



ARKANSAS
Department of Environmental Quality

May 12, 2014

Larry Bryant, Mayor
Forrest City WWTP
P.O. Box 1074
Forrest City, AR 72336

RE: Compliance Inspection, Forrest City Wastewater Treatment Plant
AFIN: 62-00070 Permit No.: AR0020087 and ARR000222

Dear Mayor Bryant:

On April 17, 2014, I performed a routine compliance 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. A copy of the inspection reports is enclosed for your records.




Please refer to the "Summary of Findings" section of the attached inspection report 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 **May 30, 2014**.

If I can be of any assistance, please contact me at greenway@adeq.state.ar.us or 870-935-7221.

Sincerely,

A handwritten signature in blue ink, appearing to read "Michael Greenway".

Michael Greenway
District 3 Field Inspector
Water Division

 A R K A N S A S Department of Environmental Quality		WATER DIVISION INSPECTION REPORT							
		AFIN: 62-00070		PERMIT #: AR0020087		DATE: 4/17/2014			
		COUNTY: 62 St. Francis			PDS #: 077727		MEDIA: WN		
		GPS LAT: 34.997413 LONG: -90.835236 LOCATION: Entrance							
FACILITY INFORMATION				INSPECTION INFORMATION					
NAME: Forrest City WWTP LOCATION: Approximately 3 miles west of Forrest City, at the end of SFC 209 CITY: Forrest City, AR				FACILITY TYPE: 1 - Municipal		INSPECTOR ID#: 86009 S - State			
				FACILITY EVALUATION RATING: 1 - Unsatisfactory		INSPECTION TYPE: Compliance Evaluation			
				DATE(S): 4/17/2014		ENTRY TIME: 11:05		EXIT TIME: 13:00	
				PERMIT EFFECTIVE DATE: 8/1/2012 PERMIT EXPIRATION DATE: 7/31/2017					
RESPONSIBLE OFFICIAL				FAYETTEVILLE SHALE RELATED: N FAYETTEVILLE SHALE VIOLATIONS: N INSPECTION PARTICIPANTS NAME/TITLE/PHONE/FAX/EMAIL/ETC.: Joel Thetford / Operator / 870-270-0201					
NAME: / TITLE Larry Bryant / Mayor COMPANY: Forrest City WWTP MAILING ADDRESS: P.O. Box 1074 CITY, STATE, ZIP: Forrest City AR 72336 PHONE & EXT: / FAX: 870-261-1424 / EMAIL: N/A									
CONTACTED DURING INSPECTION: No									
AREA EVALUATIONS (S=Satisfactory, M=Marginal, U=Unsatisfactory, N=Not Applicable/Evaluated)									
S	PERMIT	S	FLOW MEASUREMENT	**	STORMWATER				
U	RECORDS/REPORTS	S	LABORATORY	U	FACILITY SITE REVIEW				
U	OPERATION & MAINTENANCE	S	EFFLUENT/RECEIVING WATER	U	SELF-MONITORING PROGRAM				
S	SAMPLING	S	SLUDGE HANDLING/DISPOSAL	**	PRETREATMENT				
**	OTHER:								
SUMMARY OF FINDINGS									
This routine compliance evaluation inspection revealed the following: <ol style="list-style-type: none"> Improper operation and maintenance. This violates Part III, Section B, Item 1A of the Permit. The following items were noted: <ol style="list-style-type: none"> The aeration system in the middle basin was not adequately maintained (Photo 1). There was a significant amount of erosion on the levees of the North sludge lagoon (Photo 2). Recordkeeping/Reporting was inadequate. A review of the Discharge Monitoring Reports (DMRs) revealed a missing December 2013 DMR, and the March 2014 DMR had not been submitted as of May 7, 2014. This violates Part III, Section C, Item 5 of the Permit. There were no violations noted during the Sanitary Sewer Overflow (SSO) and Industrial Stormwater Inspections. However, it appears there is a lack of organization for SSO reporting. Additionally, the City experiences significant Infiltration and Inflow (I&I) volumes during storm events, in which the influent is diverted to the lagoons. There is a concern that the required 3 feet of freeboard in the lagoon may not be maintained. A collection system evaluation and corrective action plan may be required to address I&I issues if lagoon freeboard becomes inadequate or other violations occur. 									
GENERAL COMMENTS									
A letter will be sent to the responsible official. Refer to the April 17, 2014 SSO, and Industrial Stormwater inspections for additional information.									
INSPECTOR'S SIGNATURE:  Michael Greenway						DATE: 5/9/2014			
SUPERVISOR'S SIGNATURE:  Jason Bolenbaugh						DATE: 5/9/2014			

SECTION A: PERMIT VERIFICATION

PERMIT SATISFACTORILY ADDRESSES OBSERVATIONS

☒S ☐M ☐U ☐NA ☐NE

DETAILS:

- | | |
|--|--|
| 1. CORRECT NAME AND MAILING ADDRESS OF PERMITTEE: | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE |
| 2. NOTIFICATION GIVEN TO EPA/STATE OF NEW DIFFERENT OR INCREASED DISCHARGES: | <input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> NA <input type="checkbox"/> NE |
| 3. NUMBER AND LOCATION OF DISCHARGE POINTS AS DESCRIBED IN PERMIT: | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE |
| 4. ALL DISCHARGES ARE PERMITTED: | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE |

SECTION B: RECORDKEEPING AND REPORTING EVALUATION

RECORDS AND REPORTS MAINTAINED AS REQUIRED BY PERMIT

☐S ☐M ☒U ☐NA ☐NEDETAILS: Recordkeeping was unorganized, DMR's were missing and submitted late.

- | | |
|--|---|
| 1. ANALYTICAL RESULTS CONSISTENT WITH DATA REPORTED ON DMRS: | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE |
| 2. SAMPLING AND ANALYSES DATA ADEQUATE AND INCLUDE: | <input checked="" type="checkbox"/> S <input type="checkbox"/> M <input type="checkbox"/> U <input type="checkbox"/> NA <input type="checkbox"/> NE |
| a. DATES AND TIME(S) OF SAMPLING: | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE |
| b. EXACT LOCATION(S) OF SAMPLING: | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE |
| c. NAME OF INDIVIDUAL PERFORMING SAMPLING: | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE |
| d. ANALYTICAL METHODS AND TECHNIQUES: | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE |
| e. RESULTS OF CALIBRATIONS: | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE |
| f. RESULTS OF ANALYSES: | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE |
| g. DATES AND TIMES OF ANALYSES: | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE |
| h. NAME OF PERSON(S) PERFORMING ANALYSES: | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE |
| 3. LABORATORY EQUIPMENT CALIBRATION AND MAINTENANCE RECORDS ADEQUATE: | <input checked="" type="checkbox"/> S <input type="checkbox"/> M <input type="checkbox"/> U <input type="checkbox"/> NA <input type="checkbox"/> NE |
| 4. PLANT RECORDS INCLUDE SCHEDULES, DATES OF EQUIPMENT MAINTENANCE AND REPAIR: | <input checked="" type="checkbox"/> S <input type="checkbox"/> M <input type="checkbox"/> U <input type="checkbox"/> NA <input type="checkbox"/> NE |
| 5. EFFLUENT LOADINGS CALCULATED USING DAILY EFFLUENT FLOW AND DAILY ANALYTICAL DATA: | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE |

SECTION C: OPERATIONS AND MAINTENANCE

TREATMENT FACILITY PROPERLY OPERATED AND MAINTAINED

☐S ☐M ☒U ☐NA ☐NE

DETAILS:

- | | |
|--|---|
| 1. TREATMENT UNITS PROPERLY OPERATED: | <input checked="" type="checkbox"/> S <input type="checkbox"/> M <input type="checkbox"/> U <input type="checkbox"/> NA <input type="checkbox"/> NE |
| 2. TREATMENT UNITS PROPERLY MAINTAINED: <u>Aeration system needs repair, lagoon levees have been eroded.</u> | <input type="checkbox"/> S <input type="checkbox"/> M <input checked="" type="checkbox"/> U <input type="checkbox"/> NA <input type="checkbox"/> NE |
| 3. STANDBY POWER OR OTHER EQUIVALENT PROVIDED: | <input checked="" type="checkbox"/> S <input type="checkbox"/> M <input type="checkbox"/> U <input type="checkbox"/> NA <input type="checkbox"/> NE |
| 4. ADEQUATE ALARM SYSTEM FOR POWER OR EQUIPMENT FAILURES AVAILABLE: | <input checked="" type="checkbox"/> S <input type="checkbox"/> M <input type="checkbox"/> U <input type="checkbox"/> NA <input type="checkbox"/> NE |
| 5. ALL NEEDED TREATMENT UNITS IN SERVICE: | <input checked="" type="checkbox"/> S <input type="checkbox"/> M <input type="checkbox"/> U <input type="checkbox"/> NA <input type="checkbox"/> NE |
| 6. ADEQUATE NUMBER OF QUALIFIED OPERATORS PROVIDED: | <input checked="" type="checkbox"/> S <input type="checkbox"/> M <input type="checkbox"/> U <input type="checkbox"/> NA <input type="checkbox"/> NE |
| 7. SPARE PARTS AND SUPPLIES INVENTORY MAINTAINED: | <input checked="" type="checkbox"/> S <input type="checkbox"/> M <input type="checkbox"/> U <input type="checkbox"/> NA <input type="checkbox"/> NE |
| 8. OPERATION AND MAINTENANCE MANUAL AVAILABLE: | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE |
| 9. STANDARD OPERATING PROCEDURES AND SCHEDULES ESTABLISHED: | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE |
| 10. PROCEDURES FOR EMERGENCY TREATMENT CONTROL ESTABLISHED: | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE |
| 11. HAVE BYPASSES/OVERFLOWS OCCURRED AT THE PLANT OR IN THE COLLECTION SYSTEM IN THE LAST YEAR: | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE |
| 12. IF SO, HAS THE REGULATORY AGENCY BEEN NOTIFIED: | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE |
| 13. HAS CORRECTIVE ACTION BEEN TAKEN TO PREVENT ADDITIONAL BYPASSES/OVERFLOWS: | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE |
| 14. HAVE ANY HYDRAULIC OVERLOADS OCCURRED AT THE TREATMENT PLANT: | <input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> NA <input type="checkbox"/> NE |
| 15. IF SO, DID PERMIT VIOLATIONS OCCUR AS A RESULT: | <input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> NA <input type="checkbox"/> NE |

SECTION D: SAMPLING	
PERMITTEE SAMPLING MEETS PERMIT REQUIREMENTS	<input checked="" type="checkbox"/> S <input type="checkbox"/> M <input type="checkbox"/> U <input type="checkbox"/> NA <input type="checkbox"/> NE
DETAILS:	
1. SAMPLES TAKEN AT SITE(S) SPECIFIED IN PERMIT:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
2. LOCATIONS ADEQUATE FOR REPRESENTATIVE SAMPLES:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
3. FLOW PROPORTIONED SAMPLES OBTAINED WHEN REQUIRED BY PERMIT:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
4. SAMPLING AND ANALYSES COMPLETED ON PARAMETERS SPECIFIED IN PERMIT:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
5. SAMPLING AND ANALYSES PERFORMED AT FREQUENCY SPECIFIED IN PERMIT:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
6. SAMPLE COLLECTION PROCEDURES ADEQUATE:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
a. SAMPLES REFRIGERATED DURING COMPOSITING:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
b. PROPER PRESERVATION TECHNIQUES USED:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
c. CONTAINERS AND SAMPLE HOLDING TIMES CONFORM TO 40 CFR 136:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
7. IF MONITORING IS PERFORMED MORE OFTEN THAN REQUIRED ARE RESULTS REPORTED ON THE DMR:	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> NA <input type="checkbox"/> NE
SECTION E: FLOW MEASUREMENT	
PERMITTEE FLOW MEASUREMENT MEETS PERMIT REQUIREMENTS	<input checked="" type="checkbox"/> S <input type="checkbox"/> M <input type="checkbox"/> U <input type="checkbox"/> NA <input type="checkbox"/> NE
DETAILS:	
1. PRIMARY FLOW MEASUREMENT DEVICE PROPERLY INSTALLED AND MAINTAINED: __ TYPE OF DEVICE: 12" Parshall Flume	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
2. FLOW MEASURED AT EACH OUTFALL AS REQUIRED:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
3. SECONDARY INSTRUMENTS (TOTALIZERS, RECORDERS, ETC.) PROPERLY OPERATED AND MAINTAINED:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
4. CALIBRATION FREQUENCY ADEQUATE:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
5. RECORDS MAINTAINED OF CALIBRATION PROCEDURES:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
6. CALIBRATION CHECKS DONE TO ASSURE CONTINUED COMPLIANCE:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
7. FLOW ENTERING DEVICE WELL DISTRIBUTED ACROSS THE CHANNEL AND FREE OF TURBULENCE:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
8. FLOW MEASUREMENT EQUIPMENT ADEQUATE TO HANDLE EXPECTED RANGE OF FLOW RATES:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
9. HEAD MEASURED AT PROPER LOCATION:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
SECTION F: LABORATORY	
PERMITTEE LABORATORY PROCEDURES MEET PERMIT REQUIREMENTS	<input checked="" type="checkbox"/> S <input type="checkbox"/> M <input type="checkbox"/> U <input type="checkbox"/> NA <input type="checkbox"/> NE
DETAILS:	
1. EPA APPROVED ANALYTICAL PROCEDURES USED (40 CFR 136.3 FOR LIQUIDS, 503.8(B) FOR SLUDGES) :	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
2. IF ALTERNATIVE ANALYTICAL PROCEDURES ARE USED, PROPER APPROVAL HAS BEEN OBTAINED:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
3. SATISFACTORY CALIBRATION AND MAINTENANCE OF INSTRUMENTS AND EQUIPMENT:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
4. QUALITY CONTROL PROCEDURES ADEQUATE:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
5. DUPLICATE SAMPLES ARE ANALYZED $\geq 10\%$ OF THE TIME:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
6. SPIKED SAMPLES ARE ANALYZED $\geq 10\%$ OF THE TIME:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
7. COMMERCIAL LABORATORY USED:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
a. LAB NAME: Environmental Services Company	
b. LAB ADDRESS: 13715 West Markham St, Little Rock, AR 72211	
c. PARAMETERS PERFORMED: NH3-N, CBOD, FCB, Cu, TSS, TP, NO3+NO2-N	
8. BIOMONITORING PROCEDURES ADEQUATE:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
a. PROPER ORGANISMS USED:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
b. PROPER DILUTION SERIES FOLLOWED:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
c. PROPER TEST METHODS AND DURATION:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> NE
d. RETESTS AND/OR TRE PERFORMED AS REQUIRED:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> 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	Low	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 ☐NEDETAILS: **Facility is covered under the no exposure exclusion (Permit #ARR000222), evaluated separately.**

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

Water Division Photographic Evidence Sheet			
Location:	Forrest City WWTP		
Photographer:	Michael Greenway	Date:	4/17/2014
Witness:	None	Time:	11:56
		Photo #:	1
Description:	View of the middle aeration basin. Note the lack of aeration.		
 <p>4/17/2014 / 11:56:12</p>			
Photographer:	Michael Greenway	Date:	4/17/2014
Witness:	None	Time:	12:11
		Photo #:	2
Description:	View of erosion on the levee of the north lagoon.		
 <p>4/17/2014 / 12:11:18</p>			



ARKANSAS
Department of Environmental Quality

CERTIFIED MAIL: 91 7199 9991 7030 4911 0364

June 19, 2014

Larry Bryant, Mayor
Forrest City WWTP
P.O. Box 1074
Forrest City, AR 72336

RE: Failure to respond to inspection, Forrest City WWTP
AFIN: 62-00070 Permit No.: AR0020087

Dear Mayor Bryant:

A letter dated May 12, 2014 was sent by the ADEQ to you. The letter outlined the findings of my April 17, 2014 inspection of the above referenced facility. The letter requested that a written response be submitted to the Water Division Inspection Branch of this Department by May 30, 2014. To date, no response has been received.

Please submit a written response by **July 2, 2014**. A copy of the inspection report has been included for your convenience.

Thank you for your attention to this matter. Should you have any questions, feel free to contact me at 870-935-7221 or by e-mail at greenway@adeq.state.ar.us.

Sincerely,

A handwritten signature in blue ink, appearing to read "Michael Greenway", is written over a light blue horizontal line.

Michael Greenway
District 3 Field Inspector
Water Division



FORREST CITY WATER UTILITY

303 NORTH ROSSER ST.

FORREST CITY, ARKANSAS 72335

870-633-2921

July 11, 2014

Certified Mail# 7013 3020 0001 6983 4759

Arkansas Dept. of Environmental Quality
5301 NorthShore Dr.
North Little Rock, AR 72118-5317
ATTN: Michael Greenway-District 3 Field Inspector-Water Division

RE: Response to Summary of Findings; April 17, 2014 Compliance Inspection

1. Improper operation and maintenance
 - a) New Aeration diffuser sleeves were ordered on June 6, 2024 from ETEC. The order was received at our plant on July 3rd. Diffuser installation will begin within 10 days.
 - b) Erosion of levees.....Most severe sections should be completed once the pond level has been lowered to complete the work. (See Attached Proposal)
2. Recordkeeping/Reporting was inadequate
 - a) Dec.2013 DMR was found after inspection, it was misfiled and has been refiled in the correct location. Because of this error, FCWU has changed procedures for completed DMRs. Original DMRs are to be copied and filed at both the FCWU office and the Waste Water Treatment Plant.
 - b) March 2014 DMR was mailed to ADEQ on April 25.2014. FCWU will submit its copy of the March DMR by the mail on July 3rd, 2014. Mailed under separate cover.
3. Lack of organization for SSO Reporting
 - a) SSO reporting is not performed by the Waste Water Treatment Supervisor and therefore he was unaware of the process at the time of inspection. SSO Reporting is done by Sewer Collection Foreman and is reported online by the Utility Manager. As of March 2014, the utility Manager duties were passed down to the Water Treatment Supervisor.
 - b) Infiltration and inflow.....Proposals currently under review. (See Attached)

Sincerely,
Forrest City Water Utility

A handwritten signature in black ink, appearing to read "W.H. Calvin Murdock", is written over a horizontal line.

W.H. Calvin Murdock, Utility Manager

ADEQAR K A N S A S
Department of Environmental Quality**WATER DIVISION INSPECTION REPORT**

AFIN: 62-00070

PERMIT #: AR0020087

DATE: 4/17/2014

COUNTY: 62 St. Francis

PDS #: 077727

MEDIA: WN

GPS LAT: 34.997413 LONG: -90.835236 LOCATION: Entrance

FACILITY INFORMATION

NAME:

Forrest City WWTP

LOCATION:

Approximately 3 miles west of Forrest City, at the end of SFC 209

CITY:

Forrest City, AR

INSPECTION INFORMATION

FACILITY TYPE:

1 - Municipal

INSPECTOR ID#:

86009 S - State

FACILITY EVALUATION RATING:

1 - Unsatisfactory

INSPECTION TYPE:

Compliance Evaluation

DATE(S):

4/17/2014

ENTRY TIME:

11:05

EXIT TIME:

13:00

PERMIT EFFECTIVE DATE:

8/1/2012

PERMIT EXPIRATION DATE:

7/31/2017

RESPONSIBLE OFFICIAL

NAME / TITLE

Larry Bryant / Mayor

COMPANY:

Forrest City WWTP

MAILING ADDRESS:

P.O. Box 1074

CITY, STATE, ZIP:

Forrest City AR 72336

PHONE & EXT. / FAX:

870-261-1424 /

EMAIL:

N/A

FAYETTEVILLE SHALE RELATED: N

FAYETTEVILLE SHALE VIOLATIONS: N

INSPECTION PARTICIPANTS

NAME/TITLE/PHONE/FAX/EMAIL/ETC:

Joel Thetford / Operator / 870-270-0201

CONTACTED DURING INSPECTION: No

AREA EVALUATIONS

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

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

SUMMARY OF FINDINGS

This routine compliance evaluation inspection revealed the following:

1. Improper operation and maintenance. This violates Part III, Section B, Item 1A of the Permit. The following items were noted:
 - a) The aeration system in the middle basin was not adequately maintained (Photo 1).
 - b) There was a significant amount of erosion on the levees of the North sludge lagoon (Photo 2).
2. Recordkeeping/Reporting was inadequate. A review of the Discharge Monitoring Reports (DMRs) revealed a missing December 2013 DMR, and the March 2014 DMR had not been submitted as of May 7, 2014. This violates Part III, Section C, Item 5 of the Permit.
3. There were no violations noted during the Sanitary Sewer Overflow (SSO) and Industrial Stormwater Inspections. However, it appears there is a lack of organization for SSO reporting. Additionally, the City experiences significant Infiltration and Inflow (I&I) volumes during storm events, in which the influent is diverted to the lagoons. There is a concern that the required 3 feet of freeboard in the lagoon may not be maintained. A collection system evaluation and corrective action plan may be required to address I&I issues if lagoon freeboard becomes inadequate or other violations occur.

GENERAL COMMENTS

A letter will be sent to the responsible official. Refer to the April 17, 2014 SSO, and Industrial Stormwater inspections for additional information.

INSPECTOR'S SIGNATURE:

Michael Greenway

DATE: 5/9/2014

SUPERVISOR'S SIGNATURE:

Jason Bolenbaugh

DATE: 5/9/2014

Item 1-A



Aeration Works

Global Maintenance & Installation Services

5601 Paris Rd. Columbia, MO. 65202-9399
TELEPHONE (573) 474-9456 FAX (573) 474-6988

FILE COPY

EDI Aeration Works PROPOSAL # 2014-069

TO: Mr. Calvin Murdock
RE: Forrest City WWTP
Aeration/Mixing Equipment Maintenance and Membrane Replacement

Dear Mr. Murdock:

EDI Aeration Works is pleased to offer the following Proposal for the labor for refurbishment of the EDI Aeration/Mixing System at the Forrest City wastewater treatment plant. Services offered are primarily for diffuser/membrane replacement, system cleaning and overall system inspection and maintenance.

Installation Service:

The scope of this proposal includes labor cost, travel and living expenses and installation equipment cost as outlined below and required for completing the scope of work.

EDI Aeration Works is uniquely capable of installing and maintaining aeration equipment. The crews that will be employed on-site have many years of experience servicing all types of aeration equipment, and have or will furnish all the specialized equipment to maintain this particular system. Aeration Works will insure that the installation meets all of the required specifications and directions.

Labor Proposal Detailed for One Basin (3 Basins Total):

- Remove 72 existing duplex diffuser assemblies (per tank) from the air lateral piping.
- Stage the existing diffusers at the top of the basin
- Inspect the sub-header pipe supports maintain as required.
- Inspect the lateral piping supports and maintain as required.
- Inspect all piping to insure that piping does not have cracks, misalignment, require cleaning or other problems. If piping is damaged beyond repair, the owner will be notified and new pipes can be provided at an additional cost.
- Clean any piping that is fouled by foreign material.
- Install 72 new duplex diffusers on the air lateral piping
- Conduct leak check on the diffusers and manifolds. Water and blower air are to be provided by others. The airflow required for the leak check should be close to the design airflow to inspect airflow distribution.
- Remove the old membranes from the 72 existing duplex diffusers.
- Inspect the existing diffuser support tubes and maintain, repair and/or clean as necessary.

This proposal has not been published and is the sole property of Environmental Dynamics Intl. It is lent to the borrower for his/her confidential use only. In consideration of this loan, the borrower promises to return it upon request and agrees that it shall not be reproduced, copied, shared, lent, or otherwise disposed of, directly or indirectly, nor used for any purpose other than that for which it is specifically furnished.

EDI Aeration Works Proposal #2014-081
Forrest City, AR WWTP

EDI Aeration Works

- Install 144 new membranes (per tank) onto the 72 existing duplex diffusers.
- Stack refurbished diffusers on pallets with foam from new diffuser shipment/ or as directed by plant personnel.
- **Once the work is completed, Aeration Works will provide a mechanical warranty on the entire system for a period of 2 years.**

Labor Proposal Notes:

- Bid assumes that the tanks will be clean, dry and ready for equipment access upon arrival.
- AW crew will collect and deposit old diffuser membranes and other miscellaneous debris close to the basin. Client to arrange for disposal.
- Bid does not include Davis Bacon Wages.
- The personnel that will be onsite have a Certificate of Completion for Confined Space Entry 29 CFR 1910.146.
- Aeration Work's crew members have extensive safety training and Aeration Works will be responsible for following our safety procedures.
- **Pricing is for diffuser/membrane replacement labor for one basin and is not inclusive of Membranes, Diffusers or other ancillary components.**
- Bid includes one mobilization per basin (3 total for the project).

Price:

\$13,353.00 is the price for labor as defined above for one tank.

Price includes a mechanical warranty for a period of 24 months after the work is completed.

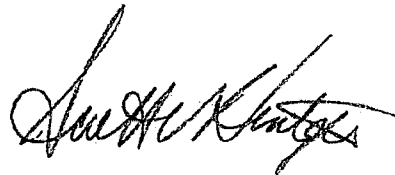
Proposal Terms:

100% net 30 at completion of each basin.

An interest charge at a rate no less than prime plus 2% will be assessed on all late payments.

Date: June 26, 2014

EDI Aeration Works



Scott V. Hentges
Senior Project Manager
Aeration Works

Standard Conditions of Proposal and Sale of Equipment and Installation Services

EDI Aeration Works Proposal 2014 - 081

Environmental Dynamics International, hereinafter also referred to as EDI or the Company, offers this proposal to supply equipment. Any resulting contract between EDI and the Purchaser shall be subject to the following terms and conditions.

Services - Environmental Dynamics International is a manufacturer of water and wastewater treatment equipment and systems. EDI is not a consulting engineering firm and does not provide Professional Engineering services as part of our contracts to supply equipment hardware.

Process and Performance Warranties - Contracts for purchase of equipment accepted by EDI exclude any process or performance warranties related to system design. Additionally, no biological or process performance warranties are expressed or may be implied by the participation of EDI in this contract. Any biological or process performance warranty for systems supplied by the Company shall be specifically and independently detailed and signed as a separate contract by an authorized Officer of the Company.

Governing Law - Any proposal for equipment supply made by the Company as well as any contract between the Company and the Purchaser are deemed to be executed at Columbia, Missouri, USA, subject to correction for typographical or mathematical errors and governed by Missouri law.

Credit Approval - Performance of any contract by the Company is contingent upon Purchaser credit approval. Credit may be waived in lieu of a project materials payment bond. A materials payment bond supplied to the project Owner or Engineer by the Purchaser is acceptable. EDI reserves the right to hold shipment on delinquent accounts.

Force Majeure - Strikes, fires, accidents, war, reduced supply of fuel or raw materials or excessive cost thereof, or other restraints affecting shipments or curtailments in manufacturing or due to delays unavoidable by or beyond the control of the Company shall be governed by *force majeure*.

Costs and Damages - The Company shall in no instance be liable for indirect or special costs, consequential or liquidated damages or any penalties outside the written contract.

Special Hazards - Unusual conditions such as rock, poor foundation soils, excess water or other unusual site or safety conditions are not covered by this standard Company proposal. Extra costs emanating from unusual site or safety conditions shall be negotiated with written agreements developed at or subsequent to the time of discovery and prior to further work being completed by EDI.

Shipment & Delivery Times - Statements as to expected date of hardware shipment represent the Company's best judgment, but shipment on those dates is not guaranteed. The Purchaser hereby waives all claims to damages caused by delay in shipment or delivery of hardware.

Insurance - The Purchaser agrees to provide and maintain for the benefit of the Company adequate insurance for the equipment herein specified from the time of its shipment from EDI until paid for in full and the Purchaser agrees to assume all loss over and above that compensated for by such insurance. The Purchaser shall procure and pay for all public liability insurance during the installation of any EDI provided equipment.

Title of Ownership - All equipment and/or services ordered by Purchaser from the Company shall remain the property of the Company until fully paid for in cash.

Cancellation or Suspension - of any order will be accepted only upon terms that will indemnify the Company against loss. Additionally, the Company may invoice the Purchaser 15% of the agreed upon contract price.

Back Charges - must be approved by EDI, in writing, before they will be accepted. EDI will make every effort to offer prompt consideration and approval of legitimate back charges.

Invoicing - The Company may make partial billings of the contract price as various components of the equipment are shipped. When equipment is manufactured by EDI, but shipment is delayed by the Customer, EDI shall be paid in accordance with contract terms as though delivery had been accomplished.

Storage Charges - When EDI manufactures equipment to meet schedules established by the Purchaser, the Company reserves the right to invoice the Purchaser for storage charges on items held at EDI at the rate of 1% per month of the sale price.

Default for Non-Payment - Contracts in default of the payment terms may be subject to any or all of the following; should the Purchaser fail to pay the purchase price as agreed the Company may, a) retain as liquidated damages all partial payments made on account thereof to date without prejudice to any other claim for damages suffered by the Company for any cause, b) be allowed site access to recover hardware, c) obtain other balances due from arbitration or d) an interest charge on outstanding invoices billed at the rate of 1.5% per month, 18% per annum.

Attorney Fees - For any suits brought or retainage paid to attorneys to collect any part of the purchase price or to enforce any provision herein, the Purchaser will pay EDI attorney fees and related expenses including an administrative fee equal to the attorney fees.

Bankruptcy, Receivership or Insolvency Proceedings - Should bankruptcy, receivership or insolvency proceedings be instituted by or against the Purchaser or should the Purchaser make an assignment in favor of creditors, the unpaid balance of the purchase price shall immediately become due and payable at the option of the Company. Notwithstanding other arrangements to the contrary, the Company shall be free to enter premises where equipment for which the Company has not been fully paid may be located and remove said equipment as its property without prejudice to any further claims on amounts of damage which the Company may suffer from any cause.

Promissory Note - Acceptance of a promissory note or other evidence of debt for any part of price shall not be construed as payment.

Patent Infringement - Any interference with Purchaser's use of equipment supplied by the Company on the grounds that such use constitutes an infringement of any patent shall impose no liability on the Company.

Spare or Potential Warranty Parts - If spare parts or potential warranty parts are required immediately, EDI may ship those parts subject to the following limitations: a) Purchaser agrees to pay for additional components or spare components including special freight charges. Reimbursement will be issued as a credit to the Purchaser's account in the event potential warranty parts are verified as actual warranty defects and b) Contract price adjustments or price adjustments on additional or spare components are subject to EDI approval and original contract terms.

Defective, damaged, improper material or shortage - Claims will not be allowed unless written notice specifying the nature and extent of the defect, damage or shortage is received in the Company's office within fourteen (14) days from unloading - unless the defect, damage or shortage is of such a nature that it would not be reasonably discovered until the material is assembled and/or erected as a finished product, then the fourteen (14) days will begin from the date of commencement of assembly and/or erection.

Mechanical Warranty - As per Manufacturers Limited Mechanical Warranty Statement

Accepted by Buyer:

Date:

Accepted by Seller / Environmental Dynamics International Inc.

Date:

FILE COPY**NOTE***Item 2-B***BID AMENDMENT**

THIS BID ADVERTISEMENT REPLACES THE
ORIGINAL BID PLACED IN THE FORREST CITY TIMES
HERALD ON AUGUST 19 THROUGH AUGUST 26.
BID DUE DATE CHANGED FROM SEPTEMBER 2 TO
SEPTEMBER 3 DUE TO LABOR DAY.

LEEVE REPAIR

The Forrest City Water Utility requests bids for the placement of 90, - 120 pound rip-rap on approximately 5,000 lineal feet of the inside of a wastewater treatment pond. Work will consist of furnishing all equipment, labor, and materials to place the Rip-rap in areas of levee erosion as directed by the Engineer. Furnished Rip-rap shall be 90 - 120 pound. The original levee had a 10-foot crown, water side slope of 2-1/2:1 with approximate toe and crown elevations of 213 and 222 respectfully.

The Contractor shall supply all labor, support equipment, materials and liability insurance to totally complete the work. The Contractor must visit the site with the Engineer to discuss the work before submitting a bid.

Location of work is at the F C Wastewater Treatment Plant at 320 SFC 209, North Pond.

The Contractor must provide a Certificate of Liability Insurance covering General Liability, \$2,000,000; Automobile Liability, \$1,000,000; Umbrella Liability, \$2,000,000, and Workers Compensation and Employer's Liability. Contractor must hold the proper Arkansas Contractors License for this type work.

The Contractor shall adhere to all OSHA and Arkansas State Safety regulations for this type work.

Ponds are at a low level at this time Work should be accomplished before November 1 (weather permitting) due to pond levels subject to potential rainfall effecting pond level.

Tons required is estimated and may be adjusted to fit the budget.

Payment shall be on an agreed schedule between the Owner and successful bidder.

PAYMENT SCHEDULE.

PLACEMENT OF 90 - 120 POUND RIP-RAP

Furnish (including hauling) 90 - 120 pound rip-rap in-place where required to bring the levee to approximate original size where directed by the Engineer. Payment shall include all costs associated to complete the job complete in-place. Including set-up and final cleanup.

2,000 Tons @ \$ 42⁰⁰ per Ton = \$ 84,000⁰⁰

Bids shall be in a sealed envelope marked. Attention Levee Repair, Forrest City Water Utility: P O Box 816, Forrest City, AR 72336 or 303 N. Rosser Street, Forrest City, AR 72335

(Bids will be received until 5:30 p.m., 3-September 2013.)

The FCWU reserves the right to reject any or all bids.

Contact Jim Beazley III, P.E. to set up an appointment to view the work area

Contact information: jbeazley1938@att.net: 870-633-2921 - cell 870-270-6504

Glenn Goe

Triple G. Excavating, Inc.
576 Hwy. 261 South
Palestine, AR 72372

ITEM 3-B

FILE COPY

From: MacDonald, Eric <Eric.MacDonald@Woolpert.com>

To: Calvin Murdock (whcm2@aol.com) <whcm2@aol.com>

Subject: SSES pricing

Date: Fri, May 2, 2014 2:31 pm

Hello Mr. Murdock, We appreciate the opportunity to provide SSES pricing for the SE section of the City. We have staff ready to work as soon as you are ready for us. As we discussed it may make sense for City staff to perform the sewer cleaning task to save money on this effort. I would like to come by and meet with you to discuss our approach in a little more detail. Do you have any time next week to get together? I am open Monday thru Wednesday. Thanks Eric

PAY ITEM SCHEDULE

ITEM NO.	DESCRIPTION	UNIT	Estimated Quantity	Unit Price	Total Price
1	Manhole Inspection	EA	400	\$131.54	\$52,615.56
2	Smoke Testing - with GIS generated reporting	LF	100,000	\$0.51	\$51,000.00
3	Dye trace, holes in the ground, surface drains	EA	20	\$241.52	\$4,830.40
4	Dye Flood Testing - with CCTV to locate defects	EA	10	\$1,207.60	\$12,076.00
5	CCTV - up to 12-inch diameter	LF	25,000	\$0.90	\$22,500.00
9	Cleaning - up to 12-inch diameter	LF	25,000	\$1.38	\$34,500.00
13	Heavy Cleaning - up to 12-inch diameter	LF	8,000	\$3.00	\$24,000.00
17	Grease/Root Removal - up to 12-inch diameter	LF	7,500	\$3.30	\$24,750.00
21	Flow Bypassing - up to 12-inch diameter	Day	1	\$0.00	\$0.00
25	Line Plugging instead of By-pass pumping for CCTV (each location)	EA	5	\$240.00	\$1,200.00
26	Flow Meter Installation and removal	EA	7	\$780.00	\$5,460.00
27	Flow Meter & Rain Gauge Monthly Maintenance	EA	7	\$847.50	\$5,932.50
28	Flow Monitoring Report	EA	1	\$10,000.00	\$10,000.00
29	SL Rat Acoustic Pipe Inspection	EA	500	\$48.00	\$24,000.00
	Sonar / CCTV (Tiscit)				
30	Sonar only, no CCTV sizes less than 18"	LF	0	\$4.20	\$0.00
31	Sonar / CCTV 18" to 30"	LF	0	\$4.56	\$0.00
	Force Main Condition Assessment				
32	Initial data collection/Record Drawing review/ Field walk thru inspection	LF	1,000	\$1.25	\$1,250.00
33	Asset Management/GIS Coordination	LF	1,000	\$0.25	\$250.00
34	Identification of Potential Failure Points	LF	1,000	\$0.25	\$250.00
35	Inspection of Accessible FM Components (including aerial crossings, ARV's and valve's)	EA	10	\$300.00	\$3,000.00
36	Segmental Pipe Location and Profiling	LF	5,000	\$0.60	\$3,000.00
37	Force Main Ultrasonic Pipe Wall Thickness Testing				
a	Excavation to expose pipe (0-4 feet deep)	EA	5	\$850.00	\$4,250.00
b	Excavation to expose pipe (4-6 feet deep)	EA	5	\$1,100.00	\$5,500.00
c	Ultrasonic pipe wall thickness test (5 radial tests)	EA	5	\$450.00	\$2,250.00
d	Digital report in Asset Mgmt/GIS system	EA	5	\$120.00	\$600.00
38	Criticality Analysis (per PS Basin)	EA	5	\$1,200.00	\$6,000.00
39	Force Main Condition Assessment Report	LF	1,000	\$0.30	\$300.00
40	Project Management/Meetings/Progress Reports	LF	1,000	\$0.45	\$450.00
41	Traffic Control (above and beyond normal flagging) with approval	Day	5	\$800.00	\$4,000.00

Eric MacDonald

Senior Associate

Project Director, Infrastructure Management

Woolpert

375 Northridge Road, Suite 300 Atlanta, GA 30350

Office: 770.391.4095 | Cell: 770.335.9771 | Direct: 678-537-8921

eric.macdonald@woolpert.com | www.woolpert.com

Please consider the environment before printing this e-mail

Item 3-B

LSM
FILE COPY

From: Stephen Jeffus <sjeffus@rjn.com>

To: Calvin Murdoch <Whcm2@aol.com>

Subject: Flow monitoring and SSES overview and example pricing

Date: Fri, May 23, 2014 10:21 am

Attachments: Overview_of_Flow_Monitoring_and_Field_Inspection_Services_from_RJN.pdf (127K)

Mr. Murdock,

I'm writing to follow up with some additional information related to Flow Monitoring and Sanitary Sewer Evaluation Studies (SSES). This information is confidential and is intended for your review and consideration only. I apologize for the delay in getting this to you. Since this note is a lengthy I've put a copy into the attached document; I thought it might be easier to file for future reference.

The example pricing information we're furnishing herein is to be used by FCWU for planning and budgetary purposes only. The pricing information includes both costs for field services and professional engineering services from a recent project in eastern Arkansas. Please note that FCWU's project needs will be different from this example project but the costs should give a good frame of reference.

This project pricing shown below is for a turn-key project from RJN. That is, RJN crews and CCTV subcontractor will transact all of the tasks. It is my understanding that you would like your crews to be a part of the sewer evaluation and complete some of the tasks internally. As I give an overview of each task I will highlight ones that FCWU can assist with or be responsible for.

Since FCWU does not have a complete digital map of the sewer collection system yet, estimates will be made on the amount of linear feet of sewer line and number of manholes that may be expected. A more formal and complete take-off of the sewer quantities would be the initial part of the SSES project.

Based on Forrest City's population estimate of 15,220 (2012), we can estimate that there is approximately 490,000 linear feet of gravity sewer line in FCWU's collection system (based on guideline of approximate 30 feet/capita). Using a manhole for every 300 linear feet of pipe, there should be around 1,620 manholes in the system.

For Inflow and Infiltration (I/I) analysis purposes, it is recommended that you start with system-wide flow monitoring. This isolates the system into sub-basins and will show which of the sub-basin areas are contributing to the I/I problem. It is best to break the system down into sub-basins of between 25,000-50,000 linear feet. If we use an average sub-basin size of 40,000 linear feet, we would propose using 12-14 flow meters. The number may vary depending on the influence of lift stations and/or diversion structures. A typical flow monitoring project last for 60 days. When done in the Spring or Fall, that provides enough time to establish a good base line of dry weather flows and catch at least 3-4 significant rainfall events (i.e. high intensity, short duration rainfall events). The example project price includes 8 meters for a total of 480 meter-days. That is, 8 meters times 60 days ($8 \times 60 = 480$).

Please note that the project example includes both flow monitoring and field inspection (SSES) services. Most projects start with the system wide flow monitoring. That will help determine which parts of the sewer system are subject to excess inflow and infiltration and should be further investigated with field inspections. If FCWU is divided up into 12 basins for the flow monitoring, the analysis may show that 5 of the basins are subject to I/I and are priority. Those 5 basins would be recommended for further study. The field inspections can then be phased then depending on budget. That is, 2-3 basins can be inspected each year.

Our flow monitoring and field investigation prices are quoted based on unit pricing. That is because actual quantities will invariably differ from estimated quantities. FCWU will only pay for actual quantities. Although it is possible to go higher, most of our projects come in under the budgeted amount because some tasks are not required after all or the actual quantities turn out to be lower than originally estimated.

The professional engineering services are priced lump sum but will vary somewhat as well with the project quantities. Although, there's not a straight-line correlation between cost and quantities (e.g. it takes almost the same time to perform an I/I analysis with 8 flow meters as it does with 12 meters), there will be differences due to the estimated engineering hours that may be needed to perform the analysis and write the report.

The recent project in Eastern Arkansas had the following costs:

2014 SSES

<u>TASK</u>	<u>UNITS</u>	<u>UNIT TYPE</u>	<u>UNIT COST</u>	<u>COST</u>
Project Administration	1	Lump Sum	\$18,750.00	\$18,750
Public Relations	125,000	Linear Feet	\$0.04	\$5,000
Flow Monitoring	480	Meter-Days	\$99.58	\$47,798
Rain Gauges	180	Gauge-Days	\$14.75	\$2,655
Manhole Inspection (<6')	100	Each	\$90.17	\$9,017
Manhole Inspection (>6')	240	Each	\$112.45	\$26,988
Manhole Inspection (Off Street)	30	Each	\$129.17	\$3,875
Smoke Testing (In-Street)	110,000	Linear Feet	\$0.37	\$40,480
Smoke Testing (Off-Street)	15,000	Linear Feet	\$0.45	\$6,705
Dyed Water Flooding	24	Each	\$472.20	\$11,333
Dyed Water Flooding w/ TV	40	Each	\$644.78	\$25,791
CCTV Inspection	11,800	Linear Feet	\$3.18	\$37,524
CCTV Data Review	11,800	Linear Feet	\$0.46	\$5,428
Flow Monitoring Analysis	1	Lump Sum	\$9,656.00	\$9,656

Data Analysis / Report	1	Lump Sum	\$35,500.00	\$35,500
Condition Assessment Technical Memo	1	Lump Sum	\$6,550.00	\$6,550

Total Cost: **\$293,051**

Project Administration is the time spent by our Project Manager and Project Engineers to: coordinate the project, attend meetings, prepare monthly briefings, etc.

Public Relations covers the time and expense of hanging smoke testing notices on doors and coordinating the smoke testing activities with FCWU and the local fire department. It is a unit price that will match the estimated aggregate smoke testing quantities.

Flow monitoring involves putting electronic flow measuring instruments into manholes. The cost is per meter per day. For this example, 8 meters are proposed for 60 days ($8 \times 60 = 480$ meter days).

Rain Gauges involves putting self-tipping rain gauges across the City. Rainfall events will not be uniform across the collection system. Typically, one rain gauge is used for every 3 flow meters.

Manhole Inspections involve thoroughly inspecting the manhole to assess structural integrity and its potential I/I contribution. Manholes that are deeper than 6 feet in total depth will be inspected using a full descent procedure where a certified technician is lowered into the manhole and inspects from the structure from top to bottom. All OSHA requirements for confined space entry are followed or exceeded. The prices vary from street to off-street because of the amount of time it may take to transport the testing and safety equipment to the off-street manholes.

Smoke testing involves isolating sewer line segments and blowing smoke into the lines using blowers mounted on the tops of the manholes. Remote segments or those along off-street manholes are more expensive due to the additional time it takes to transport the supplies and equipment to each setup.

Dyed Water Flooding is used to confirm and locate rain or ground entry points into the sewer system. A non-toxic dye is poured onto the ground or storm drains while technicians monitor the downstream manholes for evidence of the dye. These tests are used after positive defects are found from the smoke testing. The dyed water tests will help locate the defect and help establish its magnitude.

Dyed Water Flooding with TV involves using CCTV to monitor the adjacent sewer lines while the dye is introduced.

CCTV Inspection involves using a remotely operated camera to inspect the interior of the sewer system. This test is the most expensive of the field inspection techniques and is, typically, only used in areas where defects have been located from smoke and dyed water flooding.

CCTV Data Review involves an engineer review the CCTV footage. This is the process of determining the potential cause of the defects and the severity of each. This review will be used in the Engineer's analysis of the condition of the sewer system and help determine a sustainable, cost-effective remedy for the defect.

Flow Monitoring Analysis involves an engineer reviewing the data collected from the flow monitors to determine the dry weather baseline flows and the effect of rainfall derived inflow and infiltration on the sewer system.

Data Analysis/Report involves our engineers reviewing all of the monitoring and field inspection data and determining the best way to mitigate the I/I and improve the sewer system.

FCWU can perform any of the field inspection tasks and the CCTV with their own crews. We would suggest following proven inspection technique procedures; we can provide training on those techniques. RJN would assist by performing the data and engineering analysis.

I hope this information is helpful. I would like to schedule a time with you soon where can discuss this information and answer your questions.

Have a great weekend. Thanks,

Stephen Jeffus, PE

sjeffus@rjn.com

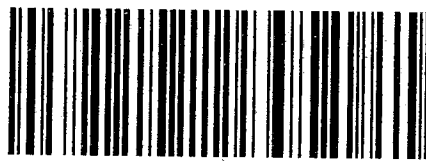
214.240.4412

 EmailLogo

The Choice for Collection System Solutions

Forrest City Water Utility
303 North Rosser St.
P.O. Box 816
Forrest City, AR 72335

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