MSD
Metropolitan Sewer District

700 West Liberty Street
Louisville Kentucky 40203-1911
502-540-6000
www.msdlouky.org

December 20, 2012

Cheryl Edwards
Permit Support Section
Surface Water Permits Branch
Division of Water
200 Fair Oaks Lane 4th Floor
Frankfort, KY 40601

Re: **Morris Forman Water Quality Treatment Center**
KPDES Permit No. KY0022411

Dear Ms. Edwards:

In accordance with the provisions of the KPDES Permit referenced above, the monthly operating report and the monthly Discharge Monitoring Report (DMR) for the reporting period November 1st to November 30th are enclosed. All permit requirements were met for the month of November, 2012.

Should you have any questions, please contact me at (502) 540-6793.

Sincerely,

Alex E. Novak

Alex E. Novak, P.E.
Director of Operations

paw

MFDMR1112.doc

Enclosures

cc: C. Roth, DOW-Louisville S. Cochran, ORSANCO

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

Form Approved.
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME MSD MORRIS FORMAN WQTC
ADDRESS C/O LOUISVILLE/JEFF CO MSD
4522 ALGONQUIN PKWY
LOUISVILLE, KY 40211-2497
FACILITY LOCATION MSD MORRIS FORM WQTC
LOUISVILLE, KY 40211

KY0022411	001 1
PERMIT NUMBER	DISCHARGE NUMBER

MAJOR
(SUBR LV)
F - FINAL JEFFE
MUNICIPAL DISCHARGE
EFFLUENT
*** NO DISCHARGE *** ☐

MONITORING PERIOD

	YEAR	MONTH	DAY		YEAR	MONTH	DAY
FROM	12	11	01	TO	12	11	30

ATTN: ALEX E NOVAK, OPER DIR

Parameter		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
OXYGEN, DISSOLVED (DO)	SAMPLE MEASUREMENT	*****	*****	****	4.1	*****	*****	(19)	0	30/30	GRAB
00300 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	*****	*****	****	2.0 INST MIN	*****	*****	MG/L		DAILY	GRAB
BOD, 5-DAY (20 DEG. C)	SAMPLE MEASUREMENT	6,471	8,615	(26)	*****	12	16	(19)	0	30/30	COMPOS
00310 E 0 0 SEC/BIOL PRCS CMPLT	PERMIT REQUIREMENT	REPORT MO AVG	REPORT MX WK AV	LBS/DY	*****	30 MO AVG	45 MX WK AV	MG/L		DAILY	COMPOS
BOD, 5-DAY (20 DEG. C)	SAMPLE MEASUREMENT	169,371	199,678	(26)	*****	307	373	(19)	0	30/30	COMPOS
00310 G 0 0 RAW SEW/INFLUENT	PERMIT REQUIREMENT	REPORT MO AVG	REPORT MX WK AV	LBS/DY	*****	REPORT MO AVG	REPORT MX WK AV	MG/L		DAILY	COMPOS
PH	SAMPLE MEASUREMENT	*****	*****	****	6.4	*****	6.8	(12)	0	30/30	GRAB
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	*****	*****	****	6.0 MINIMUM	*****	9.0 MAXIMUM	SU		DAILY	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	4,923	5,838	(26)	*****	9	10	(19)	0	30/30	COMPOS
00530 E 0 0 SEC/BIOL PRCS CMPLT	PERMIT REQUIREMENT	REPORT MO AVG	REPORT MX WK AV	LBS/DY	*****	30 MO AVG	45 MX WK AV	MG/L		DAILY	COMPOS
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	232,482	313,666	(26)	*****	399	462	(19)	0	30/30	COMPOS
00530 G 0 0 RAW SEW/INFLUENT	PERMIT REQUIREMENT	REPORT MO AVG	REPORT MX WK AV	LBS/DY	*****	REPORT MO AVG	REPORT MX WK AV	MG/L		DAILY	COMPOS
NITROGEN, AMMONIA TOTAL (AS N)	SAMPLE MEASUREMENT	10,989	12,691	(26)	*****	19.9	20.9	(19)	0	30/30	COMPOS
00610 E 0 0 SEC/BIOL PRCS CMPLT	PERMIT REQUIREMENT	REPORT MO AVG	REPORT MX WK AV	LBS/DY	*****	20 MO AVG	30 MX WK AV	MG/L		DAILY	COMPOS

NAME/TITLE PRINCIPLE EXECUTIVE OFFICER

Greg C. Heitzman, P.E.
INTERIM EXECUTIVE DIRECTOR

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

Telephone		DATE
502	540-6000	12-12-14
AREA	NUMBER	YEAR - MO - DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
G - INFLUENT
E - SECONDARY EFFLUENT
1 - FINAL EFFLUENT

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

Form Approved.
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME MSD MORRIS FORMAN WQTC
ADDRESS C/O LOUISVILLE/JEFF CO MSD
4522 ALGONQUIN PKWY
LOUISVILLE, KY 40211-2497
FACILITY LOCATION MSD MORRIS FORM WQTC
LOUISVILLE, KY 40211

ATTN: ALEX E NOVAK, OPER DIR

KY0022411	001 1
PERMIT NUMBER	DISCHARGE NUMBER

MAJOR
(SUBR LV)
F - FINAL JEFFE
MUNICIPAL DISCHARGE
EFFLUENT
*** NO DISCHARGE *** ☐

MONITORING PERIOD	YEAR	MONTH	DAY		YEAR	MONTH	DAY
FROM	12	11	01	TO	12	11	30

Parameter		QUANTITY OR LOADING AVERAGE	QUANTITY OR LOADING MAXIMUM	QUANTITY OR LOADING UNITS	QUALITY OR CONCENTRATION MINIMUM	QUALITY OR CONCENTRATION AVERAGE	QUALITY OR CONCENTRATION MAXIMUM	QUALITY OR CONCENTRATION UNITS	NO EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
NITROGEN, AMMONIA TOTAL (AS N)	SAMPLE MEASUREMENT	10250	10587	(26)	*****	18.8	21.4	(19)	0	30/30	COMPOS
00610 G 0 0 RAW SEW/INFLUENT	PERMIT REQUIREMENT	REPORT MO AVG	REPORT MX WK AV	LBS/DY	*****	REPORT MO AVG	REPORT MX WK AV	MG/L		DAILY	COMPOS
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	SAMPLE MEASUREMENT	66.5	154.5	(03)	*****	*****	*****	****	0	30/30	CONTIN
50050 E 0 0 SEC/BIOL PRCS CMPLT	PERMIT REQUIREMENT	REPORT MO AVG	REPORT DAILY MX	MGD	*****	*****	*****	****		CONTIN UOUS	CONTIN
CHLORINE, TOTAL RESIDUAL	SAMPLE MEASUREMENT	*****	*****	****	*****	*****	<0.010	(19)	0	30/30	GRAB
50060 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	*****	*****	****	*****	*****	0.019 DAILY MX	MG/L		DAILY	GRAB
COLIFORM, FECAL GENERAL	SAMPLE MEASUREMENT	*****	*****	****	*****	58	168	(13)	0	30/30	GRAB
74055 1 2 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	*****	*****	****	*****	1000 30DA GEO	2000 7 DA GEO	#/ 100ML		DAILY	GRAB
BOD, 5-DAY PERCENT REMOVAL	SAMPLE MEASUREMENT	*****	*****	****	97	*****	*****	(23)	0	ONCE/ MONTH	CALCTD
81010 K 0 0 PERCENT REMOVAL	PERMIT REQUIREMENT	*****	*****	****	85 MO MIN	*****	*****	PER-CENT		ONCE/ MONTH	CALCTD
SOLIDS, SUSPENDED PERCENT REMOVAL	SAMPLE MEASUREMENT	*****	*****	****	98	*****	*****	(23)	0	ONCE/ MONTH	CALCTD
81011 K 0 0 PERCENT REMOVAL	PERMIT REQUIREMENT	*****	*****	****	85 MO MIN	*****	*****	PER-CENT		ONCE/ MONTH	CALCTD
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPLE EXECUTIVE OFFICER

Greg C. Heitzman, P.E.
INTERIM EXECUTIIVE DIRECTOR

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SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

Telephone		DATE
502	540-6000	12-12-18
AREA	NUMBER	YEAR - MO - DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
G - INFLUENT
E - SECONDARY EFFLUENT
F - SECONDARY BYPASS AFTER PRIMARY TREATMENT.

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

Form Approved.
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LOUISVILLE, KY 40211

ATTN: ALEX E NOVAK, OPER DIR

KY0022411	001 B
PERMIT NUMBER	DISCHARGE NUMBER

MAJOR
(SUBR LV)
F - FINAL JEFFE
SECONDARY BYPASS
EFFLUENT
*** NO DISCHARGE ** ☐

MONITORING PERIOD

	YEAR	MONTH	DAY		YEAR	MONTH	DAY
FROM	12	11	01	TO	12	11	30

Parameter		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
BOD, 5-DAY (20 DEG. C)	SAMPLE MEASUREMENT	*****	*****	****	*****	192	288	(19)	0	02/30	COMPOS
00310 F 0 0 PRI/PRLM PRCS CMPLT	PERMIT REQUIREMENT	*****	*****	****	*****	REPORT MO AVG	REPORT MX WK AV	MG/L		WHEN DISCHG	COMPOS
BOD, 5-DAY (20 DEG. C)	SAMPLE MEASUREMENT	*****	*****	****	*****	17	21	(19)	0	02/30	COMPOS
00310 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	*****	*****	****	*****	REPORT MO AVG	REPORT MX WK AV	MG/L		WHEN DISCHG	COMPOS
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	*****	*****	****	*****	466	540	(19)	0	02/30	COMPOS
00530 F 0 0 PRI/PRLM PRCS CMPLT	PERMIT REQUIREMENT	*****	*****	****	*****	REPORT MO AVG	REPORT MX WK AV	MG/L		WHEN DISCHG	COMPOS
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	*****	*****	****	*****	97	176	(19)	0	02/30	COMPOS
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	*****	*****	****	*****	REPORT MO AVG	REPORT MX WK AV	MG/L		WHEN DISCHG	COMPOS
NITROGEN, AMMONIA TOTAL (AS N)	SAMPLE MEASUREMENT	*****	*****	****	*****	16.5	17.0	(19)	0	02/30	COMPOS
00610 F 0 0 PRI/PRLM PRCS CMPLT	PERMIT REQUIREMENT	*****	*****	****	*****	REPORT MO AVG	REPORT MX WK AV	MG/L		WHEN DISCHG	COMPOS
NITROGEN, AMMONIA TOTAL (AS N)	SAMPLE MEASUREMENT	*****	*****	****	*****	21.0	22.0	(19)	0	02/30	COMPOS
00610 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	*****	*****	****	*****	REPORT MO AVG	REPORT MX WK AV	MG/L		WHEN DISCHG	COMPOS
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	SAMPLE MEASUREMENT	18.90	36.20	(03)	*****	*****	*****	****	0	02/30	CONTIN
50050 F 0 0 PRI/PRLM PRCS CMPLT	PERMIT REQUIREMENT	REPORT MO AVG	REPORT MX WK AV	MGD	*****	*****	*****	****		WHEN DISCHG	CONTIN

NAME/TITLE PRINCIPLE EXECUTIVE OFFICER

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SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

Telephone		DATE
502	540-6000	12-12-14
AREA	NUMBER	YEAR - MO - DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
MONITORING DURING PERIODS OF SECONDARY BYPASS IN ADDITION TO REGULAR MONITORING.
1 - FINAL EFFLUENT
F - SECONDARY BYPASS AFTER PRIMARY TREATMENT.

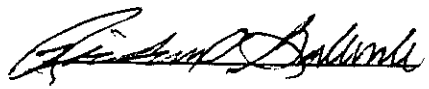
MORRIS FORMAN WATER QUALITY TREATMENT CENTER JEFFERSON COUNTY, KENTUCKY MONTH OF November 2012
KPDES PERMIT NO. KY0022411 PLANT CAPACITY - 120 MGD RECEIVING STREAM-OHIO RIVER

	WASTEWATER FLOWS (Million Gallons)			TEMP (DEGF)		pH		SETS (M/L)		TSS (mg/L)		TS (mg/L)		D.O. (mg/L)	5-DAY BOD (mg/L)			RETURN SLUDGE			AERATION BASIN					ACTIVE		CHLORINATION			FINAL EFFLUENT	
DATE	Final Effluent	Sec. Effluent	Bypass	raw	final	raw	final	raw	final	raw	final	raw	final	final	raw	prim. final	final	FLOW MG	TSS g/L	TVSS g/L	D.O mg/L	MLSS g/L	MLVSS g/L	SET	SVI	Sludge Wasted MG	Primary Sludge MG	Chlorine Dosage KLBS	Resid mg/L	Fecal Coliform #/100 ml	NH3-N mg/L	Pump. Hours
11/1	67.2	67.2	0.0	68	68	7.0	6.5	19.2	0.1	468	18			7.8	384	370	16	24.8	13.3	10.7	12.4	4.5	3.6	389	86	1.11	0.37	1.72	0.010	220	17	13.00
11/2	84.6	84.6	0.0	71	71	8.8	6.4	5.5	0.1	234	23			4.1	247	260	24	26.1	12.2	10.1	11.0	4.5	3.7	446	97	1.11	0.33	2.28	0.010	2850	19	24.00
11/3	90.5	88.9	1.6	68	68	6.8	6.4	18.0	0.1	736	18			5.1	320	288	13	26.7	13.8	11.5	10.6	3.5	2.8	442	128	1.06	0.31	3.09	0.010	50	22	24.00
11/4	65.6	65.6	0.0	66	66	7.1	6.4	11.5	0.1	268	12			5.6	184	172	7	27.0	15.8	12.8	12.1	4.6	3.5	430	93	1.28	0.12	1.49	0.010	108	17	24.00
11/5	64.9	64.9	0.0	65	65	7.0	6.4	14.5	0.1	348	11			5.5	212	207	6	27.8	14.3	11.6	13.3	5.2	3.7	442	85	1.20	0.31	1.18	0.010	70	22	15.00
11/6	65.4	65.4	0.0	67	67	7.0	6.5	8.2	0.1	328	16			4.8	258	235	9	26.8	14.6	11.4	11.2	5.4	3.9	468	87	1.14	0.41	1.33	0.010	226	25	0.00
11/7	70.8	70.8	0.0	66	66	7.1	6.4	11.0	0.1	308	14			5.0	349	304	12	26.4	14.7	11.5	10.0	5.3	3.6	454	86	1.14	0.37	1.49	0.010	70	23	0.00
11/8	64.9	64.9	0.0	67	67	7.0	6.5	22.9	0.1	580	26			5.3	395	304	14	26.7	14.9	11.5	9.6	4.9	3.4	447	91	1.23	0.41	0.88	0.010	124	24	0.00
11/9	65.4	65.4	0.0	67	67	7.2	6.6	35.0	0.1	770	15			4.9	372	333	9	28.3	12.9	10.9	9.2	4.7	3.9	506	108	1.29	0.37	1.42	0.010	55	24	0.00
11/10	64.8	64.8	0.0	69	69	7.3	6.6	18.0	0.1	462	12			4.7	189	156	8	26.4	14.5	12.0	10.9	4.3	3.6	507	123	1.22	0.37	1.18	0.010	35	26	0.00
11/11	64.6	64.6	0.0	69	69	7.3	6.4	13.0	0.1	224	9			5.9	119	112	6	25.7	13.0	10.9	15.1	4.3	3.6	362	82	1.11	0.20	0.83	0.010	20	27	0.00
11/12	146.4	110.2	36.2	64	64	7.0	6.5	22.0	5.0	572	176			4.9	122	95	21	25.6	15.3	12.3	18.0	4.1	3.1	319	77	1.09	0.35	4.01	0.010	42	20	0.00
11/13	77.8	77.8	0.0	63	63	7.1	6.6	10.9	0.1	340	11			7.6	199	157	4	25.0	15.5	12.4	16.8	4.6	3.4	413	91	1.18	0.33	2.27	0.010	72	16	0.00
11/14	73.1	73.1	0.0	64	64	7.0	6.5	11.0	0.1	284	11			7.7	283	183	8	24.1	15.0	12.3	15.7	5.3	4.0	444	85	1.29	0.39	1.26	0.010	84	18	0.00
11/15	68.9	68.9	0.0	64	64	7.2	6.4	2.0	0.1	160	9			5.8	244	286	8	26.0	15.6	12.6	13.9	4.9	3.8	397	81	1.13	0.36	1.52	0.010	80	21	0.00
11/16	66.0	66.0	0.0	65	65	6.9	6.6	16.0	0.1	444	9			6.3	368	224	5	26.9	12.7	10.3	14.3	4.5	3.6	443	98	1.18	0.27	1.57	0.010	6	21	0.00
11/17	62.1	62.1	0.0	66	66	7.2	6.5	19.0	0.1	416	9			5.8	364	305	7	26.9	12.7	10.9	12.7	4.2	3.5	442	104	1.19	0.37	1.32	0.010	9	22	0.00
11/18	59.3	59.3	0.0	66	66	7.1	6.6	11.4	0.1	316	13			5.3	262	276	10	26.8	14.3	11.9	12.2	5.1	4.1	484	95	1.20	0.27	1.12	0.010	54	21	0.00
11/19	64.1	64.1	0.0	66	64	7.3	6.7	18.0	0.1	544	12			5.6	417	334	11	27.5	14.9	12.5	20.1	3.8	3.1	453	120	1.22	0.31	1.17	0.010	40	25	0.00
11/20	64.7	64.7	0.0	68	68	7.0	6.7	21.4	0.1	544	15			6.0	447	323	10	27.2	15.3	12.3	14.1	5.0	3.8	453	92	1.26	0.41	1.37	0.010	30	25	0.00
11/21	84.0	84.0	0.0	67	67	6.9	6.6	21.0	0.1	508	16			5.8	511	204	13	27.4	12.5	10.5	11.8	5.5	4.6	459	95	1.20	0.31	1.34	0.010	22	24	0.00
11/22	58.9	58.9	0.0	65	65	7.2	6.6	17.0	0.1	416	15			4.8	309	236	10	28.8	12.2	10.3	8.3	3.6	3.3	438	122	1.14	0.27	1.21	0.010	102	28	0.00
11/23	56.3	56.3	0.0	67	67	7.5	6.6	3.5	0.1	114	9			6.6	155	197	7	25.9	13.4	11.3	13.8	4.2	3.5	477	112	1.16	0.21	0.99	0.010	46	27	0.00
11/24	54.9	54.9	0.0	62	62	7.4	6.8	11.5	0.1	242	11			5.8	269	172	6	26.1	12.8	10.4	16.9	4.4	3.5	492	111	1.14	0.24	0.80	0.010	17	32	0.00
11/25	58.9	58.9	0.0	62	62	7.5	6.8	20.0	0.1	408	9			7.5	269	219	11	26.2	13.2	10.8	17.2	4.5	3.3	452	101	1.08	0.26	0.87	0.010	46	29	0.00
11/26	62.6	62.6	0.0	62	62	7.3	6.7	20.0	0.1	356	8			7.3	224	159	7	26.4	13.0	10.6	16.8	4.4	3.4	466	105	1.13	0.45	1.08	0.010	23	27	0.00
11/27	64.1	64.1	0.0	63	63	7.0	6.6	17.7	0.1	416	9			6.3	413	226	12	26.4	14.2	11.3	15.7	4.4	3.3	412	93	1.18	0.42	1.10	0.010	78	27	0.00
11/28	59.8	59.6	0.0	61	61	7.0	6.7	16.0	0.1	296	9			6.1	435	301	14	28.0	12.5	10.4	14.1	4.8	3.8	452	98	1.17	0.48	1.11	0.010	64	25	0.00
11/29	59.6	59.6	0.0	64	64	6.9	6.6	10.7	0.1	308	12			6.4	302	247	8	25.3	13.3	10.9	14.9	5.0	4.0	418	84	1.13	0.46	1.11	0.010	48	26	0.00
11/30	63.7	63.7	0.0	64	64	7.1	6.5	19.0	0.1	560	13			6.4	590	558	15	24.7	11.7	9.7	15.1	4.6	3.6	399	87	1.02	0.40	0.97	0.010	122	27	0.00
Total	2033.7	1995.9	37.8															788.7								34.960	10.130					100.00
Average	67.8	66.5	1.3	66	65	7.1	6.6	15.5	0.3	399	18			5.9	307	248	10	26.3	13.8	11.3	13.8	4.6	3.6	440	97	1.17	0.34	1.44	0.010	58	24	0.00

SEWER CONNECTIONS 130717 TIMES 4 = 522868 SEWER POPULATION

IND. WASTER POPULATION EQ

CUSTOMERS	320
FLOW	122751
BOD	498343
TSS	551332

Authorized Agent  Certification No. 4663

MORRIS FORMAN WASTEWATER TREATMENT PLANT JEFFERSON COUNTY, KY

Month of Nov-12

Average Flow

SETTLING TANKS	Primary	Secondary		
		Battery A	Battery B	Battery C
Average Flow (MGD)	68.38	21.56	24.83	12.98
Tanks in Service	3.80	8.0	8.0	3.9
Surface Area (Ft.2)	73150.00	68940.50	68815.87	34156.83
Volume (MG)	7.92	7.06	7.05	3.50
Weir Length (Ft.)	2717.00	2857.25	2852.08	1415.63
Avg. Weir Overflow (GPD/Ft)	25165.85	7546.44	8706.01	9167.63
Avg. Settling Rate (GPD/Ft2)	934.73	497.79	510.94	473.64
Avg. Detention Time	2.78	7.86	6.81	6.47

AERATION TANKS	Battery A	Battery B	Battery C
Volume (Gallons)	4200000	4200000	2100000
Avg. Flow (MGD)	34.32	35.16	16.18
Avg. Detention Time (Hours)	4.67	4.06	3.88

CHLORINE CONTACT CHAMBERS	
Contact Chambers in Use	2.0
Volume (Gallons)	2340000
Avg. Detention Time (Hours)	1.30

Remarks: BY-PASS REPORTS (See Attached)