STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER RESOURCES

PERMIT

TO DISCHARGE WASTEWATER UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provision of North Carolina General Statute 143-215.1, other lawful standards and regulations promulgated and adopted by the North Carolina Environmental Management Commission, and the Federal Water Pollution Control Act, as amended,

Town of Typicalville

is hereby authorized to discharge wastewater from a facility located at the

Town of Typicalville WWTP
1234 Carolina Road (NCSR 1000)
South of Typicalville
Typical County

to receiving waters designated as the Carolina River in the Carolina River Basin

in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, III and IV hereof.

This permit shall become effective November 1, 2016.

This permit and authorization to discharge shall expire at midnight on April 30, 2020.

Signed this day October 7, 2016.

▪Tab 3-B, page 12

S. Jay Zimmerman

S. Jay Zimmerman, Director
Division of Water Resources
By Authority of the Environmental Management Commission

SUPPLEMENT TO PERMIT COVER SHEET

All previous NPDES Permits issued to this facility, whether for operation or discharge are hereby revoked. As of this permit issuance, any previously issued permit bearing this number is no longer effective. Therefore, the exclusive authority to operate and discharge from this facility arises under the permit conditions, requirements, terms, and provisions included herein.

The Town of Typicalville is hereby authorized to:

1. Continue to operate the existing 6.0 MGD wastewater treatment facility consisting of the following:
   - Influent Sampler
   - Flow Meter
   - Bar Screens
   - Grit Separator
   - Two Extended Aeration Basins
   - Two Circular Secondary Clarifiers
   - Chlorine Contact Chamber
   - Dechlorination
   - Post Aeration
   - Aerobic Digester

   Facility is located at the Town of Typicalville Wastewater Treatment Plant on 1234 Carolina Road (NCSR 1000), south of Typicalville, in Typical County, and

2. Discharge from said treatment works at the location specified on the attached map into the Carolina River, classified WS-IV waters in the Carolina River Basin.

A. (1.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting until expiration, the Permittee is authorized to discharge from outfall 001. Such discharges shall be limited and monitored[1] by the Permittee as specified below:

EFFLUENT CHARACTERISTICS	LIMITS			MONITORING REQUIREMENTS		
	Monthly Average	Weekly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location[2]
Flow	6.0 MGD			Continuous	Recording	E or I
BOD_5 [3]	30.0 mg/L	45.0 mg/L		Daily	Composite	E & I
Total Suspended Solids [3]	30.0 mg/L	45.0 mg/L		Daily	Composite	E & I
NH_3 - N	6.0 mg/L	18.0 mg/L		3/week	Composite	E
pH [4]				Daily	Grab	E
Fecal Coliform	200 / 100 ml	400 / 100 ml		Daily	Grab	E
Total Residual Chlorine [5]			28 µg/L	Daily	Grab	E
Temperature, °C				Daily	Grab	E
Conductivity, µohm/cm				Daily	Grab	E
Dissolved Oxygen				Daily	Grab	E
Total Copper [6]				Quarterly	Composite	E
Total Zin c[6]				Quarterly	Composite	E
Total Cadmium [6, 7]				Quarterly	Composite	E
Total Silver [6,8]				Quarterly	Composite	E
Hardness -Total as [CaCO3 or Ca + Mg)][6] (mg/l)				Quarterly	Composite	E
Hardness -Total as [CaCO3 or Ca + Mg)][6] (mg/l)				Quarterly	Grab	U
Total Nitrogen (NO_2 + NO_3 + TKN)	Monitor and Report, mg/l			Monthly	Composite	E
Total Phosphorus	Monitor and Report, mg/l			Monthly	Composite	E
Dissolved Oxygen [9]				Variable	Grab	U, D
Temperature, °C [9]				Variable	Grab	U, D
Conductivity [9]				Variable	Grab	U, D
Chronic Toxicity [10]				Quarterly	Composite	E
Effluent Pollutant Scan	Monitor and Report			Footnote 11	Footnote 11	E

Notes:

1. Effective December 21, 2016 begin submitting discharge monitoring reports electronically using NC DWR's eDMR application system. See Special Condition A. (5)
2. Sample locations: E-effluent, I-influent, U-Upstream at NCSR 1000, D-One mile downstream of the outfall
3. The monthly average effluent BOD_5 and Total Suspended Solids concentrations shall not exceed 15% of the respective influent value (85% removal).
4. The pH shall not be less than 6.0 standard units nor greater than 9 standard units.
5. The Division shall consider all effluent TRC values reported below 50 ug/l to be in compliance with the permit. However, the Permittee shall continue to record and submit all values reported by a North Carolina certified laboratory (including field certified), even if these values fall below 50 ug/l.
6. Sampling for hardness, copper, cadmium, silver and zinc shall coincide with sampling for chronic toxicity.
7. Cadmium shall be tested to its lowest reporting level of 0.5 ug/l.
8. Silver shall be tested to its lowest reporting level of 1.0 ug/l.
9. Variable is defined as follows: Samples collected three times per week during June 1 through September 30 and once per week October 1 through May 31.
10. Chronic Toxicity (Ceriodaphnia) P/F at 13%.; January, April, July, and October. See Special Condition A. (2) of this permit
11. The permittee shall perform three Effluent Pollutant Scans during the term of this permit [See Special Condition A.(3)]

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Pretreatment Program Info Database

printed on: 1/15/2017

for Program Name **Typicalville**

WWTP Name Town of Typicalville WWTP

Program Approval Date 06/30/1983

Pretreatment Status Full

Region WSRO

County Typical

NPDES Number NC0012345

NPDES Effective Date 11/01/2016

NPDES Expire Date 04/30/2020

POTW is Primary WWTP TRUE

Design Flow mgd 6.0000

WWTP SIU's 4 Program SIUs 4

WWTP CIU's 1 Program CIUs 1

Stream Information

IWC % at 7Q10 13.40

7Q10 Flow cfs / mgd 60 / 38.76

1Q10 Flow cfs / mgd 49.15 / 31.77

Stream Classification WS-V

Basin Number CAR03

Receiving Stream Name Carolina River

Last PAR Rec 02/15/2016 PAR Due Date 03/01/2017

Current Fiscal Year PCI Done

Last Audit on 10/29/2015 Audit Year Next 20/21

mercury 1631 required: yes

% Design mgd is SIU permitted 4.58 Permitted SIU flow (mgd) [Pt_SIU] .275

date Inactive		HWA	LTMP	IWS	SUO	ERP
	Date Next Due	02/01/2022		06/01/2019		
	Date Received by DWR	01/03/2017	02/01/2012	05/22/2014	12/11/2012	12/11/2012
	Date Approved	01/17/2017	04/01/2012	06/15/2014	12/14/2012	12/14/2012
	Adopt Date Required					
	Date Adopted				11/20/2012	

Info in this Box from Pt_Contacts

Formal Name	PT_Prog.Prime	Phone1	ext	Fax	Date Attended HWA Wksp	Date Attended IUP Wksp	Date Attended PAR Wksp	
Ms. Jane Wastewater		555-123-4567		555-123-4589	1/30/2008	6/11/2012		
Jane.Wastewater@Typicalville.com		Director of Public Utilities		PO Box 101				27123
Mr. John Basin	Prim	555-123-4576		555-123-4589	1/30/2008	6/11/2012	1/24/2012	
John.Basin@Typicalville.com		Pretreatment Coordinator		PO Box 101				27123

Pretreatment Related NOVs from DWQ

DWR Central Office Contact Monti Hassan

DWR Regional Contact George Smith

INFLUENT

NPDES PERMIT NO. NC0012345 MONTH: October YEAR: 2016

FACILITY NAME Town of Typicalville WWTP

Typicalville LTMP - 1/month influent for many POCs

	DATE	Composite Time	Time	50050 FLOW EFF ☐ INF ☐ DAILY RAT	00400 pH	50060 Temperature (Celcius)	00310 BOD5 20 Degrees C	00610 Ammonia Nitrogen	00530 Total Suspended Residue	01002 Arsenic	01027 Cadmium	01 Chromium	Copper	Cyanide	Lead	Mercury	Molybdenu	Nickel	Selenium	Silver	01092 Zinc
		HRS		MGD	UNITS		MG/L	MG/L	MG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
1				2.1																	
2				2.2																	
3	24	0727		2.4	6.7	23	243		245												
4	24	0649		2.4	6.7	22	223		273												
5	24	0620		2.3	6.6	22	219	28.8	302	<10	<1	<5	47.6	9	0.5200	<0.20	7.000	<5	<10	<5	494
6	24	0610		2.4	6.8	23	268		250												
7	24	0555		2.9	6.8	23	239		258												
8				2.7																	
9				2.4																	
10	24	0730		2.4	6.6	20	237		270												
11	24	0640		2.4	6.6	18	252		266												
12	24	0630		2.4	6.6	18	243		268												
13	24	0620		2.4	6.8	22	271		276												
14	24	0600		2.3	6.4	21	252		284												
15				2.2																	
16				2.3																	
17	24	0725		2.4	6.6	21	301		290												
18	24	0645		2.4	6.5	20	264		295												
19	24	0615		2.4	6.4	21	257		318												
20	24	06101		2.5	6.6	22	287		256												
21	24	0620		2.4	6.5	22	304		260												
22				2.2																	
23				2.2																	
24	24	0720		2.4	6.8	18	306		268												
25	24	0700		2.2	6.6	18	263		268												
26	24	0630		2.2	6.7	18	275		308												
27	24	0620		2.2	6.8	22	277		266												
28	24	0605		2.3	6.7	20	325		292												
29				2.2																	
30				2.2																	
31	24	0730		2.3	6.6	19	250		273												
39	AVERAGE			2.345		21	265	28.80	276	0	0	0	47.6	0	0	0	0	0	0	0	494.0
40	MAXIMUM			2.900	6.8	23	325	28.80	318	<0.010	<0.002	<0.005	47.6	<0.005	<0.010	<0.0002	<0.005	<0.010	<0.010	<0.005	494.0
41	MINIMUM			2.100	6.4	18	219	28.8	245	<0.010	<0.002	<0.005	47.6	<0.005	<0.010	<0.0002	<0.005	<0.010	<0.010	<0.005	494.0
42	Comp/Grab				G	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
43	Monthly Limit			13.5																	

Some POTWs voluntarily put LTMP Influent on DMRs

BOD, TSS Influents no BDLs- use DMR Mon Ave

EFFLUENT, Page 1

NPDES PERMIT NO. NC0012345 DISCHARGE NO.: 001 MONTH: October YEAR: 2016

FACILITY NAME Town of Typicalville WWTP COUNTY: Typical

Certified Labs: (1)Typicalville WWTP Lab (Cert #1234) (2) Neighborhood Lab (Cert. #6789)

OPERATOR IN RESPONSIBLE CHARGE (ORC): Jane Wastewater CERTIFICATION NO.: 12345

PERSON(S) COLLECTING SAMPLES: John Basin

CHECK BOX IF ORC HAS CHANGED ☐ ☐

Mail ORIGINAL and ONE COPY to:
ATTN: CENTRAL FILES
DIVISION OF WATER RESOURCES
1617 MAIL SERVICE CENTER
RALEIGH, NC 27699-1617

BOD &TSS- No

NH3 Has BDL

x (S OF OPER RESPONSIBLE CHARGE) DATE
B URE, I C AT THIS REPORT IS
A COMP BEST OF MY KNOWLEDGE.

	DATE	Operator Arrival Time	Operator Time	ORC On Site	50050 FLOW EFF ☐ INF ☐ DAILY RA	00010 Temperature Celsius	00400 pH	50060 RESIDUAL CHLORINE	00310 BOD5 20 Deg. C - BDLs=0	00530 TOTAL SUSPENDED SOLIDS	00610 Nitrogen - BDLs = 0	00610 Ammonia Nitrogen = BDLs = 1/2 DL	31616 FECAL COLIFORM (Geometric	00300 DISSOLVED OXYGEN	00600 TOTAL NITROGEN	00665 TOTAL PHOSPHORUS	TGP3B CHRONIC TOXICITY	HARDNESS
		HRS	HRS	Y/B/N	MGD	° C	UNITS	UG/L	MG/L	MG/L	MG/L	MG/L	#/100ML	MG/L	MG/L	MG/L	P/F	mg/l
1				N	2.1													
2				N	2.2													
3	0600	24		Y	2.4	23	6.7	<10	4.5	4.1	0.11	0.11	1	6.1				
4	0600	24		Y	2.4	22	6.7	<10	4.1	3.3			<1	6.4				
5	0600	24		Y	2.3	22	6.6	<10	4.4	2.7	0.14	0.14	<1	6.4	3	0.72		28.7
6	0600	24		Y	2.4	23	6.8	<10	4.4	3.3			2	6.5				
7	0600	24		Y	2.9	23	6.8	<10	3.2	3.3	<0.1	0.05	<1	6.4				
8				N	2.7													
9				N	2.4													
10	0600	24		Y	2.4	20	6.6	<10	3.7	3.7	<0.1	0.05	1	6.6				
11	0600	24		Y	2.4	18	6.6	<10	5.6	4			<1	6.5				
12	0600	24		Y	2.4	18	6.6	<10	5.2	4.7	<0.1	0.05	<1	6.5				
13	0600	24		Y	2.4	22	6.8	<10	5	3.9			<1	6.6				
14	0600	24		Y	2.3	21	6.4	<10	5.3	4.4	0.13	0.13	<1	6.4				
15				N	2.2													
16				N	2.3													
17	0600	24		Y	2.4	21	6.6	<10	5.2	5.2	<0.1	0.05	<1	6.4				
18	0600	24		Y	2.4	20	6.5	<10	5.2	5.3			<1	6.6				
19	0600	24		Y	2.4	21	6.4	<10	5.6	4.7	<0.1	0.05	1	6.5				
20	0600	24		Y	2.5	22	6.6	<10	5.4	4.4			<1	6.7				
21	0600	24		Y	2.4	22	6.5	<10	5.2	4.1	<0.1	0.05	<1	6.5				
22				N	2.2													
23				N	2.2													
24	0600	24		B	2.4	18	6.8	<10	6	4.5	<0.1	0.05	<1	6.6				
25	0600	24		B	2.2	18	6.6	<10	5.8	4.1			<1	6.6				
26	0600	24		Y	2.2	18	6.7	<10	5.3	4.3	<0.1	0.05	<1	6.6				
27	0600	24		Y	2.2	22	6.8	<10	5.6	4.5			2	6.6				
28	0600	24		Y	2.3	20	6.7	<10	5.6	4.3	0.1	0.1	1	6.5				
29				N	2.2													
30				N	2.2													
31	0600	24		Y	2.3	19	6.6	<10	4.6	3.3	0.11	0.11	25	7.4				
AVERAGE					2.345	21		0	5.0	4.1	0.045	0.076	1	6.5	3.00	0.720		28.7
MAXIMUM					2.900	23	6.8	0	6.0	5.3	0.14	0.14	25	7.4	3.00	0.720		28.700
MINIMUM					2.100	18	6.4	<10	<2.0	2.7	<0.10	0.05	<1	6.1	3.00	0.720		28.700
Comp/Grab						G	G	G	C	C	C	C	G	G	C	C	C	C
Monthly Limit					6.0			28	30	30	6	6	200					

1st NH3 column treat BDLs as zero; 2nd NH3 column redone to use 1/2 DL for BDLs

USE Recalculated DMR Aves using 1/2 DL for all BDL in YOUR HWA!! -See Guidance on web-site

EFFLUENT, Page 2

NPDES PERMIT NO NC[illegible]5 MONTH: October YEAR: 2016

FACILITY NAME Tow[illegible]picalville WWTP

	DATE		01002 Arsenic UG/L	01027 Cadmium UG/L	01035 Chromium UG/L	01042 Copper UG/L	00720 Cyanide UG/L	01051 Lead UG/L	71900 Mercury NG/L	Molybdenum UG/L	01067 Nickel UG/L	01147 Selenium UG/L	01077 Silver UG/L	01092 Zinc UG/L
1														
2														
3														
4														
5			<10	<1	<5	<5	<5	0.19	2.05	<5	<5	<10	<5	73.3
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														
18														
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22														
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25														
26														
27														
28														
29														
30														
31														
32														
33														
34														
35														
36														
37														
38														
39														
40	AVE		0	0	0	0	0	0.19	2.05	0	0	0	0	73.3
41	MAX		<10	<1	<5	<5	<5	0.19	2.05	<5	<5	<10	<5	73.3
42	MIN		<10	<1	<5	<5	<5	0.19	2.05	<5	<5	<10	<5	73.3
43	C / G		C	C	C	C	G	C	G	C	C	C	C	C
44														
45														
46														
47														

- NPDES Limits Page requires quarterly sampling for Cd, Cu, Ag & Zn.
- Typicalville's LTMP requires 1/quarter for cyanide, plus several other POCs
- Typicalville preforms LTMP sampling 1/month the year before the HWA is due

- Remember - required to list all

EFFLUENT, Page 1

Tab 3-B, page 19:

Second copy of DMR Effluent Page 1 to show Inhibition Evaluation

DISCHARGE NO.: 001 · MONTH: October YEAR: 2016
COUNTY: Typical
34) (2) Neighborhood Lab (Cert. #6789)
Jane Wastewater CERTIFICATION NO.: 12345

x
(SIGNATURE OF OPERATOR IN RESPONSIBLE CHARGE) DATE
BY THIS SIGNATURE, I CERTIFY THAT THIS REPORT IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

	DATE	Operator Arrival Time	Operator Time	ORC On Site?	50050 FLOW EFF ☐ INF ☐ DAILY RA	00010 Temperature Celsius	00400 pH	50060 RESIDUAL CHLORINE	00310 BOD5 20 Deg. C - BDLs=0	00530 TOTAL SUSPENDED SOLIDS	00610 Nitrogen - BDLs = 0	00610 Ammonia Nitrogen = BDLs = 1/2 DL	31616 FECAL COLIFORM (Geometric	00300 DISSOLVED OXYGEN	00600 TOTAL NITROGEN	00665 TOTAL PHOSPHORUS	TGP3B CHRONIC TOXICITY	HARDNESS
		HRS	HRS	Y/B/N	MGD	° C	UNITS	UG/L	MG/L	MG/L	MG/L	MG/L	#/100ML	MG/L	MG/L	MG/L	P/F	mg/l
1				N	2.1													
2				N	2.2													
3	0600	24	Y	2.4	23	6.7	<10	4.5	4.1	0.11	0.11	1	6.1				
4	0600	24	Y	2.4	22	6.7	<10	4.1	3.3			<1	6.4				
5	0600	24	Y	2.3	22	6.6	<10	4.4	2.7	0.14	0.14	<1	6.4	3	0.72		28.7
6	0600	24	Y	2.4	23	6.8	<10	4.4	3.3			2	6.5				
7	0600	24	Y	2.9	23	6.8	<10	3.2	3.3	<0.1	0.05	<1	6.4				
8			N	2.7													
9			N	2.4													
10	0600	24	Y	2.4	20	6.6	<10	3.7	3.7	<0.1	0.05	1	6.6				
11	0600	24	Y	2.4	18	6.6	<10	5.6	4			<1	6.5				
12	0600	24	Y	2.4	18	6.6	<10	5.2	4.7	<0.1	0.05	<1	6.5				
13	0600	24	Y	2.4	22	6.8	<10	5	3.9			<1	6.6				
14	0600	24	Y	2.3	21	6.4	<10	5.3	4.4	0.13	0.13	<1	6.4				
15			N	2.2													
16			N	2.3													
17	0600	24	Y	2.4	21	6.6	<10	5.2	5.2	<0.1	0.05	<1	6.4				
18	0600	24	Y	2.4	20	6.5	<10	5.2	5.3			<1	6.6				
19	0600	24	Y	2.4	21	6.4	<10	5.6	4.7	<0.1	0.05	1	6.5				
20	0600	24	Y	2.5	22	6.6	<10	5.4	4.4			<1	6.7				
21	0600	24	Y	2.4	22	6.5	<10	5.2	4.1	<0.1	0.05	<1	6.5				
22			N	2.2													
23			N	2.2													
24	0600	24	B	2.4	18	6.8	<10	6	4.5	<0.1	0.05	<1	6.6				
25	0600	24	B	2.2	18	6.6	<10	5.8	4.1			<1	6.6				
26	0600	24	Y	2.2	18	6.7	<10	5.3	4.3	<0.1	0.05	<1	6.6				
27	0600	24	Y	2.2	22	6.8	<10	5.6	4.5			2	6.6				
28	0600	24	Y	2.3	20	6.7	<10	5.6	4.3	0.1	0.1	1	6.5				
29			N	2.2													
30			N	2.2													
31	0600	24	Y	2.3	19	6.6	<10	4.6	3.3	0.11	0.11	25	7.4				
AVERAGE				2.345	21		0	5.0	4.1	0.045	0.076	1	6.5	3.00	0.720		28.7
MAXIMUM				2.900	23	6.8	0	6.0	5.3	0.14	0.14	25	7.4	3.00	0.720		28.700
MINIMUM				2.100	18	6.4	<10	<2.0	2.7	<0.10	0.05	<1	6.1	3.00	0.720		28.700
Comp/Grab					G	G	G	C	C	C	C	G	G	C	C	C	C
Monthly Limit				6.0			28	30	30	6	6	200					

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Removal Rate Calculations

Sample Date	FLOW mgd	BOD <	BOD Influent mg/L	BOD Used in Calculation	BOD <	BOD Effluent mg/L	BOD Used in Calculation	TSS <	TSS Influent mg/L	TSS Used in Calculation	TSS <	TSS Effluent mg/L	TSS Used in Calculation	AMMONIA <	AMMONIA Influent mg/L	AMMONIA Used in Calculation	AMMONIA <	AMMONIA Effluent mg/L	AMMONIA Used in Calculation
11/2016 DMR Average	2.267		270	270		5.12	5.12		269	269		3.9	3.9					0.35	0.35
11/1/2016 LTMP															28.6	28.6			
10/2016 DMR Average	2.345		265	265		5	5		276	276		4.1	4.1					0.076	0.076
10/5/2016 LTMP															28.8	28.8			
9/2016 DMR Average	2.5		245	245		6.1	6.1		280	280		5.4	5.4					0.83	0.83
9/7/2016 LTMP															26.5	26.5			
8/2016 DMR Average	2.6		224	224		5	5		334	334		10.3	10.3					0.011	0.011
8/3/2016 LTMP															31.7	31.7			
7/2016 DMR Average	2.7		205	205		5.6	5.6		216	216		5.3	5.3					0.1	0.1
7/6/2016 LTMP															17.6	17.6			
6/2016 DMR Average	2.5		219	219		5.5	5.5		211	211		5.5	5.5					0.07	0.07
6/1/2016 LTMP															46.8	46.8			
5/2016 DMR Average	3.1		224	224		7.1	7.1		230	230		7.4	7.4					0.57	0.57
5/4/2016 LTMP															16.3	16.3			
4/2016 DMR Average	2.7		250	250		6.9	6.9		254	254		4.5	4.5					1.04	1.04
4/6/2016 LTMP															24.8	24.8			
3/2016 DMR Average	2.7		247	247		9.6	9.6		234	234		6.3	6.3					4.96	4.96
3/2/2016 LTMP															23	23			
2/2016 DMR Average	3.4		211	211		8.3	8.3		213	213		7	7					1.62	1.62
2/3/2016 LTMP															25.2	25.2			
1/2016 DMR Average	3		256	256		5.4	5.4		254	254		5.1	5.1					0.24	0.24
1/6/2016 LTMP															26.8	26.8			
12/2015 DMR Average	3.9		226	226		5.1	5.1		246	246		4.4	4.4					0.21	0.21
12/1/2015 LTMP															18.4	18.4			
Column Averages =>	2.809333			236.8333			6.226667			251.4167			5.766667			26.20833			0.83975
		20		Unpaired Site Specific RR =>			97.37 %			Unpaired Site Specific RR =>			97.71 %			Unpaired Site Specific RR =>			96.80 %
				Literature/Default RR =>			85.00 %			Literature/Default RR =>			85.00 %			Literature/Default RR =>			85.00 %
				0 % of data is BDL						0 % of data is BDL						0 % of data is BDL			
				RR for this HWA =>			97.37 %			RR for this HWA =>			97.71 %			RR for this HWA =>			96.80 %

Removal Rate Calculations

Sample Date	ARSENIC					CADMIUM					CHROMIUM				
	<	Influent mg/L	Used in Calculation	<	Effluent mg/L	Used in Calculation	<	Influent mg/L	Used in Calculation	<	Effluent mg/L	Used in Calculation	<	Influent mg/L	Used in Calculation	<	Effluent mg/L	Used in Calculation
11/2016 DMR Average																		
11/1/2016 LTMP	<	0.01	0.005	<	0.01	0.005		0.00013	0.00013	<	0.00008	0.00004	<	0.005	0.0025	<	0.005	0.0025
10/2016 DMR Average																		
10/5/2016 LTMP	<	0.01	0.005	<	0.01	0.005	<	0.001	0.0005	<	0.001	0.0005	<	0.005	0.0025	<	0.005	0.0025
9/2016 DMR Average																		
9/7/2016 LTMP	<	0.01	0.005	<	0.01	0.005	<	0.001	0.0005	<	0.001	0.0005	<	0.005	0.0025	<	0.005	0.0025
8/2016 DMR Average																		
8/3/2016 LTMP	<	0.01	0.005	<	0.01	0.005	<	0.001	0.0005	<	0.001	0.0005	<	0.005	0.0025	<	0.005	0.0025
7/2016 DMR Average																		
7/6/2016 LTMP	<	0.01	0.005	<	0.01	0.005	<	0.001	0.0005	<	0.001	0.0005	<	0.005	0.0025	<	0.005	0.0025
6/2016 DMR Average																		
6/1/2016 LTMP	<	0.01	0.005	<	0.01	0.005	<	0.001	0.0005	<	0.001	0.0005	<	0.005	0.0025	<	0.005	0.0025
5/2016 DMR Average																		
5/4/2016 LTMP	<	0.01	0.005	<	0.01	0.005	<	0.001	0.0005	<	0.001	0.0005	<	0.005	0.0025	<	0.005	0.0025
4/2016 DMR Average																		
4/6/2016 LTMP	<	0.01	0.005	<	0.01	0.005	<	0.001	0.0005	<	0.001	0.0005	<	0.005	0.0025	<	0.005	0.0025
3/2016 DMR Average																		
3/2/2016 LTMP	<	0.01	0.005	<	0.01	0.005	<	0.001	0.0005		0.001	0.001	<	0.005	0.0025	<	0.005	0.0025
2/2016 DMR Average																		
2/3/2016 LTMP	<	0.01	0.005	<	0.01	0.005	<	0.001	0.0005	<	0.001	0.0005	<	0.005	0.0025	<	0.005	0.0025
1/2016 DMR Average																		
1/6/2016 LTMP	<	0.01	0.005	<	0.01	0.005	<	0.001	0.0005	<	0.001	0.0005	<	0.005	0.0025	<	0.005	0.0025
12/2015 DMR Average																		
12/1/2015 LTMP	<	0.01	0.005	<	0.01	0.005	<	0.001	0.0005	<	0.001	0.0005	<	0.005	0.0025	<	0.005	0.0025
Column Averages =>			0.0050			0.0050			0.0005			0.0005			0.0025			0.0025

21

Unpaired Site Specific RR => > 50 % BDL

Literature/Default RR => 45.00 %

100 % of data is BDL

RR for this HWA => 45.00 %

Unpaired Site Specific RR => > 50 % BDL

Literature/Default RR => 67.00 %

92 % of data is BDL

RR for this HWA => 67.00 %

Unpaired Site Specific RR => > 50 % BDL

Literature/Default RR => 82.00 %

100 % of data is BDL

RR for this HWA => 82.00 %

Removal Rate Calculations

Sample Date	COPPER <	Influent mg/L	Used in Calculation	COPPER <	Effluent mg/L	Used in Calculation	CYANIDE <	Influent mg/L	Used in Calculation	CYANIDE <	Effluent mg/L	Used in Calculation	LEAD <	Influent mg/L	Used in Calculation	LEAD <	Effluent mg/L	Used in Calculation
11/2016 DMR Average																		
11/1/2016 LTMP		0.0414	0.0414	<	0.005	0.0025		0.015	0.015		0.006	0.006		0.0026	0.0026		0.00019	0.00019
10/2016 DMR Average																		
10/5/2016 LTMP		0.0476	0.0476	<	0.005	0.0025		0.009	0.009	<	0.005	0.0025		0.00052	0.00052		0.00019	0.00019
9/2016 DMR Average																		
9/7/2016 LTMP		0.0548	0.0548	<	0.005	0.0025		0.008	0.008	<	0.005	0.0025		0.0026	0.0026		0.00028	0.00028
8/2016 DMR Average																		
8/3/2016 LTMP		0.051	0.051	<	0.005	0.0025		0.01	0.01	<	0.005	0.0025		0.0035	0.0035		0.0002	0.0002
7/2016 DMR Average																		
7/6/2016 LTMP		0.0705	0.0705	<	0.005	0.0025		0.013	0.013		0.007	0.007		0.0065	0.0065		0.00021	0.00021
6/2016 DMR Average																		
6/1/2016 LTMP		0.0547	0.0547	<	0.005	0.0025		0.011	0.011	<	0.007	0.0035		0.0043	0.0043		0.00035	0.00035
5/2016 DMR Average																		
5/4/2016 LTMP		0.0163	0.0163	<	0.005	0.0025		0.013	0.013		0.006	0.006		0.0035	0.0035		0.00026	0.00026
4/2016 DMR Average																		
4/6/2016 LTMP		0.0395	0.0395	<	0.005	0.0025		0.013	0.013		0.007	0.007		0.002	0.002		0.0002	0.0002
3/2016 DMR Average																		
3/2/2016 LTMP		0.061	0.061		0.008	0.008		0.011	0.011		0.006	0.006		0.0032	0.0032		0.00028	0.00028
2/2016 DMR Average																		
2/3/2016 LTMP		0.0477	0.0477		0.005	0.005		0.013	0.013	<	0.005	0.0025		0.0034	0.0034		0.00024	0.00024
1/2016 DMR Average																		
1/6/2016 LTMP		0.0537	0.0537		0.0052	0.0052		0.009	0.009		0.006	0.006		0.0022	0.0022		0.00018	0.00018
12/2015 DMR Average																		
12/1/2015 LTMP		0.033	0.033	<	0.005	0.0025		0.012	0.012		0.006	0.006		0.002	0.002		0.00019	0.00019
Column Averages =>			0.0476			0.0034			0.0114			0.0048			0.0030			0.0002
		22	Unpaired Site Specific RR =>			92.87 %			Unpaired Site Specific RR =>			58.03 %			Unpaired Site Specific RR =>			92.37 %
			Literature/Default RR =>			86.00 %			Literature/Default RR =>			69.00 %			Literature/Default RR =>			61.00 %
			38 % of data is BDL						21 % of data is BDL						0 % of data is BDL			
			RR for this HWA =>			92.87 %			RR for this HWA =>			58.03 %			RR for this HWA =>			92.37 %

Removal Rate Calculations

Sample Date	MERCURY					MOLYBDENUM					NICKEL				
	<	Influent mg/L	Used in Calculation	<	Effluent mg/L	Used in Calculation	<	Influent mg/L	Used in Calculation	<	Effluent mg/L	Used in Calculation	<	Influent mg/L	Used in Calculation	<	Effluent mg/L	Used in Calculation
11/2016 DMR Averag																		
11/1/2016 LTMP	<	0.0002	0.0001		1.83E-06	1.83E-06	<	0.005	0.0025	<	0.005	0.0025	<	0.005	0.0025	<	0.005	0.0025
10/2016 DMR Averag																		
10/5/2016 LTMP	<	0.0002	0.0001		2.05E-06	2.05E-06		0.007	0.007	<	0.005	0.0025	<	0.005	0.0025	<	0.005	0.0025
9/2016 DMR Average																		
9/7/2016 LTMP	<	0.0002	0.0001		2.99E-06	2.99E-06	<	0.005	0.0025	<	0.005	0.0025	<	0.005	0.0025	<	0.005	0.0025
8/2016 DMR Average																		
8/3/2016 LTMP	<	0.0002	0.0001		1.65E-06	1.65E-06	<	0.005	0.0025	<	0.005	0.0025	<	0.005	0.0025	<	0.005	0.0025
7/2016 DMR Average																		
7/6/2016 LTMP		1.64E-05	1.64E-05		2.66E-06	2.66E-06		0.0051	0.0051	<	0.005	0.0025	<	0.005	0.0025	<	0.005	0.0025
6/2016 DMR Average																		
6/1/2016 LTMP		0.00066	0.00066		4.27E-06	4.27E-06	<	0.005	0.0025	<	0.005	0.0025	<	0.005	0.0025	<	0.005	0.0025
5/2016 DMR Average																		
5/4/2016 LTMP	<	0.0002	0.0001		4.52E-06	4.52E-06	<	0.005	0.0025	<	0.005	0.0025	<	0.005	0.0025	<	0.005	0.0025
4/2016 DMR Average																		
4/6/2016 LTMP		2.68E-05	2.68E-05		2.15E-06	2.15E-06	<	0.005	0.0025	<	0.005	0.0025	<	0.005	0.0025	<	0.005	0.0025
3/2016 DMR Average																		
3/2/2016 LTMP		0.00026	0.00026		4.48E-06	4.48E-06	<	0.005	0.0025	<	0.005	0.0025	<	0.005	0.0025	<	0.005	0.0025
2/2016 DMR Average																		
2/3/2016 LTMP		0.00028	0.00028		3.22E-06	3.22E-06	<	0.005	0.0025	<	0.005	0.0025	<	0.005	0.0025	<	0.005	0.0025
1/2016 DMR Average																		
1/6/2016 LTMP		..00000935	..00000935		2.3E-06	2.3E-06	<	0.005	0.0025	<	0.005	0.0025	<	0.005	0.0025	<	0.005	0.0025
12/2015 DMR Averag																		
12/1/2015 LTMP	<	0.0002	0.0001		2.23E-06	2.23E-06	<	0.005	0.0025	<	0.005	0.0025	<	0.005	0.0025	<	0.005	0.0025
Column Averages =>		23	0.00017			0.00000			0.0031			0.0025			0.0025			0.0025
Unpaired Site Specific RR =>			98.29 %						> 50 % BDL						> 50 % BDL			
Literature/Default RR =>			60.00 %						33.00 %						42.00 %			
% of data is BDL			26 %						92 %						100 %			
RR for this HWA =>			86.75 %						33.00 %						42.00 %			

Removal Rate Calculations

Sample Date	SELENIUM					SILVER					ZINC				
	<	Influent mg/L	Used in Calculation	<	Effluent mg/L	Used in Calculation	<	Influent mg/L	Used in Calculation	<	Effluent mg/L	Used in Calculation	<	Influent mg/L	Used in Calculation	<	Effluent mg/L	Used in Calculation
11/2016 DMR Average																		
11/1/2016 LTMP	<	0.01	0.005	<	0.01	0.005		0.00063	0.00063	<	0.0005	0.00025		0.476	0.476		0.104	0.104
10/2016 DMR Average																		
10/5/2016 LTMP	<	0.01	0.005	<	0.01	0.005	<	0.005	0.0025	<	0.005	0.0025		0.494	0.494		0.0753	0.0753
9/2016 DMR Average																		
9/7/2016 LTMP	<	0.01	0.005	<	0.01	0.005	<	0.005	0.0025	<	0.005	0.0025		0.416	0.416		0.0824	0.0824
8/2016 DMR Average																		
8/3/2016 LTMP	<	0.01	0.005	<	0.01	0.005	<	0.005	0.0025	<	0.005	0.0025		0.354	0.354		0.0565	0.0565
7/2016 DMR Average																		
7/6/2016 LTMP	<	0.01	0.005	<	0.01	0.005	<	0.005	0.0025	<	0.005	0.0025		0.47	0.47		0.0725	0.0725
6/2016 DMR Average																		
6/1/2016 LTMP	<	0.01	0.005	<	0.01	0.005	<	0.005	0.0025	<	0.005	0.0025		0.448	0.448		0.0921	0.0921
5/2016 DMR Average																		
5/4/2016 LTMP	<	0.01	0.005	<	0.01	0.005	<	0.005	0.0025	<	0.005	0.0025		0.156	0.156		0.0697	0.0697
4/2016 DMR Average																		
4/6/2016 LTMP	<	0.01	0.005	<	0.01	0.005	<	0.005	0.0025	<	0.005	0.0025		0.371	0.371		0.0711	0.0711
3/2016 DMR Average																		
3/2/2016 LTMP	<	0.01	0.005	<	0.01	0.005	<	0.005	0.0025	<	0.005	0.0025		0.458	0.458		0.12	0.12
2/2016 DMR Average																		
2/3/2016 LTMP	<	0.01	0.005	<	0.01	0.005	<	0.005	0.0025	<	0.005	0.0025		0.374	0.374		0.106	0.106
1/2016 DMR Average																		
1/6/2016 LTMP	<	0.01	0.005	<	0.01	0.005	<	0.005	0.0025	<	0.005	0.0025		0.471	0.471		0.128	0.128
12/2015 DMR Average																		
12/1/2015 LTMP	<	0.01	0.005	<	0.01	0.005	<	0.005	0.0025	<	0.005	0.0025		0.21	0.21		0.0864	0.0864
Column Averages =>	24		0.0050			0.0050			0.0023			0.0023			0.3915			0.0887
Unpaired Site Specific RR =>						> 50 % BDL						> 50 % BDL						77.35 %
Literature/Default RR =>						50.00 %						75.00 %						79.00 %
	100 % of data is BDL						96 % of data is BDL						0 % of data is BDL					
RR for this HWA =>						50.00 %						75.00 %						77.35 %

Removal Rate Calculations

	Hardness			Total Nitrogen				Total Phosphorus				Upstream Hardness	
Sample Date	<	Effluent mg/L	Used in Calculation	<	Influent mg/L	Used in Calculation	< Effluent mg/L	Used in Calculation	<	Influent mg/L	Used in Calculation	< Effluent mg/L	Used in Calculation	<	Upstream mg/L	Used in Calculation
11/2016 DMR Averag																
11/1/2016 LTMP		30.6	30.6		37.2	37.2	2.8	2.8		5.4	5.4	1.2	1.2		14.2	14.2
10/2016 DMR Averag																
10/5/2016 LTMP		28.7	28.7		40.6	40.6	3	3		5.4	5.4	0.72	0.72		14.5	14.5
9/2016 DMR Average																
9/7/2016 LTMP		27.7	27.7		45.6	45.6	3.4	3.4		5.3	5.3	0.37	0.37		13.9	13.9
8/2016 DMR Average																
8/3/2016 LTMP		28.1	28.1		7.4	7.4	2.2	2.2		4.7	4.7	< 0.3	0.15		13.2	13.2
7/2016 DMR Average																
7/6/2016 LTMP		27.5	27.5		29.3	29.3	2.7	2.7		4.1	4.1	1.2	1.2		11.8	11.8
6/2016 DMR Average																
6/1/2016 LTMP		28.4	28.4		35.1	35.1	3.8	3.8		4.5	4.5	2	2		13.9	13.9
5/2016 DMR Average																
5/4/2016 LTMP		27.2	27.2		12.8	12.8	2.8	2.8		1.2	1.2	0.46	0.46		13.5	13.5
4/2016 DMR Average																
4/6/2016 LTMP		24.7	24.7		40.7	40.7	6.2	6.2		4.7	4.7	0.31	0.31		13.4	13.4
3/2016 DMR Average																
3/2/2016 LTMP		21.2	21.2		37	37	10.9	10.9		4.3	4.3	0.38	0.38		11.9	11.9
2/2016 DMR Average																
2/3/2016 LTMP		27.5	27.5		35.8	35.8	5.8	5.8		4.7	4.7	0.5	0.5		15.3	15.3
1/2016 DMR Average																
1/6/2016 LTMP		31.7	31.7		43.2	43.2	5.8	5.8		4.5	4.5	1.4	1.4		12.6	12.6
12/2015 DMR Averag																
12/1/2015 LTMP		29.8	29.8		20.9	20.9	3.9	3.9		2.7	2.7	< 0.3	0.15		12.7	12.7
Column Averages =>			27.7583			32.1333		4.4417			4.2917		0.7367			13.4083

p 25 > #REF!

Default RR =>

this HWA =>

Unpaired Site Specific RR => 86.18 %

Literature/Default RR =>

0 % of data is BDL

RR for this HWA => 86.18 %

Unpaired Site Specific RR => 82.83 %

Literature/Default RR =>

8 % of data is BDL

RR for this HWA => 82.83 %

e Specific RR => #REF!

Literature/Default RR =>

for this HWA =>

Calculator: Estimate NPDES Permit Limitations based on the Dissolved Water Quality Standards and Stream & Effluent Hardness

FACILITY:	PERMIT #:	DATE:	CALC BY:
Typicalville	NC0012345	1/4/2017	DG

Average Stream Flow (CFS)	Receiving Stream summer 7Q10 (CFS)	Receiving Stream summer 7Q10 (MGD)	Rec. Stream 1Q10 [MGD]	NPDES Flow Limit [MGD]	Total Suspended Solids (mg/L)	Total Hardness (CaCO3, mg/L)	IWC - Instream Wastewater Concentration (Chronic)	IWC - Instream Wastewater Concentration (Acute)	Average Upstream Hardness	Average Effluent Hardness
225.00	60.00	38.7097	31.81	6.00	10.00	25	0.13	0.16	13.40	27.80

Class C, C-NSW, C-Swamp, and B streams

	2	3	4	5	6	7	8
	Dissolved Water Quality Criteria (function of total hardness)		Translators- using EPA Default Partition Coefficients (streams)	Total Metal (allocated to permittee) Diss. Metal ÷ Translator		Estimated NPDES Permit Limits [Total Metal ÷ IWC]	
	Chronic	Acute		Chronic	Acute	Chronic	Acute
PARAMETER*	[ug/l]	[ug/l]		[ug/l]	[ug/l]	[ug/l]	[ug/l]
Arsenic	150	340	1.000	150	340	1117.74	2142.44
Arsenic (Human Health	10	N/A	1.000	10	N/A	251.94	N/A
Beryllium	6.5	65	1.000	6.5	65	48.44	409.58
Cadmium (a)	0.15	0.82	0.252	0.5899	3.2396	4.4	20.41
Chlorides (WS)	250000	N/A	1.000	250000	N/A	1862903	N/A
Chromium III (a)	24	183	0.202	117.7325	905.082	877.3	5703.18
Chromium VI	11	16	1.000	11	16	82.0	100.82
Chromium, Total	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Copper (a)	2.7	3.6	0.348	7.8806	10.4720	58.7	65.99
Cyanide	5.0	22.0	1.000	5.0000	22.0000	37.3	138.63
Flouride	1800.0	N/A	1.000	1800.0	N/A	13412.9	N/A
Lead (a)	0.54	14	0.184	2.9416	75.4871	21.92	475.67
Mercury	0.012000	N/A	1.000	0.012000	N/A	0.089419	N/A
Molybdenum (WS)	160.00	N/A	1.000	160.0000	N/A	1192.26	N/A
Nickel (a)**	16	145	0.432	37.2313	335.2087	277	2112.25
Nickel (WS)	25	N/A	1.000	25.0000	N/A	186	N/A
Selenium	5	56	1.000	5.0000	56.0000	37	352.87
Silver (a)	0.06	0.30	1.000	0.06	0.2964	0.45	1.87
Zinc (a)	36	36	0.288	126.7335	125.7052	944	792.10
Cadmium(trout streams)	0.15	0.51	0.252	0.59	2.02	4.4	12.73

HQW streams

9	10
Estimated NPDES Permit Limits [Total Metal ÷ IWC]	
Chronic	Acute
[ug/l]	[ug/l]
558.87	1071.22
37.26	N/A
24.22	204.79
2.2	10.21
931451.6	N/A
438.6	2851.59
41.0	50.41
N/A	N/A
29.4	32.99
18.6	69.31
6706.5	N/A
10.96	237.83
0.0447097	N/A
596.13	N/A
139	1056.12
93	N/A
19	176.44
0.22	0.93
472	396.05
2.20	6.36

CARROUSEL® A^2C^{TM} SYSTEM DESIGN CALCULATIONS
for
North Carolina WWTP (6 MGD / TWO TRAINS)

A. DESIGN CONDITIONS

AVERAGE FLOW (MGD)	6.00
DESIGN BOD (mg/l)	265
DESIGN TSS (mg/l)	320
DESIGN TKN (mg/l)	35
DESIGN TP (mg/l)	7
EFFLUENT BOD (mg/l)	10
EFFLUENT TSS (mg/l)	15
EFFLUENT NH_3-N (mg/l)	1.0
EFFLUENT NO_3-N (mg/l)	5.0
EFFLUENT TKN (mg/l)	2.0
EFFLUENT TP (mg/l)	1.0*

*Chemical polishing may be required

Sample Location:		ARSENIC			CADMIUM			CHROMIUM			COPPER			CYANIDE		
NORTH AERATION		<	mg/L	Used in Calculation	<	mg/L	Used in Calculation	<	mg/L	Used in Calculation	<	mg/L	Used in Calculation	<	mg/L	Used in Calculation
Sample Date																
10/5/2016	Spreadsheet Instructions: 1) Data entered only in Heavy Bordered cells. Rest of worksheet is protected, password is "2". 2) For below		0.026	0.026		0.0026	0.0026		0.12			8.63	8.63		0.12	0.12
4/6/2016			0.013	0.013		0.0016	0.0016		0.054	0.054		4.1	4.1		0.056	0.056
9/8/2015			0.017	0.017	<	0.001	0.0005		0.091	0.091		5.3	5.3		0.11	0.11
3/10/2015			0.012	0.012		0.0011	0.0011		0.075	0.075		4.8	4.8		0.063	0.063
10/7/2014			0.117	0.117	<	0.02	0.01		0.158	0.158		10.8	10.8		0.016	0.016
4/8/2014			0.042	0.042		0.01	0.01		0.187	0.187		10	10		0.126	0.126
9/19/2013		<	0.05	0.025		0.017	0.017		0.283	0.283		9.5	9.5		0.127	0.127
2/12/2013		<	0.05	0.025	<	0.01	0.005		0.244	0.244		2.6	2.6	<	0.005	0.0025
SOUTH AERATION		<	mg/L	Used in Calculation	<	mg/L	Used in Calculation	<	mg/L	Used in Calculation	<	mg/L	Used in Calculation	<	mg/L	Used in Calculation
Sample Date																
10/5/2016	Spreadsheet Instructions: 1) Data entered only in Heavy Bordered cells. Rest of worksheet is protected, password is "2". 2) For below		0.022	0.022		0.0028	0.0028		0.081	0.081		2.4	2.4		0.098	0.098
4/6/2016			0.019	0.019	<	0.001	0.0005		0.087	0.087		5.3	5.3		0.15	0.15
9/8/2015			0.017	0.017	<	0.001	0.0005		0.085	0.085		5.6	5.6		0.091	0.091
3/10/2015			0.018	0.018	<	0.001	0.0005		0.11	0.11		5.5	5.5		0.11	0.11
10/7/2014		<	0.1	0.05	<	0.02	0.01		0.126	0.126		10.2	10.2		0.143	0.143
4/8/2014			0.047	0.047		0.008	0.008		0.177	0.177		7.58	7.58		0.107	0.107
9/19/2013		<	0.05	0.025		0.019	0.019		0.287	0.287		9.58	9.58		0.137	0.137
2/12/2013		<	0.05	0.025	<	0.01	0.005		0.276	0.276		9.69	9.69	<	0.005	0.0025
Column Averages =>		28		0.03125			0.00588			0.15256			6.97375			0.09119

	A	B	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM
1	Sample Location:			LEAD				MERCURY				MOLYBDENUM				NICKEL			
2	**NORTH AERATION**																		
3	Sample Date			<	mg/L	Used in Calculation		<	mg/L	Used in Calculation		<	mg/L	Used in Calculation		<	mg/L	Used in Calculation	
4	10/5/2016	Spreadsheet Instructions: 1) Data entered only in Heavy Bordered cells. Rest of worksheet is protected, password is "2". 2) For below			0.079	0.079		<	0.0002	0.0001			0.0066	0.0066			0.063	0.063	
5	4/6/2016				0.027	0.027			0.0032	0.0032		<	0.005	0.0025			0.024	0.024	
6	9/8/2015				0.088	0.088			0.0015	0.0015			0.016	0.016			0.05	0.05	
7	3/10/2015				0.04	0.04			0.0014	0.0014		<	0.005	0.0025			0.028	0.028	
8	10/7/2014				0.362	0.362			0.003	0.003		<	0.05	0.025			0.158	0.158	
9	4/8/2014				0.336	0.336			0.004	0.004			0.011	0.011			0.129	0.129	
10	9/19/2013				0.188	0.188			0.0015	0.0015			0.086	0.086			0.133	0.133	
11	2/12/2013				0.167	0.167			0.002	0.002			0.054	0.054			0.088	0.088	
28																			
29	**SOUTH AERATION**																		
30	Sample Date			<	mg/L	Used in Calculation		<	mg/L	Used in Calculation		<	mg/L	Used in Calculation		<	mg/L	Used in Calculation	
31	10/5/2016	Spreadsheet Instructions: 1) Data entered only in Heavy Bordered cells. Rest of worksheet is protected, password is "2". 2) For below			0.06	0.06		<	0.0002	0.0001			0.0088	0.0088			0.052	0.052	
32	4/6/2016				0.072	0.072			0.0029	0.0029			0.011	0.011			0.037	0.037	
33	9/8/2015				0.079	0.079			0.0027	0.0027			0.012	0.012			0.058	0.058	
34	3/10/2015				0.1	0.1			0.0013	0.0013			0.012	0.012			0.053	0.053	
35	10/7/2014				0.339	0.339			0.003	0.003		<	0.05	0.025			0.13	0.13	
36	4/8/2014				0.324	0.324			0.0024	0.0024			0.011	0.011			0.126	0.126	
37	9/19/2013				0.209	0.209			0.002	0.002			0.074	0.074			0.13	0.13	
38	2/12/2013				0.188	0.188			0.0025	0.0025			0.068	0.068			0.107	0.107	
40																			
41	Column Averages =>				29	0.16613				0.00210				0.02659				0.08538	
42																			

	A	B	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY
1	Sample Location:			SELENIUM				SILVER				ZINC		
2	**NORTH AERATION**				Used in				Used in				Used in	
3	Sample Date		<	mg/L	Calculation		<	mg/L	Calculation		<	mg/L	Calculation	
4	10/5/2016	Spreadsheet Instructions: 1) Data entered only in Heavy Bordered cells. Rest of worksheet is protected, password is "2". 2) For below		0.011	0.011			0.0067				1.4	1.4	
5	4/6/2016		<	0.005	0.0025		<	0.002	0.001			1.3	1.3	
6	9/8/2015			0.0066	0.0066			0.016	0.016			1.6	1.6	
7	3/10/2015		<	0.005	0.0025			0.0031	0.0031			1.7	1.7	
8	10/7/2014		<	0.1	0.05		<	0.05	0.025			3.87	3.87	
9	4/8/2014		<	0.01	0.005			0.025	0.025			3.9	3.9	
10	9/19/2013			0.058	0.058			0.054	0.054			2.96	2.96	
11	2/12/2013		<	0.05	0.025			0.026	0.026			2.21	2.21	
28														
29	**SOUTH AERATION**				Used in				Used in				Used in	
30	Sample Date		<	mg/L	Calculation		<	mg/L	Calculation		<	mg/L	Calculation	
31	10/5/2016	Spreadsheet Instructions: 1) Data entered only in Heavy Bordered cells. Rest of worksheet is protected, password is "2". 2) For below		0.0078	0.0078			0.0092				3.85	3.85	
32	4/6/2016		<	0.005	0.0025			0.0076	0.0076			1.5	1.5	
33	9/8/2015			0.0082	0.0082			0.01	0.01			1.6	1.6	
34	3/10/2015		<	0.005	0.0025			0.014	0.014			1.6	1.6	
35	10/7/2014		<	0.1	0.05		<	0.05	0.025			1.5	1.5	
36	4/8/2014		<	0.01	0.005			0.023	0.023			3.71	3.71	
37	9/19/2013			0.067	0.067		<	0.025	0.0125			2.1	2.1	
38	2/12/2013		<	0.05	0.025		<	0.025	0.0125			2.6	2.6	
40														
41	Column Averages =>			30	0.02054				0.01691				2.33750	
42														