate (N)	mg/L	0.05		0.07	ND	ND	0.07	ND
Nitrite (N)	mg/L	0.05		ND	ND	ND	ND	ND
Nitrogen (Ammonia Nitrogen)	mg/L	0.05	19	ND	ND	ND	ND	ND
Total Organic Carbon (C)	mg/L	0.5		5.3	9	4.2	6.1	7.4
Orthophosphate (P)	mg/L	0.01		ND	ND	ND	ND	ND
pH (Lab)	pH	N/A	6.5-9.0	5.5	6.1	7.6	7.8	6
Total Phosphorus (1M depth)	mg/L	0.001		0.007	0.012	0.01	0.012	0.008
Reactive Silica (SiO2)	mg/L	0.5		2.2	0.7	1.5	1.9	2.1
Total Suspended Solids	mg/L	5		ND	ND	ND	ND	ND
Dissolved Sulphate (SO4)	mg/L	2		3	4	6	8	24

Spring 2009	Units	RDL	CCME Guideline Level	STILLWATER LAKE	THE MILL POND (THREE MILE POND)	THIRD LAKE	TUCKER LAKE	UPPER PORTERS LAKE
Community				Upper Tantallon	Timberlea	Windsor Junction	Beaverbank	Porters Lake
Sampling Date & Time	DD/MM/YYYY 24hr time			28/05/2009 11:35	26/05/2009 12:50	21/05/2009 10:25	11/05/2009 14:10	03/06/2009 8:35
Turbidity	NTU	0.1		0.6	1.1	1	2.5	1.2
Conductivity	uS/cm	1		60	89	147	244	613
Calculated Parameters								
Anion Sum	me/L	N/A		0.43	0.72	1.68	1.97	3.94
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	1		ND	N	34	21	ND
Calculated TDS	mg/L	1		30	45	83	116	248
Carb. Alkalinity (calc. as CaCO3)	mg/L	1		ND	N	ND	ND	ND
Cation Sum	me/L	N/A		0.63	0.85	1.15	2.12	4.79
Hardness (CaCO3)	mg/L	1		14	15	19.8	35.8	50
Ion Balance (% Difference)	%	N/A		18.8	8.3	18.6	3.7	9.7
Langelier Index (@ 20C)	N/A	N/A		-4.69	-4.06	-1.65	-1.4	-4.36
Langelier Index (@ 4C)	N/A	N/A		-5.01	-4.38	-1.97	-1.72	-4.68
Saturation pH (@ 20C)	N/A	N/A		10.2	10.16	9.25	9.2	10.4
Saturation pH (@ 4C)	N/A	N/A		10.5	10.48	9.57	9.52	10.7
Metals (ICP-MS)								
Total Calcium (Ca)	mg/L	0.1		4.5	4.9	6.3	11.7	3.7
Total Copper (Cu)	µg/L	2		ND	ND	ND	ND	3
Total Iron (Fe)	µg/L	50		140	140	70	180	220
Total Magnesium (Mg)	mg/L	0.1		0.6	0.7	1	1.6	9.9
Total Manganese (Mn)	µg/L	2		41	27	18	75	46
Total Potassium (K)	mg/L	0.1		0.6	1	0.9	1.4	3.5
Total Sodium (Na)	mg/L	0.1		7.7	11.8	16.7	31.2	84.9
Total Zinc (Zn)	µg/L	5		24	23	ND	14	6
MICROBIOLOGICAL								
Fecal coliform Lake	CFU/100mL	1	200	4	16	2	ND	4
Fecal coliform Outlet	CFU/100mL	1	200	6	--	2	2	--
Fecal coliform Inlet	CFU/100mL	1	200	--	--	--	--	--

HRM Water Quality Monitoring Program Results - Spring 2009

Spring 2009	Units	RDL	CCME Guideline Level	STILLWATER LAKE	THE MILL POND (THREE MILE POND)	THIRD LAKE	TUCKER LAKE	UPPER PORTERS LAKE
Community				Upper Tantallon	Timberlea	Windsor Junction	Beaverbank	Porters Lake
Sampling Date & Time	DD/MM/YYYY 24hr time			28/05/2009 11:35	26/05/2009 12:50	21/05/2009 10:25	11/05/2009 14:10	03/06/2009 8:35
Chlorophyll A - Acidification method	µg/L	N/A		2.51	6.98	23.15	2.08	1.50
Chlorophyll A - Welschmeyer method	µg/L	N/A		2.51	7.25	24.22	2.18	1.55

Notes:

-- Not Analysed
NC Not Calculable
ND Not Detected
N/A Not Applicable
MPN Most Probable Number
RDL Reportable Detection Limit
ug Micrograms
mg Milligrams
L Litre

Russell Lake - sampled by JWL
Morris Lake - sampled by JWL

CCME - Canadian Council of M
Fecal Coliform Guideline: for C
Dissolved Oxygen Guideline: lc
Bacterial level of concern for s
Bacterial level unsuitable for s
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* 'Lake' = @ Hwy 102; 'Outlet' = mouth; Fecal coliform data collected June 2 2009
** 'Lake' = @ mouth; 'Outlet' = at Roaches Pond site

WATER QUALITY ANALYSES - HRM LAKE SAMPLING PROGRAM

See NOTES below

Spring 2009	Units	RDL	CCME Guideline Level	WHIMSICAL LAKE	WHYNDER (WINDER) LAKE	WILLIAMS LAKE
Community				Mainland South	North Preston	Halifax
Sampling Date & Time	DD/MM/YYYY 24hr time			27/05/2009 14:10	03/06/2009 10:25	02/06/2009 10:30
FIELD DATA						
Secchi Depth	Meters	N/A		1.7	--	2.9
Temp	Celsius	N/A		17.64	--	15.69
Dissolved Oxygen	mg/L	0.2	6-9.5	10.57	--	10.75
pH	pH	N/A	6.5-9.0	6.32	--	7.40
Specific Conductance	mS/cm	0.001		0.876	--	0.300
TDS	g/L	0.01		0.570	--	0.195
Salinity	ppt	0.01		0.43	--	0.14
INORGANICS						
Total Alkalinity (Total as CaCO3)	mg/L	5		24	27	ND
Dissolved Chloride (Cl)	mg/L	1		231	48	76
Colour	TCU	5		<5	17	20
Total Kjeldahl Nitrogen (TKN)	mg/L	0.4		0.6	2.3	0.4
Nitrate + Nitrite	mg/L	0.05	13000	0.1	1.71	0.1
Nitrate (N)	mg/L	0.05		0.1	1.62	0.1
Nitrite (N)	mg/L	0.05		ND	0.09	ND
Nitrogen (Ammonia Nitrogen)	mg/L	0.05	19	ND	0.72	ND
Total Organic Carbon (C)	mg/L	0.5		4.8	11.5	3.2
Orthophosphate (P)	mg/L	0.01		ND	0.03	ND
pH (Lab)	pH	N/A	6.5-9.0	7.7	7	6.8
Total Phosphorus (1M depth)	mg/L	0.001		0.012	0.152	0.01
Reactive Silica (SiO2)	mg/L	0.5		ND	4	1.7
Total Suspended Solids	mg/L	5		ND	112	ND
Dissolved Sulphate (SO4)	mg/L	2		33	26	15

Spring 2009	Units	RDL	CCME Guideline Level	WHIMSICAL LAKE	WHYNDER (WINDER) LAKE	WILLIAMS LAKE
Community				Mainland South	North Preston	Halifax
Sampling Date & Time	DD/MM/YYYY 24hr time			27/05/2009 14:10	03/06/2009 10:25	02/06/2009 10:30
Turbidity	NTU	0.1		1.5	6.2	1.4
Conductivity	uS/cm	1		1030	305	312
Calculated Parameters						
Anion Sum	me/L	N/A		7.69	2.56	2.46
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	1		24	27	ND
Calculated TDS	mg/L	1		466	164	137
Carb. Alkalinity (calc. as CaCO3)	mg/L	1		ND	ND	ND
Cation Sum	me/L	N/A		8.45	2.94	2.05
Hardness (CaCO3)	mg/L	1		97	41	22
Ion Balance (% Difference)	%	N/A		4.7	6.9	9.2
Langelier Index (@ 20C)	N/A	N/A		-1.06	-2.04	-3.27
Langelier Index (@ 4C)	N/A	N/A		-1.38	-2.36	-3.59
Saturation pH (@ 20C)	N/A	N/A		8.76	9.04	10.1
Saturation pH (@ 4C)	N/A	N/A		9.08	9.36	10.4
Metals (ICP-MS)						
Total Calcium (Ca)	mg/L	0.1		32.9	13.7	6.8
Total Copper (Cu)	µg/L	2		3	25	ND
Total Iron (Fe)	µg/L	50		200	3570	80
Total Magnesium (Mg)	mg/L	0.1		3.5	1.7	1.2
Total Manganese (Mn)	µg/L	2		83	309	27
Total Potassium (K)	mg/L	0.1		2.5	4.1	0.9
Total Sodium (Na)	mg/L	0.1		148	41.7	36.4
Total Zinc (Zn)	µg/L	5		444	41	18
MICROBIOLOGICAL						
Fecal coliform Lake	CFU/100mL	1	200	6	PRESENT	10
Fecal coliform Outlet	CFU/100mL	1	200	12	--	8
Fecal coliform Inlet	CFU/100mL	1	200	--	--	--

Spring 2009	Units	RDL	CCME Guideline Level	WHIMSICAL LAKE	WHYNDER (WINDER) LAKE	WILLIAMS LAKE
Community				Mainland South	North Preston	Halifax
Sampling Date & Time	DD/MM/YYYY 24hr time			27/05/2009 14:10	03/06/2009 10:25	02/06/2009 10:30
Chlorophyll A - Acidification method	µg/L	N/A		4.16	13.23	5.78
Chlorophyll A - Welschmeyer method	µg/L	N/A		4.22	15.50	5.65

Notes:

-- Not Analysed
NC Not Calculable
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N/A Not Applicable
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