



MSD

*Louisville and Jefferson County Metropolitan Sewer District  
700 West Liberty Street  
Louisville Kentucky 40203-1911  
502-540-6000  
www.msdlouky.org*

July 25, 2007

Mr. Mike Mudd  
Kentucky Division of Water  
9116 Leesgate Rd.  
Louisville, Ky. 40222-5084

RE: Jeffersontown Treatment Plant, KPDES No: KY0025194  
Discharge Monitoring Report  
June 2007

Dear Mr. Mudd:

Attached are the Discharge Monitoring Report (DMR) and the Monthly Operating Report (MOR) report for the Jeffersontown Wastewater Treatment Plant, for the month of June 2007. Also included is the quarterly bio-monitoring report. There were two exceptions for the month caused by ras pump problems on the old (#2) plant. All eight tanks have been taken out of service in the old plant and cleaned while repairs are being completed. Once repairs and associated preventive maintenance have been completed the #2 plant will be placed back in service.

If you have any questions concerning the attached DMR's, please contact me at (502) 239-7695.

Sincerely,

James E. Porter Jr.  
Process Supervisor Central Region

JEP/Jeffersontown 0607.doc

Enclosures

cc: K. Thurman (KDOW)  
E. Brady  
R. Shaw  
P. Burgin  
T. Singleton



*Beneficial Use of Louisville's Biosolids  
www.louisvillegreen.com*

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

NAME MSD JEFFERSONTOWN STP  
ADDRESS B405 CEDAR CREEK RD  
LOUISVILLE KY 40291

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
DISCHARGE MONITORING REPORT (DMR)

KY0025194  
PERMIT NUMBER

001 2  
DISCHARGE NUMBER

MAJOR  
(SUBR LV)  
F - FINAL

JEFFE

FLOW 800 TSS DO PH  
EFFLUENT

\*\*\* NO DISCHARGE 1 \*\*\*

NOTE: Read Instructions before completing this form.

FACILITY MSD JEFFERSONTOWN STP  
LOCATION JEFFERSONTOWN  
ATTN: DEBBIE NEWTON

KY 40299

| MONITORING PERIOD |    |     |    |      |    |     |
|-------------------|----|-----|----|------|----|-----|
| FROM              |    |     | TO | YEAR |    |     |
| YEAR              | MO | DAY |    | YEAR | MO | DAY |
| 07                | 06 | 01  |    | 07   | 06 | 30  |

| 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 | *****               | *****    |        | 8.0                      | *****   | *****    | ( 19 ) | 0      | 3/1                   | GRAB        |
| 00300 1 0 0                    | PERMIT REQUIREMENT | *****               | *****    | *****  | INST MIN                 | *****   | *****    | MG/L   |        | FREE/GRAB             | WEEK        |
| EFFLUENT GROSS VALUE           |                    |                     |          |        |                          |         |          |        |        |                       |             |
| PH                             | SAMPLE MEASUREMENT | *****               | *****    |        | 7.2                      | *****   | 7.7      | ( 12 ) | 0      | 3/1                   | GRAB        |
| 00400 1 0 0                    | PERMIT REQUIREMENT | *****               | *****    | *****  | MINIMUM                  | *****   | MAXIMUM  | SU     |        | FREE/GRAB             | WEEK        |
| EFFLUENT GROSS VALUE           |                    |                     |          |        |                          |         |          |        |        |                       |             |
| SOLIDS, TOTAL SUSPENDED        | SAMPLE MEASUREMENT | 6424                | 6975     | ( 26 ) | *****                    | 285     | 324      | ( 19 ) | 0      | 3/1                   | COMP        |
| 00530 0 0 0                    | PERMIT REQUIREMENT | REPORT              | REPORT   | *****  | *****                    | REPORT  | REPORT   | MG/L   |        | FREE/COMP             | WEEK        |
| RAW SEW/INFLUENT               |                    | MD AVG              | MX WK AV | LBS/DY |                          | MD AVG  | MX WK AV |        |        |                       |             |
| SOLIDS, TOTAL SUSPENDED        | SAMPLE MEASUREMENT | 128                 | 166      | ( 26 ) | *****                    | 6       | 8        | ( 19 ) | 0      | 3/1                   | COMP        |
| 00530 1 0 0                    | PERMIT REQUIREMENT | 1000                | 1501     | *****  | *****                    | 30      | 45       | MG/L   |        | FREE/COMP             | WEEK        |
| EFFLUENT GROSS VALUE           |                    | MD AVG              | MX WK AV | LBS/DY |                          | MD AVG  | MX WK AV |        |        |                       |             |
| NITROGEN, AMMONIA TOTAL (AS N) | SAMPLE MEASUREMENT | 467                 | 542      | ( 26 ) | *****                    | 20.6    | 24.33    | ( 19 ) | 0      | 3/1                   | COMP        |
| 00610 0 0 0                    | PERMIT REQUIREMENT | REPORT              | REPORT   | *****  | *****                    | REPORT  | REPORT   | MG/L   |        | FREE/COMP             | WEEK        |
| RAW SEW/INFLUENT               |                    | MD AVG              | MX WK AV | LBS/DY |                          | MD AVG  | MX WK AV |        |        |                       |             |
| NITROGEN, AMMONIA TOTAL (AS N) | SAMPLE MEASUREMENT | 4.04                | 6.36     | ( 26 ) | *****                    | 0.18    | 0.25     | ( 19 ) | 0      | 3/1                   | COMP        |
| 00610 1 1 0                    | PERMIT REQUIREMENT | 133                 | 200      | *****  | *****                    | 4       | 6        | MG/L   |        | FREE/COMP             | WEEK        |
| EFFLUENT GROSS VALUE           |                    | MD AVG              | MX WK AV | LBS/DY |                          | MD AVG  | MX WK AV |        |        |                       |             |
| PHOSPHORUS, TOTAL (AS P)       | SAMPLE MEASUREMENT | 17.3                | 22.4     | ( 26 ) | *****                    | 0.78    | 1.02     | ( 19 ) | 0      | 3/1                   | COMP        |
| 00665 1 1 1                    | PERMIT REQUIREMENT | 33                  | 50       | *****  | *****                    | 1.0     | 1.5      | MG/L   |        | FREE/COMP             | WEEK        |
| EFFLUENT GROSS VALUE           |                    | MD AVG              | MX WK AV | LBS/DY |                          | MD AVG  | MX WK AV |        |        |                       |             |

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  
H. J. SCHROEDER JR  
EXECUTIVE DIRECTOR  
TYPED OR PRINTED

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  
James E. Porter Jr.

TELEPHONE  
502-540-6000  
DATE  
07 07 24  
AREA CODE NUMBER YEAR MO DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)  
USE MD AVG FOR BOD/TSS REMV. REPT IN MINIMUM COLUMN.

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

NAME MSD JEFFERSONTOWN STP  
ADDRESS 8405 CEDAR CREEK RD  
LOUISVILLE KY 40291

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
DISCHARGE MONITORING REPORT (DMR)

KY0025194  
PERMIT NUMBER

001 2  
DISCHARGE NUMBER

MAJOR  
(SUBR LV)  
F - FINAL

JEFFE

FACILITY MSD JEFFERSONTOWN STP  
LOCATION JEFFERSONTOWN  
ATTN: DEBBIE NEWTON

KY 40299

| MONITORING PERIOD |      |    |     |    |      |    |     |
|-------------------|------|----|-----|----|------|----|-----|
| FROM              | YEAR | MO | DAY | TO | YEAR | MO | DAY |
|                   | 07   | 06 | 01  |    | 07   | 06 | 30  |

FLOW BOD TSS DO PH  
EFFLUENT

\*\*\* NO DISCHARGE 1 \*\*\*

NOTE: Read Instructions before completing this form.

| PARAMETER                                |                    | QUANTITY OR LOADING |                 |        | QUALITY OR CONCENTRATION |               |                 |          | NO. EX | FREQUENCY OF ANALYSIS | SAMPLE TYPE |
|------------------------------------------|--------------------|---------------------|-----------------|--------|--------------------------|---------------|-----------------|----------|--------|-----------------------|-------------|
|                                          |                    | AVERAGE             | MAXIMUM         | UNITS  | MINIMUM                  | AVERAGE       | MAXIMUM         | UNITS    |        |                       |             |
| FLOW, IN CONDUIT OR THRU TREATMENT PLANT | SAMPLE MEASUREMENT | 2.95                | 7.04            | ( 03 ) | *****                    | *****         | *****           |          | 0      | 1/H                   | 1/H         |
| 50050 1 0 0                              | PERMIT REQUIREMENT | REPORT MD AVG       | REPORT MX WK AV | MGD    | *****                    | *****         | *****           | *****    |        | CONTIN                | CONTIN      |
| EFFLUENT GROSS VALUE                     |                    |                     |                 |        |                          |               |                 |          |        | UOUS                  |             |
| COLIFORM, FECAL GENERAL                  | SAMPLE MEASUREMENT | *****               | *****           |        | *****                    | 12            | 338.9           | ( 13 )   | 2      | 3/7                   | GRAB        |
| 74055 1 0 0                              | PERMIT REQUIREMENT | *****               | *****           | *****  | *****                    | 200           | 400 #/          |          |        | FREE/GRAB             |             |
| EFFLUENT GROSS VALUE                     |                    |                     |                 | *****  |                          | 30DA GED      | 7 DA GED        | 100ML    |        | WEEK                  |             |
| BOD, CARBONACEOUS 05 DAY, 20C            | SAMPLE MEASUREMENT | 4446                | 5329            | ( 26 ) | *****                    | 197           | 266             | ( 19 )   | 0      | 3/7                   | comp        |
| 80082 G 0 0                              | PERMIT REQUIREMENT | REPORT MD AVG       | REPORT MX WK AV | LBS/DY | *****                    | REPORT MD AVG | REPORT MX WK AV | MG/L     |        | FREE/COMPUS           |             |
| RAW SEW/INFLUENT                         |                    |                     |                 |        |                          |               |                 |          |        | WEEK                  |             |
| BOD, CARBONACEOUS 05 DAY, 20C            | SAMPLE MEASUREMENT | 49                  | 56              | ( 26 ) | *****                    | 2             | 2               | ( 19 )   | 0      | 3/7                   | comp        |
| 80082 1 0 0                              | PERMIT REQUIREMENT | 687                 | 1001            |        | *****                    | 20            | 30              |          |        | FREE/COMPUS           |             |
| EFFLUENT GROSS VALUE                     |                    | MD AVG              | MX WK AV        | LBS/DY |                          | MD AVG        | MX WK AV        | MG/L     |        | WEEK                  |             |
| BOD, CARB-5 DAY, 20 DEG C, PERCENT REMVL | SAMPLE MEASUREMENT | *****               | *****           |        | 98.8                     | *****         | *****           | ( 23 )   | 0      | 1/30                  | cac         |
| 80091 K 0 0                              | PERMIT REQUIREMENT | *****               | *****           | *****  | 85                       | *****         | *****           | PER-CENT |        | ONCE/ CALCTD          |             |
| PERCENT REMOVAL                          |                    |                     |                 | *****  | MD AVG                   |               |                 |          |        | MONTH                 |             |
| SOLIDS, SUSPENDED PERCENT REMOVAL        | SAMPLE MEASUREMENT | *****               | *****           |        | 96.8                     | *****         | *****           | ( 23 )   | 0      | 1/30                  | cpc         |
| 81011 K 0 0                              | PERMIT REQUIREMENT | *****               | *****           | *****  | 85                       | *****         | *****           | PER-CENT |        | ONCE/ CALCTD          |             |
| PERCENT REMOVAL                          |                    |                     |                 | *****  | MD MIN                   |               |                 |          |        | MONTH                 |             |
|                                          | SAMPLE MEASUREMENT |                     |                 |        |                          |               |                 |          |        |                       |             |
|                                          | PERMIT REQUIREMENT |                     |                 |        |                          |               |                 |          |        |                       |             |

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  
H. J. SCHROEDER JR  
EXECUTIVE DIRECTOR  
TYPED OR PRINTED

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Jama E. Port  
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE 502 540 6000  
DATE 07 07 24  
AREA CODE NUMBER YEAR MO DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)  
USE MD AVG FOR BOD/TSS REMV; REPT IN MINIMUM COLUMN.

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

NAME MSD JEFFERSONTOWN STP

ADDRESS 8405 CEDAR CREEK RD  
LOUISVILLE KY 40291

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
DISCHARGE MONITORING REPORT (DMR)

AY0025194  
PERMIT NUMBER

001  
DISCHARGE NUMBER

MAJOR  
(SUBR LV)  
F - FINAL

JEFF

BIDMONITORING/ONCE PER QUARTER  
EFFLUENT

\*\*\* NO DISCHARGE \*\*\*

NOTE: Read Instructions before completing this form.

FACILITY MSD JEFFERSONTOWN STP

LOCATION JEFFERSONTOWN KY 40299

ATTN: DEBBIE NEWTON

|                   |      |    |     |    |      |    |     |
|-------------------|------|----|-----|----|------|----|-----|
| MONITORING PERIOD |      |    |     |    |      |    |     |
| FROM              | YEAR | MO | DAY | TO | YEAR | MO | DAY |
|                   |      |    |     |    |      |    |     |

| PARAMETER                                                            |                    | QUANTITY OR LOADING |         |       | QUALITY OR CONCENTRATION |         |         |       | NO. EX | FREQUENCY OF ANALYSIS | SAMPLE TYPE |
|----------------------------------------------------------------------|--------------------|---------------------|---------|-------|--------------------------|---------|---------|-------|--------|-----------------------|-------------|
|                                                                      |                    | AVERAGE             | MAXIMUM | UNITS | MINIMUM                  | AVERAGE | MAXIMUM | UNITS |        |                       |             |
| HARDNESS, TOTAL<br>(AS CaCO3)<br>00900 1 0 1<br>EFFLUENT GROSS VALUE | SAMPLE MEASUREMENT |                     |         |       |                          | 218     | 218     |       | 0      | 1/91                  | Compl       |
|                                                                      | PERMIT REQUIREMENT |                     |         |       |                          | REPORT  | REPORT  |       |        |                       |             |
| CADMIUM, DISSOLVED<br>(AS Cd)<br>01025 1 0 1<br>EFFLUENT GROSS VALUE | SAMPLE MEASUREMENT |                     |         |       |                          | <0.001  | <0.001  |       | 0      | 1/91                  | Compl       |
|                                                                      | PERMIT REQUIREMENT |                     |         |       |                          | REPORT  | REPORT  |       |        |                       |             |
| COPPER, DISSOLVED<br>(AS Cu)<br>01040 1 0 1<br>EFFLUENT GROSS VALUE  | SAMPLE MEASUREMENT |                     |         |       |                          | <0.002  | <0.002  |       | 0      | 1/91                  | Compl       |
|                                                                      | PERMIT REQUIREMENT |                     |         |       |                          | REPORT  | REPORT  |       |        |                       |             |
| LEAD, DISSOLVED<br>(AS Pb)<br>01049 1 0 1<br>EFFLUENT GROSS VALUE    | SAMPLE MEASUREMENT |                     |         |       |                          | <0.005  | <0.005  |       | 0      | 1/91                  | Compl       |
|                                                                      | PERMIT REQUIREMENT |                     |         |       |                          | REPORT  | REPORT  |       |        |                       |             |
| ZINC, DISSOLVED<br>(AS Zn)<br>01090 1 0 1<br>EFFLUENT GROSS VALUE    | SAMPLE MEASUREMENT |                     |         |       |                          | 0.0345  | 0.0345  |       | 0      | 1/91                  | Compl       |
|                                                                      | PERMIT REQUIREMENT |                     |         |       |                          | REPORT  | REPORT  |       |        |                       |             |
| ZINC<br>TOTAL RECOVERABLE<br>01094 1 0 1<br>EFFLUENT GROSS VALUE     | SAMPLE MEASUREMENT |                     |         |       |                          | 0.0354  | 0.0354  |       | 0      | 1/91                  | Compl       |
|                                                                      | PERMIT REQUIREMENT |                     |         |       |                          | REPORT  | REPORT  |       |        |                       |             |
| CADMIUM<br>TOTAL RECOVERABLE<br>01113 1 0 1<br>EFFLUENT GROSS VALUE  | SAMPLE MEASUREMENT |                     |         |       |                          | <0.001  | <0.001  |       | 0      | 1/91                  | Compl       |
|                                                                      | PERMIT REQUIREMENT |                     |         |       |                          | REPORT  | REPORT  |       |        |                       |             |

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  
H. J. SCHROEDER JR  
EXECUTIVE DIRECTOR  
TYPED OR PRINTED

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SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT  
James E. Bitts Jr

TELEPHONE  
502 540-0000  
DATE  
07 07 26  
AREA CODE NUMBER YEAR MO DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)



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

NAME MSD JEFFERSONTOWN STP

ADDRESS 8405 CEDAR CREEK RD  
LOUISVILLE KY 40291

FACILITY MSD JEFFERSONTOWN STP

LOCATION JEFFERSONTOWN KY 40299

ATTN: DEBBIE NEWTON

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
DISCHARGE MONITORING REPORT (DMR)

KY0025194  
PERMIT NUMBER

001 Y  
DISCHARGE NUMBER

MAJOR  
(SUBR LV)

F - FINAL

BIO-MONITORING/ONCE PER QUARTER  
EFFLUENT

\*\*\* NO DISCHARGE \*\*\*

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| PARAMETER                                                                     |                    | QUANTITY OR LOADING |         |       | QUALITY OR CONCENTRATION |                  |                                 |       | NO. EX | FREQUENCY OF ANALYSIS | SAMPLE TYPE |
|-------------------------------------------------------------------------------|--------------------|---------------------|---------|-------|--------------------------|------------------|---------------------------------|-------|--------|-----------------------|-------------|
|                                                                               |                    | AVERAGE             | MAXIMUM | UNITS | MINIMUM                  | AVERAGE          | MAXIMUM                         | UNITS |        |                       |             |
| LEAD<br>TOTAL RECOVERABLE<br>01114 1 0 1<br>EFFLUENT GROSS VALUE              | SAMPLE MEASUREMENT | *****               | *****   |       | *****                    | <0.005           | <0.005                          | (19)  |        | Yr                    | com         |
|                                                                               | PERMIT REQUIREMENT | *****               | *****   | ***   | *****                    | REPORT<br>MD AVG | REPORT<br>DAILY MX              | MG/L  |        |                       |             |
| COPPER<br>TOTAL RECOVERABLE<br>01119 1 0 1<br>EFFLUENT GROSS VALUE            | SAMPLE MEASUREMENT | *****               | *****   |       | *****                    | <0.008           | <0.008                          | (19)  |        | Yr                    | com         |
|                                                                               | PERMIT REQUIREMENT | *****               | *****   | ***   | *****                    | REPORT<br>MD AVG | REPORT<br>DAILY MX              | MG/L  |        |                       |             |
| TOXICITY, FINAL CONC<br>TOXICITY UNITS<br>61406 1 0 1<br>EFFLUENT GROSS VALUE | SAMPLE MEASUREMENT | *****               | *****   |       | *****                    | *****            | <1.00                           | (26)  |        | Yr                    | com         |
|                                                                               | PERMIT REQUIREMENT | *****               | *****   | ***   | *****                    | *****            | 1.00 CHRONIC<br>DAILY MX TOXCTY |       |        |                       |             |
|                                                                               | SAMPLE MEASUREMENT |                     |         |       |                          |                  |                                 |       |        |                       |             |
|                                                                               | PERMIT REQUIREMENT |                     |         |       |                          |                  |                                 |       |        |                       |             |
|                                                                               | SAMPLE MEASUREMENT |                     |         |       |                          |                  |                                 |       |        |                       |             |
|                                                                               | PERMIT REQUIREMENT |                     |         |       |                          |                  |                                 |       |        |                       |             |
|                                                                               | SAMPLE MEASUREMENT |                     |         |       |                          |                  |                                 |       |        |                       |             |
|                                                                               | PERMIT REQUIREMENT |                     |         |       |                          |                  |                                 |       |        |                       |             |
|                                                                               | SAMPLE MEASUREMENT |                     |         |       |                          |                  |                                 |       |        |                       |             |
|                                                                               | PERMIT REQUIREMENT |                     |         |       |                          |                  |                                 |       |        |                       |             |

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EXECUTIVE DIRECTOR  
TYPED OR PRINTED

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SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT  
Jano E. Birt

TELEPHONE  
502 540-6000  
DATE  
07 07 26

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NAME OF TREATMENT PLANT JEFFERSON TOWN WTP  
 KPDES PERMIT NUMBER KY0025194

COUNTY JEFFERSON  
 PLANT CAPACITY 4.0 MGD

MONTH OF: June 2007  
 RECEIVING STREAM CHENOWETH RUN

| KPDSES PERMIT NUMBER |                                 | KY0025194                    |                            | PLANT CAPACITY |       | 4.0 MGD                  |                  | RECEIVING STREAM        |              | SEWERTREATMENT          |              |                   |                  |                  |       |                  |                |                |            |                 |                         |                    |                     |                       |         |                |              |                   |              |                   |                    |              |                                 |                          |      |
|----------------------|---------------------------------|------------------------------|----------------------------|----------------|-------|--------------------------|------------------|-------------------------|--------------|-------------------------|--------------|-------------------|------------------|------------------|-------|------------------|----------------|----------------|------------|-----------------|-------------------------|--------------------|---------------------|-----------------------|---------|----------------|--------------|-------------------|--------------|-------------------|--------------------|--------------|---------------------------------|--------------------------|------|
| DATE                 | TOTAL FLOW<br>(MILLION GALLONS) | RAW SEWAGE                   |                            | pH             |       | SETTLEABLE SOLIDS (mg/L) |                  | DISSOLVED OXYGEN (mg/L) |              | SUSPENDED SOLIDS (mg/L) |              | 5 DAY CBOD (mg/L) |                  | ACTIVATED SLUDGE |       | AERATION BASIN   |                |                |            | SLUDGE HANDLING |                         |                    |                     | FINAL                 |         |                |              |                   |              |                   |                    |              |                                 |                          |      |
|                      |                                 | GRIT REMOVED<br>(CUBIC FEET) | SCREENINGS<br>(CUBIC FEET) | RAW            | FINAL | RAW                      | PRIMARY EFFLUENT | FINAL EFFLUENT          | STREAM ABOVE | FINAL EFFLUENT          | STREAM BELOW | RAW               | PRIMARY EFFLUENT | FINAL EFFLUENT   | RAW   | PRIMARY EFFLUENT | FINAL EFFLUENT | RETURN         |            | WASTED          | DISSOLVED OXYGEN (mg/L) | MLSS (mg/L) x 1000 | MLVSS (mg/L) x 1000 | SETTLED SLUDGE VOLUME |         | RAW            |              | HAULED            |              |                   | TOTAL PHOS. (mg/L) | NH3-N (mg/L) | FECAL COLIFORM (COLONIES/100ML) |                          |      |
|                      |                                 |                              |                            |                |       |                          |                  |                         |              |                         |              |                   |                  |                  |       |                  |                | GAL/DAY X 1000 | MLSS X1000 |                 |                         |                    |                     | 30 MIN.               | 60 MIN. | GALLONS X 1000 | % DRY SOLIDS | % VOLATILE SOLIDS | % DRY SOLIDS | % VOLATILE SOLIDS |                    |              |                                 | WITHDRAWN GALLONS X 1000 |      |
| 1                    | 2.26                            |                              |                            |                |       |                          |                  |                         |              |                         |              |                   |                  |                  |       |                  |                | 1.26           | 5.72       | 38              |                         | 6.4                | 3.67                |                       | 200     | 190            | 19           |                   |              |                   |                    |              |                                 |                          |      |
| 2                    | 2.50                            |                              |                            |                |       |                          |                  |                         |              |                         |              |                   |                  |                  |       |                  |                | 1.18           |            | 38              |                         |                    |                     |                       | 200     | 190            | 19           |                   |              |                   |                    |              |                                 |                          |      |
| 3                    | 2.86                            |                              |                            |                |       |                          |                  |                         |              |                         | 229          | 6                 | 184              | 2                | 1.3   |                  | 38             |                |            |                 |                         |                    |                     |                       | 190     | 190            | 19           |                   |              |                   | 0.74               | 0.10         | 3                               |                          |      |
| 4                    | 2.58                            |                              |                            | 7.3            | 7.5   |                          |                  | 7.4                     |              |                         | 200          | 6                 | 137              | 2                | 1.61  | 6.41             | 46             | 6.3            | 3.59       | 2.38            |                         |                    |                     |                       | 190     | 180            | 13           |                   |              | 44                | 0.74               | 0.10         | 3                               |                          |      |
| 5                    | 2.86                            |                              |                            | 7.3            | 7.5   |                          |                  | 8.4                     |              |                         | 292          | 4                 | 214              | 3                | 1.36  | 8.21             | 29             | 6.8            | 3.91       | 2.67            |                         |                    |                     |                       | 200     | 190            | 19           | 6.6               | 81%          | 1.1               | 70%                | 32           | 0.68                            | 0.10                     | 20   |
| 6                    | 2.64                            |                              |                            | 7.3            | 7.5   |                          |                  | 8.5                     |              |                         |              |                   |                  |                  |       |                  |                | 1.18           | 9.69       | 48              | 6.2                     | 3.73               | 2.46                |                       | 200     | 190            | 19           |                   |              |                   |                    |              |                                 |                          |      |
| 7                    | 2.58                            |                              |                            |                |       |                          |                  |                         |              |                         |              |                   |                  |                  |       |                  |                | 1.36           | 8.31       | 48              | 6.6                     | 3.73               | 2.46                |                       | 190     | 180            | 19           |                   |              |                   |                    |              |                                 |                          |      |
| 8                    | 2.61                            |                              |                            |                |       |                          |                  |                         |              |                         |              |                   |                  |                  |       |                  |                | 1.33           | 7.94       | 40              | 6.8                     | 3.61               | 2.39                |                       | 190     | 180            | 19           |                   |              |                   |                    |              |                                 |                          |      |
| 9                    | 2.33                            |                              |                            |                |       |                          |                  |                         |              |                         |              |                   |                  |                  |       |                  |                | 1.31           |            | 38              |                         |                    |                     |                       | 200     | 190            | 19           |                   |              |                   |                    |              |                                 |                          |      |
| 10                   | 2.41                            |                              |                            |                |       |                          |                  |                         |              |                         | 184          | 4                 | 161              | 2                | 1.58  |                  | 38             | 6.7            |            |                 |                         |                    |                     |                       | 200     | 185            | 19           |                   |              |                   | 19                 | 0.87         | 0.10                            | 3                        |      |
| 11                   | 2.38                            |                              |                            | 7.2            | 7.4   |                          |                  | 8.4                     |              |                         | 426          | 5                 | 334              | 2                | 1.31  | 9.47             | 35             | 6.4            | 3.36       | 2.23            |                         |                    |                     |                       | 190     | 170            | 19           |                   |              |                   | 32                 | 0.87         | 0.10                            | 3                        |      |
| 12                   | 2.43                            |                              |                            | 7.0            | 7.6   |                          |                  | 8.2                     |              |                         | 362          | 5                 | 302              | 2                | 1.39  | 8.61             | 38             | 6.8            | 3.48       | 2.29            |                         |                    |                     |                       | 170     | 160            | 19           | 2.9               | 79%          | 0.99              | 79%                | 38           | 1.14                            | 0.10                     | 3    |
| 13                   | 2.34                            |                              |                            | 7.1            | 7.5   |                          |                  | 8.0                     |              |                         |              |                   |                  |                  |       |                  |                | 1.13           | 7          | 38              | 6.4                     | 3.22               | 2.02                |                       | 170     | 160            | 32           |                   |              |                   |                    |              | 69                              |                          |      |
| 14                   | 2.58                            |                              |                            |                |       |                          |                  |                         |              |                         |              |                   |                  |                  |       |                  |                | 1.67           | 6.75       | 49              | 6.8                     | 3.18               | 2.15                |                       | 170     | 160            | 19           |                   |              |                   |                    |              | 57                              |                          |      |
| 15                   | 2.13                            |                              |                            |                |       |                          |                  |                         |              |                         |              |                   |                  |                  |       |                  |                | 1.28           | 6.42       | 38              | 6.4                     | 2.98               | 2.13                |                       | 160     | 140            | 19           |                   |              |                   |                    |              | 44                              |                          |      |
| 16                   | 2.26                            |                              |                            |                |       |                          |                  |                         |              |                         |              |                   |                  |                  |       |                  |                | 1.38           |            | 28              | 6.4                     |                    |                     |                       | 160     | 150            | 19           |                   |              |                   |                    |              | 82                              |                          |      |
| 17                   | 2.57                            |                              |                            |                |       |                          |                  |                         |              |                         | 193          | 6                 | 135              | 2                | 1.53  |                  | 38             | 6.3            |            |                 |                         |                    |                     |                       | 170     | 150            | 19           |                   |              |                   | 6                  | 1.12         | 0.56                            | 3                        |      |
| 18                   | 2.85                            |                              |                            | 7.1            | 7.7   |                          |                  | 8.6                     |              |                         | 235          | 6                 | 200              | 2                | 1.43  | 5.52             | 45             | 6.6            | 3.23       | 2.14            |                         |                    |                     |                       | 160     | 150            | 19           |                   |              |                   | 19                 | 1.06         | 0.10                            | 2950                     |      |
| 19                   | 2.47                            |                              |                            | 7.2            | 7.6   |                          |                  | 8.8                     |              |                         | 496          | 11                | 195              | 2                | 1.37  | 5.44             | 55             | 6.8            | 3.19       | 2               |                         |                    |                     |                       | 150     | 150            | 19           | 4.4               | 89%          | 1.7               | 86%                | 19           | 0.88                            | 0.10                     | 4400 |
| 20                   | 2.68                            |                              |                            | 7.7            | 7.6   |                          |                  | 9.7                     |              |                         |              |                   |                  |                  |       |                  |                | 1.05           | 6.4        | 38              | 7.8                     | 3.21               | 2.02                |                       | 160     | 150            | 100          |                   |              |                   |                    |              | 13                              |                          |      |
| 21                   | 2.41                            |                              |                            |                |       |                          |                  |                         |              |                         |              |                   |                  |                  |       |                  |                | 0.67           | 8.42       | 38              | 6.9                     | 4.57               | 3.2                 |                       | 150     | 150            | 6            |                   |              |                   |                    |              |                                 |                          |      |
| 22                   | 2.25                            |                              |                            |                |       |                          |                  |                         |              |                         |              |                   |                  |                  |       |                  |                | 0.55           | 5.53       | 35              | 7.1                     | 3.48               | 2.32                |                       | 200     | 190            | 25           |                   |              |                   |                    |              | 6                               |                          |      |
| 23                   | 3.72                            |                              |                            |                |       |                          |                  |                         |              |                         |              |                   |                  |                  |       |                  |                | 0.67           |            | 38              | 6.9                     |                    |                     |                       | 200     | 180            | 13           |                   |              |                   |                    |              | 19                              |                          |      |
| 24                   | 4.07                            |                              |                            |                |       |                          |                  |                         |              |                         | 125          | 4                 | 67               | 2                | 1.6   | 8.46             | 38             | 7.3            | 3.1        | 2.09            |                         |                    |                     |                       | 190     | 190            | 25           |                   |              |                   |                    | 13           | 0.04                            | 0.10                     | 3    |
| 25                   | 3.23                            |                              |                            | 7.1            | 7.5   |                          |                  | 8.8                     |              |                         | 287          | 6                 | 235              | 2                | 1.07  | 7.56             | 43             | 7              | 3.12       | 2.11            |                         |                    |                     |                       | 220     | 200            | 19           |                   |              |                   |                    | 44           | 0.62                            | 0.10                     | 7    |
| 26                   | 2.78                            |                              |                            | 7.0            | 7.4   |                          |                  | 8.7                     |              |                         | 386          | 4                 | 201              | 2                | 1.06  | 6.41             | 28             | 5.9            | 3.26       | 2.27            |                         |                    |                     |                       | 200     | 200            | 25           |                   |              |                   |                    | 63           | 0.64                            | 0.56                     | 3    |
| 27                   | 4.59                            |                              |                            | 7.0            | 7.5   |                          |                  | 8.8                     |              |                         |              |                   |                  |                  |       |                  |                | 0.98           | 7.6        | 28              | 6.1                     | 3                  | 2.03                |                       | 200     | 190            | 19           | 3.9               | 87%          | 1.6               | 72%                | 13           |                                 |                          |      |
| 28                   | 7.04                            |                              |                            |                |       |                          |                  |                         |              |                         |              |                   |                  |                  |       |                  |                | 0.88           | 9.01       | 38              | 3.4                     | 3.49               | 2.44                |                       | 190     | 180            | 19           |                   |              |                   |                    |              | 38                              |                          |      |
| 29                   | 4.47                            |                              |                            |                |       |                          |                  |                         |              |                         |              |                   |                  |                  |       |                  |                | 1.14           | 1.11       | 38              | 6.5                     | 2.93               | 2.13                |                       | 170     | 160            | 32           |                   |              |                   |                    |              | 56                              |                          |      |
| 30                   | 3.56                            |                              |                            |                |       |                          |                  |                         |              |                         |              |                   |                  |                  |       |                  |                | 1.08           |            | 38              |                         |                    |                     |                       | 180     | 170            | 19           |                   |              |                   |                    |              |                                 |                          |      |
| 31                   |                                 |                              |                            |                |       |                          |                  |                         |              |                         |              |                   |                  |                  |       |                  |                |                |            |                 |                         |                    |                     |                       |         |                |              |                   |              |                   |                    |              |                                 |                          |      |
| Tot.                 | 88.44                           |                              |                            |                |       |                          |                  |                         |              |                         |              |                   |                  |                  |       |                  |                | 36.71          |            |                 |                         |                    |                     |                       |         |                |              |                   | 670          |                   |                    |              |                                 | 872                      |      |
| Avg.                 | 2.95                            |                              |                            | 7.2            | 7.5   |                          |                  | 8.5                     |              |                         | 285          | 6                 | 197              | 2                | 1.224 | 7.09             |                | 6.522          | 3.411      | 2.282           |                         |                    |                     |                       | 184     | 173.8          | 22.33        | 4.45              | 0.84         | 1.348             | 0.768              | 32.3         | 0.78                            | 0.18                     | 12   |

RESIDENTIAL  
 COMMERCIAL  
 INDUSTRIAL

INDUSTRIAL WASTE POPULATION EQUIVALENT

28076

28503

33318

FLOW

CBOD

TSS

OPERATOR

CERT. NO.

TOTAL NUMBER OF SEWER CONNECTIONS

SEWER CONNECTIONS 0 X 4 = 0 SEWERED POPULATION

PLANT TELEPHONE



**Chronic Toxicity Evaluation  
for the  
MSD-Jeffersontown  
Wastewater Treatment Plant**

**June 2007**

Prepared by:

Beckmar Environmental Laboratory  
Biomonitoring Department  
3251 Ruckriegel Parkway  
Louisville, KY. 40299  
(502) 266-6533

Submitted to:

Mr. Jim Porter  
Jeffersontown Wastewater Treatment Plant  
700 West Liberty St.  
Louisville, KY 40203

Released by: Amanda L. Spalding  
Biomonitoring QA Officer 7-23-07



## Summary

Chronic, definitive, toxicity testing was performed on final effluent samples collected June 18 through 23, 2007 from the MSD-Jeffersontown Wastewater Treatment Plant. Testing was performed June 20 through 27, 2007 and upon termination, the following conclusions were reached:

For the 7 day *Pimephales promelas* survival and growth test, the IC<sub>25</sub> for reproduction was greater than 100%, yielding less than 1.0 chronic toxicity units (TUC=100/IC<sub>25</sub>).

## Introduction

At the request of Mr. Jim Porter, chronic definitive toxicity testing was performed on 24 hour composite effluent samples collected June 18 through 23, 2007 from the MSD-Jeffersontown Wastewater Treatment Plant in Louisville, KY. Metals analyses were also performed on effluent samples collected during the same period. Information concerning plant and laboratory conditions can be found on the following pages.

The chronic toxicity testing was performed in accordance with the US EPA methodology as defined in the US EPA manual "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms" fourth edition, 2002 (EPA-821-R-02-013). The actual methods used were "Fathead Minnow, *Pimephales promelas*, Larval Survival and Growth Test Method 1000.0". The chronic toxicity test was performed in order to ascertain the IC<sub>25</sub> values for *Pimephales promelas* growth.





Date of Issue: June 28, 2007

Page 1 of 1

Metropolitan Sewer District c/o Mr. Jim Porter  
700 West Liberty St.  
Louisville, KY 40203-1913

RE: Analysis results for: J'town WWTP: Biomonitoring metals/hardness.

**BECKMAR CERTIFICATE OF ANALYSIS # 185900**

Sample Date: 6/19/2007

Sample Time: 8:00

Sampled by: Eddie Whittaker

| Parameter    | Results | Units | Type | Method    | Analyzed<br>Date / Time | Analyst |
|--------------|---------|-------|------|-----------|-------------------------|---------|
| Hardness (T) | 218     | mg/l  | C    | EPA 130.2 | 6/25/2007 16:15         | PJB     |
| Cadmium (TR) | < 0.001 | mg/l  | C    | EPA 200.7 | 6/21/2007 14:00         | ALS     |
| Cadmium (D)  | < 0.001 | mg/l  | C    | EPA 200.7 | 6/21/2007 14:00         | ALS     |
| Copper (TR)  | 0.008   | mg/l  | C    | EPA 200.7 | 6/21/2007 14:00         | ALS     |
| Copper (D)   | < 0.002 | mg/l  | C    | EPA 200.7 | 6/21/2007 14:00         | ALS     |
| Lead (TR)    | < 0.005 | mg/l  | C    | EPA 200.7 | 6/21/2007 14:00         | ALS     |
| Lead (D)     | < 0.005 | mg/l  | C    | EPA 200.7 | 6/21/2007 14:00         | ALS     |
| Zinc (TR)    | 0.0354  | mg/l  | C    | EPA 200.7 | 6/21/2007 14:00         | ALS     |
| Zinc (D)     | 0.0345  | mg/l  | C    | EPA 200.7 | 6/21/2007 14:00         | ALS     |

Remarks:

If you have any questions please call.

Thank you,

Joe P. Carney  
Quality Control Officer

JPC:dwt

ENVIRONMENTAL  
LABORATORY

Jeffersontown Business Park  
3251 Ruckriegel Parkway  
Jeffersontown, KY 40299  
502-266-6533



Test Type: Acute        Screen         
Chronic X Definitive X

## TOXICITY TEST REPORT SHEET

- 1) Facility/Discharger: Jeffersontown WWTP  
Report Date: 7/16/2007
- 2) Address: 10725 Old Taylorsville Rd., Jeffersontown, KY 40299
- 3) NPDES Permit #: KY0025194 4) Receiving Stream: Chenoweth Run mile pt 5.3
- 5) Facility Contact: Mr. Eric Brady 6) Phone #: (502) 267-8278
- 7) Consultant/Testing Lab Name: Beckmar Environmental Laboratory
- 8) Lab Contact: Becky Barker Phone #: (502) 266-6533
- 9) Outfall(s) Tested: 1
- 10) Average Daily flow on day sampled (MGD) 1) 2.04 2) 2.81  
3) 2.25 4)        5)        6)        7)
- 11) Test Species: 1) Pimephales promelas 2)
- 12) Species Age: 1) less than 24 hours 2)
- 13) Organism Source: 1) fish hatch 062007 2)
- 14) Acclimation Procedures: 1) Reared at test conditions in synthetic water  
2)
- 15) Test Conditions: Static:        Static-Renewal: X
- 16) Dilution Water Type (Synthetic, Receiving Stream) synthetic - mhs
- 17) Aeration? (Before Test/During Test/None): no
- 18) Dechlorination? no Original Chlorine Level: <0.01 ml

Rhonda Baker

(Signature of person filling out form)

7/16/2007

Date

Rhonda Baker

Name (Typed or Printed)

Biologist

Title



## Materials and Methods

### Sampling

Composite effluent samples were collected once every other 24 hours (Table I) and delivered to Beckmar Environmental Laboratory. Upon receipt, each sample went through standard log in procedures.

### Control/Dilution Water

All chemicals used are reagent grade, obtained from Aldrich. 1.20 grams of  $\text{CaSO}_4$ , 1.2 grams of  $\text{MgSO}_4$ , 1.92 grams of  $\text{NaHCO}_3$ , and 0.080 grams of  $\text{KCl}$  were dissolved in distilled water provided by a Barnstead Thermolyne distillation system and aerated for a minimum of 24 hours.

### Test Containers

*P. promelas* tests were performed in 600 mL plastic cups obtained from Liquor Outlet (Louisville, KY).

### Toxicity Testing

Samples were allowed to warm to room temperature ( $25^\circ\text{C}$ ) and were tested for residual chlorine immediately prior to dilution. Testing was then performed in accordance with US EPA methodology. Data was recorded on Beckmar generated lab sheets (Appendix I).

### Chemical Analysis

All test dilutions as well as control/dilution water were tested to determine initial dissolved oxygen, temperature, and pH. At the end of 24 hours, the control/dilution water and test dilutions were again tested to determine final dissolved oxygen, temperature and pH. Also, specific conductance, hardness, and alkalinity analyses were performed on the initial control/dilution water and 100% effluent samples. Data was recorded on Beckmar generated lab sheet (Appendix I).

### Statistical Analysis

Statistical data was generated using ToxCalc 5.0® (Tidepool Scientific software, McKinleyville, CA) and ToxStat® (USEPA, Cincinnati, OH) on a Pentium IV®, computer using Windows 98® Operating System.



### Additional Toxicity Test Information

- 1) Submit copies of all bench sheets and statistical calculations/printouts obtained during the test(s). Data must be presented in tabular form and must include all physical and/or chemical measurements recorded during the test (e.g. temperature, conductivity, total residual chlorine, dissolved oxygen, etc.).

- 2) Methods/Instrumentation used in chemical analysis:

|                           |                                        |
|---------------------------|----------------------------------------|
| Dissolved Oxygen:         | YSI Model 52                           |
| PH:                       | Thermo-Orion 720                       |
| Conductivity:             | Cole-Palmer Conductivity Meter 1481-60 |
| Alkalinity:               | Standard Methods Titration             |
| Hardness:                 | Standard Methods Titration             |
| Total Chlorine Residual:  | Fisher-Porter Titration                |
| EPA Acute/Chronic Manual: | 4 <sup>th</sup> Chronic Edition, 2002  |

- 3) Indicate below any other relevant information that may aid in the evaluation of this report. Include any deviations from EPA methodology that was necessary for these tests as well as any sample manipulations that were performed, such as aeration, dechlorination with sodium thiosulfate, etc., and the justification for such manipulations or deviations. Attach additional pages as needed.
- 4) Sample temperature upon receipt may be greater than 4°C. Samples are picked up immediately after the 24 hours composite is completed. The sampler is cooled and the samples are refrigerated, however it may be impossible to rapidly drop the effluent to 4°C.



## Results

*Pimephales promelas* exhibited 95% survival in the control, 85% survival in the 20% dilution, 90% survival in the 40% dilution, 92.5% survival in the 60% dilution, 87.5% survival in the 80% dilution, and 92.5% survival in the 100% dilution.

For the 7-day *Pimephales promelas* survival and growth test, the IC<sub>25</sub> for growth was greater than 100%, generating a chronic toxicity value of less than 1.0 TUc.

TABLE I  
Sampling Summary

| Outfall | Sample Type | Volume    | Collection Period    |                        | Rainfall | Sample Temp   |
|---------|-------------|-----------|----------------------|------------------------|----------|---------------|
| 1       | Composite   | 2 gallons | 06/18/07 @ 8:00 a.m. | = 06/19/07 @ 8:00 a.m. | 0.00"    | 4.0 degrees C |
|         | Composite   | 2 gallons | 06/20/07 @ 9:30 a.m. | = 06/21/07 @ 9:30 a.m. | 0.00"    | 4.0 degrees C |
|         | Composite   | 3 gallons | 06/22/07 @ 7:00 a.m. | = 06/23/07 @ 7:00 a.m. | 0.00"    | 4.0 degrees C |

### Dates/Times of Test Performance

Species #1: *Pimephales promelas*

Initiated: 06/20/07 @ 5:00 P.M.  
Renewed Daily @ 5:00 P.M.  
Terminated 06/27/07 @ 5:00 P.M.



# Larval Fish Growth and Survival Test-7 Day Growth

Start Date: 6/20/2007 Test ID: jt0607 Sample ID: jt0607  
 End Date: 6/27/2007 Lab ID: 0044:beckmar environmental Sample Type: EFF1-POTW  
 Sample Date: 6/19/2007 Protocol: EPAF 94-EPA Freshwater Test Species: PP-Pimephales promelas  
 Comments: Jefferson town flm chronic june 2007

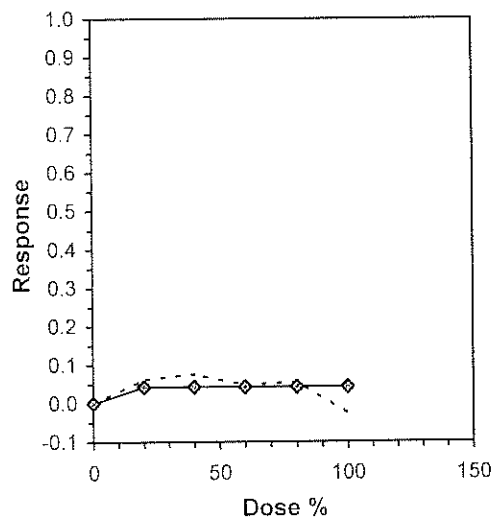
| Conc-%    | 2      | 3      | 4      |
|-----------|--------|--------|--------|
| B-Control | 0.2900 | 0.3900 | 0.4000 |
| 20        | 0.3700 | 0.3100 | 0.4400 |
| 40        | 0.3800 | 0.4000 | 0.3200 |
| 60        | 0.3400 | 0.3400 | 0.3400 |
| 80        | 0.3600 | 0.4100 | 0.3500 |
| 100       | 0.4000 | 0.4100 | 0.3500 |

| Conc-%    | Mean   | N-Mean | Transform: Untransformed |        |        |        |   | Isotonic |        |
|-----------|--------|--------|--------------------------|--------|--------|--------|---|----------|--------|
|           |        |        | Mean                     | Min    | Max    | CV%    | N | Mean     | N-Mean |
| B-Control | 0.3625 | 1.0000 | 0.3625                   | 0.2900 | 0.4000 | 13.770 | 4 | 0.3625   | 1.0000 |
| 20        | 0.3400 | 0.9379 | 0.3400                   | 0.2400 | 0.4400 | 25.072 | 4 | 0.3470   | 0.9572 |
| 40        | 0.3350 | 0.9241 | 0.3350                   | 0.2400 | 0.4000 | 21.457 | 4 | 0.3470   | 0.9572 |
| 60        | 0.3450 | 0.9517 | 0.3450                   | 0.3400 | 0.3600 | 2.899  | 4 | 0.3470   | 0.9572 |
| 80        | 0.3425 | 0.9448 | 0.3425                   | 0.2500 | 0.4100 | 19.568 | 4 | 0.3470   | 0.9572 |
| 100       | 0.3725 | 1.0276 | 0.3725                   | 0.3300 | 0.4100 | 10.368 | 4 | 0.3470   | 0.9572 |

| Auxiliary Tests                                                  | Statistic | Critical | Skew    | Kurt    |
|------------------------------------------------------------------|-----------|----------|---------|---------|
| Shapiro-Wilk's Test indicates normal distribution ( $p > 0.01$ ) | 0.95555   | 0.884    | -0.4272 | -0.1606 |
| Bartlett's Test indicates equal variances ( $p = 0.11$ )         | 8.97891   | 15.0863  |         |         |

## Linear Interpolation (200 Resamples)

| Point | %    | SD | 95% CL(Exp) | Skew |
|-------|------|----|-------------|------|
| IC05  | >100 |    |             |      |
| IC10  | >100 |    |             |      |
| IC15  | >100 |    |             |      |
| IC20  | >100 |    |             |      |
| IC25  | >100 |    |             |      |
| IC40  | >100 |    |             |      |
| IC50  | >100 |    |             |      |





# Appendix I

## *Pimephales promelas* Data Sheets

Grab #     

# Toxicity Test Results

Results of *Pimephales promelas* 7 day chronic definitive  
(Genus) (Species) (Type / Duration)

Toxicity Test

Conducted: 06/20/07 -- 06/27/07  
(mm/dd/yy) (mm/dd/yy)

Using Effluent from Outfall # 1

| Test Solution                                                                                                                                                             | Percent Survival<br>(time intervals used:- DAY) |     |      |      |                                                                                                                                                                      |      |      |   | # of Young |      | Dry Weight |      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-----|------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|---|------------|------|------------|------|
|                                                                                                                                                                           | 1                                               | 2   | 3    | 4    | 5                                                                                                                                                                    | 6    | 7    | 8 | Total      | Mean | Total      | Mean |
| Control                                                                                                                                                                   | 100                                             | 100 | 100  | 100  | 100                                                                                                                                                                  | 97.5 | 95   |   |            |      | 14.5       | 0.36 |
| 20% Effluent                                                                                                                                                              | 100                                             | 100 | 100  | 97.5 | 92.5                                                                                                                                                                 | 90   | 85   |   |            |      | 13.6       | 0.34 |
| 40% Effluent                                                                                                                                                              | 100                                             | 100 | 100  | 100  | 100                                                                                                                                                                  | 92.5 | 90   |   |            |      | 13.4       | 0.34 |
| 60% Effluent                                                                                                                                                              | 100                                             | 100 | 100  | 100  | 97.5                                                                                                                                                                 | 97.5 | 92.5 |   |            |      | 13.8       | 0.35 |
| 80% Effluent                                                                                                                                                              | 100                                             | 100 | 100  | 95   | 92.5                                                                                                                                                                 | 92.5 | 87.5 |   |            |      | 13.7       | 0.34 |
| 100% Effluent                                                                                                                                                             | 100                                             | 100 | 97.5 | 97.5 | 97.5                                                                                                                                                                 | 92.5 | 92.5 |   |            |      | 14.9       | 0.37 |
| LC <sub>50</sub> / IC <sub>25</sub> Value: <u>&gt;100%</u><br><br>95% Confidence Limits<br><br>UL: <u>NA</u><br>LL: <u>NA</u><br><br>UL = Upper Limit<br>LL = Lower Limit |                                                 |     |      |      | Calculated TU Estimate * <u>less than 1.0 TUc</u><br>(indicate Aute / Chronic)<br><br>Permit Limits: <u>1.0 TUc</u><br>(Indicate TU <sub>a</sub> / TU <sub>c</sub> ) |      |      |   |            |      |            |      |
|                                                                                                                                                                           |                                                 |     |      |      | If acute test, method used to determine<br>LC50 and Confidence Limit Valued: <u>        </u>                                                                         |      |      |   |            |      |            |      |

Note: TU<sub>a</sub> = 100/LC<sub>50</sub>; TU<sub>c</sub> = 100/IC<sub>25</sub>

## Reference Toxicant Test Results

| Species                    | Date     | Time       | Duration      | Toxicant    | Results (LC <sub>50</sub> / IC <sub>25</sub> ) |
|----------------------------|----------|------------|---------------|-------------|------------------------------------------------|
| <i>Pimephales promelas</i> | 06/12/07 | 12:00 P.M. | <u>7 days</u> | <u>NaCl</u> | <u>IC25=3.0225g/l</u>                          |

Weight Data for FATHEAD MINNOW LARVAL  
survival and growth test

Client: JEFFERSON TOWN  
Location: \_\_\_\_\_

Analyst: B. Barker  
Test Date(s): 6-26-27-2007 5pm Drying Temperature (Deg C.): 60°  
Weight Date: 6-28-07 Drying Time: 24hr



|               | Replicate Number | A<br>Weight of Boat<br>grams | B<br>Dry Wgt<br>foil & Larvae<br>grams | B-A<br>Total Dry Wgt<br>of Larvae<br>grams | C<br>Number of<br>Larvae | (B-A)/C Mean<br>Dry Wgt of<br>Larvae<br>grams | Remarks |
|---------------|------------------|------------------------------|----------------------------------------|--------------------------------------------|--------------------------|-----------------------------------------------|---------|
| Control       | 1 5°             | 1.3321                       | 1.3358                                 | 3.7                                        | 10                       | .37                                           |         |
|               | 2 4              | 1.5343                       | 1.5372                                 | 2.9                                        |                          | .29                                           |         |
|               | 3 0              | 1.3522                       | 1.3561                                 | 3.9                                        |                          | .39                                           |         |
|               | 4 3              | 1.5384                       | 1.5424                                 | 4 14.5                                     |                          | .4                                            | .36     |
| Conc:<br>20%  | 1 27 c           | 1.5940                       | 1.5977                                 | 3.7                                        |                          | .37                                           |         |
|               | 2 8              | 1.6149                       | 1.6180                                 | 3.1                                        |                          | .31                                           |         |
|               | 3 32             | 1.3467                       | 1.3511                                 | 4.4                                        |                          | .44                                           |         |
|               | 4 34°            | 1.6034                       | 1.6058                                 | 2.4 13.6                                   |                          | .24                                           | .34     |
| Conc:<br>40%  | 1 13             | 1.3211                       | 1.3249                                 | 3.8                                        |                          | .38                                           |         |
|               | 2 30             | 1.3109                       | 1.3149                                 | 4                                          |                          | .4                                            |         |
|               | 3 8 blue         | 1.6039                       | 1.6071                                 | 3.2                                        |                          | .32                                           |         |
|               | 4 00             | 1.5444                       | 1.5468                                 | 2.4 13.4                                   |                          | .24                                           | .34     |
| Conc:<br>60%  | 1 2              | 1.5367                       | 1.5401                                 | 3.4                                        |                          | .34                                           |         |
|               | 2 11             | 1.3185                       | 1.3219                                 | 3.4                                        |                          | .34                                           |         |
|               | 3 22°            | 1.5861                       | 1.5895                                 | 3.4                                        |                          | .34                                           |         |
|               | 4 1              | 1.3496                       | 1.3532                                 | 3.6 13.8                                   |                          | .36                                           | .35     |
| Conc:<br>80%  | 1 46             | 1.3110                       | 1.3146                                 | 3.6                                        |                          | .36                                           |         |
|               | 2 X              | 1.5477                       | 1.5518 (5.18)                          | 4.1                                        |                          | .41                                           |         |
|               | 3 33             | 1.3448                       | 1.3483                                 | 3.5                                        |                          | .35                                           |         |
|               | 4 22             | 1.6198 0.3                   | 1.6223                                 | 2.5 13.7                                   |                          | .25                                           | .34     |
| Conc:<br>100% | 1 15             | 1.6040                       | 1.6080                                 | 4                                          |                          | .4                                            |         |
|               | 2 9              | 1.2936                       | 1.2977                                 | 4.1                                        |                          | .41                                           |         |
|               | 3 111            | 1.5549                       | 1.5584                                 | 3.5                                        |                          | .35                                           |         |
|               | 4 11c            | 1.5708                       | 1.5741                                 | 3.3 14.9                                   | 10                       | .33                                           | .37     |

C-38

1.6080

1.6080

Survival data for FATHEAD MINNOW LARVAL  
Survival and Growth Test

BECKMAR  
Jeffersontown Business Park  
3251 Ruckriegel Parkway  
Louisville, Ky 40299  
Phone: (502) 266-6533



Number of Survivors

Discharge : JEFFERSONTOWN Test Date(s) : 6-20-27-07 5pm

Location : \_\_\_\_\_ Analyst : B. Barker

SURVIVAL AT END OF THE DAY

|                | Replicate<br>Number: | 1  | 2  | 3      | 4      | 5      | 6       | 7  | % SURV | Remarks |
|----------------|----------------------|----|----|--------|--------|--------|---------|----|--------|---------|
| Control        | 1                    | 10 | 10 | 10     | 10     | 10     | 9       | 9  |        |         |
|                | 2                    |    |    | 10     | 10     | 10     | 10      | 10 |        |         |
|                | 3                    |    |    | 10     | 10     | 10     | 10      | 10 |        |         |
|                | 4                    |    |    | 10     | 10     | 10     | 10 97.5 | 10 | 95%    |         |
| Conc :<br>20%  | 1                    |    |    | 10     | 10     | 10     | 10      | 9  |        |         |
|                | 2                    |    |    | 10     | 10     | 10     | 9       | 9  |        |         |
|                | 3                    |    |    | 10     | 10     | 9      | 9       | 9  |        |         |
|                | 4                    |    |    | 10     | 9 75   | 8 92.5 | 8 90    | 7  | 85%    |         |
| Conc :<br>40%  | 1                    |    |    | 10     | 10     | 10     | 9       | 9  |        |         |
|                | 2                    |    |    | 10     | 10     | 10     | 10      | 10 |        |         |
|                | 3                    |    |    | 10     | 10     | 10     | 9       | 9  |        |         |
|                | 4                    |    |    | 10     | 10     | 10     | 9 92.5  | 8  | 90%    |         |
| Conc :<br>60%  | 1                    |    |    | 10     | 10     | 10     | 10      | 10 |        |         |
|                | 2                    |    |    | 10     | 10     | 10     | 10      | 9  |        |         |
|                | 3                    |    |    | 10     | 10     | 10     | 10      | 10 |        |         |
|                | 4                    |    |    | 10     | 10     | 9 97.5 | 9 97.5  | 8  | 92.5%  |         |
| Conc :<br>80%  | 1                    |    |    | 10     | 10     | 10     | 10      | 10 |        |         |
|                | 2                    |    |    | 10     | 10     | 10     | 10      | 10 |        |         |
|                | 3                    |    |    | 10     | 9      | 9      | 9       | 8  |        |         |
|                | 4                    |    |    | 10     | 9 95   | 8 92.5 | 8 92.5  | 7  | 87.5%  |         |
| Conc :<br>100% | 1                    |    |    | 10     | 10     | 10     | 10      | 10 |        |         |
|                | 2                    |    |    | 10     | 10     | 10     | 10      | 10 |        |         |
|                | 3                    |    |    | 10     | 10     | 10     | 9       | 9  |        |         |
|                | 4                    | ↓  | ↓  | 9 97.5 | 9 97.5 | 9 97.5 | 8 92.5  | 8  | 92.5%  |         |



Data form for the Fathead Minnow survival and growth test.  
Routine chemical and physical determinations.

Page 1 of 2

Client: JEFFERSONTOWN, KY  
Test Start: 6-20-07 5pm  
Test Stop: 6-27-07 5pm

Analyst: B. Barker  
Analyst: \_\_\_\_\_  
Analyst: \_\_\_\_\_

| Control:             |         | Day   |       |       |       |       |       |       | Remarks |
|----------------------|---------|-------|-------|-------|-------|-------|-------|-------|---------|
|                      |         | 1     | 2     | 3     | 4     | 5     | 6     | 7     |         |
| Temp. Degree C.      | Initial | 24.0  | 24.0  | 24.1  | 24.0  | 24.0  | 24.0  | 24.0  |         |
|                      | Final   | 24.0  | 24.1  | 24.1  | 24.0  | 24.0  | 24.0  | 24.2  |         |
| D. O. mg/l           | Initial | 8.1   | 8.1   | 8.0   | 8.0   | 7.9   | 7.8   | 7.9   |         |
|                      | Final   | 5.0   | 5.9   | 6.2   | 5.5   | 5.8   | 5.0   | 5.1   |         |
| pH S.U.              | Initial | 7.76  | 7.81  | 7.83  | 7.80  | 7.83  | 7.86  | 7.87  |         |
|                      | Final   | 7.13  | 7.27  | 7.29  | 7.40  | 7.31  | 7.21  | 7.27  |         |
| Alkalinity (mg/l)    |         | 86    | 90    | 96.6  | 96    | 95.6  | 100   | 93.6  |         |
| Hardness (mg/l)      |         | 90.7  | 87.0  | 108.0 | 106.5 | 113.6 | 94.1  | 107.3 |         |
| Conductivity (µmhos) |         | 323   | 330   | 331   | 340   | 335   | 321   | 320   |         |
| Chlorine (mg/l)      |         | 20.01 | 20.01 | 20.01 | 20.01 | 20.01 | 20.01 | 20.01 |         |
| Analyst (init.)      |         | BB    | BB    | BB    | BB    | BB    | BB    | BB    |         |

| Conc. <u>20%</u> |         | Day  |      |      |      |      |      |      | Remarks |
|------------------|---------|------|------|------|------|------|------|------|---------|
|                  |         | 1    | 2    | 3    | 4    | 5    | 6    | 7    |         |
| Temp. Degree C.  | Initial | 24.0 | 24.0 | 24.1 | 24.0 | 24.0 | 24.0 | 24.0 |         |
|                  | Final   | 24.0 | 24.1 | 24.1 | 24.0 | 24.0 | 24.0 | 24.2 |         |
| D. O. mg/l       | Initial | 8.3  | 8.4  | 8.1  | 8.2  | 8.0  | 7.9  | 8.0  |         |
|                  | Final   | 5.0  | 6.3  | 6.2  | 5.7  | 5.7  | 5.0  | 5.2  |         |
| pH S.U.          | Initial | 7.70 | 7.74 | 7.82 | 7.81 | 7.84 | 7.72 | 7.87 |         |
|                  | Final   | 7.50 | 7.41 | 7.33 | 7.46 | 7.50 | 7.54 | 7.87 |         |
| Analyst (init.)  |         | BB   | BB   | BB   | BB   | BB   | BB   | BB   |         |

| Conc. <u>40%</u> |         | Day  |      |      |      |      |      |      | Remarks |
|------------------|---------|------|------|------|------|------|------|------|---------|
|                  |         | 1    | 2    | 3    | 4    | 5    | 6    | 7    |         |
| Temp. Degree C.  | Initial | 24.0 | 24.0 | 24.1 | 24.0 | 24.0 | 24.0 | 24.0 |         |
|                  | Final   | 24.0 | 24.1 | 24.1 | 24.0 | 24.0 | 24.0 | 24.2 |         |
| D. O. mg/l       | Initial | 8.5  | 8.6  | 8.2  | 8.4  | 8.1  | 8.0  | 8.2  |         |
|                  | Final   | 5.2  | 6.2  | 6.2  | 5.9  | 5.7  | 6.1  | 5.2  |         |
| pH S.U.          | Initial | 7.65 | 7.68 | 7.82 | 7.82 | 7.84 | 7.76 | 7.88 |         |
|                  | Final   | 7.48 | 7.50 | 7.39 | 7.47 | 7.60 | 7.58 | 7.85 |         |
| Analyst (init.)  |         | BB   | BB   | BB   | BB   | BB   | BB   | BB   |         |



Data form for the Fathead Minnow survival and growth test.  
Routine chemical and physical determinations.

Page 2 of 2

Client: JEFFERSONTOWN, KY  
Test Start: 6-20-07 5pm  
Test Stop: 6-27-07 5pm

Analyst: B. Barker  
Analyst: \_\_\_\_\_  
Analyst: \_\_\_\_\_

| Conc. <u>60%</u> |         | Day  |      |      |      |      |      |      | Remarks |
|------------------|---------|------|------|------|------|------|------|------|---------|
|                  |         | 1    | 2    | 3    | 4    | 5    | 6    | 7    |         |
| Temp.            | Initial | 24.0 | 24.0 | 24.1 | 24.0 | 24.0 | 24.1 | 24.0 |         |
|                  | Final   | 24.0 | 24.1 | 24.1 | 24.0 | 24.0 | 24.0 | 24.2 |         |
| D. O.            | Initial | 8.7  | 8.8  | 8.3  | 8.5  | 8.2  | 8.0  | 8.5  |         |
|                  | Final   | 5.5  | 6.0  | 6.2  | 6.0  | 5.8  | 5.5  | 5.1  |         |
| pH               | Initial | 7.57 | 7.60 | 7.82 | 7.84 | 7.84 | 7.80 | 7.88 |         |
|                  | Final   | 7.56 | 7.59 | 7.48 | 7.51 | 7.72 | 7.71 | 7.83 |         |
| Analyst (init.)  |         | MB   | MB   | MB   | MB   | MB   | MB   | MB   |         |

| Conc. <u>80%</u> |         | Day  |      |      |      |      |      |      | Remarks |
|------------------|---------|------|------|------|------|------|------|------|---------|
|                  |         | 1    | 2    | 3    | 4    | 5    | 6    | 7    |         |
| Temp.            | Initial | 24.0 | 24.0 | 24.1 | 24.0 | 24.0 | 24.3 | 24.0 |         |
|                  | Final   | 24.0 | 24.1 | 24.1 | 24.0 | 24.0 | 24.0 | 24.2 |         |
| D. O.            | Initial | 8.8  | 9.0  | 8.3  | 8.6  | 8.3  | 8.3  | 8.6  |         |
|                  | Final   | 5.3  | 6.1  | 6.0  | 6.0  | 5.7  | 5.8  | 5.0  |         |
| pH               | Initial | 7.50 | 7.52 | 7.82 | 7.85 | 7.84 | 7.86 | 7.88 |         |
|                  | Final   | 7.54 | 7.56 | 7.50 | 7.51 | 7.70 | 7.82 | 7.80 |         |
| Analyst (init.)  |         | MB   | MB   | MB   | MB   | MB   | MB   | MB   |         |

| Conc. <u>100%</u>    |         | Day   |       |       |       |       |       |       | Remarks |
|----------------------|---------|-------|-------|-------|-------|-------|-------|-------|---------|
|                      |         | 1     | 2     | 3     | 4     | 5     | 6     | 7     |         |
| Temp.                | Initial | 24.0  | 24.0  | 24.1  | 24.1  | 24.0  | 24.0  | 24.0  |         |
|                      | Final   | 24.0  | 24.1  | 24.1  | 24.0  | 24.0  | 24.0  | 24.2  |         |
| D. O.                | Initial | 9.1   | 9.3   | 8.4   | 8.7   | 8.3   | 8.5   | 8.8   |         |
|                      | Final   | 5.2   | 6.0   | 5.9   | 5.7   | 5.8   | 5.4   | 5.2   |         |
| pH                   | Initial | 7.45  | 7.44  | 7.82  | 7.85  | 7.85  | 7.86  | 7.88  |         |
|                      | Final   | 7.46  | 7.50  | 7.47  | 7.55  | 7.69  | 7.82  | 7.77  |         |
| Alkalinity (mg/l)    |         | 123.2 | 122.2 | 183.6 | 188.8 | 176.4 | 189.6 | 170.8 |         |
| Hardness (mg/l)      |         | 180.8 | 183.4 | 188.8 | 188.7 | 189.4 | 189.4 | 186.0 |         |
| Conductivity (µmhos) |         | 800   | 808   | 858   | 861   | 848   | 844   | 843   |         |
| Chlorine (mg/l)      |         | 40.01 | 40.01 | 40.01 | 40.01 | 40.01 | 40.01 | 40.01 |         |
| Analyst (init.)      |         | MB    | MB    | MB    | MB    | MB    | MB    | MB    |         |

18/16.5 18/16.5 18/18.4 18/18.4 18/16.1



# **Appendix II**

## **Chain of Custody Data Sheets**



Beckmar Environmental Laboratory  
3251 Ruckriegel Parkway  
Louisville, KY 40299  
(502) 266-6533  
Fax: (502) 266-6446  
[www.beckmarlab.com](http://www.beckmarlab.com)

# CHAIN OF CUSTODY

PAGE \_\_\_\_\_ OF \_\_\_\_\_



# Beckman

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## CHAIN OF CUSTODY

[illegible]

## CHAIN OF CUSTODY

The Beckmar logo features a stylized, abstract graphic element resembling a lowercase 'b' or a curved line, positioned above the word 'Beckmar' in a bold, sans-serif typeface.[illegible]