STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WATER QUALITY

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 February 1, 2007.

This permit and authorization to discharge shall expire at midnight on January 31, 2012.

Signed this day December 23, 2006.

Coleen H. Sullins

Coleen H. Sullins, Director
Division of Water Quality
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 13.5 MGD wastewater treatment facility consisting of a flow meter, bar screens, grit separator, extended aeration basins, secondary clarifiers, chlorination facilities, dechlorination, aerobic digester, dissolved air flotation (DAF), sludge lagoons, and polymer addition 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 permit expiration, the Permittee is authorized to discharge from outfall 001. Such discharges shall be limited and monitored by the Permittee as specified below:

EFFLUENT CHARACTERISTICS	LIMITS			MONITORING REQUIREMENTS		
	Monthly Average	Weekly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location[1]
Flow	13.5 MGD			Continuous	Recording	Influent or Effluent
BOD, 5-day (20°C) [2]	30.0 mg/L	45.0 mg/L		Daily	Composite	Effluent, Influent
Total Suspended Solids (TSS) [2]	30.0 mg/L	45.0 mg/L		Daily	Composite	Effluent, Influent
NH_3 as N (April 1-October 31)	14.8 mg/L	35.0 mg/L		Daily	Composite	Effluent
NH_3 as N (November 1–March 31)				3/Week	Composite	Effluent
pH [3]				Daily	Grab	Effluent
pH				Footnote 1	Grab	Upstream[1], Downstream[1]
Fecal Coliform (geometric mean)	200 / 100 ml	400 / 100 ml		Daily	Grab	Effluent
Total Residual Chlorine (TRC) [4]			28 µg/L	Daily	Grab	Effluent
Temperature, °C				Daily	Grab	Effluent
Temperature, °C				Footnote 1	Grab	Upstream[1], Downstream[1]
Conductivity, µohm/cm				Footnote 1	Grab	Upstream, Downstream
Dissolved Oxygen (DO), mg/L				Daily	Grab	Effluent
Dissolved Oxygen (DO), mg/L				Footnote 1	Grab	Upstream[1], Downstream[1]
Mercury		224 ng/L (0.224 ug/l) (0.000224 mg/l)		Weekly	Composite	Effluent
Total Copper, µg/L [5]				2/Month	Composite	Effluent
Total Nitrogen (TN) TN = (NO_2 + NO_3) + TKN, mg/L				Monthly	Composite	Effluent
Total Phosphorus (TP), mg/L				Monthly	Composite	Effluent
Chronic Toxicity [6]				Quarterly	Composite	Effluent
Total Silver, µg/L [5]				2/month	Composite	Effluent
Total Zinc, µg/L [5]				Quarterly	Composite	Effluent
Effluent Pollutant Scan [7]				Annual	Composite/ Grab	Effluent

(Continued from **A.(1.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**)

Notes:

1. Sample locations: Upstream – Upstream at NCSR 1000; Downstream - Downstream at NCSR 2000. **Upstream and downstream samples shall be grab samples. Stream samples shall be collected three times per week during June, July, August and September and once per week during the remaining months of the year.**
2. The monthly average BOD_5 and TSS concentrations shall not exceed 15% of the respective influent value (85% removal).
3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units.
4. Total Residual Chlorine compliance is required for chlorine or chlorine derivative used for disinfection. 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.
5. Sampling for zinc, copper, and silver should coincide with sampling for chronic toxicity test.
6. Chronic Toxicity (Ceriodaphnia) P/F at 5.4%. Toxicity testing shall be performed in the months of March, June, September and December (see Part A.(2.).
7. See Special Condition A.(3.) for list of pollutants.

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

Pretreatment Program Info Database

printed on: 1/23/2009

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 02/01/2009

NPDES Expire Date 04/30/2012

POTW is Primary WWTP TRUE

Design Flow mgd 13.5000

Stream Information

IWC % 5.35

7Q10 Flow cfs / mgd 370 / 239.02

Stream Classification WS IV

Basin Number CAR03

Receiving Stream Name CAROLINA RIVER

Last PAR Rec

PAR Due Date 03/01/2009

mercury 1631 required

Current Fiscal Year PCI Done

Last Audit on 03/15/2007

Audit Year Next 11/12

% Design mgd is SIU permitted 33.33

Permitted SIU flow (mgd) [Pt_SIU] 4.5

WWTP SIU's 3

WWTP CIU's 1

Program SIUs 3

Program CIUs 1

	HWA	LTMP	IWS	SUO	ERP
date Inactive					
Date Next Due	04/01/2012		11/30/2010		
Date Received by DWQ	06/27/2008	06/27/1994	11/16/2005	05/30/2007	05/18/2001
Date Approved	01/07/2009	08/31/1994	03/22/2006	10/18/2007	05/22/2001
Adopt Date Required					
Date Adopted				11/19/2002	

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				
Jane.Wastewater@Typicalville.com			Director of Public Utilities		PO Box 101			27123
Mr. John Basin	Prim	555-123-4576		555-123-4589				
John.Basin@Typicalville.com			Pretreatment Coordinator		PO Box 101			27123

Pretreatment Related NOVs from DWQ

DWQ Central Office Contact Dana Folley

DWQ Regional Contact George Smith

15

INFLUENT

NPDES PERMIT NO. NC0012345 MONTH March YEAR 2004

FACILITY NAME Town of Typicalville WWTP

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
5				50050	00400	50060	00310	00610	00530	01002	01027	01035	01042	00720	01051	71900		01067	01147	01077	01092
6	DATE	Composite Time	Time	FLOW EFF ■ INF □ DAILY RATE	pH	Temperature (Celcius)	BOD5 20 Degrees C	Ammonia Nitrogen	Total Suspended Residue	Arsenic	Cadmium	Chromium	Copper	Cyanide	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
7		HRS		MGD	UNITS		MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
8	1	24	0848	7.461	9.3	22	114	6.67	73												
9	2	24	0846	6.938	9.1	24	152		80												
10	3	24		6.75																	
11	4	24		6.996																	
12	5	24	0907	13.379	9.4	17	112		116												
13	6	24	0838	9.902	9.4	18	53	4.55	80												
14	7	24	0858	8.429	9.4	18	84	5.24	36	<0.010	<0.002	<0.005	0.097	<0.005	<0.010	<0.0002	<0.005	<0.010	<0.010	<0.005	0.062
15	8	24	0856	8.512	9.7	19	124	5.24	80												
16	.	24	0857	9.641	9.5	18	101		92												
17	10	24		8.025																	
18	11	24		6.471																	
19	12	24	0848	7.978	9.9	23	141		79												
20	13	24	0848	7.525	10	19	142	8.86	86												
21	14	24	0850	7.135	9.6	19	166	7.42	121												
22	15	24	0850	12.886	9.6	16	135	8.9	108												
23	16	24	0844	10.519	9.2	15	110		106												
24	17	24		8.614																	
25	18	24		7.344																	
26	19	24	0855	7.516	9.8	16	97		56												
27	20	24	0849	7.337	9.8	19	85	7.61	84												
28	21	24	0850	6.151	9.8	13	99	7.73	80												
29	22	24	0856	4.906	9.5	16	92	9.28	74												
30	23	24		2.496																	
31	24	24		2.576																	
32	25	24		3.32																	
33	26	24		2.703																	
34	27	24	0858	2.357	6.7	12	123	12.35	110												
35	28	24	0852	2.581	6.5	12	107	15.32	431												
36	29	24	0844	2.75	6.6	12	127	12.1	315												
37	30	24	0848	3.361	6.9	12	140		157												
38	31	24		2.908																	
39	AVERAGE			6.628		17	115	8.56	118	<0.010	<0.002	<0.005	0.097	<0.005	<0.010	<0.0002	<0.005	<0.010	<0.010	<0.005	0.062
40	MAXIMUM			13.379	10.0	24	166	15.32	431	<0.010	<0.002	<0.005	0.097	<0.005	<0.010	<0.0002	<0.005	<0.010	<0.010	<0.005	0.062
41	MINIMUM			2.357	6.5	12	53	4.6	36	<0.010	<0.002	<0.005	0.097	<0.005	<0.010	<0.0002	<0.005	<0.010	<0.010	<0.005	0.062
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																	

Typicalville LTMP - 1/quarter influent for many POCs

Some POTWs voluntarily put LTMP Influent on DMRs

BOD, TSS, NH3 Influents no BDLs- use DMR Mon Ave

EFFLUENT, Page 1

NPDES PERMIT NO. NC0012345 DISCHARGE NO. 001 MONTH March YEAR 2004

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 GRADE IV CERTIFICATION NO. 12345

PERSON(S) COLLECTING SAMPLES John Basin ORC PHONE 555-123-4567

CHECK BOX IF ORC HAS CHANGED ☐ NO FLOW / DISCHARGE FROM SITE * ☐

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

x
(SIGNAT ATOR IN R BLE CHARGE) DATE
BY THA PORT IS
ACCURA TE TO THE IY KNOWLEDGE.

BOD+ NH3 Have BDLs

TSS - No

	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	00310 BOD5 20 Deg. C - BDLs= 1/2 DL	00610 Ammonia Nitrogen - BDLs = 0	00610 Ammonia Nitrogen = BDLs = 1/2 DL	TOTAL SUSPENDED	31616 FECAL COLIFORM (Geometric	00300 DISSOLVED OXYGEN	00600 TOTAL NITROGEN	00665 TOTAL PHOSPHORUS	01077 Silver	01042 Copper
																		ENTER PARAMETER CODE ABOVE NAME AND UNITS BELOW	
		HRS	HRS	Y/B/N	MGD	° C	UNITS	UG/L	MG/L	MG/L	MG/L	MG/L	MG/L	#/100ML	MG/L	MG/L	MG/L	MG/L	MG/L
1		0700	24	Y	7.461	16	7.8	<10	3	3	2	2	11	<1	8.2				
2		0700	24	B	6.938	16	7.9	<10	3	3			13	<1	8.9				
3		0700	24		6.75														
4		0700	24		6.996														
5		0700	24	Y	13.379	16	8	<10	<2	1			14	68	9.5				
6		0700	24	Y	9.902	16	7.8	<10	<2	1	0.4	0.4	15	35	8.5				
7		0700	24	Y	8.429	16	7.6	<10	2	2	0.1	0.1	8	10	8.2	2.52	0.568	<0.005	0.041
8		0700	24	Y	8.512	14	8	<10	2	2	<0.10	**0.05**	6	7	9.5				
9		0700	24	Y	9.641	14	8	<10	3	3			8	20	9.9				
10		0700	24		8.025														
11		0700	24		6.471														
12		0700	24	Y	7.978	14	7.9	<10	3	3			10	5	9.5				
13		0700	24	Y	7.525	14	7.9	<10	2	2	0.24	0.24	14	24	9.5				
14		0700	24	Y	7.135	13	7.9	<10	2	2	1.01	1.01	16	4	9.2			<0.005	0.056
15		0700	24	B	12.886	12	7.8	<10	2	2	1.98	1.98	15	1	9.8				
16		0700	24	Y	10.519	13	7.8	<10	2	2			21						
17		0700	24		8.614														
18		0700	24		7.344														
19		0700	24	Y	7.516	13	8	<10	<2	1			8						
20		0700	24	Y	7.337	13	8	<10	2	2	<0.10	**0.05**	11						
21		0700	24	Y	6.151	12	8	<10	2	2	<0.10	**0.05**	22						
22		0700	24	B	4.906	12	7.8	<10	2	2	<0.10	**0.05**	17						
23		0700	24		2.496														
24		0700	24		2.576														
25		0700	24		3.32														
26		0700	24		2.703														
27		0700	24	Y	2.357	8	7.2	13	4	4	<0.10	**0.05**	32	3	10.9				
28		0700	24	B	2.581	8	7.2	<10	3	3	<0.10	**0.05**	20	2	11.5				
29		0700	24	B	2.75	10	7.2	<10	3	3	0.1	0.1	18	1	10.9				
30		0700	24	B	3.361	9	7.3	18	2	2			18	1	11.5				
31		0700	24		2.908														
AVERAGE					6.628	13		16	2.1	**2.3**	0.45	**0.47**	15	14	9.7	2.52	0.568	<0.005	0.049
MAXIMUM					13.379	16	8.0	18	4.0	4.0	2.00	2.00	32	68	11.5	2.52	0.568	<0.005	0.056
MINIMUM					2.357	8	7.2	<10	<2.0	1.0	<0.10	0.05	6	<1	8.2	2.52	0.568	<0.005	0.041
Comp/Grab						G	G	G	C	C	C	C	C	G	G	C	C	C	C
Monthly Limit					13.5			28	30	30	12.7	12.7	30	200					

Typicalville's NPDES Permit requires 2/month sampling for copper and silver. Use average.

3/7/04 sample counts for both LTMP and NPDES.

1st BOD + NH3 columns treat BDLs as zero; 2nd BOD + NH3 columns 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 1

Tab 3-B, page 17A:

Second copy of DMR Effluent Page 1 to show Inhibition Evaluation

DISCHARGE NO. 001 MONTH March YEAR 2004

COUNTY Typical

) (2)_Neighborhood Lab (Cert. #6789)__

ne Wastewater____ GRADE_IV_ CERTIFICATION NO.___12345___

ORC PHONE__555-123-4567__

NO FLOW / DISCHARGE FROM SITE * ☐

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	00310 BOD5 20 Deg. C - BDLs= 1/2 DL	00610 Ammonia Nitrogen - BDLs = 0	00610 Ammonia Nitrogen = BDLs = 1/2 DL	00530 TOTAL SUSPENDED	31616 FECAL COLIFORM (Geometric	00300 DISSOLVED OXYGEN	00600 TOTAL NITROGEN	00665 TOTAL PHOSPHORUS	01077 Silver	01042 Copper
		HRS	HRS	Y/B/N	MGD	° C	UNITS	UG/L	MG/L	MG/L	MG/L	MG/L	MG/L	#/100ML	MG/L	MG/L	MG/L	MG/L	MG/L
1		0700	24	Y	7.461	16	7.8	<10	3	3	2	2	11	<1	8.2				
2		0700	24	B	6.938	16	7.9	<10	3	3			13	<1	8.9				
3		0700	24		6.75														
4		0700	24		6.996														
5		0700	24	Y	13.379	16	8	<10	<2	1			14	68	9.5				
6		0700	24	Y	9.902	16	7.8	<10	<2	1	0.4	0.4	15	35	8.5				
7		0700	24	Y	8.429	16	7.6	<10	2	2	0.1	0.1	8	10	8.2	2.52	0.568	<0.005	0.041
8		0700	24	Y	8.512	14	8	<10	2	2	<0.10	**0.05**	6	7	9.5				
9		0700	24	Y	9.641	14	8	<10	3	3			8	20	9.9				
10		0700	24		8.025														
11		0700	24		6.471														
12		0700	24	Y	7.978	14	7.9	<10	3	3			10	5	9.5				
13		0700	24	Y	7.525	14	7.9	<10	2	2	0.24	0.24	14	24	9.5				
14		0700	24	Y	7.135	13	7.9	<10	2	2	1.01	1.01	16	4	9.2			<0.005	0.056
15		0700	24	B	12.886	12	7.8	<10	2	2	1.98	1.98	15	1	9.8				
16		0700	24	Y	10.519	13	7.8	<10	2	2			21	41	9.7				
17		0700	24		8.614														
18		0700	24		7.344														
19		0700	24	Y	7.516	13	8	<10	[illegible]	1			8	3	8.6				
20		0700	24	Y	7.337	13	8	<10	2	2	<0.10	**0.05**	11	12	10.1				
21		0700	24	Y	6.151	12	8	<10	2	2	<0.10	**0.05**	22	8	10.7				
22		0700	24	B	4.906	12	7.8	<10	2	2	<0.10	**0.05**	17	<1	10.2				
23		0700	24		2.496														
24		0700	24		2.576														
25		0700	24		3.32														
26		0700	24		2.703														
27		0700	24	Y	2.357	8	7.2	13	4	4	<0.10	**0.05**	32	3	10.9				
28		0700	24	B	2.581	8	7.2	<10	3	3	<0.10	**0.05**	20	2	11.5				
29		0700	24	B	2.75	10	7.2	<10	3	3	0.1	0.1	18	1	10.9				
30		0700	24	B	3.361	9	7.3	18	2	2			18	1	11.5				
31		0700	24		2.908														
AVERAGE					6.628	13		16	2.1	**2.3**	0.45	**0.47**	15	14	9.7	2.52	0.568	<0.005	0.049
MAXIMUM					13.379	16	8.0	18	4.0	4.0	2.00	2.00	32	68	11.5	2.52	0.568	<0.005	0.056
MINIMUM					2.357	8	7.2	<10	<2.0	1.0	<0.10	0.05	6	<1	8.2	2.52	0.568	<0.005	0.041
Comp/Grab						G	G	G	C	C	C	C	C	G	G	C	C	C	C
Monthly Limit					13.5			28	30	30	12.7	12.7	30	200					

1st BOD + NH3 columns treat BDLs as zero; 2nd BOD + NH3 columns 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

17A

EFFLUENT, Page 3

NPDES PERMIT NO. NC 012345 MONTH March YEAR 2004

FACILITY NAME Town of Typicalville WWTP

- NPDES Limits Page does not require any sampling for cyanide.
- Typicalville's LTMP requires 1/quarter for cyanide, plus several other POCs
- March 7th is quarterly LTMP for Jan-Mar 04 quarter.

- Remember - required to list all LTMP effluent data on DMRs.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
6			50050	01002	01027	01035	00720	0105							
7	DATE	Time	FLOW EFF ■ INF □ DAILY RATE	Arsenic	Cadmium	Chromium	Cyanide	Lead							
8		HRS	MGD	MG/L	MG/L	MG/L	MG/L	MG/							
9	1	0700	7.461												
10	2	0700	6.938												
11	3	0700	6.75												
12	4	0700	6.996												
13	5	0700	13.379												
14	6	0700	9.902												
15	7	0700	8.429	<0.010	<0.002	<0.005	<0.005	<0.010	<0.0002	<0.005	<0.010	<0.010	0.02		
16	8	0700	8.512												
17	9	0700	9.641												
18	10	0700	8.025												
19	11	0700	6.471												
20	12	0700	7.978												
21	13	0700	7.525												
22	14	0700	7.135												
23	15	0700	12.886												
24	16	0700	10.519												
25	17	0700	8.614												
26	18	0700	7.344												
27	19	0700	7.516												
28	20	0700	7.337												
29	21	0700	6.151												
30	22	0700	4.906												
31	23	0700	2.496												
32	24	0700	2.576												
33	25	0700	3.32												
34	26	0700	2.703												
35	27	0700	2.357												
36	28	0700	2.581												
37	29	0700	2.75												
38	30	0700	3.361												
39	31	0700	2.908												
40	AVE		6.628	<0.010	<0.002	<0.005	<0.005	<0.010	<0.0002	<0.005	<0.010	<0.010	0.020		
41	MAX		13.379	<0.010	<0.002	<0.005	<0.005	<0.010	<0.0002	<0.005	<0.010	<0.010	0.020		
42	MIN		2.357	<0.010	<0.002	<0.005	<0.005	<0.010	<0.0002	<0.005	<0.010	<0.010	0.020		
43	C / G			C	C	C	C	C	C	C	C	C	C		
44			13.5												
45															
46															
47															

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1		FLOW			BOD							TSS							AMMONIA				
2																							
3	Sample Date	MGD		<	Influent mg/L	Used in Calc	<	Effluent mg/L	Used in Calc		<	Influent mg/L	Used in Calc	<	Effluent mg/L	Used in Calc		<	Influent mg/L	Used in Calc	<	Effluent mg/L	Used in Calc
4	1/2004 DMR AVG	6.521	Spre		121	121		3	3			104	104		12	12			7.66	7.66		0.13	0.13
5	2/2004 DMR AVG	8.765	ad		94	94		3	3			103	103		8	8			7.92	7.92		0.11	0.11
6	3/2004 DMR AVG	6.628	sh		115	115		2.3	2.3			118	118		15	15			8.56	8.56		0.47	0.47
7	3/7/04 LTMP		eet																				
8	4/2004 DMR AVG	7.795	Ins		95	95		3	3			114	114		28	28			6.72	6.72		0.13	0.13
9	5/2004 DMR AVG	6.684	tru		128	128		3	3			138	138		10	10			6.7	6.7		0.2	0.2
10	6/2004 DMR AVG	7.197	cti		101	101		3	3			133	133		9	9			7.41	7.41		0.18	0.18
11	6/8/2004 LTMP		on																				
12	7/14/2004 LTMP		s:																				
13	7/2004 DMR AVG	6.235	1)		121	121		2	2			141	141		8	8			7.93	7.93		0.12	0.12
14	8/2004 DMR AVG	7.059	Da		92	92		3	3			122	122		7	7			9.45	9.45		0.22	0.22
15	9/2004 DMR AVG	8.076	ta		85	85		3	3			100	100		8	8			7.96	7.96		0.2	0.2
16	9/14/2004 LTMP		ent																				
17	10/2004 DMR AVG	7.518	er		81	81		3	3			74	74		7	7			8.13	8.13		0.14	0.14
18	11/2004 DMR AVG	8.137	ed		94	94		3	3			102	102		9	9			8.2	8.2		0.11	0.11
19	12/2004 DMR AVG	7.98	onl		98	98		3	3			92	92		11	11			7.22	7.22		0.11	0.11
20	12/7/2004 LTMP		y																				
21	1/2005 DMR AVG	7.848	in		142	142		3	3			92	92		9	9			8.07	8.07		0.13	0.13
22	2/2005 DMR AVG	8.074	He		120	120		2	2			93	93		10	10			7.94	7.94		0.11	0.11
23	3/2005 DMR AVG	9.045	av		107	107		3	3			82	82		8	8			5.39	5.39		0.11	0.11
24	3/8/2005 LTMP		y																				
25	4/2005 DMR AVG	7.519	Bo		103	103		3	3			111	111		10	10			6.88	6.88		0.11	0.11
26	5/2005 DMR AVG	6.859	rd		112	112		3	3			105	105		10	10			7.75	7.75		0.11	0.11
27	6/2005 DMR AVG	6.756	er		132	132		2	2			101	101		7	7			8.19	8.19		0.12	0.12
28	6/14/2005 LTMP		ed																				
29	7/2005 DMR AVG	6.839	cel		105	105		3	3			115	115		6	6			7.43	7.43		0.14	0.14
30	8/2005 DMR AVG	7.092	ls.		113	113		3	3			122	122		8	8			6.79	6.79		0.11	0.11
31	9/2005 DMR AVG	6.411	Re		135	135		3	3			112	112		10	10			7.16	7.16		0.14	0.14
32	9/13/2005 LTMP		st																				
33	10/2005 DMR AVG	6.953	of		138	138		3	3			94	94		12	12			8.13	8.13		0.11	0.11
34	11/2005 DMR AVG	6.467	wo		143	143		3	3			101	101		12	12			7.52	7.52		0.15	0.15
35	12/2005 DMR AVG	7.412	rks		121	121		3	3			103	103		11	11			8.19	8.19		0.11	0.11
36	12/2/2005 LTMP		he																				
37	1/2006 DMR AVG	8.107	et		131	131		5	5			92	92		16	16			8.08	8.08		0.8	0.8
38	2/2006 DMR AVG	7.87	is		119	119		3	3			93	93		15	15			8.8	8.8		0.13	0.13
39	3/2006 DMR AVG	6.827			150	150		3	3			95	95		14	14			9.2	9.2		0.14	0.14
40	3/8/2006 LTMP																						

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1		FLOW			BOD							TSS							AMMONIA				
2					Influent	Used in		Effluent	Used in			Influent	Used in		Effluent	Used in			Influent	Used in		Effluent	Used in
3	Sample Date	MGD		<	mg/L	Calc	<	mg/L	Calc		<	mg/L	Calc	<	mg/L	Calc		<	mg/L	Calc	<	mg/L	Calc
41	4/2006 DMR AVG	6.727			123	123		3	3			85	85		10	10			8.47	8.47		0.11	0.11
42	5/2006 DMR AVG	6.721			153	153		3	3			104	104		11	11			9.32	9.32		0.15	0.15
43	6/2006 DMR AVG	7.401			138	138		3	3			96	96		19	19			7.69	7.69		0.36	0.36
44	6/7/2006 LTMP																						
45	7/2006 DMR AVG	7.276			128	128		3	3			114	114		11	11			7.29	7.29		0.56	0.56
46	8/2006 DMR AVG	7.551			131	131		4	4			90	90		12	12			6.98	6.98		0.83	0.83
47	9/2006 DMR AVG	8.075			100	100		2	2			79	79		11	11			7.27	7.27		0.35	0.35
48	9/13/2006 LTMP																						
49	10/2006 DMR AVG	7.787			102	102		3	3			97	97		11	11			9.11	9.11		0.15	0.15
50	11/2006 DMR AVG	7.975			101	101		3	3			105	105		8	8			8.31	8.31		0.3	0.3
51	12/2006 DMR AVG	6.438			143	143		3	3			97	97		10	10			10.49	10.49		0.17	0.17
52	12/6/2006 LTMP																						
53	1/2007 DMR AVG	8.658			108	108		2	2			98	98		42	42			7.82	7.82		0.14	0.14
54	2/2007 DMR AVG	7.322			117	117		3	3			100	100		9	9			9.2	9.2		0.17	0.17
55	3/2007 DMR AVG	8.078			104	104		3	3			118	118		9	9			8.21	8.21		0.16	0.16
56	3/7/2007 LTMP																						
57	4/2007 DMR AVG	7.006			131	131		3	3			84	84		6	6			8.1	8.1		0.2	0.2
58	5/2007 DMR AVG	6.446			130	130		4	4			64	64		8	8			7.55	7.55		0.15	0.15
59	6/2007 DMR AVG	6.25			152	152		4	4			79	79		7	7			8.03	8.03		0.13	0.13
60	6/6/2007 LTMP																						
61	7/2007 DMR AVG	6.219			127	127		3	3			134	134		9	9			7.6	7.6		0.11	0.11
62	8/2007 DMR AVG	5.901			143	143		4	4			85	85		8	8			8.5	8.5	<	0.1	0.05
63	9/2007 DMR AVG	5.783			167	167		3	3			91	91		7	7			10.6	10.6		0.11	0.11
64	9/12/2007 LTMP																						
65	10/2007 DMR AVG	6.504			152	152		4	4			128	128		9	9			10.5	10.5		0.12	0.12
66	11/2007 DMR AVG	5.316			150	150		4	4			166	166		11	11			10.8	10.8		0.14	0.14
67	12/2007 DMR AVG	5.959			142	142		4	4			114	114		19	19			11.1	11.1		0.13	0.13
68	12/12/2007 LTMP																						
69																							
70	Column Averages =>					122			3.1				103.8			11.2				8.2			0.2
71		7.168																					
72						Unpaired Site Specific RR =>			97.48 %				Unpaired Site Specific RR =>			89.22 %				Unpaired Site Specific RR =>			97.65 %
73																							
74						Literature/Default RR =>			85.00 %				Literature/Default RR =>			85.00 %				Literature/Default RR =>			85.00 %
75																							
76						0 % of data is BDL							0 % of data is BDL							1 % of data is BDL			
77																							
78						RR for this HWA =>			97.00 %				RR for this HWA =>			89.00 %				RR for this HWA =>			98.00 %

Average POTW Flow used everywhere!

Average Influents used in Uncontrollable Mass Balance Spreadsheet

	A	B	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
1		FLOW		ARSENIC							CADMIUM							CHROMIUM					
2					Influent	Used in		Effluent	Used in			Influent	Used in		Effluent	Used in			Influent	Used in		Effluent	Used in
3	Sample Date	MGD		<	mg/L	Calc	<	mg/L	Calc		<	mg/L	Calculation	<	mg/L	Calculation		<	mg/L	Calculation	<	mg/L	Calculation
4	1/2004 DMR AVG	6.521																					
5	2/2004 DMR AVG	8.765																					
6	3/2004 DMR AVG	6.628																					
7	3/7/04 LTMP			<	0.01	0.005	<	0.01	0.005		<	0.002	0.001	<	0.002	0.001		<	0.005	0.0025	<	0.005	0.0025
8	4/2004 DMR AVG	7.795																					
9	5/2004 DMR AVG	6.684																					
10	6/2004 DMR AVG	7.197																					
11	6/8/2004 LTMP			<	0.005	0.0025	<	0.005	0.0025		<	0.001	0.0005	<	0.001	0.0005			0.0069	0.0069	<	0.002	0.001
12	7/14/2004 LTMP			<	0.005	0.0025	<	0.005	0.0025		<	0.001	0.0005	<	0.001	0.0005			0.0044	0.0044	<	0.002	0.001
13	7/2004 DMR AVG	6.235																					
14	8/2004 DMR AVG	7.059																					
15	9/2004 DMR AVG	8.076																					
16	9/14/2004 LTMP			<	0.005	0.0025	<	0.005	0.0025		<	0.001	0.0005	<	0.001	0.0005			0.0085	0.0085	<	0.002	0.001
17	10/2004 DMR AVG	7.518																					
18	11/2004 DMR AVG	8.137																					
19	12/2004 DMR AVG	7.98																					
20	12/7/2004 LTMP			<	0.005	0.0025	<	0.005	0.0025		<	0.001	0.0005	<	0.001	0.0005			0.0029	0.0029		0.0041	0.0041
21	1/2005 DMR AVG	7.848																					
22	2/2005 DMR AVG	8.074																					
23	3/2005 DMR AVG	9.045																					
24	3/8/2005 LTMP			<	0.005	0.0025	<	0.005	0.0025		<	0.001	0.0005	<	0.001	0.0005			0.0025	0.0025	<	0.002	0.001
25	4/2005 DMR AVG	7.519																					
26	5/2005 DMR AVG	6.859																					
27	6/2005 DMR AVG	6.756																					
28	6/14/2005 LTMP			<	0.005	0.0025	<	0.005	0.0025		<	0.001	0.0005	<	0.001	0.0005			0.0025	0.0025	<	0.002	0.001
29	7/2005 DMR AVG	6.839																					
30	8/2005 DMR AVG	7.092																					
31	9/2005 DMR AVG	6.411																					
32	9/13/2005 LTMP			<	0.005	0.0025	<	0.005	0.0025		<	0.001	0.0005	<	0.001	0.0005			0.0029	0.0029	<	0.002	0.001
33	10/2005 DMR AVG	6.953																					
34	11/2005 DMR AVG	6.467																					
35	12/2005 DMR AVG	7.412																					
36	12/2/2005 LTMP			<	0.005	0.0025		0.008	0.008		<	0.001	0.0005	<	0.001	0.0005			0.0046	0.0046	<	0.002	0.001
37	1/2006 DMR AVG	8.107																					
38	2/2006 DMR AVG	7.87																					
39	3/2006 DMR AVG	6.827																					
40	3/8/2006 LTMP				0.013	0.013	<	0.01	0.005		<	0.002	0.001	<	0.002	0.001		<	0.005	0.0025	<	0.005	0.0025

	A	B	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
1		FLOW		ARSENIC							CADMIUM							CHROMIUM					
2					Influent	Used in		Effluent	Used in			Influent	Used in		Effluent	Used in			Influent	Used in		Effluent	Used in
3	Sample Date	MGD		<	mg/L	Calc	<	mg/L	Calc		<	mg/L	Calculation	<	mg/L	Calculation		<	mg/L	Calculation	<	mg/L	Calculation
41	4/2006 DMR AVG	6.727																					
42	5/2006 DMR AVG	6.721																					
43	6/2006 DMR AVG	7.401																					
44	6/7/2006 LTMP			<	0.01	0.005	<	0.01	0.005		<	0.002	0.001	<	0.002	0.001		<	0.005	0.0025	<	0.005	0.0025
45	7/2006 DMR AVG	7.276																					
46	8/2006 DMR AVG	7.551																					
47	9/2006 DMR AVG	8.075																					
48	9/13/2006 LTMP				0.014	0.014	<	0.01	0.005		<	0.002	0.001	<	0.002	0.001		<	0.005	0.0025	<	0.005	0.0025
49	10/2006 DMR AVG	7.787																					
50	11/2006 DMR AVG	7.975																					
51	12/2006 DMR AVG	6.438																					
52	12/6/2006 LTMP			<	0.01	0.005	<	0.01	0.005		<	0.002	0.001	<	0.002	0.001		<	0.005	0.0025	<	0.005	0.0025
53	1/2007 DMR AVG	8.658																					
54	2/2007 DMR AVG	7.322																					
55	3/2007 DMR AVG	8.078																					
56	3/7/2007 LTMP			<	0.01	0.005	<	0.01	0.005		<	0.002	0.001	<	0.002	0.001		<	0.005	0.0025	<	0.005	0.0025
57	4/2007 DMR AVG	7.006																					
58	5/2007 DMR AVG	6.446																					
59	6/2007 DMR AVG	6.25																					
60	6/6/2007 LTMP			<	0.01	0.005	<	0.01	0.005		<	0.002	0.001	<	0.002	0.001		<	0.005	0.0025	<	0.005	0.0025
61	7/2007 DMR AVG	6.219																					
62	8/2007 DMR AVG	5.901																					
63	9/2007 DMR AVG	5.783																					
64	9/12/2007 LTMP			<	0.01	0.005	<	0.01	0.005		<	0.002	0.001	<	0.002	0.001		<	0.005	0.0025	<	0.005	0.0025
65	10/2007 DMR AVG	6.504																					
66	11/2007 DMR AVG	5.316																					
67	12/2007 DMR AVG	5.959																					
68	12/12/2007 LTMP			<	0.01	0.005	<	0.01	0.005		<	0.002	0.001	<	0.002	0.001		<	0.005	0.0025	<	0.005	0.0025
69																							
70	Column Averages =>					0.0048			0.0041				0.0008			0.0008				0.0034			0.0020
71		7.168																					
72																							
73																							
74																							
75																							
76																							
77																							
78																							

Average POTW Flow used everywhere!

Average Influents used in Uncontrollable Mass Balance Spreadsheet

Average Arsenic Influent used in HASL

Site Specific RR => 50 % BDL

Literature/Default RR => 45.00 %

91 % of data is BDL

RR for this HWA => 45.00 %

Unpaired Site Specific RR => 50 % BDL

Literature/Default RR => 67.00 %

100 % of data is BDL

RR for this HWA => 67.00 %

Unpaired Site Specific RR => 50 % BD

Literature/Default RR => 82.00 %

74 % of data is BDL

RR for this HWA => 82.00 %

	A	B	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM
1		FLOW		COPPER							CYANIDE							LEAD					
2					Influent	Used in		Effluent	Used in			Influent	Used in		Effluent	Used in			Influent	Used in		Effluent	Used in
3	Sample Date	MGD		<	mg/L	Calc	<	mg/L	Calculation		<	mg/L	Calculation	<	mg/L	Calc		<	mg/L	Calculation	<	mg/L	Calculation
4	1/2004 DMR AVG	6.521						0.053	0.053														
5	2/2004 DMR AVG	8.765						0.02	0.02														
6	3/2004 DMR AVG	6.628						0.049	0.049														
7	3/7/04 LTMP				0.097	0.097					<	0.005	0.0025	<	0.005	0.0025		<	0.01	0.005	<	0.01	0.005
8	4/2004 DMR AVG	7.795						0.022	0.022														
9	5/2004 DMR AVG	6.684						0.022	0.022														
10	6/2004 DMR AVG	7.197						0.033	0.033														
11	6/8/2004 LTMP				0.12	0.12						0.053	0.053		0.003	0.003		<	0.005	0.0025	<	0.005	0.0025
12	7/14/2004 LTMP				0.19	0.19					<	0.005	0.0025	<	0.005	0.0025			0.008	0.008		0.005	0.005
13	7/2004 DMR AVG	6.235						0.034	0.034														
14	8/2004 DMR AVG	7.059						0.062	0.062														
15	9/2004 DMR AVG	8.076						0.047	0.047														
16	9/14/2004 LTMP				0.17	0.17					<	0.005	0.0025	<	0.005	0.0025			0.0072	0.0072	<	0.005	0.0025
17	10/2004 DMR AVG	7.518						0.049	0.049														
18	11/2004 DMR AVG	8.137						0.061	0.061														
19	12/2004 DMR AVG	7.98						0.065	0.065														
20	12/7/2004 LTMP				0.13	0.13					<	0.005	0.0025	<	0.005	0.0025		<	0.005	0.0025	<	0.005	0.0025
21	1/2005 DMR AVG	7.848						0.071	0.071														
22	2/2005 DMR AVG	8.074						0.057	0.057														
23	3/2005 DMR AVG	9.045						0.041	0.041														
24	3/8/2005 LTMP				0.089	0.089					<	0.005	0.0025	<	0.005	0.0025		<	0.005	0.0025	<	0.005	0.0025
25	4/2005 DMR AVG	7.519						0.053	0.053														
26	5/2005 DMR AVG	6.859						0.077	0.077														
27	6/2005 DMR AVG	6.756						0.087	0.087														
28	6/14/2005 LTMP				0.093	0.093					<	0.005	0.0025	<	0.005	0.0025			0.0062	0.0062	<	0.005	0.0025
29	7/2005 DMR AVG	6.839						0.068	0.068														
30	8/2005 DMR AVG	7.092						0.06	0.06														
31	9/2005 DMR AVG	6.411						0.078	0.078														
32	9/13/2005 LTMP				0.13	0.13					<	0.005	0.0025	<	0.005	0.0025		<	0.005	0.0025	<	0.005	0.0025
33	10/2005 DMR AVG	6.953						0.087	0.087														
34	11/2005 DMR AVG	6.467						0.111	0.111														
35	12/2005 DMR AVG	7.412						0.026	0.026														
36	12/2/2005 LTMP				0.08	0.08						0.002	0.002	<	0.002	0.001			0.0059	0.0059	<	0.005	0.0025
37	1/2006 DMR AVG	8.107						0.068	0.068														
38	2/2006 DMR AVG	7.87						0.047	0.047														
39	3/2006 DMR AVG	6.827						0.064	0.064														
40	3/8/2006 LTMP				0.237	0.237						0.011	0.011		0.006	0.006		<	0.01	0.005	<	0.01	0.005

	A	B	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM
1		FLOW			COPPER							CYANIDE							LEAD				
2																							
3	Sample Date	MGD		<	Influent mg/L	Used in Calc	<	Effluent mg/L	Used in Calculation		<	Influent mg/L	Used in Calculation	<	Effluent mg/L	Used in Calc		<	Influent mg/L	Used in Calculation	<	Effluent mg/L	Used in Calculation
41	4/2006 DMR AVG	6.727						0.07	0.07														
42	5/2006 DMR AVG	6.721						0.074	0.074														
43	6/2006 DMR AVG	7.401						0.077	0.077														
44	6/7/2006 LTMP				0.426	0.426						0.006	0.006	<	0.005	0.0025		<	0.01	0.005	<	0.01	0.005
45	7/2006 DMR AVG	7.276						0.059	0.059														
46	8/2006 DMR AVG	7.551						0.051	0.051														
47	9/2006 DMR AVG	8.075						0.03	0.03														
48	9/13/2006 LTMP				0.122	0.122						0.009	0.009		0.006	0.006		<	0.01	0.005	<	0.01	0.005
49	10/2006 DMR AVG	7.787						0.036	0.036														
50	11/2006 DMR AVG	7.975						0.035	0.035														
51	12/2006 DMR AVG	6.438						0.03	0.03														
52	12/6/2006 LTMP				0.319	0.319					<	0.005	0.0025	<	0.005	0.0025		<	0.01	0.005	<	0.01	0.005
53	1/2007 DMR AVG	8.658						0.025	0.025														
54	2/2007 DMR AVG	7.322						0.044	0.044														
55	3/2007 DMR AVG	8.078						0.039	0.039														
56	3/7/2007 LTMP				0.195	0.195						0.032	0.032	<	0.005	0.0025			0.012	0.012	<	0.01	0.005
57	4/2007 DMR AVG	7.006						0.038	0.038														
58	5/2007 DMR AVG	6.446						0.048	0.048														
59	6/2007 DMR AVG	6.25						0.047	0.047														
60	6/6/2007 LTMP				0.15	0.15					<	0.005	0.0025	<	0.005	0.0025			0.017	0.017	<	0.01	0.005
61	7/2007 DMR AVG	6.219						0.047	0.047														
62	8/2007 DMR AVG	5.901						0.055	0.055														
63	9/2007 DMR AVG	5.783						0.065	0.065														
64	9/12/2007 LTMP				0.204	0.204						0.056	0.056	<	0.005	0.0025		<	0.01	0.005	<	0.01	0.005
65	10/2007 DMR AVG	6.504						0.054	0.054														
66	11/2007 DMR AVG	5.316						0.09	0.09														
67	12/2007 DMR AVG	5.959						0.065	0.065														
68	12/12/2007 LTMP				0.356	0.356					<	0.005	0.0025	<	0.005	0.0025		<	0.01	0.005	<	0.01	0.005
69																							
70	Column Averages =>					0.1828			0.0540				0.0114			0.0029				0.0060			0.0040
71		7.168																					
72						Unpaired Site Specific RR =>			70.47 %				Unpaired Site Specific RR =>			50 % BDL				Unpaired Site Specific RR =>			50 % BD
73																							
74						Literature/Default RR =>			86.00 %				Literature/Default RR =>			69.00 %				Literature/Default RR =>			61.00 %
75																							
76						0 % of data is BDL							71 % of data is BDL							79 % of data is BDL			
77																							
78						RR for this HWA =>			70.00 %				RR for this HWA =>			69.00 %				RR for this HWA =>			61.00 %

Average POTW Flow used everywhere!

Average Influents used in Uncontrollable Mass Balance Spreadsheet

	A	B	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH
1		FLOW		MERCURY							MOLYBDENUM							NICKEL					
2					Influent	Used in		Effluent	Used in			Influent	Used in		Effluent	Used in			Influent	Used in		Effluent	Used in
3	Sample Date	MGD		<	mg/L	Calculation	<	mg/L	Calculation		<	mg/L	Calculation	<	mg/L	Calculation		<	mg/L	Calculation	<	mg/L	Calculation
4	1/2004 DMR AVG	6.521																					
5	2/2004 DMR AVG	8.765																					
6	3/2004 DMR AVG	6.628																					
7	3/7/04 LTMP			<	0.0002	0.0001	<	0.0002	0.0001		<	0.005	0.0025	<	0.005	0.0025		<	0.01	0.005	<	0.01	0.005
8	4/2004 DMR AVG	7.795																					
9	5/2004 DMR AVG	6.684																					
10	6/2004 DMR AVG	7.197																					
11	6/8/2004 LTMP			<	0.0002	0.0001	<	0.0002	0.0001			0.0077	0.0077		0.0078	0.0078			0.0059	0.0059	<	0.005	0.0025
12	7/14/2004 LTMP			<	0.0002	0.0001	<	0.0002	0.0001			0.039	0.039		0.021	0.021		<	0.005	0.0025	<	0.005	0.0025
13	7/2004 DMR AVG	6.235																					
14	8/2004 DMR AVG	7.059																					
15	9/2004 DMR AVG	8.076																					
16	9/14/2004 LTMP			<	0.0002	0.0001	<	0.0002	0.0001			0.018	0.018		0.009	0.009			0.006	0.006	<	0.005	0.0025
17	10/2004 DMR AVG	7.518																					
18	11/2004 DMR AVG	8.137																					
19	12/2004 DMR AVG	7.98																					
20	12/7/2004 LTMP			<	0.0002	0.0001	<	0.0002	0.0001			0.0062	0.0062		0.0076	0.0076		<	0.005	0.0025	<	0.005	0.0025
21	1/2005 DMR AVG	7.848																					
22	2/2005 DMR AVG	8.074																					
23	3/2005 DMR AVG	9.045																					
24	3/8/2005 LTMP			<	0.0002	0.0001	<	0.0002	0.0001			0.0066	0.0066	<	0.005	0.0025		<	0.005	0.0025	<	0.005	0.0025
25	4/2005 DMR AVG	7.519																					
26	5/2005 DMR AVG	6.859																					
27	6/2005 DMR AVG	6.756																					
28	6/14/2005 LTMP			<	0.0002	0.0001	<	0.0002	0.0001			0.0074	0.0074		0.006	0.006		<	0.005	0.0025	<	0.005	0.0025
29	7/2005 DMR AVG	6.839																					
30	8/2005 DMR AVG	7.092																					
31	9/2005 DMR AVG	6.411																					
32	9/13/2005 LTMP			<	0.0002	0.0001	<	0.0002	0.0001			0.0058	0.0058		0.0064	0.0064		<	0.005	0.0025	<	0.005	0.0025
33	10/2005 DMR AVG	6.953																					
34	11/2005 DMR AVG	6.467																					
35	12/2005 DMR AVG	7.412																					
36	12/2/2005 LTMP			<	0.0002	0.0001	<	0.0002	0.0001		<	0.005	0.0025	<	0.005	0.0025		<	0.005	0.0025	<	0.005	0.0025
37	1/2006 DMR AVG	8.107																					
38	2/2006 DMR AVG	7.87																					
39	3/2006 DMR AVG	6.827																					
40	3/8/2006 LTMP			<	0.0002	0.0001	<	0.0002	0.0001		<	0.005	0.0025	<	0.005	0.0025		<	0.01	0.005	<	0.01	0.005

25

	A	B	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH
1		FLOW		MERCURY							MOLYBDENUM							NICKEL					
2					Influent	Used in		Effluent	Used in			Influent	Used in		Effluent	Used in			Influent	Used in		Effluent	Used in
3	Sample Date	MGD		<	mg/L	Calculation	<	mg/L	Calculation		<	mg/L	Calculation	<	mg/L	Calculation		<	mg/L	Calculation	<	mg/L	Calculation
41	4/2006 DMR AVG	6.727																					
42	5/2006 DMR AVG	6.721																					
43	6/2006 DMR AVG	7.401																					
44	6/7/2006 LTMP			<	0.0002	0.0001	<	0.0002	0.0001			0.005	0.005		0.006	0.006		<	0.01	0.005	<	0.01	0.005
45	7/2006 DMR AVG	7.276																					
46	8/2006 DMR AVG	7.551																					
47	9/2006 DMR AVG	8.075																					
48	9/13/2006 LTMP			<	0.0002	0.0001	<	0.0002	0.0001		<	0.005	0.0025		0.006	0.006		<	0.01	0.005	<	0.01	0.005
49	10/2006 DMR AVG	7.787																					
50	11/2006 DMR AVG	7.975																					
51	12/2006 DMR AVG	6.438																					
52	12/6/2006 LTMP			<	0.0002	0.0001	<	0.0002	0.0001			0.007	0.007		0.005	0.005		<	0.01	0.005	<	0.01	0.005
53	1/2007 DMR AVG	8.658																					
54	2/2007 DMR AVG	7.322																					
55	3/2007 DMR AVG	8.078																					
56	3/7/2007 LTMP				0.0004	0.0004	<	0.0002	0.0001		<	0.005	0.0025	<	0.005	0.0025		<	0.01	0.005	<	0.01	0.005
57	4/2007 DMR AVG	7.006																					
58	5/2007 DMR AVG	6.446																					
59	6/2007 DMR AVG	6.25																					
60	6/6/2007 LTMP			<	0.0002	0.0001	<	0.0002	0.0001			0.006	0.006		0.006	0.006		<	0.01	0.005	<	0.01	0.005
61	7/2007 DMR AVG	6.219																					
62	8/2007 DMR AVG	5.901																					
63	9/2007 DMR AVG	5.783																					
64	9/12/2007 LTMP				0.0008	0.0008		0.0011	0.0011		<	0.005	0.0025	<	0.005	0.0025		<	0.01	0.005	<	0.01	0.005
65	10/2007 DMR AVG	6.504																					
66	11/2007 DMR AVG	5.316																					
67	12/2007 DMR AVG	5.959																					
68	12/12/2007 LTMP				0.0003	0.0003	<	0.0002	0.0001		<	0.005	0.0025	<	0.005	0.0025		<	0.01	0.005	<	0.01	0.005
69																							
70	Column Averages =>					0.000171			0.000159				0.0074			0.0058				0.0042			0.0038
71		7.168																					
72		L				Unpaired Site Specific RR =>			> 50 % BDL				Unpaired Site Specific RR =>			22.11 %				Unpaired Site Specific RR =>			50 % BD
73	Average POTW Flow used everywhere!																						
74						Literature/Default RR =>			60.00 %				Literature/Default RR =>			33.00 %				Literature/Default RR =>			42.00 %
75																							
76	Average Influents used				88 % of data is BDL							41 % of data is BDL							94 % of data is BDL				
77	in Uncontrollable Mass																						
78	Balance Spreadsheet								RR for this HWA =>							RR for this HWA =>							RR for this HWA =>
									60.00 %							22.00 %							42.00 %

	A	B	CJ	CK	CL	CM	CN	CO	CQ	CR	CS	CT	CU	CV	CX	CY	CZ	DA	DB	DC
1		FLOW		SELENIUM						SILVER						ZINC				
2																				
3	Sample Date	MGD	<	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
4	1/2004 DMR AVG	6.521										<	0.002	0.001						
5	2/2004 DMR AVG	8.765										<	0.002	0.001						
6	3/2004 DMR AVG	6.628										<	0.005	0.0025						
7	3/7/04 LTMP		<	0.01	0.005	<	0.01	0.005	<	0.005	0.0025					0.062	0.062		0.02	0.02
8	4/2004 DMR AVG	7.795										<	0.002	0.001						
9	5/2004 DMR AVG	6.684										<	0.002	0.001						
10	6/2004 DMR AVG	7.197										<	0.002	0.001						
11	6/8/2004 LTMP		<	0.005	0.0025	<	0.005	0.0025	<	0.002	0.001					0.14	0.14		0.025	0.025
12	7/14/2004 LTMP		<	0.005	0.0025	<	0.005	0.0025	<	0.002	0.001					0.095	0.095		0.029	0.029
13	7/2004 DMR AVG	6.235										<	0.002	0.001						
14	8/2004 DMR AVG	7.059										<	0.002	0.001						
15	9/2004 DMR AVG	8.076										<	0.002	0.001						
16	9/14/2004 LTMP		<	0.005	0.0025	<	0.005	0.0025	<	0.002	0.001					0.073	0.073		0.013	0.013
17	10/2004 DMR AVG	7.518										<	0.002	0.001						
18	11/2004 DMR AVG	8.137										<	0.002	0.001						
19	12/2004 DMR AVG	7.98										<	0.002	0.001						
20	12/7/2004 LTMP		<	0.005	0.0025	<	0.005	0.0025	<	0.002	0.001					0.081	0.081		0.02	0.02
21	1/2005 DMR AVG	7.848										<	0.002	0.001						
22	2/2005 DMR AVG	8.074										<	0.002	0.001						
23	3/2005 DMR AVG	9.045										<	0.002	0.001						
24	3/8/2005 LTMP		<	0.005	0.0025	<	0.005	0.0025	<	0.002	0.001					0.12	0.12		0.022	0.022
25	4/2005 DMR AVG	7.519										<	0.002	0.001						
26	5/2005 DMR AVG	6.859										<	0.002	0.001						
27	6/2005 DMR AVG	6.756											0.002	0.002						
28	6/14/2005 LTMP		<	0.005	0.0025	<	0.005	0.0025	<	0.002	0.001					0.063	0.063		0.015	0.015
29	7/2005 DMR AVG	6.839										<	0.002	0.001						
30	8/2005 DMR AVG	7.092										<	0.002	0.001						
31	9/2005 DMR AVG	6.411										<	0.002	0.001						
32	9/13/2005 LTMP		<	0.005	0.0025	<	0.005	0.0025	<	0.002	0.001					0.096	0.096		0.024	0.024
33	10/2005 DMR AVG	6.953										<	0.005	0.0025						
34	11/2005 DMR AVG	6.467										<	0.005	0.0025						
35	12/2005 DMR AVG	7.412										<	0.002	0.001						
36	12/2/2005 LTMP		<	0.005	0.0025	<	0.005	0.0025	<	0.002	0.001					0.21	0.21		0.035	0.035
37	1/2006 DMR AVG	8.107										<	0.005	0.0025						
38	2/2006 DMR AVG	7.87										<	0.005	0.0025						
39	3/2006 DMR AVG	6.827										<	0.005	0.0025						
40	3/8/2006 LTMP		<	0.01	0.005	<	0.01	0.005	<	0.005	0.0025					0.125	0.125		0.06	0.06

27

	A	B	CJ	CK	CL	CM	CN	CO	CQ	CR	CS	CT	CU	CV	CX	CY	CZ	DA	DB	DC
1		FLOW	SELENIUM						SILVER						ZINC					
2																				
3	Sample Date	MGD	<	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
41	4/2006 DMR AVG	6.727										<	0.005	0.0025						
42	5/2006 DMR AVG	6.721										<	0.005	0.0025						
43	6/2006 DMR AVG	7.401										<	0.005	0.0025						
44	6/7/2006 LTMP		<	0.01	0.005	<	0.01	0.005	<	0.005	0.0025					0.086	0.086		0.025	0.025
45	7/2006 DMR AVG	7.276										<	0.005	0.0025						
46	8/2006 DMR AVG	7.551										<	0.005	0.0025						
47	9/2006 DMR AVG	8.075										<	0.005	0.0025						
48	9/13/2006 LTMP		<	0.01	0.005	<	0.01	0.005	<	0.005	0.0025					0.089	0.089		0.031	0.031
49	10/2006 DMR AVG	7.787										<	0.005	0.0025						
50	11/2006 DMR AVG	7.975										<	0.005	0.0025						
51	12/2006 DMR AVG	6.438										<	0.005	0.0025						
52	12/6/2006 LTMP		<	0.01	0.005	<	0.01	0.005	<	0.005	0.0025					0.087	0.087		0.023	0.023
53	1/2007 DMR AVG	8.658										<	0.005	0.0025						
54	2/2007 DMR AVG	7.322										<	0.005	0.0025						
55	3/2007 DMR AVG	8.078										<	0.005	0.0025						
56	3/7/2007 LTMP		<	0.01	0.005	<	0.01	0.005	<	0.005	0.0025					0.084	0.084		0.027	0.027
57	4/2007 DMR AVG	7.006										<	0.005	0.0025						
58	5/2007 DMR AVG	6.446										<	0.005	0.0025						
59	6/2007 DMR AVG	6.25										<	0.005	0.0025						
60	6/6/2007 LTMP		<	0.01	0.005	<	0.01	0.005	<	0.005	0.0025					0.042	0.042		0.044	0.044
61	7/2007 DMR AVG	6.219										<	0.005	0.0025						
62	8/2007 DMR AVG	5.901										<	0.005	0.0025						
63	9/2007 DMR AVG	5.783										<	0.005	0.0025						
64	9/12/2007 LTMP		<	0.01	0.005	<	0.01	0.005	<	0.005	0.0025					0.058	0.058		0.013	0.013
65	10/2007 DMR AVG	6.504										<	0.005	0.0025						
66	11/2007 DMR AVG	5.316										<	0.005	0.0025						
67	12/2007 DMR AVG	5.959										<	0.005	0.0025						
68	12/12/2007 LTMP		<	0.01	0.005	<	0.01	0.005	<	0.005	0.0025					0.103	0.103		0.023	0.023
69																				
70	Column Averages =>				0.0038			0.0038			0.0018			0.0019			0.0949			0.0264
71		7.168																		
72					Unpaired Site Specific RR =>			50 % BDL			Unpaired Site Specific RR =>			50 % BDL			Unpaired Site Specific RR =>			72.18 %
73																				
74					Literature/Default RR =>			50.00 %			Literature/Default RR =>			75.00 %			Literature/Default RR =>			79.00 %
75																				
76					100 % of data is BDL						98 % of data is BDL						0 % of data is BDL			
77																				
78					RR for this HWA =>			50.00 %			RR for this HWA =>			75.00 %			RR for this HWA =>			72.00 %

Average POTW Flow used everywhere!

Average Influents used in Uncontrollable Mass Balance Spreadsheet

Town of Typicalville Plant Design BOD and TSS Loading (Influent)

	DESIGN DATA
1. Design Loadings	13.5 MGD average flow 20 .25 MGD peak flow (1.5 peak to average ratio) Influent BOD = 175 mg/L Influent Suspended Solids = 150 mg/L
2. Screening	Two mechanically cleaned bar screens 1-inch spacing 3/8-inch bar stock One manually cleaned bypass screen
3. Grit Removal	One 10 ft. x 42 ft. rectangular tank with chain and bucket grit collector Capacity (peak) 20.25 MGD
4. Aeration	Two basins 7.0 million gallons each Detention time at 13.5 MGD = 24.9 hours Eight— 40 HP floating aerators and three – 40 HP floating mixers in each basin
5. MLSS Screening	Two manually cleaned screens 1 – inch spacing 1/4 – inch bar stock Two catenary bar rakes
6. Final Settling	Two tanks at 90' – 0" diameter Surface area = 6,360 ft^2 each Two tanks at 130' – 0" diameter Surface area = 13,266 ft^2 Total area = 39,252 ft^2 Surface overflow rate at 20.25MGD=516 gpd/ft^2
7. Chlorination	Three chlorine contact tanks Total volume = 35,500 cf Detention time = 30 minutes at 13.5 MGD Two automatic and one manual chlorinator rated at 500 lbs/day each.
8. Sludge Handing	Aerated basin Volume = 2,300,000 gallons Two lagoon Volume = 1,625,000 gallons each; 3,250,000 gallons total Total volume = 5,520,000 gallons Two dissolved air flotation thickeners.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
1	Sample Location:				ARSENIC				CADMIUM				CHROMIUM				COPPER				CYANIDE	
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		<	mg/L	Used in Calculation
4	3/7/2004	Spreadsheet Instructions: 1) Data entered only in Heavy Bordered cells. Rest of worksheet is protected, password is "2".			0.026	0.026			0.0026	0.0026			0.12				8.63	8.63			0.12	
5	9/14/2004				0.013	0.013			0.0016	0.0016			0.054	0.054			4.1	4.1			0.056	0.056
6	3/8/2005				0.017	0.017		<	0.001	0.0005			0.091	0.091			5.3	5.3			0.11	0.11
7	9/13/2005				0.012	0.012			0.0011	0.0011			0.075	0.075			4.8	4.8			0.063	0.063
8	3/8/2006				0.117	0.117		<	0.02	0.01			0.158	0.158			10.8	10.8			0.016	0.016
9	9/13/2006				0.042	0.042			0.01	0.01			0.187	0.187			10	10			0.126	0.126
10	6/6/2007			<	0.05	0.025			0.017	0.017			0.283	0.283			9.5	9.5			0.127	0.127
11	12/12/2007			<	0.05	0.025		<	0.01	0.005			0.244	0.244			2.6	2.6		<	0.005	0.0025
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		<	mg/L	Used in Calculation
31	3/7/2004	Spreadsheet Instructions: 1) Data entered only in Heavy Bordered cells. Rest of worksheet is protected, password is "2".			0.022	0.022			0.0028	0.0028			0.081	0.081			2.4	2.4			0.098	0.098
32	9/14/2004				0.019	0.019		<	0.001	0.0005			0.087	0.087			5.3	5.3			0.15	0.15
33	3/8/2005				0.017	0.017		<	0.001	0.0005			0.085	0.085			5.6	5.6			0.091	0.091
34	9/13/2005				0.018	0.018		<	0.001	0.0005			0.11	0.11			5.5	5.5			0.11	0.11
35	3/8/2006			<	0.1	0.05		<	0.02	0.01			0.126	0.126			10.2	10.2			0.143	0.143
36	9/13/2006				0.047	0.047			0.008	0.008			0.177	0.177			7.58	7.58			0.107	0.107
37	6/6/2007			<	0.05	0.025			0.019	0.019			0.287	0.287			9.58	9.58			0.137	0.137
38	12/12/2007			<	0.05	0.025		<	0.01	0.005			0.276	0.276			9.69	9.69		<	0.005	0.0025
40																						
41	Column Averages =>					0.03125				0.00588				0.15256				6.97375				0.09119
42																						

30

	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	3/7/2004	Spreadsheet Instructions: 1) Data entered only in Heavy Bordered cells. Rest of worksheet is protected, password is "2".			0.079	0.079		<	0.0002	0.0001			0.0066	0.0066			0.063	0.063	
5	9/14/2004				0.027	0.027			0.0032	0.0032		<	0.005	0.0025			0.024	0.024	
6	3/8/2005				0.088	0.088			0.0015	0.0015			0.016	0.016			0.05	0.05	
7	9/13/2005				0.04	0.04			0.0014	0.0014		<	0.005	0.0025			0.028	0.028	
8	3/8/2006				0.362	0.362			0.003	0.003		<	0.05	0.025			0.158	0.158	
9	9/13/2006				0.336	0.336			0.004	0.004			0.011	0.011			0.129	0.129	
10	6/6/2007				0.188	0.188			0.0015	0.0015			0.086	0.086			0.133	0.133	
11	12/12/2007				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	3/7/2004	Spreadsheet Instructions: 1) Data entered only in Heavy Bordered cells. Rest of worksheet is protected, password is "2".			0.06	0.06		<	0.0002	0.0001			0.0088	0.0088			0.052	0.052	
32	9/14/2004				0.072	0.072			0.0029	0.0029			0.011	0.011			0.037	0.037	
33	3/8/2005				0.079	0.079			0.0027	0.0027			0.012	0.012			0.058	0.058	
34	9/13/2005				0.1	0.1			0.0013	0.0013			0.012	0.012			0.053	0.053	
35	3/8/2006				0.339	0.339			0.003	0.003		<	0.05	0.025			0.13	0.13	
36	9/13/2006				0.324	0.324			0.0024	0.0024			0.011	0.011			0.126	0.126	
37	6/6/2007				0.209	0.209			0.002	0.002			0.074	0.074			0.13	0.13	
38	12/12/2007				0.188	0.188			0.0025	0.0025			0.068	0.068			0.107	0.107	
40																			
41	Column Averages =>					0.16613				0.00210				0.02659				0.08538	
42																			

W

typicalville_Aeration_basin
data s ary
Page 3 pages
2/2 5:56 PM

	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	3/7/2004	Spreadsheet Instructions: 1) Data entered only in Heavy Bordered cells. Rest of worksheet is protected, password is "2".		0.011	0.011			0.0067				1.4	1.4	
5	9/14/2004		<	0.005	0.0025		<	0.002	0.001			1.3	1.3	
6	3/8/2005			0.0066	0.0066			0.016	0.016			1.6	1.6	
7	9/13/2005		<	0.005	0.0025			0.0031	0.0031			1.7	1.7	
8	3/8/2006		<	0.1	0.05		<	0.05	0.025			3.87	3.87	
9	9/13/2006		<	0.01	0.005			0.025	0.025			3.9	3.9	
10	6/6/2007			0.058	0.058			0.054	0.054			2.96	2.96	
11	12/12/2007		<	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	3/7/2004	Spreadsheet Instructions: 1) Data entered only in Heavy Bordered cells. Rest of worksheet is protected, password is "2".		0.0078	0.0078			0.0092				3.85	3.85	
32	9/14/2004		<	0.005	0.0025			0.0076	0.0076			1.5	1.5	
33	3/8/2005			0.0082	0.0082			0.01	0.01			1.6	1.6	
34	9/13/2005		<	0.005	0.0025			0.014	0.014			1.6	1.6	
35	3/8/2006		<	0.1	0.05		<	0.05	0.025			1.5	1.5	
36	9/13/2006		<	0.01	0.005			0.023	0.023			3.71	3.71	
37	6/6/2007			0.067	0.067		<	0.025	0.0125			2.1	2.1	
38	12/12/2007		<	0.05	0.025		<	0.025	0.0125			2.6	2.6	
40														
41	Column Averages =>				0.02054				0.01691				2.33750	
42														

23