ADEQ

A R K A N S A S
Department of Environmental Quality

September 8, 2015

Steve Parke, Director of Utilities
Fort Smith, City of
3900 Kelley Highway
Fort Smith, AR 72901

RE: Fort Smith Massard WWTP Inspection (Sebastian Co)
AFIN: 66-01652 NPDES Permit No.: AR0021750
ARR000449

Dear Mr. Parke:

On August 18, 2015, I performed a Compliance Inspection**,** a No-Exposure Evaluation Inspection, and a Collection System Inspection of the above-referenced facility in accordance with the provisions of the Federal Clean Water Act, the Arkansas Water and Air Pollution Control Act, and the regulations promulgated thereunder. Copies of the inspection reports are enclosed for your records.

Please refer to the "Summary of Findings" section of each of the attached inspection reports and provide a written response for each violation that was noted. This response should be mailed to the attention of the Water Division Inspection Branch at the address at the bottom of this letter or e-mailed to Water-Inspection-Report@adeq.state.ar.us. This response should contain documentation describing the course of action taken to correct each item noted. This corrective action should be completed as soon as possible, and the written response with all necessary documentation (i.e. photos) is due by **September 22, 2015**.

If I can be of any assistance, please contact me at grayd@adeq.state.ar.us or (479) 424-0333.

Sincerely,

Dannielle Gray
District 4 Field Inspector
Water Division

ADEQ
ARKANSAS
Department of Environmental Quality

WATER DIVISION INSPECTION REPORT

AFIN: **66-01652** | PERMIT #: **AR0021750** | DATE: **8/18/2015**

COUNTY: **66 Sebastian** | PDS #: **086328** | MEDIA: **WN**

GPS LAT: **35.340459** LONG: **-94.305533** LOCATION: **Entrance**

FACILITY INFORMATION

NAME:
Fort Smith Massard WWTP
LOCATION:
1609 North 9th St
CITY:
Barling, AR

RESPONSIBLE OFFICIAL

NAME: / TITLE
Steve Parke / Director of Utilities
COMPANY:
Fort Smith, City of
MAILING ADDRESS:
3900 Kelley Highway
CITY, STATE, ZIP:
Fort Smith AR 72901
PHONE & EXT: / FAX:
479-784-2342 /
EMAIL:
sparke@FortSmithAR.gov

CONTACTED DURING INSPECTION: **Yes**

INSPECTION INFORMATION

FACILITY TYPE: **1 - Municipal**
INSPECTOR ID#: **71330 S - State**
FACILITY EVALUATION RATING: **3 - Satisfactory**
INSPECTION TYPE: **Compliance Evaluation**
DATE(S): **8/18/2015**
ENTRY TIME: **09:30**
EXIT TIME: **14:30**
PERMIT EFFECTIVE DATE: **2/1/2015**
PERMIT EXPIRATION DATE: **1/31/2020**

FAYETTEVILLE SHALE RELATED: **N**

FAYETTEVILLE SHALE VIOLATIONS: **N**

INSPECTION PARTICIPANTS

NAME/TITLE/PHONE/FAX/EMAIL/ETC.:
David Shelly, Chief Operator, 479-452-2735, dshelly@fsark.com
Gerald Plank, Supervisor, 479-784-2333
Kerri McCabe, ADEQ Water Inspector Supervisor

AREA EVALUATIONS

(S=Satisfactory, M=Marginal, U=Unsatisfactory, N=Not Applicable/Evaluated)

S	PERMIT	**S**	FLOW MEASUREMENT	**	STORMWATER
S	RECORDS/REPORTS	**S**	LABORATORY	**M**	FACILITY SITE REVIEW
S	OPERATION & MAINTENANCE	**S**	EFFLUENT/RECEIVING WATER	**S**	SELF-MONITORING PROGRAM
S	SAMPLING	**S**	SLUDGE HANDLING/DISPOSAL	**	PRETREATMENT
**	OTHER:				

SUMMARY OF FINDINGS

The following violations were noted during inspection:

1. **The recirculation box in between the trickling filters was observed leaking during inspection (see Photo 10). This is a violation of Part III, Section B.1.A of the permit.**

2. **Best Management Practices (BMPs) are not being implemented near the trash bin at the raw water lift station onsite. Specifically, the trash bin that collects solids from incoming wastewater is not covered, bermed, or otherwise protected from stormwater runoff; and therefore, poses a pollution risk (see Photo 17). This is a violation of Part II, Condition 6 of the permit.**

GENERAL COMMENTS		
I conducted this inspection on August 18, 2015 with the above-referenced inspection participants. Inspection included a facility assessment, a records audit, a collection system evaluation, and a No-Exposure Certification review. **During facility assessment, I observed an open trash bin (see Photo 17) located outside the raw water lift station. This trash bin collects solids that are filtered out at the lift station before wastewater is sent to WWTP. The trash bin is not covered and has a drain hole on the base of the bin. The ground around the bin showed signs of discharge to the ground. This trash bin poses a stormwater pollution risk and threatens the facility's No-Exposure Certification. Failure to eliminate the risk may result in loss of coverage under the No-Exposure Certification.** **While onsite, we calculated flow using the primary flow measurement device and compared this to the meter reading (Page 7 of this report). Percent error calculated was 22.41%, which exceeds the maximum deviation allowed by the permit (less than +/-10%). The permittee is encouraged to verify to ensure the accuracy of the digital flowmeter to avoid potential permit violations.** **Records were found to be orderly and complete. See Collection System Inspection report for additional information regarding the collection system evaluation. See permit number ARR000449 Inspection report for information regarding No-Exposure Certification verification.**		
INSPECTOR'S SIGNATURE: Dannielle J Gray **Dannielle Gray**		DATE: **8/28/2015**
SUPERVISOR'S SIGNATURE: Kerri McCabe **Kerri McCabe**		DATE: **9/2/2015**

SECTION A: PERMIT VERIFICATION	
PERMIT SATISFACTORILY ADDRESSES OBSERVATIONS	☑S ☐M ☐U ☐NA ☐NE
DETAILS:	
1. CORRECT NAME AND MAILING ADDRESS OF PERMITTEE:	☑Y ☐N ☐NA ☐NE
2. NOTIFICATION GIVEN TO EPA/STATE OF NEW DIFFERENT OR INCREASED DISCHARGES:	☐Y ☐N ☑NA ☐NE
3. NUMBER AND LOCATION OF DISCHARGE POINTS AS DESCRIBED IN PERMIT:	☑Y ☐N ☐NA ☐NE
4. ALL DISCHARGES ARE PERMITTED:	☑Y ☐N ☐NA ☐NE

SECTION B: RECORDKEEPING AND REPORTING EVALUATION	
RECORDS AND REPORTS MAINTAINED AS REQUIRED BY PERMIT	☑S ☐M ☐U ☐NA ☐NE
DETAILS:	
1. ANALYTICAL RESULTS CONSISTENT WITH DATA REPORTED ON DMRS:	☑Y ☐N ☐NA ☐NE
2. SAMPLING AND ANALYSES DATA ADEQUATE AND INCLUDE:	☑S ☐M ☐U ☐NA ☐NE
a. DATES AND TIME(S) OF SAMPLING:	☑Y ☐N ☐NA ☐NE
b. EXACT LOCATION(S) OF SAMPLING:	☑Y ☐N ☐NA ☐NE
c. NAME OF INDIVIDUAL PERFORMING SAMPLING:	☑Y ☐N ☐NA ☐NE
d. ANALYTICAL METHODS AND TECHNIQUES:	☑Y ☐N ☐NA ☐NE
e. RESULTS OF CALIBRATIONS:	☑Y ☐N ☐NA ☐NE
f. RESULTS OF ANALYSES:	☑Y ☐N ☐NA ☐NE
g. DATES AND TIMES OF ANALYSES:	☑Y ☐N ☐NA ☐NE
h. NAME OF PERSON(S) PERFORMING ANALYSES:	☑Y ☐N ☐NA ☐NE
3. LABORATORY EQUIPMENT CALIBRATION AND MAINTENANCE RECORDS ADEQUATE:	☑S ☐M ☐U ☐NA ☐NE
4. PLANT RECORDS INCLUDE SCHEDULES, DATES OF EQUIPMENT MAINTENANCE AND REPAIR:	☑S ☐M ☐U ☐NA ☐NE
5. EFFLUENT LOADINGS CALCULATED USING DAILY EFFLUENT FLOW AND DAILY ANALYTICAL DATA:	☑Y ☐N ☐NA ☐NE

SECTION C: OPERATIONS AND MAINTENANCE	
TREATMENT FACILITY PROPERLY OPERATED AND MAINTAINED	☑S ☐M ☐U ☐NA ☐NE
DETAILS:	
1. TREATMENT UNITS PROPERLY OPERATED:	☑S ☐M ☐U ☐NA ☐NE
2. TREATMENT UNITS PROPERLY MAINTAINED:	☑S ☐M ☐U ☐NA ☐NE
3. STANDBY POWER OR OTHER EQUIVALENT PROVIDED:	☑S ☐M ☐U ☐NA ☐NE
4. ADEQUATE ALARM SYSTEM FOR POWER OR EQUIPMENT FAILURES AVAILABLE:	☑S ☐M ☐U ☐NA ☐NE
5. ALL NEEDED TREATMENT UNITS IN SERVICE:	☑S ☐M ☐U ☐NA ☐NE
6. ADEQUATE NUMBER OF QUALIFIED OPERATORS PROVIDED:	☑S ☐M ☐U ☐NA ☐NE
7. SPARE PARTS AND SUPPLIES INVENTORY MAINTAINED: **Kept at P-Street WWTP maintenance shop.**	☑S ☐M ☐U ☐NA ☐NE
8. OPERATION AND MAINTENANCE MANUAL AVAILABLE:	☑Y ☐N ☐NA ☐NE
9. STANDARD OPERATING PROCEDURES AND SCHEDULES ESTABLISHED:	☑Y ☐N ☐NA ☐NE
10. PROCEDURES FOR EMERGENCY TREATMENT CONTROL ESTABLISHED:	☑Y ☐N ☐NA ☐NE
11. HAVE BYPASSES/OVERFLOWS OCCURRED AT THE PLANT OR IN THE COLLECTION SYSTEM IN THE LAST YEAR:	☐Y ☑N ☐NA ☐NE
12. IF SO, HAS THE REGULATORY AGENCY BEEN NOTIFIED:	☐Y ☐N ☑NA ☐NE
13. HAS CORRECTIVE ACTION BEEN TAKEN TO PREVENT ADDITIONAL BYPASSES/OVERFLOWS:	☐Y ☐N ☑NA ☐NE
14. HAVE ANY HYDRAULIC OVERLOADS OCCURRED AT THE TREATMENT PLANT:	☐Y ☑N ☐NA ☐NE
15. IF SO, DID PERMIT VIOLATIONS OCCUR AS A RESULT:	☐Y ☐N ☑NA ☐NE

SECTION D: SAMPLING	
PERMITTEE SAMPLING MEETS PERMIT REQUIREMENTS	☑S ☐M ☐U ☐NA ☐NE
DETAILS:	
1. SAMPLES TAKEN AT SITE(S) SPECIFIED IN PERMIT:	☑Y ☐N ☐NA ☐NE
2. LOCATIONS ADEQUATE FOR REPRESENTATIVE SAMPLES:	☑Y ☐N ☐NA ☐NE
3. FLOW PROPORTIONED SAMPLES OBTAINED WHEN REQUIRED BY PERMIT:	☐Y ☐N ☑NA ☐NE
4. SAMPLING AND ANALYSES COMPLETED ON PARAMETERS SPECIFIED IN PERMIT:	☑Y ☐N ☐NA ☐NE
5. SAMPLING AND ANALYSES PERFORMED AT FREQUENCY SPECIFIED IN PERMIT:	☑Y ☐N ☐NA ☐NE
6. SAMPLE COLLECTION PROCEDURES ADEQUATE:	☑Y ☐N ☐NA ☐NE
a. SAMPLES REFRIGERATED DURING COMPOSITING:	☑Y ☐N ☐NA ☐NE
b. PROPER PRESERVATION TECHNIQUES USED:	☑Y ☐N ☐NA ☐NE
c. CONTAINERS AND SAMPLE HOLDING TIMES CONFORM TO 40 CFR 136:	☑Y ☐N ☐NA ☐NE
7. IF MONITORING IS PERFORMED MORE OFTEN THAN REQUIRED ARE RESULTS REPORTED ON THE DMR:	☐Y ☐N ☐NA ☐NE

SECTION E: FLOW MEASUREMENT	
PERMITTEE FLOW MEASUREMENT MEETS PERMIT REQUIREMENTS	☑S ☐M ☐U ☐NA ☐NE
DETAILS:	
1. PRIMARY FLOW MEASUREMENT DEVICE PROPERLY INSTALLED AND MAINTAINED: TYPE OF DEVICE: **24" Parshall flume**	☑Y ☐N ☐NA ☐NE
2. FLOW MEASURED AT EACH OUTFALL AS REQUIRED:	☑Y ☐N ☐NA ☐NE
3. SECONDARY INSTRUMENTS (TOTALIZERS, RECORDERS, ETC.) PROPERLY OPERATED AND MAINTAINED:	☑Y ☐N ☐NA ☐NE
4. CALIBRATION FREQUENCY ADEQUATE: **Last calibration 12/2014.**	☑Y ☐N ☐NA ☐NE
5. RECORDS MAINTAINED OF CALIBRATION PROCEDURES:	☑Y ☐N ☐NA ☐NE
6. CALIBRATION CHECKS DONE TO ASSURE CONTINUED COMPLIANCE:	☑Y ☐N ☐NA ☐NE
7. FLOW ENTERING DEVICE WELL DISTRIBUTED ACROSS THE CHANNEL AND FREE OF TURBULENCE:	☑Y ☐N ☐NA ☐NE
8. FLOW MEASUREMENT EQUIPMENT ADEQUATE TO HANDLE EXPECTED RANGE OF FLOW RATES:	☑Y ☐N ☐NA ☐NE
9. HEAD MEASURED AT PROPER LOCATION:	☑Y ☐N ☐NA ☐NE

SECTION F: LABORATORY	
PERMITTEE LABORATORY PROCEDURES MEET PERMIT REQUIREMENTS	☑S ☐M ☐U ☐NA ☐NE
DETAILS:	
1. EPA APPROVED ANALYTICAL PROCEDURES USED (40 CFR 136.3 FOR LIQUIDS, 503.8(B) FOR SLUDGES) :	☑Y ☐N ☐NA ☐NE
2. IF ALTERNATIVE ANALYTICAL PROCEDURES ARE USED, PROPER APPROVAL HAS BEEN OBTAINED:	☐Y ☐N ☑NA ☐NE
3. SATISFACTORY CALIBRATION AND MAINTENANCE OF INSTRUMENTS AND EQUIPMENT:	☑Y ☐N ☐NA ☐NE
4. QUALITY CONTROL PROCEDURES ADEQUATE:	☑Y ☐N ☐NA ☐NE
5. DUPLICATE SAMPLES ARE ANALYZED ≥10% OF THE TIME:	☑Y ☐N ☐NA ☐NE
6. SPIKED SAMPLES ARE ANALYZED ≥10% OF THE TIME:	☑Y ☐N ☐NA ☐NE
7. COMMERCIAL LABORATORY USED:	☑Y ☐N ☐NA ☐NE
a. LAB NAME: **City of Fort Smith certified lab.**	
b. LAB ADDRESS:	
c. PARAMETERS PERFORMED:	
8. BIOMONITORING PROCEDURES ADEQUATE:	☑Y ☐N ☐NA ☐NE
a. PROPER ORGANISMS USED:	☑Y ☐N ☐NA ☐NE
b. PROPER DILUTION SERIES FOLLOWED:	☑Y ☐N ☐NA ☐NE
c. PROPER TEST METHODS AND DURATION:	☑Y ☐N ☐NA ☐NE
d. RETESTS AND/OR TRE PERFORMED AS REQUIRED:	☑Y ☐N ☐NA ☐NE

SECTION G: EFFLUENT/RECEIVING WATERS OBSERVATIONS

BASED ON VISUAL OBSERVATIONS ONLY — ☑S ☐M ☐U ☐NA ☐NE

DETAILS:

OUTFALL #:	OIL SHEEN	GREASE	TURBIDITY	VISIBLE FOAM	FLOATING SOLIDS	COLOR	OTHER
001	None	None	None	None	None	Clear	--

SECTION H: SLUDGE DISPOSAL

SLUDGE DISPOSAL MEETS PERMIT REQUIREMENTS — ☑S ☐M ☐U ☐NA ☐NE

DETAILS:

1. SLUDGE MANAGEMENT ADEQUATE TO MAINTAIN EFFLUENT QUALITY: ☑S ☐M ☐U ☐NA ☐NE
2. SLUDGE RECORDS MAINTAINED AS REQUIRED BY 40 CFR 503: ☑S ☐M ☐U ☐NA ☐NE
3. FOR LAND APPLIED SLUDGE, TYPE OF LAND APPLIED TO: (E.G., FOREST, AGRICULTURAL, PUBLIC CONTACT SITE):

SECTION I: SAMPLING INSPECTION PROCEDURES

SAMPLE RESULTS WITHIN PERMIT REQUIREMENTS — ☐S ☐M ☐U ☑NA ☐NE

DETAILS:

1. SAMPLES OBTAINED THIS INSPECTION: ☐Y ☐N ☑NA ☐NE
2. TYPE OF SAMPLE: ☐GRAB:__ ☐COMPOSITE:__ METHOD:__ FREQUENCY:
3. SAMPLES PRESERVED: ☐Y ☐N ☑NA ☐NE
4. FLOW PROPORTIONED SAMPLES OBTAINED: ☐Y ☐N ☑NA ☐NE
5. SAMPLE OBTAINED FROM FACILITY'S SAMPLING DEVICE: ☐Y ☐N ☑NA ☐NE
6. SAMPLE REPRESENTATIVE OF VOLUME AND NATURE OF DISCHARGE: ☐Y ☐N ☑NA ☐NE
7. SAMPLE SPLIT WITH PERMITTEE: ☐Y ☐N ☑NA ☐NE
8. CHAIN-OF-CUSTODY PROCEDURES EMPLOYED: ☐Y ☐N ☑NA ☐NE
9. SAMPLES COLLECTED IN ACCORDANCE WITH PERMIT: ☐Y ☐N ☑NA ☐NE

SECTION J: STORM WATER POLLUTION PREVENTION PLAN

STORM WATER MANAGEMENT MEETS PERMIT REQUIREMENTS — ☐S ☐M ☐U ☑NA ☐NE

DETAILS:

1. SWPPP UPDATED AS NEEDED:__ DATE OF LAST UPDATE: ☐Y ☐N ☑NA ☐NE
2. SITE MAP INCLUDING ALL DISCHARGES AND SURFACE WATERS: ☐Y ☐N ☑NA ☐NE
3. POLLUTION PREVENTION TEAM IDENTIFIED: ☐Y ☐N ☑NA ☐NE
4. POLLUTION PREVENTION TEAM PROPERLY TRAINED: ☐Y ☐N ☑NA ☐NE
5. LIST OF POTENTIAL POLLUTANT SOURCES: ☐Y ☐N ☑NA ☐NE
6. LIST OF POTENTIAL SOURCES AND PAST SPILLS AND LEAKS: ☐Y ☐N ☑NA ☐NE
7. ALL NON-STORM WATER DISCHARGES ARE AUTHORIZED: ☐Y ☐N ☑NA ☐NE
8. LIST OF STRUCTURAL BMPS: ☐Y ☐N ☑NA ☐NE
9. LIST OF NON-STRUCTURAL BMPS: ☐Y ☐N ☑NA ☐NE
10. BMPS PROPERLY OPERATED AND MAINTAINED: ☐Y ☐N ☑NA ☐NE
11. INSPECTIONS CONDUCTED AS REQUIRED: ☐Y ☐N ☑NA ☐NE

FLOW CALCULATION SHEET

Date: **8/18/2015** Time: **1011**

Head in Inches: **12.1** Feet: **1.1**

Type & Size of Primary Flow Measurement Device: **24" Parshall flume**

Name & Model of Secondary Flow Measurement Device: **Milltronics OCM III**

Date of last Calibration of Secondary Flow Device: **12/2014**

Recorded Flow at Date & Time Listed Above: **4.65** (Facility Flow Meter)

Calculated Flow at Date & Time Listed Above: **5.993**

(Flow is calculated using flow charts in: ISCO Open Channel Flow Measurement Handbook-5th Edition)

$$\% \text{ Error} = \frac{\text{Recorded Value} - \text{Calculated Value}}{\text{Calculated Value}} \times 100$$

$$\% \text{ Error} = \frac{4.65 - 5.993}{5.993} \times 100$$

$$\% \text{ Error} = \frac{-1.343}{5.993} \times 100$$

$$\% \text{ Error} = -0.2241 \times 100$$

% Error = **-22.41** %

Comments: **Exceeds +/-10%**

DMR Calculation Check

Reporting Period:	**From**	**2015** (Year)	**06** (Month)	**01** (Day)	**To**	**2015** (Year)	**06** (Month)	**30** (Day)

Parameter Checked: **TSS**

	Loading	**Concentration**	
	Mass	**Monthly**	
	Mo. Avg. - lbs/day	**Mo. Avg. - mg/l**	**7-day Avg. - mg/l**
Reported Value:	**682**	**7**	**9**
Calculated Value:	**682.3**	**6.9**	**9.3**
Permit Value:	**2505**	**30**	**45**

If calculated value does not equal reported value, explain: **Rounding differences**

DMR Calculation Check

Reporting Period: From **2014** (Year) **11** (Month) **01** (Day) To **2014** (Year) **11** (Month) **30** (Day)

Parameter Checked: **BOD**

	Loading Mass Mo. Avg. - lbs/day	Concentration Monthly Mo. Avg. - mg/l	Concentration Monthly 7-day Avg. - mg/l
Reported Value:	**453**	**9**	**13**
Calculated Value:	**453.3**	**9.1**	**12.6**
Permit Value:	**2502**	**30**	**45**

If calculated value does not equal reported value, explain: **Rounding differences**

Water Division Photographic Evidence Sheet					
Location:	**Fort Smith Massard WWTP**				
Photographer:	**Kerri McCabe**	Date:	**8/18/2015**	Time:	**0943**
Witness:	**Gerald Plank**			Photo #:	**1**
Description:	**Influent.**				

Photographer:	**Kerri McCabe**	Date:	**8/18/2015**	Time:	**0943**
Witness:	**Gerald Plank**			Photo #:	**2**
Description:	**Cyclone filter and waste bin at raw water intake.**				

Water Division Photographic Evidence Sheet					
Location:	**Fort Smith Massard WWTP**				
Photographer:	**Kerri McCabe**	Date:	**8/18/2015**	Time:	**0945**
Witness:	**Gerald Plank**			Photo #:	**3**
Description:	**Plant overview taken from influent and facing diversion box and trickling filters.**				

Photographer:	**Kerri McCabe**	Date:	**8/18/2015**	Time:	**0945**
Witness:	**Gerald Plank**			Photo #:	**4**
Description:	**Primary clarifier.**				

Water Division Photographic Evidence Sheet					
Location:	**Fort Smith Massard WWTP**				
Photographer:	**Kerri McCabe**	Date:	**8/18/2015**	Time:	**0945**
Witness:	**Gerald Plank**			Photo #:	**5**
Description:	**Second primary clarifier.**				

Photographer:	**Kerri McCabe**	Date:	**8/18/2015**	Time:	**0950**
Witness:	**Gerald Plank**			Photo #:	**6**
Description:	**Close up of primary clarifier.**				

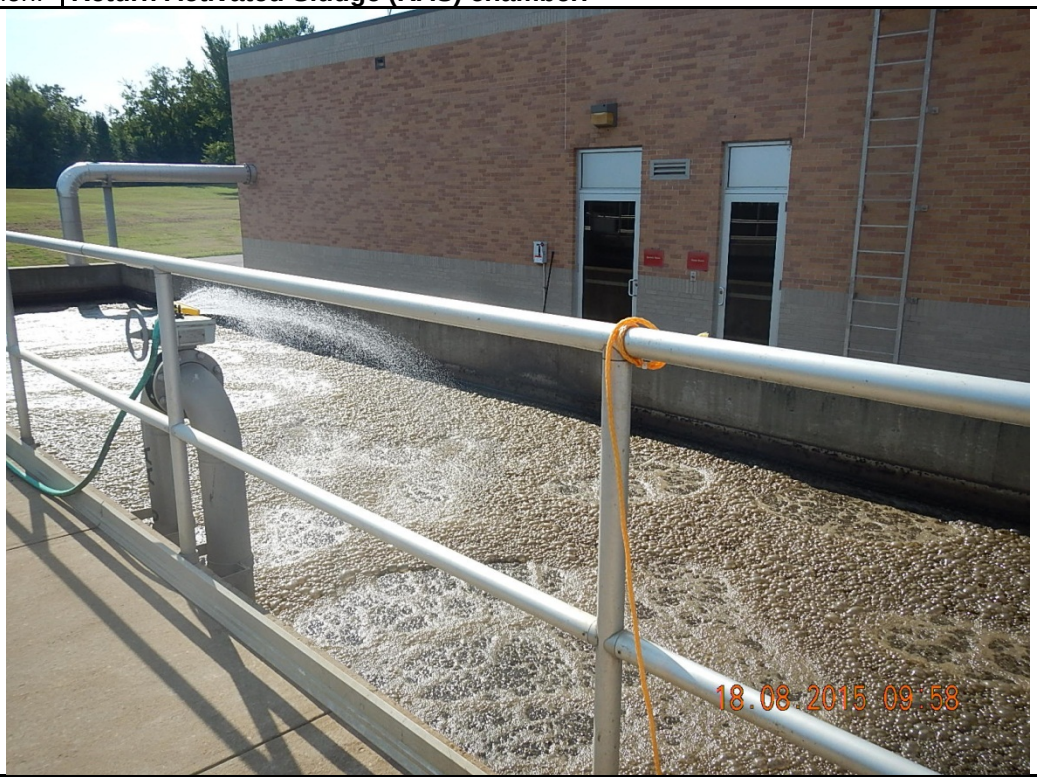
Water Division Photographic Evidence Sheet					
Location:	**Fort Smith Massard WWTP**				
Photographer:	**Kerri McCabe**	Date:	**8/18/2015**	Time:	**0954**
Witness:	**Gerald Plank**			Photo #:	**7**
Description:	**Trickling filter.**				

Photographer:	**Kerri McCabe**	Date:	**8/18/2015**	Time:	**0954**
Witness:	**Gerald Plank**			Photo #:	**8**
Description:	**Second trickling filter.**				

Water Division Photographic Evidence Sheet					
Location:	**Fort Smith Massard WWTP**				
Photographer:	**Kerri McCabe**	Date:	**8/18/2015**	Time:	**0955**
Witness:	**Gerald Plank**			Photo #:	**9**
Description:	**Trickling filter media.**				

Photographer:	**Kerri McCabe**	Date:	**08/18/2015**	Time:	**0955**
Witness:	**Gerald Plank**			Photo #:	**10**
Description:	**Leak noted in recirculation box.**				

Water Division Photographic Evidence Sheet					
Location:	**Fort Smith Massard WWTP**				
Photographer:	**Kerri McCabe**	Date:	**8/18/2015**	Time:	**0958**
Witness:	**Gerald Plank**			Photo #:	**11**
Description:	**Return Activated Sludge (RAS) chamber.**				



Photographer:	**Kerri McCabe**	Date:	**8/18/2015**	Time:	**0958**
Witness:	**Gerald Plank**			Photo #:	**12**
Description:	**Waste Activated Sludge (WAS) chamber.**				

Water Division Photographic Evidence Sheet					
Location:	**Fort Smith Massard WWTP**				
Photographer:	**Kerri McCabe**	Date:	**8/18/2015**	Time:	**1004**
Witness:	**Gerald Plank**			Photo #:	**13**
Description:	**Baffle and weir at secondary clarifier.**				

Photographer:	**Kerri McCabe**	Date:	**8/18/2015**	Time:	**1009**
Witness:	**Gerald Plank**			Photo #:	**14**
Description:	**UV disinfection chamber.**				

Water Division Photographic Evidence Sheet					
Location:	**Fort Smith Massard WWTP**				
Photographer:	**Kerri McCabe**	Date:	**8/18/2015**	Time:	**1010**
Witness:	**Gerald Plank**			Photo #:	**15**
Description:	**Post-disinfection; pre-flume box.**				

Photographer:	**Kerri McCabe**	Date:	**8/18/2015**	Time:	**1011**
Witness:	**Gerald Plank**			Photo #:	**16**
Description:	**24” Parshall flume at effluent box.**				

Water Division Photographic Evidence Sheet					
Location:	**Fort Smith Massard WWTP**				
Photographer:	**Kerri McCabe**	Date:	**8/18/2015**	Time:	**1240**
Witness:	**Gerald Plank**			Photo #:	**17**
Description:	**Unprotected trash bin at raw water lift station on facility grounds; note waste trail in front of bin indicates bin and contents are susceptible to stormwater runoff.**				

Figure 1: Google Earth image dated Oct 5, 2013 showing Massard WWTP overview.

From:	Gray, Dannielle
To:	McConnell, Melissa
Subject:	FW: P Street/Massard WET Results
Date:	Monday, September 14, 2015 2:14:06 PM
Attachments:	Massard Plant Bio 2nd Qrt 2015.pdf

Please attach to WID 18043 (email and attachment).

Dannielle Gray
ADEQ Water Inspector, District 4
(479) 424-0333

From: Floyd, Steve [mailto:floyd@FortSmithAR.gov]
Sent: Wednesday, August 19, 2015 3:53 PM
To: Gray, Dannielle
Subject: P Street/Massard WET Results

FYI

Steve Floyd
Superintendent
Water/Wastewater Operations
3900 Kelley Hwy
Fort Smith, AR 72904
479-784-2331
sfloyd@FortSmithAR.gov

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

May 05, 2015

Lance McAvoy
City of Fort Smith
3900 Kelley Hwy.
Fort Smith, AR 72904

RE: Project: MASSARD BIOMONITORING
Pace Project No.: 60192343

Dear Lance McAvoy:
Enclosed are the analytical results for sample(s) received by the laboratory on April 21, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Flanagan

Alice Flanagan
alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Dan Clover, City of Fort Smith, AR

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: MASSARD BIOMONITORING
Pace Project No.: 60192343

Southeast Kansas Certification IDs
808 West McKay, Frontenac, KS 66763
Arkansas Certification #: 13-012-0
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Oklahoma Certification #: 2012-051
Texas Certification #: T104704407-13-4
Utah Certification #: KS000212013-3
Minnesota Certification #: 495004

REPORT OF LABORATORY ANALYSIS

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Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: MASSARD BIOMONITORING
Pace Project No.: 60192343

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60192343001	MASSARD EFFLUENT	Water	04/20/15 08:00	04/21/15 14:00
60192343002	ARKANSAS RIVER	Water	04/20/15 09:00	04/21/15 14:00

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SAMPLE ANALYTE COUNT

Project: MASSARD BIOMONITORING
Pace Project No.: 60192343

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60192343001	MASSARD EFFLUENT	EPA 821/R-02/013	TDH	1

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ANALYTICAL RESULTS

Project: MASSARD BIOMONITORING
Pace Project No.: 60192343

Sample: MASSARD EFFLUENT **Lab ID: 60192343001** Collected: 04/20/15 08:00 Received: 04/21/15 14:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Chronic Toxicity	Analytical Method: EPA 821/R-02/013							
Toxicity, Chronic	**Complete**		1.0	1		04/21/15 14:30		

Sample: ARKANSAS RIVER **Lab ID: 60192343002** Collected: 04/20/15 09:00 Received: 04/21/15 14:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
	Analytical Method: EPA 821/R-02/013							
Toxicity, Chronic	**Complete**		1.0	1		04/21/15 14:30		

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QUALIFIERS

Project: MASSARD BIOMONITORING
Pace Project No.: 60192343

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MASSARD BIOMONITORING
Pace Project No.: 60192343

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60192343001	**MASSARD EFFLUENT**	EPA 821/R-02/013	BIO/1804		

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Sample Condition Upon Receipt

WO#: 60192343

60192343

Client Name: Ft Smith Mussard

Optional
Proj Due Date:
Proj Name:

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace ☐ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☒ Other ☐

Thermometer Used: T-111

Type of Ice: (Wet) Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2.8

Date and initials of person examining contents: MB 4/21/15 1400

Temperature should be above freezing to 6°C

Chain of Custody present:	☒Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☒Yes ☐No ☐N/A	2.
Chain of Custody relinquished:	☐Yes ☒No ☐N/A	3.
Sampler name & signature on COC:	☒Yes ☐No ☐N/A	4.
Samples arrived within holding time:	☒Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	☒Yes ☐No ☐N/A	6.
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	7.
Sufficient volume:	☒Yes ☐No ☐N/A	8.
Correct containers used:	☒Yes ☐No ☐N/A	
Pace containers used:	☒Yes ☐No ☐N/A	9.
Containers intact:	☒Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☒N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	12.
Sample labels match COC: Includes date/time/ID/analyses Matrix: WT	☒Yes ☐No ☐N/A	13.
All containers needing preservation have been checked.	☐Yes ☐No ☒N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☒N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐Yes ☒No	Initial when completed / Lot # of added preservative
Trip Blank present: Pace Trip Blank lot # (if purchased):	☐Yes ☐No ☒N/A	15.
Headspace in VOA vials (>6mm):	☐Yes ☐No ☒N/A	16.
Project sampled in USDA Regulated Area:	☐Yes ☐No ☒N/A	17. List State:

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: AAF Date: 04/22/15

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

1858215

Section A Required Client Information:

Company: City of Fort Smith
Address: 3900 Kelley Hwy, Ft. Smith, AR 72904
Email To:
Phone: 479-784-2337 Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Lance McAvoy
Copy To:
Purchase Order No.:
Project Name: Massard Biomonitoring
Project Number:

Section C Invoice Information:

Attention: Lance McAvoy
Company Name: City of Fort Smith
Address: 2900 Kelley Hwy, Ft. Smith, AR 72904
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: AR

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other Ice	Requested Analysis Filtered (Y/N) Y/N	Analysis Test: Chronic Minnow	Chronic Ceriodaphnia	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	Massard Effluent	WW	C	4/19/15	0500	4/20/15	0500										X	Y	X	X		60192343 16Cub -001
2	Arkansas River	WT	G			4/20/15	0900										X	Y	X	X		60192343 26Cub -002
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Free Cl_2: 0.02mg/L		4/20/15	12:00	[signature]	4/21/15	1400	2.8	Y	Y	Y
Total Cl_2: 0.01mg/L										
Arkansas River FCl_2: 0.04mg/L										
Arkansas River TCl_2: 0.04mg/L										

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Rachel Sharp
SIGNATURE of SAMPLER: Rachel Sharp
DATE Signed (MM/DD/YY): 04/20/15

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

RS 4/20/15

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REFERENCE #60192343

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
Phone: 913.599.5665
Fax: 913.599.1759

April 30, 2015

Lance McAvoy
City of Fort Smith (Massard)
3900 Kelley HWY
Fort Smith , AR 72904

Re: Lab Project Number: 60192343
Client Project ID: Wet Test

Dear:

Enclosed are the analytical results for sample(s) received by the laboratory. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any question concerning this report, please feel free to contact me.

Sincerely,

Tim Harrell
Tim.Harrell@pacelabs.com
Technical Director

REPORT OF LABORATORY ANALYSIS

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www.pacelabs.com

REFERENCE #60192343

Pace Analytical Services, Inc.
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CHRONIC TOXICITY TEST FOR CITY OF FORT SMITH (Massard)

PERMIT # AR 0021750
AFIN # 66-01652

PERFORMED ON:

Pimephales promelas

and

Ceriodaphnia dubia

PREPARED FOR:

Lance McAvoy
City of Fort Smith (Massard)
3900 Kelley HWY
Fort Smith, AR 72904

PREPARED BY:
Pace Analytical Services, Inc.
808 West McKay
Frontenac, KS 66763
1-620-235-0003

April 30, 2015

REPORT OF LABORATORY ANALYSIS

nelac

Pace Analytical Services, Inc.
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TABLE OF CONTENTS

Pace Analytical Services, Inc.
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SUMMARY

A Chronic Whole Effluent Toxicity Test using the 7-day chronic fathead minnows (Pimephales promelas), static renewal larval survival and growth test, and three brood 7-day chronic Cladoceran (Ceriodaphnia dubia), static renewal survival and reproduction test, was conducted on effluent discharge water collected at the CITY OF FORT SMITH (Massard) effluent discharge from April 20, 2015 to April 24, 2015. All the test methods followed are as listed in EPA 821-R-02-013, "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms."

Statistically significant ($p<0.05$) mortality is determined by Dunnet's procedure using average percent survival of each test concentration versus the average survival of the controls. If significant mortality occurs, median lethal concentrations (LC50) are calculated using effluent concentrations and their corresponding percent mortality data. The LC50's and the 95% confidence intervals are calculated where appropriate by the Spearman-Karber method. Statistical analysis is accomplished by following steps in EPA 821-R-02-013, November 2002 and by use of Toxstat version 3.4.

In minnow section of testing, it was observed that the effluent had no significant effect on the survival of the larvae at the 9% concentration. No significant mortality was observed in the other effluent concentrations after the 7-day exposure period. The No Observed Effect Concentration (NOEC) was determined to be 9% for survival. The LC50 was estimated to be >9% effluent. No significant reduction in growth was observed in the 9% effluent concentration. The Toxic Units is <1. The IC25 is >9. The NOEC for growth in effluent was determined to be 9%. The PMSD is 11.3.

In Cladoceran section of testing, it was observed that the effluent had no significant effect on the survival of the organisms in the 9% effluent concentration. No significant mortality was observed in the other effluent concentrations after the 7-day exposure period. The No Observed Effect Concentration (NOEC) was determined to be 9% for survival. The LC50 was estimated to be >9% effluent. No significant reduction in reproduction was observed in the 9% effluent concentrations. The Toxic Units is <1. The IC25 is >9. The NOEC for reproduction in effluent was determined to be 9%. The PMSD is 15.7.

The chronic toxicity exhibited by the fathead minnows and the Ceriodaphnia treated by the effluent sampled from April 20 to April 24 from the CITY OF FORT SMITH (Massard) effluent discharge, is acceptable as described in EPA 821-R-02-013.

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INTRODUCTION

Pace Analytical was contracted to perform this chronic toxicity test on effluent from the CITY OF FORT SMITH (Massard) effluent discharge. Chronic toxicity was measured using the Pimephales promelas at larval for survival and growth test and the Ceriodaphnia dubia survival and reproduction test described in EPA 821-R-02-013, "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms." The raw data of the study is stored at Pace Analytical Services, INC. 808 West McKay, Frontenac, KS 66763.

TEST MATERIAL

City of Fort Smith (Massard) personnel collected sampling of the effluent. A sample of the effluent was delivered to Pace by commercial carrier on 4-21-15. Subsequent samples followed by delivery on 4-23-15 and on 4-25-15. All samples were stored at ≤ 6° Celsius. Upstream Water was used as a control and also to make the required dilutions in the test as described in EPA 821-R-02-013.

TEST METHODS

Pace used EPA test method 1000.0 for conducting the Fathead Minnow, Pimephales promelas, Larval Survival and Growth Test. EPA test method 1002.0 was used for conducting the Cladoceran, Ceriodaphnia dubia, Survival and Reproduction Test. The tests were conducted to estimate the LC50, NOEC, and LOEC for survival, growth, and reproduction of these test species.

The Pimephales and Ceriodaphnia tests were initiated on 4-21-15 and carried out until 4-28-15. The Pimephales tests were conducted in 500 ml plastic jars with 250 ml of test solution. Eight larvae were placed in each of at least 5 replicates to make a total of 40 larvae per sample concentration. The Ceriodaphnia tests were carried out in 35ml vials containing 25 ml of test solution. One Neonate was placed in each of 10 replicates to make a total of 10 neonates per sample concentration.

TEST ORGANISMS

Organisms used in these tests were cultured at Pace under controlled temperature and photo period conditions and/or were purchased from an external supplier. Pace maintains records of culture techniques for all organisms, whether produced in house or purchased.

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RESULTS

Pace Analytical Services, Inc.
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TABLE 1

Permittee: CITY OF FORT SMITH (Massard) Effluent discharge.

Date Sampled No. 1: 4-20-15 8:00

No. 2: 4-22-15 8:00

No. 3: 4-24-15 8:00

Test Initiated: 14:30 Date: 4-21-15

Dilution Water used: Upstream

FATHEAD MINNOW LARVAE GROWTH AND SURVIVAL
(Pimephales promelas)

DATA TABLE FOR GROWTH OF FATHEAD MINNOWS

Effluent Concentration (%)	Average Dry Weight in Milligrams in Replicate Chambers A	B	C	D	E	Mean Dry Weight (mg)	CV% *
Upstream 0%	0.400	0.408	0.403	0.378	0.339	0.386	7.38
Dilution 1 3%	0.364	0.384	0.393	0.414	0.400	0.391	4.77
Dilution 2 4%	0.346	0.380	0.379	0.315	0.408	0.366	9.79
Dilution 3 5%	0.399	0.344	0.376	0.363	0.401	0.377	6.43
Dilution 4 7%	0.421	0.440	0.346	0.365	0.385	0.391	9.93
Dilution 5 9%	0.404	0.408	0.382	0.353	0.365	0.382	6.26

* Coefficient of Variation = Standard Deviation X 100 / Mean

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Permittee: CITY OF FORT SMITH (Massard) Effluent discharge.

FATHEAD MINNOW SURVIVAL

Conc. %	Percent Survival in Replicate Chambers					Mean Percent Survival			CV %
	A	B	C	D	E	24hr	48hr	7 day	
Upstream 0%	100	100	100	100	87.5	100	100	97.5	4.79
Dilution 1 3%	100	100	100	100	100	100	100	100	0.00
Dilution 2 4%	100	100	100	87.5	100	100	100	97.5	4.79
Dilution 3 5%	100	87.5	100	87.5	100	100	100	95	5.99
Dilution 4 7%	100	100	100	100	100	100	100	100	0.00
Dilution 5 9%	100	100	100	100	100	100	100	100	0.00

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CERIODAPHNIA SURVIVAL AND REPRODUCTION

DATA TABLE FOR CERIODAPHNIA YOUNG PRODUCTION

Replicate	Upstream 0%	Dilution 1 3%	Dilution 2 4%	Dilution 3 5%	Dilution 3 7%	Dilution 4 9%
1	20	22	24	20	22	20
2	22	18	25	26	17	17
3	20	23	18	16	19	23
4	23	20	17	21	22	25
5	20	18	22	20	24	17
6	16	22	15	24	19	23
7	18	20	21	22	14	15
8	24	24	22	18	25	22
9	19	24	24	18	20	23
10	24	16	23	24	23	24
Mean	20.6	20.7	21.1	20.9	20.5	20.9
SD	2.633	2.751	3.348	3.143	3.375	3.446
CV %	12.78	13.29	15.87	15.04	16.46	16.49

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Permittee: CITY OF FORT SMITH (Massard) Effluent discharge.

CERIODAPHNIA MEAN PERCENT SURVIVAL

	Percent Effluent (%)					
Time Elapsed	Upstream 0%	Dilution 1 3%	Dilution 2 4%	Dilution 3 5%	Dilution 4 7%	Dilution 5 9%
24 hrs	100	100	100	100	100	100
48 hrs	100	100	100	100	100	100
7-day	100	100	100	100	100	100
SD	0.0	0.0	0.0	0.0	0.0	0.0
CV %	0.0	0.0	0.0	0.0	0.0	0.0

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TABLE 2
SUMMARY OF TEST CONDITIONS FOR THE FATHEAD MINNOW (Pimephales promelas) LARVAL SURVIVAL AND GROWTH TEST

1. Test type	Static renewal
2. Temperature	25 degrees Celsius
3. Light quality	Ambient laboratory light
4. Light intensity	Ambient laboratory levels
5. Photoperiod	16 hr light, 8 hr dark
6. Test chamber size	500 ml
7. Test solution volume	250 ml
8. Renewal of test concentrations	Daily
9. Age of test organism	< 24 hours
10. No. larvae/chamber	8
9. No. replicates/concentration	5
12. No. larvae/concentration	40
13. Feeding regime	Feed 0.1 ml newly hatched brine shrimp nauplii three times daily. Larvae are not fed 12 hours prior to termination of test.
15. Cleaning	Siphon daily, immediately before test solution renewal
15. Aeration	None

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TABLE 2 (CONT.)

16. Dilution Water	Upstream
17. Effluent concentrations	0%, 3%, 4%, 5%, 7%, 9%
18. Test duration	7 days
19. Endpoints	Survival and growth
20. Test acceptability	80% or greater survival in the controls, Average dry weight in controls >0.25 mg, Coefficient of variation in the control must not exceed 40%.

TABLE 2 (CONT.)
SUMMARY OF TEST CONDITIONS FOR THE CLADOCERAN
(Ceriodaphnia dubia) SURVIVAL AND REPRODUCTION TEST

1. Test type	Static renewal
2. Temperature	25 degrees Celsius
3. Light quality	Ambient laboratory light
4. Light intensity	Ambient laboratory levels
5. Photoperiod	16 hr light, 8 hr dark
6. Test chamber size	30 ml
7. Test solution volume	25 ml

TABLE 2 (CONT.)

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8. Renewal of test concentrations	Daily
9. Age of test organism	< 24 hours
10. No. larvae/chamber	1
9. No. replicates/concentration	10
12. No. larvae/concentration	10
13. Feeding regime	Feed 0.1 ml YCT three times daily. Larvae are not fed 12 hours prior to termination of test.
15. Cleaning	Siphon daily, immediately before test solution renewal
15. Aeration	None
16. Dilution Water	Upstream
17. Effluent concentrations	0%, 3%, 4%, 5%, 7%, 9%
18. Test duration	Until 60% or more surviving control females have three broods or a maximum of 8 days.
19. Endpoints	Survival and Reproduction
20. Test acceptability	80% or greater survival in the controls, Average reproduction rate of 15 young / adult. Coefficient of variation in the control must not exceed 40%.

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TABLE 2 (SECTION 2)

BIOMONITORING CHRONIC TOXICITY REPORT
FATHEAD MINNOW (Pimephales promelas)
CHEMICAL PARAMETERS CHART

Permittee: CITY OF FORT SMITH (Massard). Effluent discharge.

ANALYSTS: Pace Analytical Services, Inc.
Timothy Harrell
Mike Bollin

SAMPLE NO. 1 COLLECTED: DATE: 4-20-15

SAMPLE NO. 2 COLLECTED: DATE: 4-22-15

SAMPLE NO. 3 COLLECTED: DATE: 4-24-15

TABLE 2 (SECTION 2)
INITIAL WATER QUALITY
EFFLUENT CONCENTRATION

	Upstream	100%
PH	7.45	7.13
D.O.	8.30	7.70
Temp	25.0	25.0
Alk	74	80
Hard	108	96
Cond	295	361
Chlorine	<0.1	<0.1

* D.O. is reported as mg/L
Alkalinity is reported as mg/L CaCO3
Hardness is reported as mg/L CaCO3
Conductance is reported as umhos
Chlorine is reported as mg/L

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TEST WATER QUALITY

24-Hour Water Quality Measurements

Effluent Concentration (%)	PH	D.O. (mg/l)	Temperature (C)
0% Upstream	7.84	7.30	25.0
3% Effluent	7.84	7.30	25.0
4% Effluent	7.84	7.30	25.0
5% Effluent	7.84	7.30	25.0
7% Effluent	7.83	7.30	25.0
9% Effluent	7.83	7.30	25.0

48-Hour Water Quality Measurements

Effluent Concentration (%)	PH	D.O. (mg/l)	Temperature (C)
0% Upstream	7.95	7.20	25.2
3% Effluent	7.96	7.20	25.2
4% Effluent	7.97	7.20	25.2
5% Effluent	7.97	7.20	25.2
7% Effluent	7.98	7.20	25.2
9% Effluent	8.00	7.20	25.2

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9608 Loiret Blvd.
Lenexa, KS 66219
Phone: 913.599.5665
Fax: 913.599.1759

FINAL WATER QUALITY

EFFLUENT CONCENTRATION

	Upstream	9%
pH	7.95	7.98
D.O.	6.80	6.90
Temp	25.1	25.1
Alk	84	90
Hard	140	150
Cond	449	486

* D.O. is reported as mg/L
Alkalinity is reported as mg/L CaCO3
Hardness is reported as mg/L CaCO3
Conductance is reported as umhos

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
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Fax: 913.599.1759

TEST VALIDITY

The Pimephales promelas control survival rate was 97.5%. The mean dry weight (growth) of the Pimephales promelas was determined at 0.386 mg/organism in the controls. The percent coefficient of variation (%CV) values for the fathead minnow control for survival and growth were 4.79 and 7.38. The Ceriodaphnia dubia survival rates were 100 in the control. The Ceriodaphnia in the control produced an average of 20.6 young over the seven-day exposure period. Percent CV values for Ceriodaphnia dubia control survival and reproduction was 0.00 and 12.78. Control data met or exceeded all criteria set out by EPA 821-R-02-013 for test acceptance.

CONCLUSIONS

The No Observed Effect Concentration (NOEC) for Pimephales promelas was 9% for survival and 9% for growth. The No Observed Effect Concentration (NOEC) for Ceriodaphnia dubia was 9% for Survival and 9% for Reproduction. The tests were ran using a synthetic control against effluent concentrations of 3%, 4%, 5%, 7%, and 9%. The effluent sampled on 4-20-15, 4-22-15, and 4-24-15 exhibited acceptable chronic toxicity in Pimephales promelas and in Ceriodaphnia dubia during the exposure period as described in EPA 821-R-02-013.

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
Phone: 913.599.5665
Fax: 913.599.1759

APPENDIX A
STATISTICAL ANNALYSIS

60192343 FT SMITH FATHEAD SURVIVAL
File: 6192343A Transform: ARC SINE(SQUARE ROOT(Y))

Chi-square test for normality: actual and expected frequencies

INTERVAL	<-1.5	-1.5 to <-0.5	-0.5 to 0.5	>0.5 to 1.5	>1.5
EXPECTED	2.010	7.260	11.460	7.260	2.010
OBSERVED	2	2	23	3	0

Calculated Chi-Square goodness of fit test statistic = 19.9412
Table Chi-Square value (alpha = 0.01) = 13.277

Data FAIL normality test. Try another transformation.

Warning - The first three homogeneity tests are sensitive to non-normal data and should not be performed.

60192343 FT SMITH FATHEAD SURVIVAL
File: 6192343A Transform: ARC SINE(SQUARE ROOT(Y))

Shapiro - Wilk's test for normality

D = 0.038

W = 0.760

Critical W (P = 0.05) (n = 30) = 0.927
Critical W (P = 0.01) (n = 30) = 0.900

Data FAIL normality test. Try another transformation.

Warning - The first three homogeneity tests are sensitive to non-normal data and should not be performed.

60192343 FT SMITH FATHEAD SURVIVAL
File: 6192343A Transform: ARC SINE(SQUARE ROOT(Y))

Hartley's test for homogeneity of variance
Bartlett's test for homogeneity of variance

These two tests can not be performed because at least one group has zero variance.

Data FAIL to meet homogeneity of variance assumption.
Additional transformations are useless.

60192343 FT SMITH FATHEAD SURVIVAL
File: 6192343A Transform: ARC SINE(SQUARE ROOT(Y))

STEEL'S MANY-ONE RANK TEST - Ho:Control<Treatment

GROUP	IDENTIFICATION	TRANSFORMED MEAN	RANK SUM	CRIT. VALUE	df	SIG
1	UPSTREAM	1.084				
2	3%	1.107	30.00	16.00	5.00	
3	4%	1.084	27.50	16.00	5.00	
4	5%	1.061	25.00	16.00	5.00	
5	7%	1.107	30.00	16.00	5.00	
6	9%	1.107	30.00	16.00	5.00	

Critical values use k = 5, are 1 tailed, and alpha = 0.05

60192343 FT SMITH FATHEAD GROWTH
File: 6192343B Transform: NO TRANSFORMATION

Shapiro - Wilk's test for normality

D = 0.020

W = 0.962

Critical W (P = 0.05) (n = 30) = 0.927
Critical W (P = 0.01) (n = 30) = 0.900

Data PASS normality test at P=0.01 level. Continue analysis.

60192343 FT SMITH FATHEAD GROWTH
File: 6192343B Transform: NO TRANSFORMATION

Bartlett's test for homogeneity of variance
Calculated B1 statistic = 2.67

Table Chi-square value = 15.09 (alpha = 0.01, df = 5)
Table Chi-square value = 11.07 (alpha = 0.05, df = 5)

Data PASS B1 homogeneity test at 0.01 level. Continue analysis.

60192343 FT SMITH FATHEAD GROWTH
File: 6192343B Transform: NO TRANSFORMATION

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 1 of 2

GRP	IDENTIFICATION	N	MIN	MAX	MEAN
1	UPSTREAM	5	0.339	0.408	0.386
2	3%	5	0.364	0.414	0.391
3	4%	5	0.315	0.408	0.366
4	5%	5	0.344	0.401	0.377
5	7%	5	0.346	0.440	0.391
6	9%	5	0.353	0.408	0.382

60192343 FT SMITH FATHEAD GROWTH
File: 6192343B Transform: NO TRANSFORMATION

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 2 of 2

GRP	IDENTIFICATION	VARIANCE	SD	SEM	C.V. %
1	UPSTREAM	0.001	0.028	0.013	7.38
2	3%	0.000	0.019	0.008	4.77
3	4%	0.001	0.036	0.016	9.79
4	5%	0.001	0.024	0.011	6.43
5	7%	0.002	0.039	0.017	9.93
6	9%	0.001	0.024	0.011	6.26

60192343 FT SMITH FATHEAD GROWTH
File: 6192343B Transform: NO TRANSFORMATION

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	0.002	0.000	0.564
Within (Error)	24	0.020	0.001	
Total	29	0.023		

Critical F value = 2.62 (0.05,5,24)
Since F < Critical F FAIL TO REJECT Ho: All equal

60192343 FT SMITH FATHEAD GROWTH
File: 6192343B Transform: NO TRANSFORMATION

DUNNETT'S TEST - TABLE 1 OF 2 Ho:Control<Treatment

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	T STAT	SIG
1	UPSTREAM	0.386	0.386		
2	3%	0.391	0.391	-0.293	
3	4%	0.366	0.366	1.084	
4	5%	0.377	0.377	0.488	
5	7%	0.391	0.391	-0.314	
6	9%	0.382	0.382	0.173	

Dunnett table value = 2.36 (1 Tailed Value, P=0.05, df=24,5)

60192343 FT SMITH FATHEAD GROWTH
File: 6192343B Transform: NO TRANSFORMATION

DUNNETT'S TEST - TABLE 2 OF 2 Ho:Control<Treatment

GROUP	IDENTIFICATION	NUM OF REPS	Minimum Sig Diff (IN ORIG. UNITS)	% of CONTROL	DIFFERENCE FROM CONTROL
1	UPSTREAM	5			
2	3%	5	0.044	11.3	-0.005
3	4%	5	0.044	11.3	0.020
4	5%	5	0.044	11.3	0.009
5	7%	5	0.044	11.3	-0.006
6	9%	5	0.044	11.3	0.003

FISHER'S EXACT TEST

IDENTIFICATION	NUMBER OF ALIVE	DEAD	TOTAL ANIMALS
CONTROL	10	0	10
3%	10	0	10
TOTAL	20	0	20

CRITICAL FISHER'S VALUE (10,10,10) (p=0.05) IS 6. b VALUE IS 10.
Since b is greater than 6 there is no significant difference between CONTROL and TREATMENT at the 0.05 level.

FISHER'S EXACT TEST

IDENTIFICATION	NUMBER OF ALIVE	DEAD	TOTAL ANIMALS
CONTROL	10	0	10
4%	10	0	10
TOTAL	20	0	20

CRITICAL FISHER'S VALUE (10,10,10) (p=0.05) IS 6. b VALUE IS 10.
Since b is greater than 6 there is no significant difference between CONTROL and TREATMENT at the 0.05 level.

FISHER'S EXACT TEST

IDENTIFICATION	NUMBER OF ALIVE	DEAD	TOTAL ANIMALS
CONTROL	10	0	10
5%	10	0	10

TOTAL	20	0	20

CRITICAL FISHER'S VALUE (10,10,10) (p=0.05) IS 6. b VALUE IS 10.
Since b is greater than 6 there is no significant difference between CONTROL and TREATMENT at the 0.05 level.

FISHER'S EXACT TEST

	NUMBER OF		
IDENTIFICATION	ALIVE	DEAD	TOTAL ANIMALS
CONTROL	10	0	10
7%	10	0	10
TOTAL	20	0	20

CRITICAL FISHER'S VALUE (10,10,10) (p=0.05) IS 6. b VALUE IS 10.
Since b is greater than 6 there is no significant difference between CONTROL and TREATMENT at the 0.05 level.

FISHER'S EXACT TEST

	NUMBER OF		
IDENTIFICATION	ALIVE	DEAD	TOTAL ANIMALS
CONTROL	10	0	10
9%	10	0	10
TOTAL	20	0	20

CRITICAL FISHER'S VALUE (10,10,10) (p=0.05) IS 6. b VALUE IS 10.
Since b is greater than 6 there is no significant difference between CONTROL and TREATMENT at the 0.05 level.

SUMMARY OF FISHER'S EXACT TESTS

	NUMBER	NUMBER	SIG

GROUP	IDENTIFICATION	EXPOSED	DEAD	(P=.05)
	CONTROL	10	0	
1	3%	10	0	
2	4%	10	0	
3	5%	10	0	
4	7%	10	0	
5	9%	10	0	

60192343 FT SMITH CERIODAPHNIA DUBIA REPRODU
File: 6192343E Transform: NO TRANSFORMATION

Chi-square test for normality: actual and expected frequencies

INTERVAL	<-1.5	-1.5 to <-0.5	-0.5 to 0.5	>0.5 to 1.5	>1.5
EXPECTED	4.020	14.520	22.920	14.520	4.020
OBSERVED	6	11	21	21	1

Calculated Chi-Square goodness of fit test statistic = 7.1501
Table Chi-Square value (alpha = 0.01) = 13.277

Data PASS normality test. Continue analysis.

60192343 FT SMITH CERIODAPHNIA DUBIA REPRODU
File: 6192343E Transform: NO TRANSFORMATION

Bartlett's test for homogeneity of variance
Calculated B1 statistic = 1.08

Table Chi-square value = 15.09 (alpha = 0.01, df = 5)
Table Chi-square value = 11.07 (alpha = 0.05, df = 5)

Data PASS B1 homogeneity test at 0.01 level. Continue analysis.

60192343 FT SMITH CERIODAPHNIA DUBIA REPRODU
File: 6192343E Transform: NO TRANSFORMATION

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 1 of 2

GRP	IDENTIFICATION	N	MIN	MAX	MEAN
1	UPSTREAM	10	16.000	24.000	20.600
2	3%	10	16.000	24.000	20.700
3	4%	10	15.000	25.000	21.100
4	5%	10	16.000	26.000	20.900
5	7%	10	14.000	25.000	20.500
6	9%	10	15.000	25.000	20.900

60192343 FT SMITH CERIODAPHNIA DUBIA REPRODU
File: 6192343E Transform: NO TRANSFORMATION

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 2 of 2

GRP	IDENTIFICATION	VARIANCE	SD	SEM	C.V. %
1	UPSTREAM	6.933	2.633	0.833	12.78
2	3%	7.567	2.751	0.870	13.29
3	4%	11.211	3.348	1.059	15.87
4	5%	9.878	3.143	0.994	15.04
5	7%	11.389	3.375	1.067	16.46
6	9%	11.878	3.446	1.090	16.49

60192343 FT SMITH CERIODAPHNIA DUBIA REPRODU
File: 6192343E Transform: NO TRANSFORMATION

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	2.483	0.497	0.051
Within (Error)	54	529.700	9.809	
Total	59	532.183		

Critical F value = 2.45 (0.05,5,40)
Since F < Critical F FAIL TO REJECT Ho: All equal

60192343 FT SMITH CERIODAPHNIA DUBIA REPRODU
File: C:\TOXSTAT\6192343E. Transform: NO TRANSFORMATION

DUNNETT'S TEST - TABLE 1 OF 2 Ho:Control<Treatment

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	T STAT	SIG
1	UPSTREAM	20.600	20.600		
2	3%	20.700	20.700	-0.071	
3	4%	21.100	21.100	-0.357	
4	5%	20.900	20.900	-0.214	
5	7%	20.500	20.500	0.071	
6	9%	20.900	20.900	-0.214	

Dunnett table value = 2.31 (1 Tailed Value, P=0.05, df=40,5)

60192343 FT SMITH CERIODAPHNIA DUBIA REPRODU
File: C:\TOXSTAT\6192343E. Transform: NO TRANSFORMATION

DUNNETT'S TEST - TABLE 2 OF 2 Ho:Control<Treatment

GROUP	IDENTIFICATION	NUM OF REPS	Minimum Sig Diff (IN ORIG. UNITS)	% of CONTROL	DIFFERENCE FROM CONTROL
1	UPSTREAM	10			
2	3%	10	3.236	15.7	-0.100
3	4%	10	3.236	15.7	-0.500
4	5%	10	3.236	15.7	-0.300
5	7%	10	3.236	15.7	0.100
6	9%	10	3.236	15.7	-0.300

Conc. ID		1	2	3	4	5	6
Conc. Tested		0	3	4	5	7	9
Response	1	.400	.364	.346	.399	.421	.404
Response	2	.408	.384	.380	.344	.440	.408
Response	3	.403	.393	.379	.376	.346	.382
Response	4	.378	.414	.315	.363	.365	.353
Response	5	.339	.400	.408	.401	.385	.365

*** Inhibition Concentration Percentage Estimate ***
Toxicant/Effluent: Ft Smith
Test Start Date: 4/21/15 Test Ending Date: 4/28/15
Test Species: Fathead
Test Duration: 7 Day
DATA FILE:

Conc. ID	Number Replicates	Concentration	Response Means	Std. Dev.	Pooled Response Means
1	5	0.000	0.386	0.028	0.388
2	5	3.000	0.391	0.019	0.388
3	5	4.000	0.366	0.036	0.379
4	5	5.000	0.377	0.024	0.379
5	5	7.000	0.391	0.039	0.379
6	5	9.000	0.382	0.024	0.379

*** No Linear Interpolation Estimate can be calculated from the input data since none of the (possibly pooled) group response means were less than 75% of the control response mean.

Conc. ID	1	2	3	4	5	6
Conc. Tested	0	3	4	5	7	9
Response 1	20	22	24	20	22	20
Response 2	22	18	25	26	17	17
Response 3	20	23	18	16	19	23
Response 4	23	20	17	21	22	25
Response 5	20	18	22	20	24	17
Response 6	16	22	15	24	19	23
Response 7	18	20	21	22	14	15
Response 8	24	24	22	18	25	22
Response 9	19	24	24	18	20	23
Response 10	24	16	23	24	23	24

*** Inhibition Concentration Percentage Estimate ***
Toxicant/Effluent: Ft Smith
Test Start Date: 4/21/15 Test Ending Date: 4/28/15
Test Species: Dubia
Test Duration: 7 Day
DATA FILE:

Conc. ID	Number Replicates	Concentration	Response Means	Std. Dev.	Pooled Response Means
1	10	0.000	20.600	2.633	20.825
2	10	3.000	20.700	2.751	20.825
3	10	4.000	21.100	3.348	20.825
4	10	5.000	20.900	3.143	20.825
5	10	7.000	20.500	3.375	20.700
6	10	9.000	20.900	3.446	20.700

*** No Linear Interpolation Estimate can be calculated from the input data since none of the (possibly pooled) group response means were less than 75% of the control response mean.

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
Phone: 913.599.5665
Fax: 913.599.1759

APPENDIX B
CHAIN OF CUSTODY FORMS

Pace Analytical
www.pacelabs.com

Page: 1 of 1

1858215

Section A Required Client Information:

Company: City of Fort Smith
Address: 3900 Kelley Hwy
Ft. Smith, AR 72904
Email To:
Phone: 479-784-2337 Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Lance McAvoy
Copy To:
Purchase Order No.:
Project Name: Massard Biomonitoring
Project Number:

Section C Invoice Information:

Attention: Lance McAvoy
Company Name: City of Fort Smith
Address: 2500 Kelley Hwy, Ft. Smith, AR 72904
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: AR

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Chronic Minnow	Chronic Ceriodaphnia	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	Massard Effluent	WW	C	4/9/15	0800	4/20/15	0800										X		X	X		16Cub -001
2	Arkansas River	WT	G			4/20/15	0900										X		X	X		26Cub -002
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

60192343

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Free Cl_2 = 0.02mg/L		4/20/15	12:00	[signature]	4/21/15	1400	2.8	Y	Y	Y
Total Cl_2 = 0.01mg/L										
Arkansas River FCl_2 = 0.04mg/L										
Arkansas River TCl_2 = 0.04mg/L										

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Rachel Sharp
SIGNATURE of SAMPLER: Rachel Sharp
DATE Signed (MM/DD/YY): 04/20/15

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days. RS 4/20/15

F-ALL-Q-020rev.07, 15-May-2007

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

1858217

Section A Required Client Information:

Company: City of Fort Smith
Address: 3900 Kelley Hwy
Fort Smith, AR 72904
Email To:
Phone: 479-784-2337 Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Lance McAvoy
Copy To:
Purchase Order No.:
Project Name: Massard Biomonitoring
Project Number:

Section C Invoice Information:

Attention: Lance McAvoy
Company Name: City of Fort Smith
Address: 3900 Kelley Hwy, Ft Smith, AR
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: AR

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE)

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other: Ice	Analysis Test Y/N	Cyprinella Minnow	Chronic Ceriodaphnia	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Y/N	N	N		
1	Massard Effluent	WW	C	4/21/15	0800	4/22/15	0800		1								X		X	X		6Cub -001
2	Arkansas River	WT	G	—	—	4/22/15	0900		2								X		X	X		6Cub -002
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Effluent FCl_2 = 0.01 mg/L	Rachel L. Sharp / City of Fort Smith	4/22/15	0950	[signature]	4/23/15	1440	2.6	Y	Y	Y
TCl_2 = 0.01 mg/L										
River FCl_2 = 0.05 mg/L										
TCl_2 = 0.01 mg/L										

SAMPLER NAME AND SIGNATURE			Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	Rachel L. Sharp					
SIGNATURE of SAMPLER:	Rachel L. Sharp	DATE Signed (MM/DD/YY): 04/22/15				

Page 58 of 70

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

RLS 04/22/15

F-ALL-Q-020rev.07, 15-May-2007

Pace Analytical® www.pacelabs.com

Sample Condition Upon Receipt

Client Name: Ft Smith

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☒ Other ☐

Thermometer Used: T-111

Cooler Temperature: 2.6

Type of Ice: (Wet) Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Temperature should be above freezing to 6°C

Optional
Proj Due Date:
Proj Name:

Date and initials of person examining contents: MB 4/23/15 1544

Chain of Custody present:	☒Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☒Yes ☐No ☐N/A	2.
Chain of Custody relinquished:	☒Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	☒Yes ☐No ☐N/A	4.
Samples arrived within holding time:	☒Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	☒Yes ☐No ☐N/A	6.
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	7.
Sufficient volume:	☒Yes ☐No ☐N/A	8.
Correct containers used:	☒Yes ☐No ☐N/A	
Pace containers used:	☐Yes ☐No ☐N/A	9.
Containers intact:	☒Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☒N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	12.
Sample labels match COC:	☒Yes ☐No ☐N/A	
Includes date/time/ID/analyses Matrix: WT		13.
All containers needing preservation have been checked.	☐Yes ☐No ☒N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☒N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐Yes ☒No	Initial when completed / Lot # of added preservative
Trip Blank present:	☐Yes ☐No ☒N/A	
Pace Trip Blank lot # (if purchased):		15.
Headspace in VOA vials (>6mm):	☐Yes ☐No ☒N/A	
		16.
Project sampled in USDA Regulated Area:	☐Yes ☐No ☒N/A	17. List State:

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review:

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

1857546

Section A Required Client Information:

Company: City of Fort Smith
Address: 3900 Kelley Hwy, Fort Smith, AR 72904
Email To:
Phone: 479-784-2337 Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Lance McAvoy
Copy To:
Purchase Order No.:
Project Name: Massard Biomonitoring
Project Number:

Section C Invoice Information:

Attention: Lance McAvoy
Company Name: City of Fort Smith
Address: 3900 Kelley Hwy, Ft. Smith, AR
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: AR

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other: Ice	Requested Analysis Filtered (Y/N) Y/N	Analysis Test: Chronic Mimicry	Chronic Ceriodaphnia	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		N	N			
1	Massard Effluent	WW	C	4/23/15	0800	4/24/15	0800		1								X	X	X			60
2	Arkansas River Water	WT	G	—	—	4/24/15	0960		2								X					2
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Effluent F Cl_2 = 0.02mg/L	Rachel L. Sharp / City of Ft. Smith	4/24/15	1030	[signature]	4/25/15	0800	2.0	Y	Y	Y
T Cl_2 = 0.01mg/L										
River F Cl_2 = 0.05mg/L										
T Cl_2 = 0.04mg/L										

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Rachel L. Sharp

SIGNATURE of SAMPLER: Rachel L. Sharp DATE Signed (MM/DD/YY): 04/24/15

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days. RLS 04/24/15

ORIGINAL

Pace Analytical® www.pacelabs.com

Sample Condition Upon Receipt

Client Name: Ft Smith

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ Other ☐

Tracking #:

Pace Shipping Label Used? Yes ☐ No ☒

Optional
Proj Due Date:
Proj Name:

Custody Seal on Cooler/Box Present: Yes ☐ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☒ Other ☐

Thermometer Used: T-243

Cooler Temperature: 3.0

Type of Ice: (Wet) Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Temperature should be above freezing to 6°C

Date and initials of person examining contents: MB 4/28/15 0800

Chain of Custody present:	☒Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☒Yes ☐No ☐N/A	2.
Chain of Custody relinquished:	☒Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	☒Yes ☐No ☐N/A	4.
Samples arrived within holding time:	☒Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	☒Yes ☐No ☐N/A	6.
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	7.
Sufficient volume:	☒Yes ☐No ☐N/A	8.
Correct containers used:	☒Yes ☐No ☐N/A	
Pace containers used:	☒Yes ☐No ☐N/A	9.
Containers intact:	☒Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☒N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	12.
Sample labels match COC:	☒Yes ☐No ☐N/A	
Includes date/time/ID/analyses Matrix: WT		13.
All containers needing preservation have been checked.	☐Yes ☐No ☒N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☒N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐Yes ☒No	Initial when completed / Lot # of added preservative
Trip Blank present:	☐Yes ☐No ☒N/A	
Pace Trip Blank lot # (if purchased):		15.
Headspace in VOA vials (>6mm):	☐Yes ☐No ☒N/A	
		16.
Project sampled in USDA Regulated Area:	☐Yes ☐No ☒N/A	17. List State:

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
Phone: 913.599.5665
Fax: 913.599.1759

APPENDIX C

REFERENCE TOXICANTS SUMMARY

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
Phone: 913.599.5665
Fax: 913.599.1759

The absence of significant control mortality during this test indicated the health of the organisms and indicated that any significant mortality in the test concentrations was not due to contaminants or variations in testing conditions.

Reference toxicity testing is routinely performed by staff members in our biomonitoring - bioassay laboratory.

Start: 4/9/15 10:45 End: 4/16/15 11:00

Reference Toxicant (NaCl) Pimephales promelas

10 g/l	40	6	0	0
8 g/l	40	31	24	4
6 g/l	40	38	33	24
4 g/l	40	40	40	39
2 g/l	40	40	40	40

IC25 (5.19 g/l Sodium Chloride)

Survival NOEC: 4.0 g/l

Reference Toxicant (NaCl) Ceriodaphnia Dubia

Concentration of Toxicant	Avg. # of Live Organisms/replicate			
	0 hrs	24 hrs	48 hrs	7 days
2.5 g/l	10	5	0	0
2.0 g/l	10	10	9	2
1.5 g/l	10	10	10	10
1.0 g/l	10	10	10	10
0.5 g/l	10	10	10	10

IC25 (1.16 g/l Sodium Chloride)

Survival NOEC: 1.5 g/l

Submitted By: Timothy Harrell, Technical Director

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
Phone: 913.599.5665
Fax: 913.599.1759

APPENDIX D
STATE AGENCY FORMS

Biomonitoring Form
Chronic Toxicity Summary Form
Pimephales promelas
Chemical Parameters Chart

Permittee: City of Fort Smith
NPDES No.: AR 0021750
Contact: Lance McAvoy
Analyst: Tim Harrell
Mike Bollin

Sample No. 1 Collected: Date: 4/20/2015 **Time:** 8:00
Sample No. 2 Collected: Date: 4/22/2015 **Time:** 8:00
Sample No. 3 Collected: Date: 4/24/2015 **Time:** 8:00
Test Begin: Date: 4/21/2015 **Time:** 14:30
Test End: Date: 4/28/2015 **Time:** 14:00

Dilution: 0 Day:	1	2	3	4	5	6	7	Comments
Temp (C)	25	25.2	25.1	25.2	25.2	24.9	25.1	
DO Initial	7.7	8.1	8	8.4	8.4	8.4	8.2	
DO Final	7.3	7.2	7.1	7	7.3	7	6.9	
pH Initial	7.84	7.58	7.79	7.48	7.83	7.89	7.9	
pH Final	7.62	7.95	7.93	7.96	7.95	7.95	7.98	
Alkalinity	80							
Hardness	96							
Conductivity	361							
Chlorine	<.1						<.1	

Dilution: 5 Day:	1	2	3	4	5	6	7	Comments
Temp (C)	25	25.2	25.1	25.2	25.2	24.9	25.1	
DO Initial		8.1	8	8.4	8.4	8.4	8.1	
DO Final	7.3	7.2	7.1	7	7.3	7	6.9	
pH Initial		7.57	7.74	7.49	7.85	7.9	7.91	
pH Final	7.84	7.97	7.94	7.95	7.96	7.94	7.97	
Alkalinity								
Hardness								
Conductivity								
Chlorine								

Dilution: 3 Day:	1	2	3	4	5	6	7	Comments
Temp (C)	25	25.2	25.1	25.2	25.2	24.9	25.1	
DO Initial		8.1	8	8.4	8.4	8.4	8.2	
DO Final	7.3	7.2	7.1	7	7.3	7	6.9	
pH Initial		7.58	7.77	7.48	7.83	7.89	7.9	
pH Final	7.84	7.96	7.93	7.96	7.95	7.95	7.98	
Alkalinity								
Hardness								
Conductivity								
Chlorine								

Dilution: 7 Day:	1	2	3	4	5	6	7	Comments
Temp (C)	25	25.2	25.1	25.2	25.2	24.9	25.1	
DO Initial		8.2	8	8.3	8.4	8.4	8.1	
DO Final	7.3	7.2	7.1	7	7.3	7	6.8	
pH Initial		7.56	7.72	7.5	7.85	7.9	7.92	
pH Final	7.83	7.98	7.94	7.94	7.97	7.93	7.95	
Alkalinity								
Hardness								
Conductivity								
Chlorine								

Dilution: 4 Day:	1	2	3	4	5	6	7	Comments
Temp (C)	25	25.2	25.1	25.2	25.2	24.9	25.1	
DO Initial		8.1	8	8.4	8.4	8.4	8.2	
DO Final	7.3	7.2	7.1	7	7.3	7	6.9	
pH Initial		7.58	7.75	7.49	7.83	7.89	7.91	
pH Final	7.84	7.97	7.93	7.96	7.95	7.94	7.97	
Alkalinity								
Hardness								
Conductivity								
Chlorine								

Dilution: 9 Day:	1	2	3	4	5	6	7	Comments
Temp (C)	25	25.2	25.1	25.2	25.2	24.9	25.1	Init. 100%
DO Initial		8.2	8	8.3	8.4	8.4	8.1	
DO Final	7.3	7.2	7.1	7	7.3	7	6.8	
pH Initial		7.55	7.71	7.52	7.85	7.91	7.93	
pH Final	7.83	8	7.94	7.93	7.97	7.92	7.95	
Alkalinity								74
Hardness								108
Conductivity								295
Chlorine							<.1	<.1

Summary Reporting Forms Chronic Biomonitoring
Fathead Minnow Larvae Growth and Survival
(Pimephales promelas)

Permittee: City of Fort Smith **NPDES No.:** AR 0021750

		Time:	Date:		Time:	Date:
Composite 1 Collected	**From**	8:00	4/19/2015	**To**	8:00	4/20/2015
Composite 2 Collected	**From**	8:00	4/21/2015	**To**	8:00	4/22/2015
Composite 3 Collected	**From**	8:00	4/23/2015	**To**	8:00	4/24/2015

Test initiated: am/pm 14:30 date 4/21/2015
Test terminated: am/pm 14:00 date 4/28/2015

Dilution water used: Receiving X Reconstituted

Data Table for Survival

Effluent Conc.%	Percent Survival in Replicate Chambers					Mean Percent Survival			CV%*
	A	B	C	D	E	24h	48h	7 days	
0%	100	100	100	100	87.5	100	100	97.5	4.79
3%	100	100	100	100	100	100	100	100	0
4%	100	100	100	87.5	100	100	100	97.5	4.79
5%	100	87.5	100	87.5	100	100	100	95	5.99
7%	100	100	100	100	100	100	100	100	0
9%	100	100	100	100	100	100	100	100	0

Data Table for Survival

Effluent Conc.%	Average Dry Weight in milligrams in Replicate Chambers					Mean Dry Weight mg	CV%*
	A	B	C	D	E		
0%	0.4	0.408	0.403	0.378	0.339	0.386	7.38
3%	0.364	0.384	0.393	0.414	0.4	0.391	4.77
4%	0.346	0.38	0.379	0.315	0.408	0.366	9.79
5%	0.399	0.344	0.376	0.363	0.401	0.377	6.43
7%	0.421	0.44	0.346	0.365	0.385	0.391	9.93
9%	0.404	0.408	0.382	0.353	0.365	0.382	6.26

*coefficient of variation = standard deviation x 100/mean.

Fathead Minnow Larvae Growth and Survival (cont)
(Pimephales promelas)

1. Dunnett's Procedure or Steels Many-One Rank Test as appropriate:

Is the mean survival at 7 days significantly different (p=.05) than the control survival for the % effluent corresponding to:

a) Low Flow or Critical Dilution	**(**	**7 %):**	**Yes:**	**No: X**
b) ½ Low Flow Dilution	**(**	**%):**	**Yes:**	**No:**

2. Dunnett's Procedure (or appropriate test):

Is the mean dry weight (growth) of the effluent at 7 days significantly different (p=0.05) than the control's dry weight for the % effluent corresponding to (significant non-lethal effects):

a) Low Flow or Critical Dilution	**(**	**7 %):**	**Yes:**	**No:** X
b) ½ Low Flow Dilution	**(**	**%):**	**Yes:**	**No:**

3. If you answered NO to 1. a) and 2. a) enter (0) otherwise enter (1): 0

4. If you answered NO to 1. b) and 2. b) enter (0) otherwise enter (1):

5. Enter response to item 3 on DMR Form, parameter #TEP6C.

6. Enter response to item 4 on DMR Form, parameter #TFP6C.

7. Enter percent effluent corresponding to each NOEC below and circle lowest number:

a) NOEC survival:	**9 % effluent**
b) NOEC reproduction:	**9 % effluent**

Biomonitoring Form
Chronic Toxicity Summary Form
Ceriodaphnia dubia
Chemical Parameters Chart

Permittee: City of Fort Smith
NPDES No.: AR 0021750
Contact: Lance McAvoy
Analyst: Tim Harrell
Mike Bollin

Sample No. 1 Collected: Date: 4/20/2015 **Time:** 8:00
Sample No. 2 Collected: Date: 4/22/2015 **Time:** 8:00
Sample No. 3 Collected: Date: 4/24/2015 **Time:** 8:00
Test Begin: Date: 4/21/2015 **Time:** 14:30
Test End: Date: 4/28/2015 **Time:** 14:00

Dilution: 0 Day:	1	2	3	4	5	6	7	Comments
Temp (C)	25	25.2	25.1	25.2	25.2	24.9	25.1	
DO Initial	7.7	8.1	8	8.4	8.4	8.4	8.2	
DO Final	7.3	7.2	7.1	7	7.3	7	6.9	
pH Initial	7.84	7.58	7.79	7.48	7.83	7.89	7.9	
pH Final	7.62	7.95	7.93	7.96	7.95	7.95	7.98	
Alkalinity	80							
Hardness	96							
Conductivity	361							
Chlorine	<.1						<.1	

Dilution: 5 Day:	1	2	3	4	5	6	7	Comments
Temp (C)	25	25.2	25.1	25.2	25.2	24.9	25.1	
DO Initial		8.1	8	8.4	8.4	8.4	8.1	
DO Final	7.3	7.2	7.1	7	7.3	7	6.9	
pH Initial		7.57	7.74	7.49	7.85	7.9	7.91	
pH Final	7.84	7.97	7.94	7.95	7.96	7.94	7.97	
Alkalinity								
Hardness								
Conductivity								
Chlorine								

Dilution: 3 Day:	1	2	3	4	5	6	7	Comments
Temp (C)	25	25.2	25.1	25.2	25.2	24.9	25.1	
DO Initial		8.1	8	8.4	8.4	8.4	8.2	
DO Final	7.3	7.2	7.1	7	7.3	7	6.9	
pH Initial		7.58	7.77	7.48	7.83	7.89	7.9	
pH Final	7.84	7.96	7.93	7.96	7.95	7.95	7.98	
Alkalinity								
Hardness								
Conductivit								
Chlorine								

Dilution: 7 Day:	1	2	3	4	5	6	7	Comments
Temp (C)	25	25.2	25.1	25.2	25.2	24.9	25.1	
DO Initial		8.2	8	8.3	8.4	8.4	8.1	
DO Final	7.3	7.2	7.1	7	7.3	7	6.8	
pH Initial		7.56	7.72	7.5	7.85	7.9	7.92	
pH Final	7.83	7.98	7.94	7.94	7.97	7.93	7.95	
Alkalinity								
Hardness								
Conductivit								
Chlorine								

Dilution: 4 Day:	1	2	3	4	5	6	7	Comments
Temp (C)	25	25.2	25.1	25.2	25.2	24.9	25.1	
DO Initial		8.1	8	8.4	8.4	8.4	8.2	
DO Final	7.3	7.2	7.1	7	7.3	7	6.9	
pH Initial		7.58	7.75	7.49	7.83	7.89	7.91	
pH Final	7.84	7.97	7.93	7.96	7.95	7.94	7.97	
Alkalinity								
Hardness								
Conductivit								
Chlorine								

Dilution: 9 Day:	1	2	3	4	5	6	7	Comments
Temp (C)	25	25.2	25.1	25.2	25.2	24.9	25.1	Init. 100%
DO Initial		8.2	8	8.3	8.4	8.4	8.1	
DO Final	7.3	7.2	7.1	7	7.3	7	6.8	
pH Initial		7.55	7.71	7.52	7.85	7.91	7.93	
pH Final	7.83	8	7.94	7.93	7.97	7.92	7.95	
Alkalinity								74
Hardness								108
Conductivit								295
Chlorine							<1	<1

Summary Reporting Forms
Chronic Biomonitoring

Ceriodaphnia dubia Survival and Reproduction

Permittee: City of Fort Smith **NPDES No.:** AR 0021750

		Time:	Date:		Time:	Date:
Composite 1 Collected	**From**	8:00	4/19/2015	**To**	8:00	4/20/2015
Composite 2 Collected	**From**	8:00	4/21/2015	**To**	8:00	4/22/2015
Composite 3 Collected	**From**	8:00	4/23/2015	**To**	8:00	4/24/2015

Test initiated: **am/pm** 14:30 **date** 4/21/2015
Test terminated: **am/pm** 14:00 **date** 4/28/2015

Dilution water used: **Receiving** X **Reconstituted**

Percent Survival

Time of Reading	Percent Effluent					
	Up 0	3	4	5	7	9
24h	100	100	100	100	100	100
48h	100	100	100	100	100	100
End of test	100	100	100	100	100	100

Number of Young Produced per Female @ End of Test

Rep	UP 0	3	4	5	7	9
A	20	22	24	20	22	20
B	22	18	25	26	17	17
C	20	23	18	16	19	23
D	23	20	17	21	22	25
E	20	18	22	20	24	17
F	16	22	15	24	19	23
G	18	20	21	22	14	15
H	24	24	22	18	25	22
I	19	24	24	18	20	23
J	24	16	23	24	23	24
Mean	20.6	20.7	21.1	20.9	20.5	20.9
CV%*	12.78	13.29	15.87	15.04	16.46	16.49

***coefficient of variation = standard deviation x 100/mean.**

Ceriodaphnia dubia
Survival and Reproduction (cont)

1. Fisher's Exact Test:

Is the mean survival at the end of the test significantly different (p=.05) than the control survival for the % effluent corresponding to (lethality):

a) Low Flow or Critical Dilution	**(**	**7 %):**	**Yes:**	**No: X**
b) ½ Low Flow Dilution	**(**	**%):**	**Yes:**	**No:**

2. Dunnett's Procedure or Steel's Many-One Rank Test as appropriate:

Is the mean number of young produced per female significantly different (p=.05) than the control's number of young per female for the % effluent corresponding to (significant non-lethal effects):

a) Low Flow or Critical Dilution	**(**	**7 %):**	**Yes:**	**No: X**
b) ½ Low Flow Dilution	**(**	**%):**	**Yes:**	**No:**

3. If you answered NO to 1. a) and 2. a) enter (0) otherwise enter (1): 0

4. If you answered NO to 1. b) and 2. b) enter (0) otherwise enter (1):

5. Enter response to item 3 on DMR Form, parameter #TEP3B.

6. Enter response to item 4 on DMR Form, parameter #TFP3B.

7. Enter percent effluent corresponding to each NOEC below and circle lowest number:

a) NOEC survival: 9 **% effluent**
b) NOEC reproduction: 9 **% effluent**

From: Gray, Dannielle
To: McConnell, Melissa
Subject: FW: P Street/Massard DMR"s/Lab Data
Date: Monday, September 14, 2015 2:14:36 PM
Attachments: 20150819145602.pdf

Please attach to WID 18043 (email and attachment).

Dannielle Gray
ADEQ Water Inspector, District 4
(479) 424-0333

From: Floyd, Steve [mailto:floyd@FortSmithAR.gov]
Sent: Wednesday, August 19, 2015 3:18 PM
To: Gray, Dannielle
Subject: P Street/Massard DMR's/Lab Data

Dannielle,

Attached is the information requested. I will have Lance forward the WET results when he returns to the office.

Steve Floyd
Superintendent
Water/Wastewater Operations
3900 Kelley Hwy
Fort Smith, AR 72904
479-784-2331
sfloyd@FortSmithAR.gov

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

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

NAME: FORT SMITH, CITY OF - "P" STREET WWTP
ADDRESS: 3900 KELLEY HWY
FORT SMITH, AR 72904
FACILITY: FORT SMITH, CITY OF - "P" STREET WWTP
LOCATION: 13 NORTH "P" STREET
FORT SMITH, AR 72901

ATTN: STEVE PARKE, DIRECTOR

AR0033278	001-A
PERMIT NUMBER	**DISCHARGE NUMBER**

MONITORING PERIOD	
MM/DD/YYYY	**MM/DD/YYYY**
05/01/2014	05/31/2014

DMR Mailing ZIP CODE: 72904
MAJOR

001-MONTHLY-TRTD MUNICIPAL WASTEWATER
External Outfall

No Discharge ☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Oxygen, dissolved [DO]	SAMPLE MEASUREMENT	******	******	******	6.3	******	******		0	7/7	Grab
00300 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	2 INST MIN	******	******	mg/L		Daily	GRAB
pH	SAMPLE MEASUREMENT	******	******	******	6.5	******	7.4		0	5/7	Grab
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	6 MINIMUM	******	9 MAXIMUM	SU		Three Per Week	GRAB
Solids, total suspended	SAMPLE MEASUREMENT	420	******		******	5	6		0	7/7	Comp24
00530 1 0 Effluent Gross	PERMIT REQUIREMENT	3002 MO AVG	******	lb/d	******	30 MO AVG	45 7 DA AVG	mg/L		Daily	COMPOS
Nitrogen, ammonia total [as N]	SAMPLE MEASUREMENT	149	******		******	2	2.6		0	7/7	Comp24
00610 1 0 Effluent Gross	PERMIT REQUIREMENT	500 MO AVG	******	lb/d	******	5 MO AVG	7.5 7 DA AVG	mg/L		Daily	COMPOS
Nitrite + Nitrate total [as N]	SAMPLE MEASUREMENT	224	******		******	5.6	5.6		*	1 mo.	Comp24
00630 1 0 Effluent Gross	PERMIT REQUIREMENT	Req. Mon. MO AVG	******	lb/d	******	Req. Mon. MO AVG	Req. Mon. 7 DA AVG	mg/L		Monthly	COMPOS
Phosphorus, total [as P]	SAMPLE MEASUREMENT	18	******		******	0.45	0.45		*	1 mo.	Comp24
00665 1 0 Effluent Gross	PERMIT REQUIREMENT	Req. Mon. MO AVG	******	lb/d	******	Req. Mon. MO AVG	Req. Mon. 7 DA AVG	mg/L		Monthly	COMPOS
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT	9.6	22.9		******	******	******	******	*	Cont.	Record
50050 1 0 Effluent Gross	PERMIT REQUIREMENT	Req. Mon. MO AVG	Req. Mon. 7 DA AVG	MGD	******	******	******	******		Daily	TOTALZ

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE
~~Steve Parke, 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	479-784-2231		06-23-2014
TYPED OR PRINTED			AREA Code	NUMBER	MM/DD/YYYY

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

REPORT FLOW AS MONTHLY AVERAGE & DAILY MAXIMUM IN MILLION GALLONS PER DAY. SAMPLE AT THE END OF POST-AERATION BASIN. SEE PART II, #'s 6. (TRC), 8. (WET) & 9. DMR MUST BE SUBMITTED EVEN WHEN NO DISCHARGE OCCURS. SUBMIT A TABULAR OVERFLOW REPORT WITH THIS DMR EACH MONTH, SEE PART II, #5 (SSO). 66-01653

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

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

NAME: FORT SMITH, CITY OF - "P" STREET WWTP
ADDRESS: 3900 KELLEY HWY
FORT SMITH, AR 72904
FACILITY: FORT SMITH, CITY OF - "P" STREET WWTP
LOCATION: 13 NORTH "P" STREET
FORT SMITH, AR 72901

ATTN: STEVE PARKE, DIRECTOR

AR0033278	001-A
PERMIT NUMBER	**DISCHARGE NUMBER**

MONITORING PERIOD	
MM/DD/YYYY	**MM/DD/YYYY**
05/01/2014	05/31/2014

DMR Mailing ZIP CODE: 72904
MAJOR

001-MONTHLY-TRTD MUNICIPAL WASTEWATER
External Outfall

No Discharge ☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Chlorine, total residual	SAMPLE MEASUREMENT	******	******	******	******	******	0.07		0	7/7	Grab
50060 A 0 Disinfection, Process Complete	PERMIT REQUIREMENT	******	******	******	******	******	.1 INST MAX	mg/L		Daily	GRAB
Coliform, fecal general	SAMPLE MEASUREMENT	******	******	******	******	10	13		0	7/7	Grab
74055 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	200 MOAV GEO	400 7DAV GEO	#/100mL		Daily	GRAB
BOD, carbonaceous, 05 day, 20 C	SAMPLE MEASUREMENT	276	******		******	4	4		0	7/7	Comp24
80082 1 0 Effluent Gross	PERMIT REQUIREMENT	2502 MO AVG	******	lb/d	******	25 MO AVG	37.5 7 DA AVG	mg/L		Three Per Week	COMPOS

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE
Steve Parke, 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	479	784-2231	06-23-2014
TYPED OR PRINTED			AREA Code	NUMBER	MM/DD/YYYY

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

REPORT FLOW AS MONTHLY AVERAGE & DAILY MAXIMUM IN MILLION GALLONS PER DAY. SAMPLE AT THE END OF POST-AERATION BASIN. SEE PART II, #'s 6. (TRC), 8. (WET) & 9. DMR MUST BE SUBMITTED EVEN WHEN NO DISCHARGE OCCURS. SUBMIT A TABULAR OVERFLOW REPORT WITH THIS DMR EACH MONTH, SEE PART II, #5 (SSO). 66-01653

"P" Street Plant Data
May 2014

DAY	FLOW			BOD			CBOD				AMMONIA NITROGEN				D.O.	pH	TURB.	SUSPENDED SOLIDS								CHLORINE	FECAL COLIFORM		
	INF.		EFF.	INFLUENT			EFFLUENT				EFFLUENT				EFF.	EFF.	EFF.	INFLUENT		EFFLUENT						EFFLUENT	EFFLUENT		
	MGD		MGD	mg/L		ppd	mg/L		7D Avg.	ppd	mg/L		7D Avg	ppd	mg/L	S.U.	NTU	mg/L	ppd	mg/L		7D Avg.		ppd		mg/L	#/100ml		7D Avg.
1	7.526	^	5.845	110.53		6937.6	3.31			161.4	2.15			104.8	7.84	7.04	1.30	210.00	13181.0	5.00	<			243.7		0.01	9	<	
2	7.167	^	5.511	115.66		6913.3	3.01			138.3	2.70			124.1	8.01	7.05	2.00	88.75	5304.8	5.00	<			229.8		0.00	9	<	
3	6.541	^	5.035	127.58		6959.7	2.66		3.0	111.7	2.63		2.5	110.4	7.89	NDP	1.60	105.00	5728.0	5.00	<	5.0		210.0		0.00	9		11
4	6.332	^	4.760	146.00		7710.1	3.88			154.0	2.03			80.6	7.92	NDP	1.90	108.75	5743.0	5.00	<			198.5		0.01	9	<	
5	6.858	^	4.813	120.00		6863.5	3.01			120.8	3.00			120.4	7.85	7.07	2.00	72.50	4146.7	5.00	<			200.7		0.01	9	<	
6	7.182	^	4.970	155.20		9296.2	4.96	b		205.6	3.42			141.8	7.73	7.14	2.20	90.00	5390.8	5.00	<			207.2		0.00	9	<	
7	5.546	^	4.633	292.96	a,b	13550.5	4.96	b		191.7	3.02			116.7	7.77	7.44	2.00	248.89	11512.1	8.00				309.1		0.07	9	<	
8	12.186	^	11.976	200.00		20326.2	15.60			1558.1	3.75			374.5	7.76	7.01	4.00	180.00	18293.6	7.00				699.2		0.02	9	<	
9	11.517	^	11.212	94.56		9082.7	5.13	a		479.7	1.03			96.3	6.98	7.27	2.80	97.14	9330.5	5.00	<			467.5		0.02	18		
10	9.609	^	8.109	87.94		7047.4	5.10		6.1	344.9	2.18		2.6	147.4	7.13	NDP	2.00	106.25	8514.8	5.00	<	5.7		338.1		0.01	9	<	10
11	8.041	^	6.466	117.20		7859.7	2.04			110.0	1.67			90.1	7.04	NDP	1.50	83.75	5616.4	5.00	<			269.6		0.02	9	<	
12	12.546	^	11.506	156.00		16322.8	3.00			287.9	3.06			293.6	7.47	6.98	2.80	116.00	12137.5	5.00				479.8		0.03	9	<	
13	22.036	^	22.870	47.14		8663.4	2.92			556.9	1.53			291.8	7.32	6.79	4.50	63.00	11578.2	5.00				953.7		0.02	18		
14	21.685	^	22.181	49.94	b	9031.8	2.26	b		416.1	1.75			323.7	6.67	6.91	2.90	42.00	7595.8	5.00				924.9		0.04	9	<	
15	17.869	^	17.631	68.62		10226.2	2.00	<,a		294.1	1.28			188.2	8.48	6.86	1.70	72.00	10729.9	5.00	<			735.2		0.02	9	<	
16	15.281	^	14.606	36.00		4586.0	2.00	<,a		243.6	1.38			168.1	8.34	6.81	1.20	44.00	5607.5	5.00	<			609.1		0.03	9		
17	19.509	^	19.244	53.56	a	8714.5	2.52	a	2.4	404.4	1.71		1.8	274.4	6.28	NDP	2.30	60.00	9762.3	5.00	<	5.0		802.5		0.01	9	<	10
18	13.446	^	13.980	46.80	b	5248.1	2.00	<		233.2	1.07			124.8	8.17	NDP	1.70	62.00	6952.7	5.00	<			583.0		0.04	9	<	
19	12.403	^	10.878	76.24		7886.3	2.29			207.8	1.38			125.2	7.56	7.03	1.40	69.00	7137.4	5.00	<			453.6		0.01	9		
20	10.871	^	9.387	121.25		10993.0	2.09			163.6	1.66			130.0	7.29	6.46	1.70	116.25	10539.7	5.00	<			391.4		0.00	9	<	
21	9.026	^	7.568	121.00	b	9108.5	2.52			159.5	1.82			115.2	7.30	7.05	1.80	105.71	7957.5	5.00				316.4		0.06	9		
22	8.955	^	7.066	119.08		8893.5	2.00	<		117.9	1.48			87.2	7.41	6.82	3.90	128.00	9559.6	5.00	<			294.7		0.03	9	<	
23	8.417	^	7.066	119.50		8388.6	2.00	<		117.9	1.43			84.3	7.57	6.87	2.30	122.86	8624.5	5.00	<			294.7		0.01	9	<	
24	7.355	^	6.548	73.14		4486.5	2.00	<	2.1	109.2	1.34		1.5	73.2	7.59	NDP	1.20	61.11	3748.5	5.00	<	5.0		273.1		0.02	9	<	9
25	4.253	^	5.961	91.34		3239.5	2.50			124.3	1.17			58.2	7.37	NDP	1.70	65.00	2305.3	5.00	<			248.6		0.00	9	<	
26	10.934	^	9.238	105.54		9624.1	2.00	<		154.1	0.88			67.8	7.53	NDP	1.60	66.00	6018.5	5.00	<			385.2		0.02	27		
27	9.497	^	7.966	122.34		9689.9	4.22			280.4	2.25			149.5	7.27	6.86	2.70	88.33	6996.2	5.00	<			332.2		0.01	45		
28	9.031	^	7.164	114.40		8616.4	4.96			296.3	3.02			180.4	7.33	6.91	3.20	82.00	6176.1	5.00	<			296.7		0.01	9	<	
29	10.934	^	9.238	121.66		11094.1	3.46	a		266.6	1.60			123.3	7.46	6.96	1.80	125.00	11398.7	5.00	<			385.2		0.02	9	<	
30	9.449	^	7.546	135.42	a	10671.7	3.73	a		234.7	2.33			146.6	7.14	6.92	2.20	138.75	10934.1	5.00	<			314.7		0.00	9	<	
31	9.173	^	7.667	114.00		8721.3	4.85		3.7	310.1	1.77		1.9	113.2	7.29	NDP	2.00	114.44	8755.0	9.00		5.6		575.5		0.01	9	<	13
SUM	331.174		298.661	3460.6		276755.3	109.0		17.3	8556.8	61.5		10.2	4625.8	232.8	146.3	67.90	3132.5	257276.8	164.0		26.3		13025.6		0.56	351		53
AVG	10.683		9.634	111.6		8927.6	3.5		3.5	276.0	2.0		2.0	149.2	7.5	7.0	2.19	101.0	8299.3	5.3		5.3		420.2		0.02	10		11
MAX	22.036		22.870	293.0		20326.2	15.6		6.1	1558.1	3.8		2.6	374.5	8.5	7.4	4.50	248.9	18293.6	9.0		5.7		953.7		0.07	45		13
MIN	4.253		4.633	36.0		3239.5	2.0		2.1	109.2	0.9		1.5	58.2	6.3	6.5	1.20	42.0	2305.3	5.0		5.0		198.5		0.00	9		9

BOD % Removal: 97
TSS % Removal: 95

Notes:
a: Data questionable due to spike recovery failure
b: Data questionable due to excessive blank depletion
^: Data not originally on the chain of custody, supplied later by Mike Keith.
<: Dilution did not quantify, actual value less than value reported.
NDP: No Data Provided.

"P" Street WWTP Monthly Nitrogen Total Phosphorous Data

Sample Date	Inf. Flow, MGD	Eff. Flow, MGD	Nitrate+Nitrite as N EFFLUENT			Total Phosphorous as P EFFLUENT			CBOD Removal %
			mg/L	7D Avg.	ppd	mg/L	7D Avg.	ppd	
1/1/2014	7.175	6.091	3.93	3.93	199.6	1.00	1.00	50.8	
2/11/2014	8.63	7.422	5.77	5.77	357.2	1.20	1.20	74.3	
3/11/2014	8.126	6.333	3.48	3.48	183.8	1.25	1.25	66.0	
4/21/2014	8.286	6.518	4.95	4.95	269.1	0.95	0.95	51.6	
5/5/2014	6.858	4.813	5.58	5.58	224.0	0.45	0.45	18.1	97.1%

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

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

NAME: FORT SMITH, CITY OF - "P" STREET WWTP
ADDRESS: 3900 KELLEY HWY
FORT SMITH, AR 72904
FACILITY: FORT SMITH, CITY OF - "P" STREET WWTP
LOCATION: 13 NORTH "P" STREET
FORT SMITH, AR 72901

ATTN: STEVE PARKE, DIRECTOR

AR0033278	001-A
PERMIT NUMBER	**DISCHARGE NUMBER**

MONITORING PERIOD	
MM/DD/YYYY	**MM/DD/YYYY**
11/01/2014	11/30/2014

DMR Mailing ZIP CODE: 72904
MAJOR

001-MONTHLY-TRTD MUNICIPAL WASTEWATER
External Outfall

No Discharge ☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Oxygen, dissolved [DO]	SAMPLE MEASUREMENT	******	******	******	6.7	******	******		0	7/7	Grab
00300 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	2 INST MIN	******	******	mg/L		Daily	GRAB
BOD, 5-day, 20 deg. C	SAMPLE MEASUREMENT	367	******		******	7	10		0	7/7	Comp24
00310 1 0 Effluent Gross	PERMIT REQUIREMENT	3002 MO AVG	******	lb/d	******	30 MO AVG	45 7 DA AVG	mg/L		Three Per Week	COMPOS
pH	SAMPLE MEASUREMENT	******	******	******	6.7	******	7.0		0	5/7	Grab
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	6 MINIMUM	******	9 MAXIMUM	SU		Three Per Week	GRAB
Solids, total suspended	SAMPLE MEASUREMENT	327	******		******	6	8		0	7/7	Comp24
00530 1 0 Effluent Gross	PERMIT REQUIREMENT	3002 MO AVG	******	lb/d	******	30 MO AVG	45 7 DA AVG	mg/L		Daily	COMPOS
Nitrite + Nitrate total [as N]	SAMPLE MEASUREMENT	330	******		******	7.6	7.6		*	1 mo.	Comp24
00630 1 0 Effluent Gross	PERMIT REQUIREMENT	Req. Mon. MO AVG	******	lb/d	******	Req. Mon. MO AVG	Req. Mon. 7 DA AVG	mg/L		Monthly	COMPOS
Phosphorus, total [as P]	SAMPLE MEASUREMENT	67	******		******	1.6	1.6		*	1 Mo.	Comp24
00665 1 0 Effluent Gross	PERMIT REQUIREMENT	Req. Mon. MO AVG	******	lb/d	******	Req. Mon. MO AVG	Req. Mon. 7 DA AVG	mg/L		Monthly	COMPOS
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT	6.1	11.9		******	******	******	******	*	Cont.	Record
50050 1 0 Effluent Gross	PERMIT REQUIREMENT	Req. Mon. MO AVG	Req. Mon. 7 DA AVG	MGD	******	******	******	******		Daily	TOTALZ

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE
Steve Parke, 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	479-784-2231		12-16-2014
TYPED OR PRINTED			AREA Code	NUMBER	MM/DD/YYYY

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

REPORT FLOW AS MONTHLY AVERAGE & DAILY MAXIMUM IN MILLION GALLONS PER DAY. SAMPLE AT THE END OF POST-AERATION BASIN. SEE PART II, #'s 6. (TRC), 8. (WET) & 9. DMR MUST BE SUBMITTED EVEN WHEN NO DISCHARGE OCCURS. SUBMIT A TABULAR OVERFLOW REPORT WITH THIS DMR EACH MONTH, SEE PART II, #5 (SSO). 66-01653

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

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

NAME: FORT SMITH, CITY OF - "P" STREET WWTP
ADDRESS: 3900 KELLEY HWY
FORT SMITH, AR 72904
FACILITY: FORT SMITH, CITY OF - "P" STREET WWTP
LOCATION: 13 NORTH "P" STREET
FORT SMITH, AR 72901

ATTN: STEVE PARKE, DIRECTOR

AR0033278	001-A
PERMIT NUMBER	**DISCHARGE NUMBER**

MONITORING PERIOD	
MM/DD/YYYY	**MM/DD/YYYY**
11/01/2014	11/30/2014

DMR Mailing ZIP CODE: 72904
MAJOR

001-MONTHLY-TRTD MUNICIPAL WASTEWATER
External Outfall

No Discharge ☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Chlorine, total residual	SAMPLE MEASUREMENT	******	******	******	******	******	0.08		0	7/7	Grab
50060 A 0 Disinfection, Process Complete	PERMIT REQUIREMENT	******	******	******	******	******	.1 INST MAX	mg/L		Daily	GRAB
Coliform, fecal general	SAMPLE MEASUREMENT	******	******	******	******	10	12		0	7/7	Grab
74055 1 1 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	1000 MOAV GEO	2000 7DAV GEO	#/100mL		Daily	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE
Steve Parke, 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	479-784-2231		12-16-2014
TYPED OR PRINTED			AREA Code	NUMBER	MM/DD/YYYY

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

REPORT FLOW AS MONTHLY AVERAGE & DAILY MAXIMUM IN MILLION GALLONS PER DAY. SAMPLE AT THE END OF POST-AERATION BASIN. SEE PART II, #'s 6. (TRC), 8. (WET) & 9. DMR MUST BE SUBMITTED EVEN WHEN NO DISCHARGE OCCURS. SUBMIT A TABULAR OVERFLOW REPORT WITH THIS DMR EACH MONTH, SEE PART II, #5 (SSO). 66-01653

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

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

NAME: CITY OF FORT SMITH
ADDRESS: 3900 KELLEY HWY.
FORT SMITH, AR 72904
FACILITY: FORT SMITH, CITY OF-MASSARD
LOCATION: 1609 9TH STREET
BARLING, AR 72923

ATTN: STEVE PARKE, DIRECTOR

AR0021750	001-A
PERMIT NUMBER	**DISCHARGE NUMBER**

MONITORING PERIOD	
MM/DD/YYYY	**MM/DD/YYYY**
11/01/2014	11/30/2014

DMR Mailing ZIP CODE: 72904
MAJOR

TREATED MUNICIPAL WASTEWATER
External Outfall

No Discharge ☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Oxygen, dissolved [DO]	SAMPLE MEASUREMENT	******	******	******	4,4	******	******		0	5/7	Grab
00300 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	2 INST MIN	******	******	mg/L		Once Every Weekday	GRAB
BOD, 5-day, 20 deg. C	SAMPLE MEASUREMENT	453	******		******	9	13		0	7/7	Comp24
00310 1 0 Effluent Gross	PERMIT REQUIREMENT	2502 MO AVG	******	lb/d	******	30 MO AVG	45 7 DA AVG	mg/L		Once Every Weekday	COMP24
pH	SAMPLE MEASUREMENT	******	******	******	6.7	******	7.4		0	5/7	Grab
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	6 MINIMUM	******	9 MAXIMUM	SU		Once Every Weekday	GRAB
Solids, total suspended	SAMPLE MEASUREMENT	278	******		******	5	6		0	7/7	Comp24
00530 1 0 Effluent Gross	PERMIT REQUIREMENT	2502 MO AVG	******	lb/d	******	30 MO AVG	45 7 DA AVG	mg/L		Once Every Weekday	COMP24
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT	6.0	9.8		******	******	******	******	*	Cont.	Record
50050 1 0 Effluent Gross	PERMIT REQUIREMENT	Req. Mon. MO AVG	Req. Mon. DAILY MX	MGD	******	******	******	******		Daily	TOTALZ
BOD, percent removal [total]	SAMPLE MEASUREMENT	******	******	******	96	******	******		0	7/7	Comp24
50076 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	85 MO AV MN	******	******	%		Once Every Weekday	COMP24
Coliform, fecal general	SAMPLE MEASUREMENT	******	******	******	******	10	13		0	7/7	Grab
74055 1 1 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	1000 MOAV GEO	2000 7DAV GEO	#/100mL		Once Every Weekday	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE
Steve Parke, 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	479-784-2231		12-16-2014
TYPED OR PRINTED			AREA Code	NUMBER	MM/DD/YYYY

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

ONCE/WEEKDAY: MONDAY - FRIDAY. 66-01652

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

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

NAME: CITY OF FORT SMITH
ADDRESS: 3900 KELLEY HWY.
FORT SMITH, AR 72904
FACILITY: FORT SMITH, CITY OF-MASSARD
LOCATION: 1609 9TH STREET
BARLING, AR 72923

ATTN: STEVE PARKE, DIRECTOR

AR0021750	001-A
PERMIT NUMBER	**DISCHARGE NUMBER**

MONITORING PERIOD	
MM/DD/YYYY	**MM/DD/YYYY**
11/01/2014	11/30/2014

DMR Mailing ZIP CODE: 72904
MAJOR

TREATED MUNICIPAL WASTEWATER
External Outfall

No Discharge ☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Solids, suspended percent removal	SAMPLE MEASUREMENT	******	******	******	98	******	******		0	7/7	Comp24
81011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	85 MO AV MN	******	******	%		Once Every Weekday	COMP24

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE
Steve Parke, 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	479-784-2231		12-16-2014
TYPED OR PRINTED			AREA Code	NUMBER	MM/DD/YYYY

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

ONCE/WEEKDAY: MONDAY - FRIDAY. 66-01652

Massard Plant Data
November 2014

DAY	FLOW	BIOCHEMICAL OXYGEN DEMAND							DO	p H		TURB.	TEMP.	SUSPENDED SOLIDS							FECAL COLIFORM		
	EFF.	INFLUENT			EFFLUENT				EFF.	INF.	EFF.	EFF.	EFF.	INFLUENT			EFFLUENT				EFFLUENT		
	MGD	mg/L		ppd	mg/L		7D Avg.	ppd	mg/L	S.U.	S.U.	NTU	°C	mg/L		ppd	mg/L		7D Avg.	ppd	#/100ml		7D Avg.
1	5.673	295.50	b,p	13980.9	3.99	b,p	4.0	188.8	NDP	NDP	NDP	2.60	NDP	226.00		10692.7	5.00	<	5.0	236.6	9		10
2	5.156	436.67	b,p	18777.3	13.73	b,p		590.4	NDP	NDP	NDP	3.10	NDP	470.00		20210.5	5.00	<		215.0	9	<	
3	5.183	208.59	p	9016.6	4.97	p		214.8	4.96	7.05	6.78	3.70	20.0	194.00		8385.9	5.00	<		216.1	9	sb,eb	
4	8.228	134.50	p	9229.6	8.89	p		610.0	4.66	6.97	6.77	5.00	21.0	116.67		8006.1	6.00			411.7	9	<,sb	
5	7.842	156.14	b	10211.9	8.83	b		577.5	4.94	6.98	6.68	3.60	20.0	83.87		5485.3	5.00			327.0	9		
6	6.350	101.43	b	5371.6	4.38	b		232.0	4.44	6.96	6.77	2.40	20.0	78.33		4148.3	5.00	<		264.8	18		
7	5.797	76.67	b	3706.8	3.93	b		190.0	4.99	6.92	6.88	2.30	19.6	45.00		2175.6	5.00	<		241.7	9	<	
8	5.788	190.00		9171.7	2.89		6.8	139.5	NDP	NDP	NDP	1.90	NDP	141.67		6838.7	5.00	<	5.1	241.4	9	<	10
9	5.604	213.89		9996.7	4.78			223.4	NDP	NDP	NDP	3.10	NDP	138.57		6476.4	5.00	<		233.7	9	<	
10	5.527	384.29	p	17713.9	16.67	<,p		768.4	4.81	7.04	7.01	4.10	20.7	265.00		12215.2	5.00			230.5	18		
11	5.452	212.63	b,p	9668.2	17.54	b,p		797.5	5.04	7.10	7.42	2.40	18.6	821.31		37344.7	5.00	<		227.3	9	<	
12	5.466	186.00	b,p	8479.1	20.38	b,p		929.1	5.28	7.21	7.09	2.60	17.0	168.33		7673.6	5.00	<		227.9	9		
13	5.090	351.88		14937.5	4.89			207.6	5.29	7.24	7.07	2.30	15.0	194.87		8272.3	5.00	<		212.3	9	<	
14	5.189	138.08		5975.6	4.77			206.4	5.20	7.37	7.09	3.30	16.0	102.50		4435.8	5.00			216.4	9		
15	5.019	163.16	a,b,p	6829.6	6.94	a,b,p	10.9	290.5	NDP	NDP	NDP	3.10	NDP	136.25		5703.2	5.00		5.0	209.3	9	<	10
16	5.072	204.80	a,b,p	8663.1	21.10	a,b,p		892.5	NDP	NDP	NDP	2.80	NDP	145.00		6133.6	5.00	<		211.5	9	<	
17	4.969	642.86	p	26641.1	5.23	p		216.7	5.25	7.33	6.91	2.50	17.0	530.00		21964.0	5.00	<		207.2	18		
18	5.119	182.13	p	7775.6	28.42	p		1213.3	5.41	7.35	7.20	2.90	15.0	131.67		5621.3	6.00			256.2	9	<	
19	5.126	235.33	p,b	10060.6	9.40	p,b		401.9	5.24	7.39	7.18	2.60	17.0	135.00		5771.4	5.00	<		213.8	9	<	
20	5.110	258.94		11035.3	13.47			574.1	5.42	7.28	7.02	2.80	18.0	230.00		9802.0	5.00			213.1	9	<	
21	4.998	164.50	p	6856.9	7.54	p		314.3	5.11	7.27	7.14	3.10	17.0	265.00		11046.1	6.00			250.1	9	<	
22	9.056	381.25	p	28794.7	3.30	p	12.6	249.2	NDP	NDP	NDP	3.40	NDP	208.57		15752.7	5.00	<	5.3	377.6	9	<	10
23	9.760	72.25		5881.0	19.38			1577.5	NDP	NDP	NDP	8.20	NDP	59.09		4809.8	13.00			1058.2	54		
24	7.587	270.91	a,b	17142.0	6.18	a,b		391.0	5.05	7.34	7.13	3.10	17.0	576.67		36489.1	5.00	<		316.4	18		
25	7.944	280.00		18550.8	6.05			400.8	5.16	7.38	7.19	3.10	17.0	150.00		9937.9	5.00			331.3	9	<	
26	6.097	218.57		11114.1	5.19			263.9	5.22	7.42	7.15	3.20	16.0	150.00		7627.3	5.00	<		254.2	9		
27	5.660	132.50		6254.6	4.35			205.3	5.28	7.22	7.07	2.90	15.0	131.67		6215.4	5.00	<		236.0	9	<	
28	5.476	200.50		9156.8	4.63			211.5	5.68	7.26	7.17	3.00	17.0	97.14		4436.4	5.00	<		228.3	9	<	
29	5.642	451.25		21233.2	5.34		7.3	251.3	NDP	NDP	NDP	3.60	NDP	803.33		37800.1	5.00	<	6.1	235.3	9		13
30	5.466	324.75		14804.2	5.92			269.9	NDP	NDP	NDP	2.80	NDP	404.17		18424.7	5.00	<		227.9	9		
SUM	180.4	7270.0		357030.9	273.1		41.6	13599.2	102.4	144.1	140.7	95.50	354	7199.7		349896.1	161.0		26.6	8328.8	351		53
AVG	6.0	242.3		11901.0	9.1		8.3	453.3	5.1	7.2	7.0	3.18	18	240.0		11663.2	5.4		5.3	277.6	10		11
MAX	9.8	642.9		28794.7	28.4		12.6	1577.5	5.7	7.4	7.4	8.20	21	821.3		37800.1	13.0		6.1	1058.2	54		13
MIN	5.0	72.3		3706.8	2.9		4.0	139.5	4.4	6.9	6.7	1.90	15	45.0		2175.6	5.0		5.0	207.2	9		10

BOD % Removal: 96
TSS % Removal: 98

Notes:
a: Data questionable due to spike recovery failure
b: Data questionable due to excessive blank depletion
sb: Data questionable due to colony growth on start blank
eb: Data questionable due to colony growth on end blank
p: Data questionable due to precision failure
<: Dilution did not quantify, actual value less than value reported.
NDP: No Data Provided.

"P" Street Plant Data
November 2014

DAY	FLOW			BIOCHEMICAL OXYGEN DEMAND						D.O.	pH	TURB.	SUSPENDED SOLIDS						CHLORINE	FECAL COLIFORM		
	INF.		EFF.	INFLUENT			EFFLUENT			EFF.	EFF.	EFF.	INFLUENT			EFFLUENT			EFFLUENT	EFFLUENT		
	MGD		MGD	mg/L		ppd	mg/L		7D Avg.	ppd	mg/L	S.U.	NTU	mg/L		ppd	mg/L		7D Avg.	ppd	mg/L	#/100ml		7D Avg.
1	6.251	^	4.923	155.08	b,p	8084.8	6.48	b,p	6.5	266.1	9.60	NDP	3.60	78.00		4066.4	5.00	<	5.0	205.3	0.01	9	<	9
2	6.604	^	5.147	332.50	b,p	18313.2	5.81	b,p		249.4	9.56	NDP	4.00	96.25		5301.2	6.00			257.6	0.02	9	<	
3	6.609	^	4.791	146.50	p	8074.9	6.48	p		258.9	9.46	6.91	4.70	95.06		5239.6	8.00			319.7	0.03	9	<,sb,eb	
4	11.317	^	9.765	135.00	p	12741.8	6.09	p		496.0	8.68	6.99	4.90	102.86		9708.3	7.00			570.1	0.01	9	<,sb	
5	9.490	^	8.442	85.38	b	6757.5	5.76	b		405.5	8.75	6.86	4.60	65.75		5203.9	6.00			422.4	0.03	45		
6	8.102	^	6.546	116.00	b	7838.2	5.40	b		294.8	9.23	6.86	3.30	64.00		4324.5	5.00	<		273.0	0.06	9	<	
7	7.355	^	6.059	148.40	b	9103.0	3.29	b		166.3	9.23	6.95	3.90	77.50		4753.9	5.00			252.7	0.02	9	<	
8	6.425	^	5.433	171.60		9195.1	11.54		6.3	522.9	9.18	NDP	4.40	117.50		6296.2	5.00		6.0	226.6	0.03	9		11
9	6.730	^	5.400	116.00		6510.9	5.07			228.3	9.29	NDP	4.30	71.25		3999.1	5.00	<		225.2	0.02	9	<	
10	7.051	^	5.276	134.00	p	7879.9	5.08	p		223.5	9.21	6.87	4.00	108.33		6370.4	7.00			308.0	0.00	9		
11	6.150	^	5.084	177.60	b,p	9109.3	4.61	b,p		195.5	9.27	6.91	4.20	101.64		5213.2	5.00			212.0	0.00	9		
12	6.565	^	5.212	196.80	b,p	10775.2	8.69	b,p		377.7	10.10	6.98	4.50	84.29		4615.1	6.00			260.8	0.00	9	<	
13	6.218	^	5.149	142.50		7389.8	6.50			279.1	11.80	7.02	3.90	123.40		6399.3	6.00			257.7	0.01	9	<	
14	6.091	^	4.991	208.00		10566.2	6.68			278.1	11.90	7.00	4.40	105.71		5370.0	5.00			208.1	0.00	9		
15	5.817	^	4.985	142.00	a,b,p	6889.0	11.06	a,b,p	6.8	459.8	11.70	NDP	4.10	94.29		4574.4	5.00		5.6	207.9	0.01	9	<	9
16	6.184	^	5.005	156.00	a,b,p	8045.6	8.66	a,b,p		361.5	11.60	NDP	3.10	84.29		4347.2	5.00			208.7	0.01	9	<	
17	6.369	^	5.085	210.00	p	11154.7	6.18	p		262.1	11.60	6.99	3.70	116.25		6174.9	6.00			254.5	0.06	9	<	
18	6.335	^	4.866	204.50	p	10804.5	6.61	p		268.2	11.80	7.00	3.40	77.46		4092.5	7.00			284.1	0.00	9		
19	6.030	^	4.712	404.18	p,b	20326.3	13.49	p,b		530.1	11.90	6.95	3.10	140.00		7040.6	7.00			275.1	0.00	9	<	
20	6.156	^	4.671	202.22		10382.2	11.83			460.9	11.70	6.84	3.60	105.56		5419.6	7.00			272.7	0.07	9	<	
21	6.188	^	4.639	308.42	p	15916.9	9.98	p		386.1	11.60	6.85	2.90	110.00		5676.9	10.00			386.9	0.06	9		
22	14.691	^	11.910	244.00	p	29895.6	13.03	p	10.0	1294.3	11.30	NDP	3.40	215.00		26342.4	11.00		7.6	1092.6	0.08	9	<	9
23	13.015	^	11.452	83.67		9082.0	6.76			645.6	11.40	NDP	4.90	82.26		8928.9	10.00			955.1	0.00	18		
24	9.662	^	8.108	93.67	a,b	7548.0	5.70	a,b		385.4	6.70	6.78	3.30	46.91		3780.1	5.00			338.1	0.07	9	<	
25	8.399	^	6.818	131.20		9190.3	5.75			327.0	11.10	6.81	3.10	72.00		5043.4	6.00			341.2	0.00	27		
26	8.059	^	6.496	142.80		9597.9	6.00			325.1	11.00	6.74	3.50	66.67		4481.0	5.00			270.9	0.03	9	<	
27	7.074	^	5.706	163.00		9616.5	7.21			343.1	10.00	6.72	3.10	106.17		6263.7	5.00			237.9	0.01	9		
28	7.010	^	5.606	146.50		8564.9	5.58			260.9	11.00	6.88	3.00	91.25		5334.8	5.00	<		233.8	0.01	9	<	
29	6.938	^	5.422	120.16		6952.8	4.34		5.9	196.3	10.90	NDP	2.20	72.50		4195.1	5.00	<	5.9	226.1	0.01	9	<	12
30	7.106	^	5.295	141.00		8356.2	5.80			256.1	10.60	NDP	2.70	73.00		4326.3	5.00			220.8	0.01	9	<	
SUM	225.991		182.994	5158.7		314663.2	215.5		35.5	11004.6	311.2	137.9	111.80	2845.2		182882.8	185.0		30.0	9805.3	0.67	333		50
AVG	7.533		6.100	172.0		10488.8	7.2		7.1	366.8	10.4	6.9	3.73	94.8		6096.1	6.2		6.0	326.8	0.02	10		10
MAX	14.691		11.910	404.2		29895.6	13.5		10.0	1294.3	11.9	7.0	4.90	215.0		26342.4	11.0		7.6	1092.6	0.08	45		12
MIN	5.817		4.639	83.7		6510.9	3.3		5.9	166.3	6.7	6.7	2.20	46.9		3780.1	5.0		5.0	205.3	0.00	9		9

BOD % Removal: 96
TSS % Removal: 93

Notes:
- a: Data questionable due to spike recovery failure
- b: Data questionable due to excessive blank depletion
- sb: Data questionable due to colony growth on start blank
- eb: Data questionable due to colony growth on end blank
- p: Data questionable due to precision failure
- ^: Data not originally on the chain of custody, supplied later by Mike Keith.
- <: Dilution did not quantify, actual value less than value reported.
- NDP: No Data Provided.

"P" Street WWTP Monthly Nitrogen Total Phosphorous Data

Sample Date	Inf. Flow, MGD	Eff. Flow, MGD	Nitrate+Nitrite as N EFFLUENT			Total Phosphorous as P EFFLUENT			CBOD Removal %
			mg/L	7D Avg.	ppd	mg/L	7D Avg.	ppd	
1/1/2014	7.175	6.091	3.93	3.93	199.6	1.00	1.00	50.8	
2/11/2014	8.63	7.422	5.77	5.77	357.2	1.20	1.20	74.3	
3/11/2014	8.126	6.333	3.48	3.48	183.8	1.25	1.25	66.0	
4/21/2014	8.286	6.518	4.95	4.95	269.1	0.95	0.95	51.6	
5/5/2014	6.858	4.813	5.58	5.58	224.0	0.45	0.45	18.1	97.1%
6/16/2014	7.794	6.051	6.90	6.90	348.2	1.90	1.90	95.9	97.5%
7/7/2014	6.831	4.528	8.26	8.26	311.9	2.40	2.40	90.6	98.2%
8/6/2014	6.195	4.584	8.50	8.50	325.0	1.30	1.30	49.7	97.2%
9/22/2014	8.162	6.414	6.81	6.81	364.3	0.55	0.55	29.4	97.4%
10/13/2014	35.877	27.113	3.22	3.22	728.1	0.20	0.20	45.2	87.8%
11/12/2014	6.565	5.212	7.58	7.58	329.5	1.55	1.55	67.4	

The City of Fort Smith ARKANSAS

September 17, 2015

Water Division Inspection Branch
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118-5317

Re: Fort Smith Massard WWTP Inspection, AFIN: 66-01652
NPDES Permit No. AR21750, ARR000449

Dear Ms. Gray:

The following deficiencies noted from your inspection of the Massard WWTP on August 18, 2015 have been corrected as follows.

1. The recirculation box in between the trickling filters that was seeping at a construction joint has been repaired. The old sealing material was removed at the area of the leak and Preco-Patch has been utilized to seal the joint. (See photos 1 and 2)

2. A section of the concrete pad in front of the trash bin (sanitary landfill dumpster) at the raw water pump station will be cut and removed creating a drainage channel. The cut section will be fitted with grating and a drain line from the new channel is to be installed directly into the RWPS wet well. Concrete curbing will be installed on the west side of the pad to insure that any drainage from the trash bin will travel into the new drain system and into the wet well. Construction will begin on September 21, 2015. I will advise when completed. (See photos 3 and 4).

3. Effluent meter calibration was measured by our technicians following the inspection. The percentage error at that time was +6.2 % which is within the required +/- 10%. However the meter was re-calibrated to a percentage error of -0.8151. (See the attached meter calibration report)

Should you require assistance or clarification, please contact me at sfloyd@fortsmithar.gov or (479) 784-2331.

Sincerely,

Steve Floyd
Superintendent – Water/Wastewater Operations

Pc: Steve Parke, Director of Utilities
David Shelly, Massard WWTP Supervisor

Utility Department • 3900 Kelley Hwy.
Fort Smith, Arkansas 72904
(479) 784-2231 • FAX (479) 784-2358

Photo # 1


Photo #2

Photo #3

Photo # 4

City of Fort Smith Utility Department
Flow Meter Calibration

FLOW CALCULATION

LOCATION: **Massard POTW - Effluent Flow Meter Number 2**

Manufacture: Milltronics
Model: OCM-III
Serial Number: 107PB

Flow Meter Type: 24 Inch Parshall Flume

Field Data: **Date:** 9/15/2015 **Time of Measurement:** 10:00:00 AM **CST**

Measured Head, Ft. 0.94 **Displayed Flow, Mgd** 4.66

FORMULA

Flow, Gpd = 8.00xH^1.55x86,400 sec/dayx7.481/ gal/cu-ft

Flow, Gpd = 4,697,984.26 **Mgd =** 4.698

ERROR

$$\text{\% Error} = \frac{\text{Displayed Flow, Mgd - Calculated Flow, Mgd}}{\text{Displayed Flow, Mgd}} \times 100$$

% Error = -0.8151

Person Making Measurement: Karl Lee Date: 9/15/2015

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ADEQ
ARKANSAS
Department of Environmental Quality

October 7, 2015

Steve Parke
Fort Smith, City of – Massard WWTP
3900 Kelley Highway
Fort Smith, AR 72901

RE: Response to Inspection (Sebastian Co)
AFIN: 66-01652 NPDES Permit No.: AR0021750

Dear Mr. Parke:

I have reviewed the response pertaining to my August 18, 2015 inspection of the City of Fort Smith's Massard wastewater treatment facility. The information provided sufficiently addresses the violations referenced in my inspection report. At this time, the Department has no further comment concerning this particular inspection. Acceptance of this response by the Department does not preclude any future enforcement action deemed necessary at this site or any other site.

If we need further information concerning this matter, we will contact you. Thank you for your attention to this matter. Should you have any questions, feel free to contact me at (479) 424-0333 or you may e-mail me at grayd@adeq.state.ar.us.

Sincerely,

Dannielle Gray
District 4 Field Inspector
Water Division

cc: Steve Floyd, City of Fort Smith, sfloyd@fsark.com