AGAT Laboratories

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CLIENT NAME: REGION OF QUEENS MUNICIPALITY
345 ROY TURNER ROAD
LIVERPOOL, NS B0T1K0
(902) 354-3455
ATTENTION TO: ADAM GRANT
PROJECT:
AGAT WORK ORDER: 23X033740
ECOTOX ANALYSIS REVIEWED BY: Virginie Bérubé, Biologiste, AGAT Montréal
TRACE ORGANICS REVIEWED BY: Dylan McCarthy, Trace Organics Lab Technician
WATER ANALYSIS REVIEWED BY: Ashleigh Dussault, Inorganics Laboratory Supervisor
DATE REPORTED: Jun 28, 2023
PAGES (INCLUDING COVER): 15
VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (902) 468-8718

Notes

Disclaimer:

- *All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.*
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- *All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.*
- *For environmental samples in the Province of Quebec: The analysis is performed on and results apply to samples as received. A temperature above 6°C upon receipt, as indicated in the Sample Reception Notification (SRN), could indicate the integrity of the samples has been compromised if the delay between sampling and submission to the laboratory could not be minimized.*

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AGAT WORK ORDER: 23X033740

PROJECT:

CLIENT NAME: REGION OF QUEENS MUNICIPALITY

ATTENTION TO: ADAM GRANT

SAMPLING SITE:

SAMPLED BY:

Rainbow Trout Lethality (O. mykiss) single concentration-96h

DATE RECEIVED: 2023-06-08

DATE REPORTED: 2023-06-28

				SOUTH QUEENS WASTE WATER FACILITY
SAMPLE DESCRIPTION:				
SAMPLE TYPE:				Water
DATE SAMPLED:				2023-06-08
Parameter	**Unit**	**G / S**	**RDL**	**5049494**
Mortality 100% v/v	% mortality-96h			10
Acute Lethality				PASS

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

5049494 Non-conformance: Analysis started past holding time (> 5days after sampling).

Refer to the appendix for analysis details.
Acute lethality: PASS (mortality: 50% or less)
Acute lethality: FAIL (mortality: more than 50%)

Analysis performed at AGAT Montréal (unless marked by *)

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Certificate of Analysis

AGAT WORK ORDER: 23X033740

PROJECT:

CLIENT NAME: REGION OF QUEENS MUNICIPALITY

ATTENTION TO: ADAM GRANT

SAMPLING SITE:

SAMPLED BY:

Haloacetic Acids (water)

DATE RECEIVED: 2023-06-08

DATE REPORTED: 2023-06-28

		SAMPLE DESCRIPTION:		WORKS DEPT	SOUTH QUEEN WATER TREATMENT	OLD COBB BARN RD	SCHOOL ST. SAMPLE STATION	BROOKLYN SAMPLE STATION
		SAMPLE TYPE:		Water	FACILITY Water	Water	Water	Water
		DATE SAMPLED:		2023-06-08	2023-06-08	2023-06-08	2023-06-08	2023-06-08
Parameter	**Unit**	**G / S**	**RDL**	**5049486**	**5049490**	**5049491**	**5049492**	**5049493**
Chloroacetic Acid	ug/L		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoacetic Acid	ug/L		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dichloroacetic Acid	ug/L		0.5	20.0	17.7	26.1	35.2	39.0
Trichloroacetic Acid	ug/L		0.5	20.8	16.4	28.5	38.3	38.2
Bromochloroacetic Acid	ug/L		0.5	1.2	1.3	1.5	1.5	1.7
Dibromoacetic Acid	ug/L		0.5	<0.5	<0.5	<0.5	<0.5	0.5
Total Haloacetic Acids	ug/L		4.0	42.0	35.4	56.1	75.0	79.4
HAA5	ug/L		4.0	40.8	34.1	54.6	73.5	77.7
Surrogate	**Unit**	**Acceptable Limits**						
2-Bromobutanoic acid	%	70-130		101	104	97	114	104

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

5049486-5049493 HAA5 is a calculated parameter. The calculated parameter is non-accredited. The component parameters of the calculation are accredited.

Analysis performed at AGAT Halifax (unless marked by *)

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AGAT WORK ORDER: 23X033740

PROJECT:

CLIENT NAME: REGION OF QUEENS MUNICIPALITY

ATTENTION TO: ADAM GRANT

SAMPLING SITE:

SAMPLED BY:

Trihalomethane Analysis - Water

DATE RECEIVED: 2023-06-08

DATE REPORTED: 2023-06-28

		SAMPLE DESCRIPTION:		WORKS DEPT	SOUTH QUEEN WATER TREATMENT FACILITY	OLD COBB BARN RD	SCHOOL ST. SAMPLE STATION	BROOKLYN SAMPLE STATION
		SAMPLE TYPE:		Water	Water	Water	Water	Water
		DATE SAMPLED:		2023-06-08	2023-06-08	2023-06-08	2023-06-08	2023-06-08
Parameter	**Unit**	**G / S**	**RDL**	**5049486**	**5049490**	**5049491**	**5049492**	**5049493**
Chloroform	mg/L		0.001	0.036	0.027	0.050	0.071	0.062
Bromodichloromethane	mg/L		0.001	0.003	0.003	0.004	0.006	0.004
Dibromochloromethane	mg/L		0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Bromoform	mg/L		0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Trihalomethanes	mg/L		0.001	0.039	0.030	0.054	0.077	0.066
Surrogate	**Unit**	**Acceptable Limits**						
Toluene-d8	%	50-140		84	80	79	80	82

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

5049486-5049493 Total Trihalomethanes is a calculated parameter. The calculated value is the sum of Chloroform + Bromodichloromethane + Dibromochloromethane + Bromoform. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Calgary (unless marked by *)

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Certificate of Analysis

AGAT WORK ORDER: 23X033740

PROJECT:

CLIENT NAME: REGION OF QUEENS MUNICIPALITY

ATTENTION TO: ADAM GRANT

SAMPLING SITE:

SAMPLED BY:

CBOD

DATE RECEIVED: 2023-06-08

DATE REPORTED: 2023-06-28

				SOUTH QUEENS WASTE WATER FACILITY
SAMPLE DESCRIPTION:				
SAMPLE TYPE:				Water
DATE SAMPLED:				2023-06-08
Parameter	**Unit**	**G / S**	**RDL**	**5049494**
Biochemical Oxygen Demand, Carbonaceous	mg/L		2	3

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Analysis performed at AGAT Halifax (unless marked by *)

Certified By: Ashleigh Dussault

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Certificate of Analysis

AGAT WORK ORDER: 23X033740

PROJECT:

CLIENT NAME: REGION OF QUEENS MUNICIPALITY

ATTENTION TO: ADAM GRANT

SAMPLING SITE:

SAMPLED BY:

Standard Water Analysis + Total Metals

DATE RECEIVED: 2023-06-08

DATE REPORTED: 2023-06-28

SAMPLE DESCRIPTION:				WORKS DEPT	SOUTH QUEEN WATER TREATMENT FACILITY	OLD COBB BARN RD	SCHOOL ST. SAMPLE STATION	BROOKLYN SAMPLE STATION
SAMPLE TYPE:				Water	Water	Water	Water	Water
DATE SAMPLED:				2023-06-08	2023-06-08	2023-06-08	2023-06-08	2023-06-08
Parameter	Unit	G / S	RDL	5049486	5049490	5049491	5049492	5049493
pH				6.35	6.05	6.07	6.13	5.99
Reactive Silica as SiO2	mg/L		0.5	2.0	2.1	2.2	1.9	2.0
Chloride	mg/L		1	11	11	11	9	10
Fluoride	mg/L		0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Sulphate	mg/L		2	4	4	3	3	3
Alkalinity	mg/L		5	7	6	6	6	6
True Color	TCU		5.00	<5.00	<5.00	<5.00	<5.00	<5.00
Turbidity	NTU		0.50	<0.50	<0.50	<0.50	0.76	<0.50
Electrical Conductivity	umho/cm		1	62	61	61	58	56
Nitrate + Nitrite as N	mg/L		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrate as N	mg/L		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite as N	mg/L		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ammonia as N	mg/L		0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Total Organic Carbon	mg/L		0.5	3.0	3.0	3.0	3.8	3.4
Ortho-Phosphate as P	mg/L		0.01	0.24	0.25	0.29	0.30	0.28
Total Sodium	mg/L		0.1	10.7	10.7	10.7	10.7	9.6
Total Potassium	mg/L		0.1	0.2	0.2	0.2	0.2	0.2
Total Calcium	mg/L		0.1	0.6	0.3	0.5	0.5	0.5
Total Magnesium	mg/L		0.1	0.3	0.3	0.3	0.3	0.4
Bicarb. Alkalinity (as CaCO3)	mg/L		5	7	6	6	6	6
Carb. Alkalinity (as CaCO3)	mg/L		10	<10	<10	<10	<10	<10
Hydroxide	mg/L		5	<5	<5	<5	<5	<5
Calculated TDS	mg/L		1	32	31	30	28	28
Hardness	mg/L			2.7	2.0	2.5	2.5	2.9
Langelier Index (@20C)	NA			-4.56	-5.23	-4.99	-4.92	-5.07
Langelier Index (@ 4C)	NA			-4.88	-5.55	-5.31	-5.24	-5.39
Saturation pH (@ 20C)	NA			10.9	11.3	11.1	11.1	11.1

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CLIENT NAME: REGION OF QUEENS MUNICIPALITY

ATTENTION TO: ADAM GRANT

SAMPLING SITE:

SAMPLED BY:

Standard Water Analysis + Total Metals

DATE RECEIVED: 2023-06-08

DATE REPORTED: 2023-06-28

SAMPLE DESCRIPTION:				WORKS DEPT	SOUTH QUEEN WATER TREATMENT FACILITY	OLD COBB BARN RD	SCHOOL ST. SAMPLE STATION	BROOKLYN SAMPLE STATION
SAMPLE TYPE:				Water	Water	Water	Water	Water
DATE SAMPLED:				2023-06-08	2023-06-08	2023-06-08	2023-06-08	2023-06-08
Parameter	Unit	G / S	RDL	5049486	5049490	5049491	5049492	5049493
Saturation pH (@ 4C)	NA			11.2	11.6	11.4	11.4	11.4
Anion Sum	me/L			0.53	0.51	0.49	0.44	0.46
Cation sum	me/L			0.56	0.55	0.55	0.56	0.52
% Difference/ Ion Balance	%			2.6	3.2	5.9	12.2	5.6
Total Aluminum	ug/L		5	210	229	174	180	156
Total Antimony	ug/L		2	<2	<2	<2	<2	<2
Total Arsenic	ug/L		2	<2	<2	<2	<2	<2
Total Barium	ug/L		5	<5	<5	<5	<5	6
Total Beryllium	ug/L		2	<2	<2	<2	<2	<2
Total Bismuth	ug/L		2	<2	<2	<2	<2	<2
Total Boron	ug/L		5	39	17	12	9	9
Total Cadmium	ug/L		0.09	<0.09	<0.09	<0.09	<0.09	<0.09
Total Chromium	ug/L		2	<2	<2	<2	<2	<2
Total Cobalt	ug/L		1	<1	<1	<1	<1	<1
Total Copper	ug/L		2	7	15	<2	4	<2
Total Iron	ug/L		50	<50	<50	<50	150	<50
Total Lead	ug/L		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Manganese	ug/L		2	<2	21	<2	16	<2
Total Molybdenum	ug/L		2	<2	<2	<2	<2	<2
Total Nickel	ug/L		2	<2	<2	<2	<2	<2
Total Phosphorous	mg/L		0.07	0.47	0.47	0.46	0.50	0.56
Total Selenium	ug/L		1	<1	<1	<1	<1	<1
Total Silver	ug/L		0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Strontium	ug/L		5	6	<5	5	6	7
Total Thallium	ug/L		0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Tin	ug/L		2	<2	<2	<2	<2	<2
Total Titanium	ug/L		3	<3	<3	<3	<3	<3

Certified By: Ashleigh Dussault

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Certificate of Analysis

AGAT WORK ORDER: 23X033740

PROJECT:

CLIENT NAME: REGION OF QUEENS MUNICIPALITY

ATTENTION TO: ADAM GRANT

SAMPLING SITE:

SAMPLED BY:

Standard Water Analysis + Total Metals

DATE RECEIVED: 2023-06-08

DATE REPORTED: 2023-06-28

SAMPLE DESCRIPTION:				WORKS DEPT	SOUTH QUEEN WATER TREATMENT FACILITY	OLD COBB BARN RD	SCHOOL ST. SAMPLE STATION	BROOKLYN SAMPLE STATION
SAMPLE TYPE:				Water	Water	Water	Water	Water
DATE SAMPLED:				2023-06-08	2023-06-08	2023-06-08	2023-06-08	2023-06-08
Parameter	Unit	G / S	RDL	5049486	5049490	5049491	5049492	5049493
Total Uranium	ug/L		0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total Vanadium	ug/L		2	<2	<2	<2	<2	<2
Total Zinc	ug/L		5	447	339	489	374	693

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

5049486-5049493 % Difference / Ion Balance, Hardness, Langelier Index, Nitrate + Nitrite, Hydroxide and Saturation pH are calculated parameters. The calculated parameters are non-accredited. The component parameters of the calculations are accredited.
pH has been analyzed past the recommended holding time of 15 minutes from sampling. Field measurement recommended for most accurate result

Analysis performed at AGAT Halifax (unless marked by *)

Certified By: Ashleigh Dussault

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Quality Assurance

CLIENT NAME: REGION OF QUEENS MUNICIPALITY

AGAT WORK ORDER: 23X033740

PROJECT:

ATTENTION TO: ADAM GRANT

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Jun 28, 2023

PARAMETER	Batch	Sample Id	DUPLICATE Dup #1	DUPLICATE Dup #2	DUPLICATE RPD	Method Blank	REFERENCE MATERIAL Measured Value	REFERENCE MATERIAL Acceptable Limits Lower	REFERENCE MATERIAL Acceptable Limits Upper	METHOD BLANK SPIKE Recovery	METHOD BLANK SPIKE Acceptable Limits Lower	METHOD BLANK SPIKE Acceptable Limits Upper	MATRIX SPIKE Recovery	MATRIX SPIKE Acceptable Limits Lower	MATRIX SPIKE Acceptable Limits Upper
Haloacetic Acids (water)															
Chloroacetic Acid	1	5043444	< 0.5	< 0.5	NA	< 0.5	100%	70%	130%	82%	60%	130%	81%	60%	130%
Bromoacetic Acid	1	5043444	< 0.5	< 0.5	NA	< 0.5	84%	70%	130%	88%	60%	130%	91%	60%	130%
Dichloroacetic Acid	1	5043444	1.0	1.1	NA	< 0.5	91%	70%	130%	115%	60%	130%	106%	60%	130%
Trichloroacetic Acid	1	5043444	0.9	0.9	NA	< 0.5	89%	70%	130%	116%	60%	130%	112%	60%	130%
Bromochloroacetic Acid	1	5043444	1.0	1.0	NA	< 0.5	85%	70%	130%	128%	60%	130%	126%	60%	130%
Dibromoacetic Acid	1	5043444	0.9	0.9	NA	< 0.5	86%	70%	130%	130%	60%	130%	122%	60%	130%

Comments: If Matrix spike value is NA, the spiked analyte concentration was lower than that of the matrix contribution.
If RPD value is NA, the results of the duplicates are less than 5x the RDL and the RPD will not be calculated.

PARAMETER	Batch	Sample Id	DUPLICATE Dup #1	DUPLICATE Dup #2	DUPLICATE RPD	Method Blank	REFERENCE MATERIAL Measured Value	REFERENCE MATERIAL Acceptable Limits Lower	REFERENCE MATERIAL Acceptable Limits Upper	METHOD BLANK SPIKE Recovery	METHOD BLANK SPIKE Acceptable Limits Lower	METHOD BLANK SPIKE Acceptable Limits Upper	MATRIX SPIKE Recovery	MATRIX SPIKE Acceptable Limits Lower	MATRIX SPIKE Acceptable Limits Upper
Trihalomethane Analysis - Water															
Chloroform	4644	5060784	<0.001	<0.001	NA	< 0.001	95%	50%	140%	87%	60%	130%	95%	50%	140%
Bromodichloromethane	4644	5060784	<0.001	<0.001	NA	< 0.001	138%	50%	140%	126%	60%	130%	119%	50%	140%
Dibromochloromethane	4644	5060784	<0.001	<0.001	NA	< 0.001	135%	50%	140%	115%	60%	130%	108%	50%	140%
Bromoform	4644	5060784	<0.001	<0.001	NA	< 0.001	134%	50%	140%	113%	60%	130%	102%	50%	140%

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.
The sample spikes and dups are not from the same sample ID.

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Quality Assurance

CLIENT NAME: REGION OF QUEENS MUNICIPALITY

AGAT WORK ORDER: 23X033740

PROJECT:

ATTENTION TO: ADAM GRANT

SAMPLING SITE:

SAMPLED BY:

Water Analysis

RPT Date: Jun 28, 2023			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Standard Water Analysis + Total Metals															
pH	5058866		7.11	7.12	0.2%	<	100%	80%	120%	NA			NA		
Reactive Silica as SiO2	5052515		4.9	5.1	3.6%	< 0.5	103%	80%	120%	114%	80%	120%	116%	80%	120%
Chloride	5049486	5049486	11	11	3.5%	< 1	91%	80%	120%	NA	80%	120%	NA	70%	130%
Fluoride	5049486	5049486	<0.12	<0.12	NA	< 0.12	105%	80%	120%	NA	80%	120%	101%	70%	130%
Sulphate	5049486	5049486	4	4	NA	< 2	106%	80%	120%	NA	80%	120%	94%	70%	130%
Alkalinity	5058866		89	87	1.8%	< 5	91%	80%	120%	NA			NA		
True Color	5049491	5049491	<5.00	<5.00	NA	< 5	84%	80%	120%	98%	80%	120%	NA		
Turbidity	5058866		1.45	1.45	NA	< 0.5	98%	80%	120%	NA			NA		
Electrical Conductivity	5058866		201	201	0.0%	< 1	98%	90%	110%	NA			NA		
Nitrate as N	5049486	5049486	<0.05	<0.05	NA	< 0.05	105%	80%	120%	NA	80%	120%	90%	70%	130%
Nitrite as N	5049486	5049486	<0.05	<0.05	NA	< 0.05	102%	80%	120%	NA	80%	120%	96%	70%	130%
Ammonia as N	5046989		<0.03	<0.03	NA	< 0.03	97%	80%	120%	101%	80%	120%	103%	70%	130%
Total Organic Carbon	5048713		30.7	30.3	1.3%	< 0.5	99%	80%	120%	NA	80%	120%	NA	80%	120%
Ortho-Phosphate as P	5049491	5049491	0.29	0.29	0.0%	< 0.01	117%	80%	120%	120%	80%	120%	117%	80%	120%
Total Sodium	5051174		230	239	3.7%	< 0.1	100%	80%	120%	98%	80%	120%	NA	70%	130%
Total Potassium	5051174		2.2	2.3	5.6%	< 0.1	98%	80%	120%	98%	80%	120%	98%	70%	130%
Total Calcium	5051174		19.8	20.6	4.1%	< 0.1	98%	80%	120%	103%	80%	120%	NA	70%	130%
Total Magnesium	5051174		3.7	3.9	6.0%	< 0.1	101%	80%	120%	100%	80%	120%	102%	70%	130%
Bicarb. Alkalinity (as CaCO3)	5058866		89	87	1.8%	< 5	NA	80%	120%	NA			NA		
Carb. Alkalinity (as CaCO3)	5058866		<10	<10	NA	< 10	NA	80%	120%	NA			NA		
Hydroxide	5058866		<5	<5	NA	< 5	NA	80%	120%	NA			NA		
Total Aluminum	5051174		30	31	2.9%	< 5	99%	80%	120%	99%	80%	120%	97%	70%	130%
Total Antimony	5051174		<2	<2	NA	< 2	97%	80%	120%	100%	80%	120%	96%	70%	130%
Total Arsenic	5051174		<2	<2	NA	< 2	100%	80%	120%	97%	80%	120%	99%	70%	130%
Total Barium	5051174		122	129	5.6%	< 5	98%	80%	120%	96%	80%	120%	101%	70%	130%
Total Beryllium	5051174		<2	<2	NA	< 2	97%	80%	120%	89%	80%	120%	94%	70%	130%
Total Bismuth	5051174		<2	<2	NA	< 2	100%	80%	120%	100%	80%	120%	97%	70%	130%
Total Boron	5051174		22	20	NA	< 5	96%	80%	120%	89%	80%	120%	91%	70%	130%
Total Cadmium	5051174		0.65	0.70	7.1%	< 0.09	99%	80%	120%	98%	80%	120%	98%	70%	130%
Total Chromium	5051174		<2	<2	NA	< 1	102%	80%	120%	99%	80%	120%	100%	70%	130%
Total Cobalt	5051174		1	2	NA	< 1	103%	80%	120%	102%	80%	120%	100%	70%	130%
Total Copper	5051174		181	191	5.5%	< 1	103%	80%	120%	102%	80%	120%	NA	70%	130%
Total Iron	5051174		<50	<50	NA	< 50	102%	80%	120%	100%	80%	120%	98%	70%	130%
Total Lead	5051174		6.8	7.0	3.6%	< 0.5	102%	80%	120%	100%	80%	120%	97%	70%	130%
Total Manganese	5051174		508	534	5.1%	< 2	102%	80%	120%	100%	80%	120%	NA	70%	130%
Total Molybdenum	5051174		<2	<2	NA	< 2	97%	80%	120%	98%	80%	120%	98%	70%	130%
Total Nickel	5051174		2	3	NA	< 2	103%	80%	120%	102%	80%	120%	101%	70%	130%
Total Phosphorous	5051174		2.87	2.96	3.2%	< 0.02	106%	80%	120%	100%	80%	120%	NA	70%	130%
Total Selenium	5051174		<1	<1	NA	< 1	93%	80%	120%	94%	80%	120%	98%	70%	130%

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Quality Assurance

CLIENT NAME: REGION OF QUEENS MUNICIPALITY

AGAT WORK ORDER: 23X033740

PROJECT:

ATTENTION TO: ADAM GRANT

SAMPLING SITE:

SAMPLED BY:

Water Analysis (Continued)

RPT Date: Jun 28, 2023			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Total Silver	5051174		<0.1	<0.1	NA	< 0.1	100%	80%	120%	100%	80%	120%	97%	70%	130%
Total Strontium	5051174		122	128	5.1%	< 5	99%	80%	120%	98%	80%	120%	104%	70%	130%
Total Thallium	5051174		0.2	0.2	NA	< 0.1	100%	80%	120%	99%	80%	120%	96%	70%	130%
Total Tin	5051174		<2	<2	NA	< 2	97%	80%	120%	99%	80%	120%	97%	70%	130%
Total Titanium	5051174		<3	<3	NA	< 2	98%	80%	120%	98%	80%	120%	97%	70%	130%
Total Uranium	5051174		3.5	3.6	3.5%	< 0.2	98%	80%	120%	97%	80%	120%	96%	70%	130%
Total Vanadium	5051174		<2	<2	NA	< 2	101%	80%	120%	97%	80%	120%	99%	70%	130%
Total Zinc	5051174		80	86	8.2%	< 5	100%	80%	120%	98%	80%	120%	102%	70%	130%
CBOD															
Biochemical Oxygen Demand, Carbonaceous	5048660		<20	<20	NA	< 2	84%	70%	130%	NA			NA		

Comments: If RPD value is NA, the results of the duplicates are less than 5x the RDL and the RPD will not be calculated.

Certified By: Ashleigh Drysdale

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Method Summary

CLIENT NAME: REGION OF QUEENS MUNICIPALITY

AGAT WORK ORDER: 23X033740

PROJECT:

ATTENTION TO: ADAM GRANT

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
ECOTOX Analysis			
Mortality 100% v/v	ECO-152-20000F	EPS1/RM/13	
Acute Lethality	ECO-152-20000F	EPS1/RM/13	
Trace Organics Analysis			
Chloroacetic Acid	ORG-120-5110	EPA 552.3	GC/ECD
Bromoacetic Acid	ORG-120-5110	EPA 552.3	GC/ECD
Dichloroacetic Acid	ORG-120-5110	EPA 552.3	GC/ECD
Trichloroacetic Acid	ORG-120-5110	EPA 552.3	GC/ECD
Bromochloroacetic Acid	ORG-120-5110	EPA 552.3	GC/ECD
Dibromoacetic Acid	ORG-120-5110	EPA 552.3	GC/ECD
2-Bromobutanoic acid	ORG-120-5110	EPA 552.3	GC/ECD
Total Haloacetic Acids	ORG-120-5110	EPA 552.3	GC/ECD
HAA5	ORG-120-5110	EPA 552.3	GC/ECD
Chloroform	TO-0330	EPA SW-846 5030 & 8260	GC/MS
Bromodichloromethane	TO-0330	EPA SW-846 5030 & 8260	GC/MS
Dibromochloromethane	TO-0330	EPA SW-846 5030 & 8260	GC/MS
Bromoform	TO-0330	EPA SW-846 5030 & 8260	GC/MS
Total Trihalomethanes	TO-0330	EPA SW-846 8260	GC/MS
Toluene-d8	TO-0330	EPA SW-846 5030 & 8260	GC/MS

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Method Summary

CLIENT NAME: REGION OF QUEENS MUNICIPALITY **AGAT WORK ORDER: 23X033740**

PROJECT: **ATTENTION TO: ADAM GRANT**

SAMPLING SITE: **SAMPLED BY:**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Biochemical Oxygen Demand, Carbonaceous	INOR-121-6023	SM 5210 B	INCUBATOR
pH	INOR-121-6001	SM 4500 H+B	PC TITRATE
Reactive Silica as SiO2	INOR-121-6027	SM 4500-SiO2 F	COLORIMETER
Chloride	INORG-121-6005	SM 4110 B	ION CHROMATOGRAPH
Fluoride	INORG-121-6005	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INORG-121-6005	SM 4110 B	ION CHROMATOGRAPH
Alkalinity	INOR-121-6001	SM 2320 B	
True Color	INOR-121-6008	SM 2120 B	LACHAT FIA
Turbidity	INOR-121-6001	SM 2130 B	PC TITRATE
Electrical Conductivity	INOR-121-6001	SM 2510 B	PC TITRATE
Nitrate + Nitrite as N	INORG-121-6005	SM 4110 B	CALCULATION
Nitrate as N	INORG-121-6005	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INORG-121-6005	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-121-6047	SM 4500-NH3 H	COLORIMETER
Total Organic Carbon	INOR-121-6026	SM 5310 B	TOC ANALYZER
Ortho-Phosphate as P	INOR-121-6012	SM 4500-P G	COLORIMETER
Total Sodium	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS
Total Potassium	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS
Total Calcium	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS
Total Magnesium	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS
Bicarb. Alkalinity (as CaCO3)	INORG-121-6001	SM 2320 B	PC TITRATE
Carb. Alkalinity (as CaCO3)	INORG-121-6001	SM 2320 B	PC TITRATE
Hydroxide	INORG-121-6001	SM 2320 B	PC-TITRATE
Calculated TDS	CALCULATION	SM 1030E	CALCULATION
Hardness	CALCULATION	SM 2340B	CALCULATION
Langelier Index (@20C)	CALCULATION	CALCULATION	CALCULATION
Langelier Index (@ 4C)	CALCULATION	CALCULATION	CALCULATION
Saturation pH (@ 20C)	CALCULATION	CALCULATION	CALCULATION
Saturation pH (@ 4C)	CALCULATION	CALCULATION	CALCULATION
Anion Sum	CALCULATION	SM 1030E	CALCULATION
Cation sum	CALCULATION	SM 1030E	CALCULATION
% Difference/ Ion Balance	CALCULATION	SM 1030E	CALCULATION
Total Aluminum	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS
Total Antimony	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Arsenic	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS
Total Barium	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS
Total Beryllium	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS
Total Bismuth	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS
Total Boron	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS

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Method Summary

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AGAT WORK ORDER: 23X033740

PROJECT:

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SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Total Cadmium	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS
Total Chromium	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS
Total Cobalt	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS
Total Copper	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS
Total Iron	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS
Total Lead	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS
Total Manganese	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS
Total Molybdenum	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS
Total Nickel	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS
Total Phosphorous	MET-121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS
Total Selenium	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS
Total Silver	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS
Total Strontium	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS
Total Thallium	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS
Total Tin	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS
Total Titanium	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS
Total Uranium	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS
Total Vanadium	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS
Total Zinc	MET121-6104 & MET-121-6105	modified from SM 3125/SM 3030 B/SM 3030 D	ICP-MS

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Chain of Custody Record

Laboratory Use Only
Arrival Condition: ☐ Good ☐ Poor (see notes)
Arrival Temperature: 14.9, 13.7, 13.5
Hold Time:
AGAT Job Number: 23X033740
Notes:

Report Information
Company: Region of Queens Municipality
Contact: Adam Grant
Address: 142 Hank Snow Drive
Liverpool NS
Phone: 902-350-2046 Fax: 902-354-7473
Client Project #:
AGAT Quotation:
Please Note: If quotation number is not provided client will be billed full price for analysis.

Report Information (Please print):
1. Name: Adam Grant
Email: agrant@regionofqueens.com
2. Name: Scott Rhyno
Email: watertreatment@regionofqueens.com

Report Format
☐ Single Sample per page
☐ Multiple Samples per page
☐ Excel Format Included
☐ Export

Turnaround Time Required (TAT)
Regular TAT ■ 5 to 7 working days
Rush TAT ☐ Same day ☐ 1 day ☐ 2 days ☐ 3 days
Date Required:

Invoice To Same Yes ■ / No ☐
Company:
Contact:
Address:
Phone: Fax:
PO/Credit Card#:

Regulatory Requirements (Check):
☐ List Guidelines on Report ☐ Do not list Guidelines on Report
☐ PIRI
☐ Tier 1 ☐ Res ☐ Pot ☐ Coarse
☐ Tier 2 ☐ Com ☐ N/Pot ☐ Fine
☐ Gas ☐ Fuel ☐ Lube
☐ CCME ■ CDWQ
☐ Industrial ☐ NSEQS-Cont Sites
☐ Commercial ☐ HRM 101
☐ Res/Park ☐ Storm Water
☐ Agricultural ☐ Waste Water
☐ FWAL
☐ Sediment ☐ Other

Drinking Water Sample: ☐ Yes ☐ No **Salt Water Sample** ☐ Yes ☐ No
Reg. No.:

Sample Identification	Date/Time Sampled	Sample Matrix	# Containers	Comments – Site/Sample Info. Sample Containment
Works Dept	June 8/2023	DW	9	
South Queens Water Treatment Facility	June 8/2023	DW	9	
Old Cobb Barn Rd	June 8/2023	DW	9	
School St. Sample Station	June 8/2023	DW	9	
Brooklyn Sample Station	June 8/2023	DW	9	
South Queens Wastewater Facility	June 8/2023	WW	2	

Field Filtered/Preserved	Standard Water Analysis	Metals: ☐ Total ☐ Diss ☐ Available	Mercury	BOD ☐ CBOD	pH	TSS ☐ TDS ☐ VSS	TKN	Total Phosphorus	Phenols	Tier 1: TPH/BTEX (PIRI) ☐ low level	Tier 2: TPH/BTEX Fractionation	CCME-CWS TPH/BTEX	VOC	THM	HAA	PAH	PCB	TC + EC P/A ☐ MPN ☐ MF	HPC ☐ Pseudomonas	Fecal Coliform ☐ MPN ☐ MF	Other: Single trout tox	Other:	Hazardous (Y/N)
	✔	✔												✔	✔							
	✔	✔												✔	✔							
	✔	✔												✔	✔							
	✔	✔												✔	✔							
	✔	✔												✔	✔							
				✔																✔		

Samples Relinquished By (Print Name):	Date/Time	Samples Received By (Print Name):	Date/Time
Lucas Harvey	June 8/23 1:00		
Samples Relinquished By (Sign):	**Date/Time**	**Samples Received By (Sign):**	**Date/Time**
	June 8/23 1:00		

Pink Copy - Client
Yellow Copy - AGAT
White Copy- AGAT

Page ☐ of ☐
N°:

Date revised: May 19, 2016