

**MONTHLY PROGRESS REPORT
JULY 2020**

**EMERGENCY WWTP REPAIR PROJECT
GREENVILLE, MS**

Submitted To:

U.S. Environmental Protection Agency, Region 4
Clean Water Enforcement Branch
61 Forsythe Street, S.W.
Atlanta, GA 30303-8960

and

Mississippi Department of Environmental Quality
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Prepared For:

City Hall
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August 10, 2020



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CERTIFICATION


Monthly Progress Report

July 2020

Administrative Order No. CWA-04-2020-0303

City of Greenville, MS

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.


Errick D. Simmons, Mayor

August 10, 2020
Date

File Name: Monthly Progress Report (July 2020)

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TABLE OF CONTENTS

CERTIFICATION

SECTION	DESCRIPTION
I	Permit Effluent Exceedances
II	Summary of ICAP Activities
III	ICAP Schedule

FIGURES

FIGURE 1	Vicinity Map
FIGURE 2	WWTP Map No. 1
FIGURE 3	WWTP Map No. 2
FIGURE 4	Aeration Basin Re-configuration Plan

APPENDICES

APPENDIX A	WWTP Effluent Data – July 2020
APPENDIX B	Mississippi River @ Greenville Gage – July 2020
APPENDIX C	Emergency WWTP Repair Project Construction Schedule

SECTION I

PERMIT EFFLUENT EXCEEDANCES

A tabulation of the permit effluent limit exceedances for the month of July 2020 is referenced in Table 1 below. The raw data are referenced in Appendix A.

TABLE 1 - EFFLUENT PERMIT EXCEEDANCES

DATE	FLOW (MGD)	BOD5 (mg/l)	TSS (mg/l)	pH (SU)	TOTAL FECAL COLIFORM (MPN/100ml)
07-01-2020	---	154	186	---	8,333
07-02-2020	---	127	40	---	46,667
07-03-2020	---	144	46	---	68,333
07-04-2020	---	92	---	---	131,667
07-05-2020	---	92	60	---	26,667
07-06-2020	---	86	56	---	28,333
07-07-2020	---	140	48	---	26,667
07-08-2020	---	163	40	---	123,333
07-09-2020	---	104	44	---	135,000
07-10-2020	---	114	34	---	75,000
07-11-2020	---	163	42	---	86,111
07-12-2020	---	70	---	---	178,333
07-13-2020	---	70	---	---	13,333
07-14-2020	---	87	34	---	13,333
07-15-2020	---	132	112	---	31,667
07-16-2020	---	155	132	---	16,667
07-17-2020	---	155	128	---	106,667
07-18-2020	---	167	100	---	158,333
07-19-2020	---	107	108	---	242,500
07-20-2020	---	85	116	---	146,667
07-21-2020	---	108	120	---	26,667
07-22-2020	---	172	88	---	98,000
07-23-2020	---	200	64	---	128,333
07-24-2020	---	225	64	---	48,333
07-25-2020	---	169	92	---	58,388
07-26-2020	---	133	40	---	8,333
07-27-2020	---	67	---	---	98,333
07-28-2020	---	68	---	---	76,667
07-29-2020	---	162	66	---	108,333
07-30-2020	---	181	58	---	95,000
07-31-2020	---	200	50	---	78,500

- End of Section -

SECTION II

SUMMARY OF ICAP ACTIVITIES

The following ICAP activities were performed prior to and during the month of July 2020:

1. Clarifier Cleanings – With the seasonal fall of the Mississippi River gage over the months of June and July¹ and the anticipated drop in the shallow groundwater table, Hemphill Construction Company (HEMPHILL) of Florence, MS, rescheduled the clarifier cleaning work. Clarifier No. 2 was cleaned in November 2019; Clarifier Nos. 1, 3, & 4 are scheduled to be cleaned. If the groundwater table falls below 116' MSL, the work for the remaining three clarifiers will begin July 15, 2020, and end December 4, 2020. The construction schedule (Appendix C) has been amended to recognize HEMPILL's revised schedule.
2. Clarifier Repairs – W.L. Burle, Engineers, P.A. (BURLE) worked with Industrial Services, Inc. (IS) to reschedule the clarifier repair work to follow HEMPILL's cleaning work. If the groundwater table falls below 116' MSL, and Clarifier No. 2 can be emptied in time, IS plans to begin the repair work by August 15, 2020. The construction schedule (Appendix C) has also been amended to recognize IS's revised schedule.
3. Aeration Basins 1-7 Cleanings – On January 20, 2020, HEMPILL began cleaning Basin No. 7 and completed the work March 18, 2020. Basin No. 2 was cleaned in April. Basin No. 1 was cleaned in May. Basin No. 3 was cleaned in July. The cleaning of Basin No. 4 began in July continued through the end of the month.
4. By-Pass Channel Cleaning – HEMPILL started and completed the cleaning of the by-pass channel in March 2020.
5. UV Disinfection Chamber Cleaning – HEMPILL has rescheduled this work for December 2020.
6. Interim Disinfection Systems – Upon receipt of the administrative order in December 2019, the City of Greenville, MS (CITY) began disinfecting the WWTP's effluent using chlorine tablets and chlorine gas and continued using the tablets until the CITY's interim NaClO disinfection system was installed and operational.

¹ The Mississippi River at the Greenville gage was below flood stage (48' (122.92' Mean Sea Level (MSL)) during the entire month of July (See Appendix B). It also remained below 36' during the month; however, the groundwater table in the vicinity of the clarifiers remained above the floor elevation of the clarifiers (116' MSL) and thus prevented any cleaning and repair work to occur.

Also in December 2019, the CITY retained BURLE to prepare the construction plans and specifications for the project. BURLE immediately specified the NaClO disinfection equipment and recommended to the CITY that they directly purchase the equipment. The CITY voted to purchase the equipment during the December 3, 2019 council meeting; delivery was expected in 10 to 12 weeks.

In order to expedite construction, BURLE broke the project into two (2) phases: Phase I – Foundation and Phase II – Equipment Installation. They are discussed below:

- Phase I was bid on January 3, 2020. AVIS was the low bidder (\$37,000) and was awarded the project. AVIS finished the project January 21, 2020.
- Phase II was bid January 30, 2020. AVIS was again the low bidder (\$24,800), and was awarded the project. The 10,000 gallon above-ground storage tank arrived on February 28, 2020, and was installed by AVIS that day. The balance of equipment (pumps, controls, housing, etc.) was delivered in March, with the exception of an eyewash station which was received in April. The installation of the remaining equipment followed.

Start-up was delayed due to Pandemic-related supply disruptions/travel restrictions. On April 21, the equipment representative for the disinfection equipment company conducted a training session for MANCHAC. Sodium hypochlorite was then ordered and delivered the following week. Startup occurred April 29, 2020 and the system has remained operational since.

7. Sludge Lagoon No. 2 Project – BURLE completed the construction plans and specifications, and submitted same to the MDEQ SRF Division for review on January 31, 2020. MDEQ reviewed and approved the documents in March. The project was bid May 27, 2020. Two (2) bids were received; both were over budget. The bids were rejected during the June 2nd council meeting.

BURLE redesigned the project to emphasize landfill disposal instead of land application and also extended the construction period by 110 days, bringing the total construction period to 475 days. MDEQ has reviewed/approved the amended plans and specifications. The CITY is currently bidding the project and has scheduled the bid opening for August 26, 2020.

8. Wasted Activated Sludge (WAS) Pumps/Piping – In December 2019, the CITY voted to purchase three (3) WAS pumps from NOV Process and Flow Technologies (NOV) of Dallas, TX for \$46,023.00. The CITY issued a purchase order (No. 200995) on January 21, 2020. NOV delivered the pumps in April 2020. The WAS comminutors and control panels were

delivered on May 1, 2020. The pumps, grinders and control panels are scheduled to be installed by Manchac Management Services, LLC (MANCHAC) of Baton Rouge, LA after the discharge lines have been inspected and cleaned.

Also, the valving on the WAS suction lines from Aeration Basin Nos. 1 through 8 will be replaced under Contract No. 6-WWTP Effluent Pump Station Improvement Project. Construction documents were prepared/delivered to MDEQ for review in June 2020. MDEQ approved the construction documents in July. The bid opening is scheduled for August 26, 2020.

9. Additional WWTP Improvements – During the February 4, 2020 City Council meeting, the CITY approved additional WWTP improvements which were proposed by MANCHAC, the CITY's WWTP operator.

The improvements consist of:

- a. Blowers – MANCHAC proposes to rebuild three (3) of the existing blowers. On February 6, 2020, MANCHAC removed Blower No. 4 from the blower building and transported it to Erichson Company, Inc. (ERICHSON) of Metairie, LA for rehabilitation. ERICHSON rebuilt the blower in March 2020, and returned it to the WWTP.

In April, two blowers, Blower Nos. 5 and 6, were delivered to ERICHSON in hopes of rebuilding the better of the two and using the other for parts. ERICHSON rebuilt Blower No. 5 and MANCHAC transported it to the WWTP in June. The motor for Blower No. 6 was taken to Mid-South Electric (MID-SOUTH) of Greenville, MS for repair.

In July, MANCHAC installed the blowers and now have four (4) operational blowers.

- b. Aeration Basin Diffusers – MANCHAC asked the CITY to purchase sufficient diffusers to replace all of the diffusers for eight (8) aeration basins. The CITY issued a purchase order for the diffusers in February. As many as 14,000 diffusers will be replaced. MANCHAC is performing the work as basins are cleaned and the diffusers are inspected. In April, MANCHAC oversaw the replacement of the diffusers in Basin Nos. 2 and 7. In July, MANCHAC started replacing the diffusers in Basin No. 1; the work will be completed in August, as soon as HEMPHILL finishes their scheduled repairs to the sluice gate and aeration piping.
- c. Aeration Basin Aeration Valves – MANCHAC is currently replacing the aeration valves for Basin Nos. 1 through 8.

- d. Barrack Replacement – After the CITY receives MDEQ SRF Loan No. 12 in 2021, MANCHAC plans to replace the existing barrack (Item II.8.c) with a new automated bar screen and conveyor/compactor. The new bar screen, along with the new grit chamber bar screen, will give the WWTP gross solids removal redundancy.
- e. Aeration Basin No. 8 Cleaning – In February 2020, MANCHAC began cleaning Basin No. 8, using MANCHAC's crew and completed the work in April.
- f. Exercise/Repair Frozen Sluice Gates for Aeration Basins 1 through 8 – The CITY hired IS to exercise and/or repair eleven (11) frozen sluice gates in Basin Nos. 1 through 8. The work began in June. Several of the gates are in need of concrete wall repairs. The concrete work will be performed by HEMPHILL under a change order which will be brought before the City Council for review/approval in August 2020.
- g. Slide Gate/Stop Gate Installations – MANCHAC plans to use Basin No. 8 as an interim grit chamber until the new grit chamber is operational in April 2021. To accomplish this, MANCHAC will reconfigure the flow through the aeration basins from parallel flow to serpentine, series flow as shown in Figure 4. This will be accomplished by installing four (4) slide gates and two (2) stop plates as shown in the drawing. The CITY has issued purchase orders for both the equipment and to IS for the installation of the equipment. The work began in July 2020 and should be completed in October 2020.

In June, BURLE prepared construction documents for the installation of the slide gate electrical services. The project was bid on July 29, 2020. McInnis Electric was the lone bidder with a bid of \$228,570.00. The CITY will discuss the bid during the August 4th council meeting.

- h. Temporary Sludge Dewatering – In order to provide interim sludge dewatering services prior to the completion of the Sludge Lagoon No. 2 project, the CITY plans to provide belt press sludge dewatering system and dispose of the sludge at a landfill. This will consist of:
 - Existing Belt Press Building Repairs – The existing belt press building will be repaired. In July, the CITY inspected the WWTP's two (2) belt presses, a 2 meter Phoenix press and a 1 meter Carter press, and scheduled an equipment representative to evaluate the condition of both presses. Phoenix Process Equipment provided a quote to rebuild the 2 meter Phoenix belt press; the 1 meter Carter belt press was not repairable. The CITY also received quotes in July to repair the belt press building and electrical system. BURLE will bring these

quotes before the City Council for issuance of purchase orders in September 2020.

- Leasing Belt Press Equipment – MANCHAC plans to lease and operate a trailer-mounted, 2 meter belt press. The system will be installed adjacent to the existing, belt press building.
- Biosolids Land Application Site – BURLE is preparing a biosolids land application permit for a 1,400 acre site in Washington County, MS. The biosolids currently stored in Aeration Basins 9 through 12 and Lagoon Nos. 1 and 3 will be disposed of on the land application site.

10. Grit Chamber Construction Project – HEMPHILL began construction of the grit chamber in February 2020. The work has continued through the end of this reporting period. The anticipated completion date is April 23, 2021.

11. WWTP Biosolids Land Application Site – In January 2020, MANCHAC constructed the WWTP biosolids land application site which was approved of by MDEQ and referred to in their approval letter (dated December 3, 2019) as the “Basin Material Removal Plan”. MANCHAC made the site available to HEMPHILL for disposal of the aeration basin material in January.

During the January 23, 2020 public works committee meeting, a neighbor living south of the WWTP, Ms. Sarah Moorman, complained about both the odor from the land application activities and the land application site’s stormwater run-off impacting her property. The CITY told Ms. Moorman that they were operating the land application site within the terms of their MDEQ-approved plan. She stated she would attend the February 4, 2020 council meeting to object to the disposal practices.

On January 30, 2020, MDEQ inspected the site and subsequently instructed MANCHAC to discontinue land application work until the site was dryer and the biosolids could be properly incorporated into the surficial soils as required in MDEQ’s approval plan. This action temporarily forced HEMPHILL to cease basin cleaning activities.

In February 2020, HEMPHILL installed a HDPE pipeline from the aeration basins to the sludge lagoons. This pipeline gave HEMPHILL the option of pumping the biosolid to either the sludge lagoons, as originally planned under the grit chamber project, or to the biosolids land application site. Since February, HEMPHILL has used the pipeline to convey the solids from the basins to the sludge lagoons.

12. WWTP Effluent Pump Station Repair – In March 2020, MANCHAC informed the CITY that the effluent pumps were in poor condition. Of the three pumps, only two were marginally operational. The situation was such that the pump station could not process the CITY's anticipated wastewater flow during a rain fall event.

The following actions were taken to address the problem:

- MANCHAC has installed two (2) by-pass pumps to assist Pump No. 3 in meeting demand. While they are in use, MANCHAC is making the following repairs:
 - Pump No. 1 – The motor was removed and taken to MID-SOUTH for repair. The motor was repaired and returned on May 20, 2020.
 - Pump No. 2 – The motor was also removed and taken to MID-SOUTH for repair; the motor was repaired and returned on May 20, 2020. Luckett Pumps (LUCKETT) of Tutwiller, MS was hired to inspect, repair and re-install the pump; the work is scheduled for September 2020. Upon completion, the two bypass pumps will be removed from service.
 - Pump No. 3 – LUCKETT was also hired to inspect the pump. The inspection has been scheduled to occur during a dry weather month when the river gage reading is low (<36' at the Greenville gage).
- The CITY issued a purchase order to MANCHAC to purchase one (1) new effluent pump. MANCHAC has placed the order and delivery is expected within 20 weeks of the order. Upon receipt, the CITY will hire a contractor to install it.
- BURLE moved the effluent pump station repair and aeration basin valve replacement project up in order of design under MDEQ SRF Loan 11 and called it Contract No. 6 WWTP Effluent Pump Station Improvement Project. The project, as it relates to the effluent pump station, will involve the complete replacement of two pumps and the valves for all three pumps.

The design of the project was expedited. Plans/specifications were delivered to MDEQ for review/approval in June 2020, instead of the original deadline of September 30, 2020. MDEQ approved the plans/specifications in July. The CITY is currently advertising the project and will receive bids August 26, 2020.

- End of Section -

SECTION III

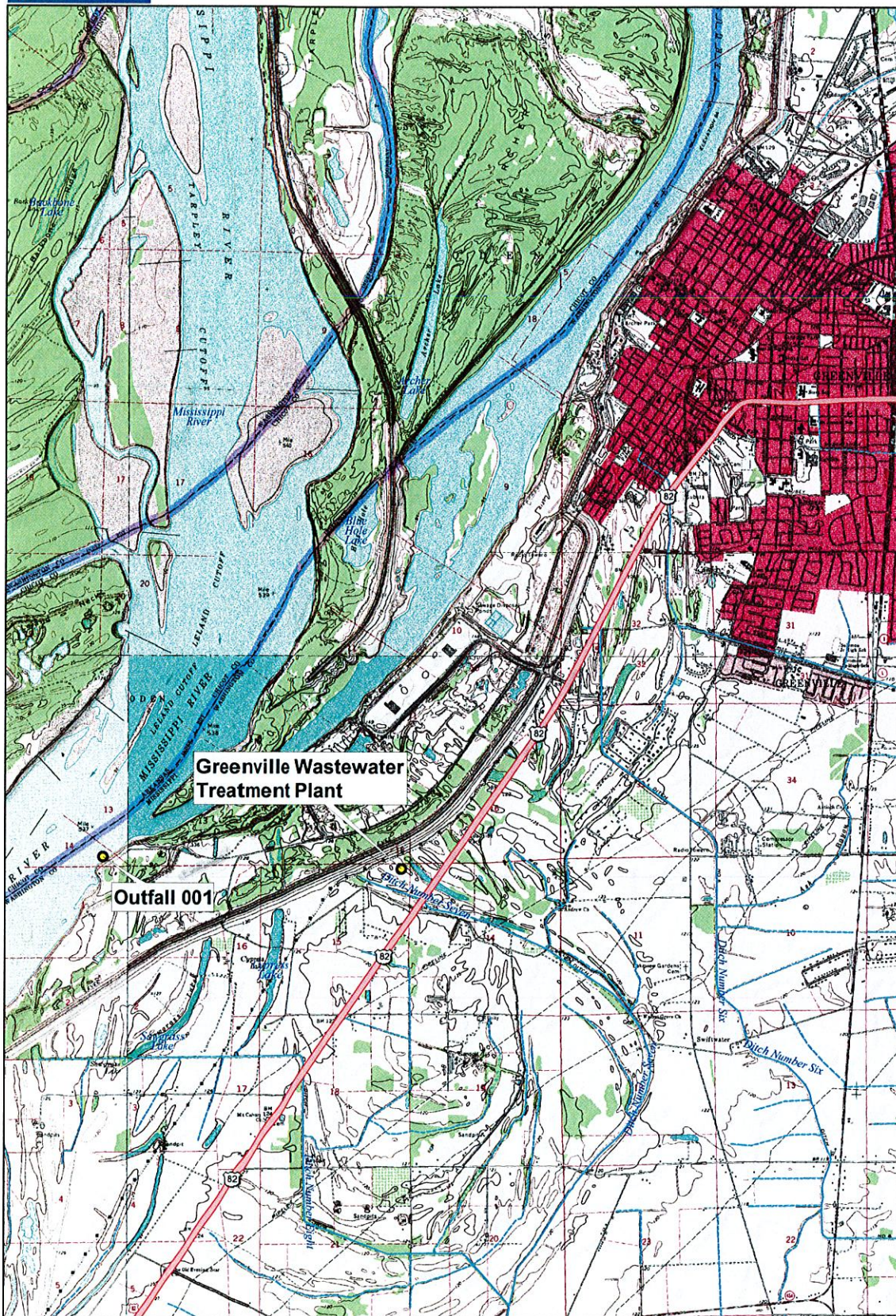
ICAP SCHEDULE

During the July 10th conference call with EPA, DOJ and MDEQ, the CITY discussed the impact the COVID-19 pandemic, the 2020 Spring Flood Event and the complexity of the repair work have had on the CITY's Emergency WWTP Repair Project. EPA requested an amended ICAP Schedule which recognizes the impacts and delays.

The CITY sent the amended schedule to EPA/MDEQ on August 7, 2020, for review and comment (See Appendix C).

FIGURES

FIGURE 1
VICINITY MAP



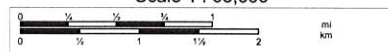
Data use subject to license.

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Scale 1 : 63,360



1" = 5,280.0 ft Data Zoom 12-0



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FIGURE 1 VICINITY MAP

MONTHLY PROGRESS REPORT
JULY 2020
WASTEWATER TREATMENT PLANT REPAIR PROJECT
GREENVILLE, MISSISSIPPI



QUADRANGLE LOCATION

Proj. No.	02500-1-0419
CAD File No.	GWTP Vicinity.Dwg
Drawn By: MJJ	Dwg. No.
Chkd. By: WLB, JR.	1
Date: 8/10/2020	
Scale: 1" = 1 MILE	

FIGURE 2
WWTP MAP NO. 1



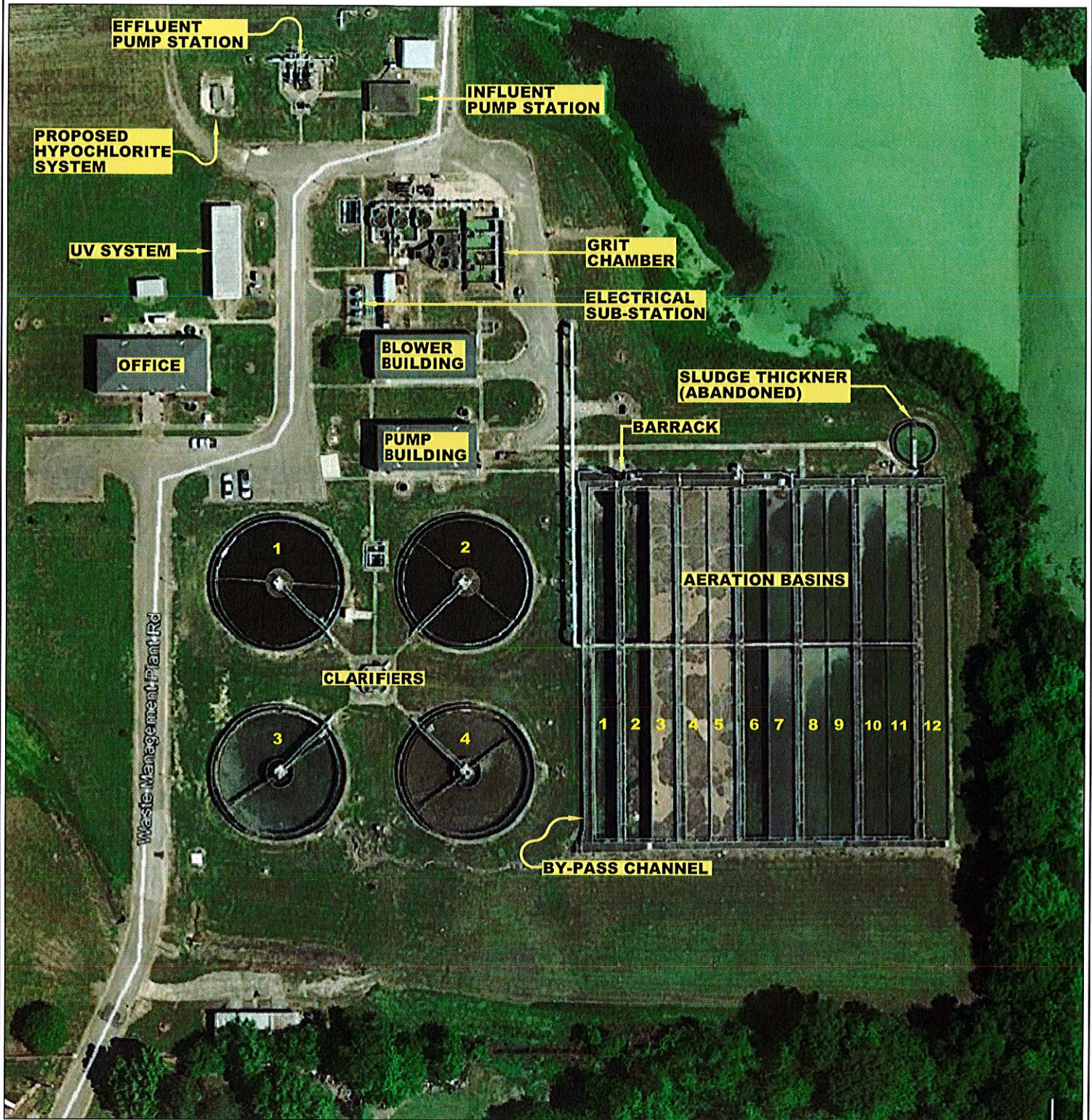
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MONTHLY PROGRESS REPORT
JULY 2020
WASTEWATER TREATMENT PLANT
REPAIR PROJECT
GREENVILLE, MISSISSIPPI

FIGURE 2
WASTEWATER
TREATMENT
PLANT MAP

Proj. No. 02500-1-0419	
CAD File No. GreenvilleWWTP Layout.dwg	
Drawn By: MJJ	Dwg. No.
Chkd. By: WLB, Jr.	2
Date: 8/10/2020	
Scale: N.T.S.	

FIGURE 3
WWTP MAP NO. 2



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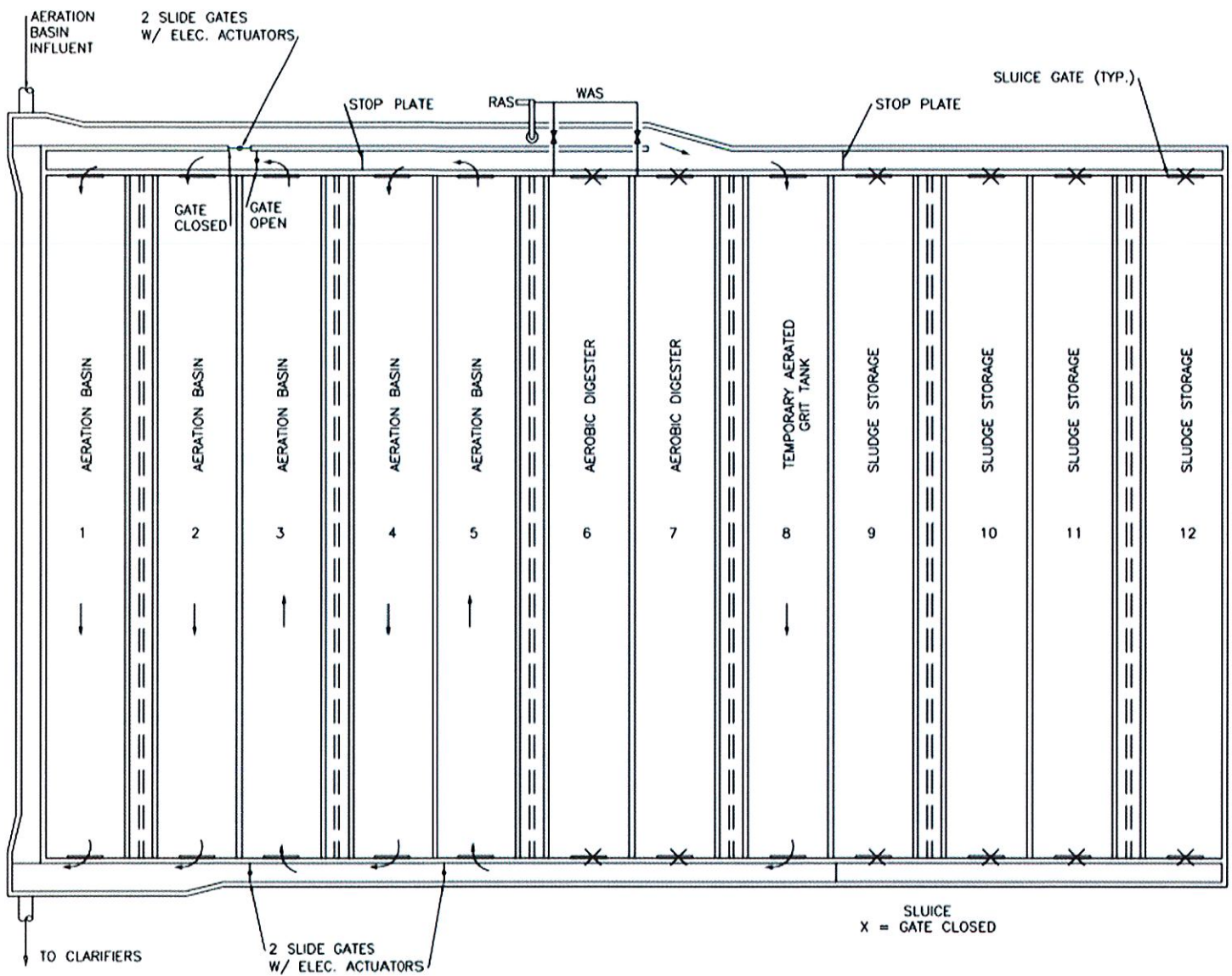
MONTHLY PROGRESS REPORT
JULY 2020
WASTEWATER TREATMENT PLANT
REPAIR PROJECT
GREENVILLE, MISSISSIPPI

FIGURE 3
WASTEWATER
TREATMENT
PLANT MAP

Proj. No. 02500-1-0419	
CAD File No. GreenvilleWWTP Layout.dwg	
Drawn By: MJJ	Dwg. No.
Chkd. By: WLB, Jr.	3
Date: 8/10/2020	
Scale: N.T.S.	

FIGURE 4

AERATION BASIN RE-CONFIGURATION PLAN



GREENVILLE WWTP
AERATION BASIN OPERATION
NORMAL FLOW



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MONTHLY PROGRESS REPORT
JULY 2020
WASTEWATER TREATMENT PLANT
REPAIR PROJECT
GREENVILLE, MISSISSIPPI

FIGURE 4
AERATION BASINS
PLAN

Proj. No. 02500-1-0419	
CAD File No. GreenvilleWWTP Layout.dwg	
Drawn By: MJJ	Dwg. No.
Chkd. By: WLB, Jr.	4
Date: 8/10/2020	
Scale: N.T.S.	

APPENDICES

APPENDIX A
WWTP EFFLUENT DATA (JULY 2020)

Greenville Daily WWTP Report

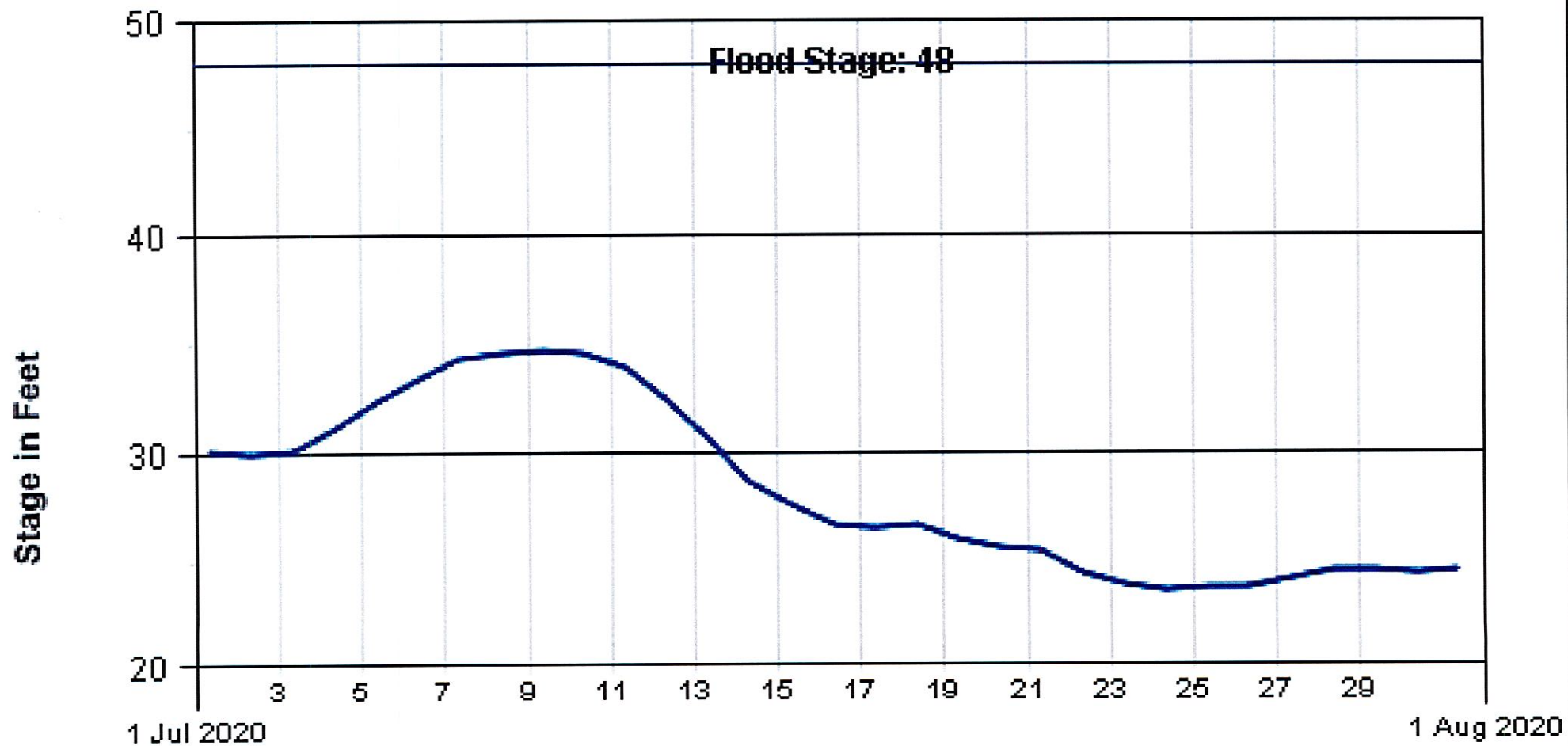
	MGD		Effluent (ppm)					colonies/100mL
	Effluent flow		BOD	TSS	Total N	Chlorine Residual		Total Fecal Coliform
Wednesday, July 01, 2020	3.9		154	186		0.96		8333
Thursday, July 02, 2020	13.3		127	40		0.08		46667
Friday, July 03, 2020	4.74		144	46		0.11		68333
Saturday, July 04, 2020	10		92	22		0.05		131667
Sunday, July 05, 2020	10.2		92	60		0.2		26667
Monday, July 06, 2020	9.7		86	56		0.02		28333
Tuesday, July 07, 2020	4.4		140	48		0.02		26667
Wednesday, July 08, 2020	9.3		163	40		0.01		123333
Thursday, July 09, 2020	5.6		104	44		0.06		135000
Friday, July 10, 2020	10.9		114	34		0.03		75000
Saturday, July 11, 2020	4.5		163	42		0.11		86111
Sunday, July 12, 2020	10.1		70	26		0.11		178333
Monday, July 13, 2020	9.7		70	22		0.07		13333
Tuesday, July 14, 2020	7.7		87	34		0.1		13333
Wednesday, July 15, 2020	7.6		132	112		0.09		31667
Thursday, July 16, 2020	7.4		155	132		0.08		16667
Friday, July 17, 2020	7.3		155	128		0.12		106667
Saturday, July 18, 2020	6.9		167	100		0.05		158333
Sunday, July 19, 2020	6.8		107	108		0.03		242500
Monday, July 20, 2020	6.8		85	116		0.03		146667
Tuesday, July 21, 2020	4.2		108	120		0.02		26667
Wednesday, July 22, 2020	9.2		172	88		0.02		98000
Thursday, July 23, 2020	3.4		200	64		0.05		128333
Friday, July 24, 2020	3.4		225	64		0.05		48333
Saturday, July 25, 2020	3.8		169	92		0.03		58388
Sunday, July 26, 2020	9.4		133	40		0.17		8333
Monday, July 27, 2020	3		67	22		0.01		98333
Tuesday, July 28, 2020	9.1		68	30		0.08		76667
Wednesday, July 29, 2020	5.6		162	66		0.01		108333
Thursday, July 30, 2020	2.8		181	58		0.03		95000

Friday, July 31, 2020	8.7		200	50		0.006		78500
Jul. 2020 Total	219.44		xxxx	xxxx	xxxx	xxxx		xxxx
Jul 2020 Average	7.07871		132	67.41935	#DIV/0!	0.090516		57558.7807
Jal.2020 Max	13.3		225	186	0	0.96		242500
Jal.2020 Min	2.8		67	22	0	0.006		8333

APPENDIX B

MISSISSIPPI RIVER @ GREENVILLE GAGE – JULY 2020

Mississippi River @ Greenville, MS
From 07/01/2020 To 07/31/2020



Gage Zero = 74.92 Ft. NGVD29

APPENDIX C

EMERGENCY WWTP REPAIR PROJECT CONSTRUCTION SCHEDULE

APPENDIX C - SCHEDULE, EMERGENCY WWTP REPAIR PROJECT, GREENVILLE, MS as of 8/6/2020

