



FISHER ARNOLD

ENGINEERS | ARCHITECTS | CONSULTANTS | PLANNERS

June 23, 2021

Ms. Danielle E. Harbin
Office of Water Quality
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

**RE: UPDATE ON ACTIVITIES FOR CORRECTIVE ACTION PLAN
WEST MEMPHIS UTILITIES
NPDES PERMIT NUMBER AR0022039, AFIN 18-00879**

Dear Ms. Harbin:

On behalf of West Memphis Utilities (WMU), please accept the following as an update of activities undertaken since our last update in December 2020. As outlined in WMU's Amended CAP, WMU outlined a plan of action through December 2023. Listed below is a capsule summary of those activities either completed or underway since the CAP was implemented.

1. WMU continues to meet monthly with their CAP Working Group. Members of this group include Todd Pedersen, General Manager WMU; Ward Wimbish, Asst. General Manager, WMU; and AJ Elhaj, all engineers with WMU; Denise Bosnick, Director of Environmental Quality, WMU; and Paul Holloway, WWTP Manager, WMU. Also included in these monthly meetings as necessary are Tim Verner, P.E., and Jeff Old, P.E., Fisher & Arnold, and Mac Compton, P.E., RJN Group. This group directs and tracks on-going efforts by WMU staff and all outside consultants and contractors relative to efforts towards the elimination of systemwide SSOs.
2. Upchurch Services is finalizing work for the rehabilitation of sewer manholes previously identified in RJN SSES Report and bid last fall. This work should be completed within the next 30 days.

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3. Landmark Construction has completed the work to upgrade Pump Station 9. As previously described, this project included the addition of a third pump and new valving to provide additional redundancy to this station. Other work included the cleaning of the wet well, control modifications, and other maintenance type work. All work is complete except for the installation of a new hoist/trolley, which is on back order with delivery expected in mid-July 2021.
4. Engineering plans and specifications for the replacement of Pump Stations 3 and 4, and a new force main are complete and state approvals secured. WMU is in the process of securing easements and setting of an advertisement date to secure construction bids. It is anticipated that this work will be advertised in the next 30 to 45 days.
5. Since December 2020, WWTF staff had to bypass on one occasion from March 29, 2021, to April 1, 2021. The total volume bypassed was 23 MG. This event was reported to ADEQ at the time of occurrence. Additionally, since December 2020, there have been a total of 10 reported sanitary sewer overflows.
6. Fisher & Arnold, Inc. is approximately 80% complete with the preparation of plans detailing the expansion of the WWTF. This project, when completed, will increase the average daily flow capacity to 12 MGD and allow a peak flow of 18 MGD. Concurrent with these design efforts, Fisher & Arnold, Inc. will also prepare and submit to ADEQ necessary NPDES permit modifications for this increased flow. It is anticipated that these plans, specifications, and permit modifications will be submitted to ADEQ in 60 days.
7. Between the period of November 17, 2020, and June 7, 2021, WMU has spent \$1,612,989.189 in the planning, engineering, replacement, and/or repair of their sewer collection and treatment systems. Of this total, \$760,047.97 has been for actual rehabilitation and/or rehabilitation of existing infrastructure. The remained has been for advance planning studies and/or design of sewer infrastructure repairs, rehabilitation, or replacement.

Ms. Danielle E. Harbin
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Hopefully, this summary of activities is useful to you and your staff and demonstrates the commitment of WMU to eliminate SSOs in their collection system and WWTP bypasses. If you require any additional information, please do not hesitate to contact me at this office.

Sincerely,

FISHER & ARNOLD, INC.



Tim Verner, P.E.
Senior Vice-President

TV/tv

Enclosures

Cc: Todd Pedersen, General Manager, WMU



Arkansas Department of Health

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Governor Asa Hutchinson

José R. Romero MD, Secretary of Health

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June 4, 2021

District 4

Jeffrey W. Old, P.E.
Fisher Arnold
9180 Crestwyn Hills Drive
Memphis, TN 38125

RE: Pump Sta. 3 and 4 Rehabilitation and Force Main
West Memphis, Crittenden Co., AR
ADH Project #115172

Dear Mr. Old,

The plans for the above-referenced project dated April 28, 2021, and submitted to the Engineering Section on May 21, 2021, have been reviewed and are hereby approved with the following conditions:

1. The Engineering Section relied upon the statements and representations made in the engineer's report, plans and specifications. In case any statement or representation in the aforementioned documents is found to be incorrect, this approval may be revoked.
2. There shall be no deviation from the plans and specifications unless revised plans and specifications have been first submitted for review and written consent given.
3. The review and approval of the plans and specifications were for functional and sanitary features and in no way constitute an analysis of the structural design nor does it cover any building plumbing.
4. If construction on this project is not started within one year of the date affixed hereto, this Letter of Approval is void.
5. Construction inspection for this project shall be the responsibility of Fisher Arnold.

One copy of the plans is being retained for our files and one copy is being returned to you. When submitting correspondence for this project, be sure and reference our **ADH Project #115172**. If you have any questions concerning this matter, please call me at (501) 661-2892.

Sincerely,

A handwritten signature in black ink, appearing to read 'Glenn A. Greenway', with a long horizontal flourish extending to the right.

Glenn A. Greenway, P.E.
Engineer Supervisor
Engineering Section

GAG:jtc

cc: West Memphis Waterworks (PWS 156)



WEST MEMPHIS UTILITY COMMISSION

604 East Cooper

Phone: 870-735-3355

West Memphis, AR 72301

CAP MEETING (January 13, 2021)

Attendees Onsite:

- **WMUC-** Paul Holloway, AJ Elhaj, Denise Bosnick, Todd Pedersen, Ward Wimbish.
- **F&A-** Tim Verner, Nate Kendell
- **RJN-** Mac Compton

Project Members:

- **W.M.U.C.-** Todd Pedersen, Ward Wimbish, Paul Holloway, AJ Elhaj
- **F&A-** Tim Verner, Jeff Old
- **RJN-** Mac Compton, Stephen Jeffus, Colton Bryant

The Following Actions that were discussed:

A. Review Meeting Minutes

- Everyone agreed to last meeting notes, and no comments were made.

B. Pump Station Number 9 Modifications

- Elhaj stated that Landmark Construction has been on the jobsite working on steel structure and widen the openings of the concrete slab.
- Elhaj stated that Landmark Construction has worked on the masonry work around the new door frame.
- Elhaj stated that Landmark Construction are waiting the new pump to be delivered to the jobsite by the end of January.

C. Common Force Main Extension & Pump Stations Refit

- Verner stated that pump station 4 will have three new pumps at a rate of 70 Hp per pump.
- Verner stated that FA has received the package from the vender for pump station 3, which include a prefabricated building, and built-in pump skit.
- Verner stated that FA will be looking at the concrete slab and making sure that they are not increasing the length of the suction line.
- Verner stated that FA will have the final drawings by the end of January and send it off to ADEQ for review.



WEST MEMPHIS UTILITY COMMISSION

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D. 2020 SANITARY SEWER MANHOLE REHABILITATION

- Elhaj stated that WMU has given the notice to proceed to Upchurch Service on November 9, 2020 and Per-construction on November 15, 2020.
- Elhaj stated that Upchurch services have completed grout pipes, seal corbel, and currently working on grout lower 18" of the manhole & reset manhole frames and covers.

E. WWTF MODIFICATION

- Verner stated that FA have looked at (3) 110 LF Clarifiers with the option of having one clarifier off during the normal flow.
- Verner stated that Dr. Moore have confirmed that the detention time with two 110 LF diameter clarifiers during normal conditions.
- Holloway requested that Dr. Moore needs to provide the detention time during normal conditions.
- Verner stated that each Clarifier will have two pumps for the sludge return which include one pump in reserve, and both will be on VFD driven. Verner stated They will be total of six pumps for the three clarifiers.
- Verner stated that the Structural Engineers stated based on original design the oxidation ditch cannot be drained with the current wall structural.
- Holloway stated that WMU have drained the oxidation ditch many times.
- Pedersen suggested that WMU to drain the oxidation ditch and Have FA come out to radar the wall from the inside.
- Verner stated that FA will set up a meeting with the structural engineer to radar the inside of the wall.
- Verner stated the life expectancy of diffuser head for the oxidation ditch range from 7 to 15 years based on the manufacture and they are 24 heads in total.
- Verner stated that FA will set up a meeting with Dr. Moore and WMU to review clarifiers detention time, options for the oxidation ditch.



WEST MEMPHIS UTILITY COMMISSION

604 East Cooper

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West Memphis, AR 72301

CAP MEETING (March 10, 2021)

Attendees Onsite:

- **WMUC-** Paul Holloway, AJ Elhaj, Denise Bosnick, Todd Pedersen, Ward Wimbish.
- **F&A-** Tim Verner, Jeff Old
- **RJN-** Mac Compton

Project Members:

- **W.M.U.C.-** Todd Pedersen, Ward Wimbish, Paul Holloway, AJ Elhaj
- **F&A-** Tim Verner, Jeff Old
- **RJN-** Mac Compton, Stephen Jeffus, Colton Bryant

The Following Actions that were discussed:

A. Review Meeting Minutes

- Everyone agreed to last meeting notes, and no comments were made.

B. Pump Station Number 9 Modifications

- Elhaj stated that Landmark construction has installed a new 20" plug valve at the discharge Along with 16-inch bypass riser.
- Elhaj stated that Landmark Construction has got the bypass system ready, landmark still waiting on the plug at the 42-inch line.
- Old stated that the electrical submittal was approved couple weeks ago.
- Old stated that Landmark got the bypass set up and Hill services will start cleaning up the wet well.

C. Common Force Main Extension & Pump Stations Refit

- Verner stated that FA used the calculations for the force main and still seeing overflows for each basin based on the force main design.
- Verner stated that the rest of the overflows will be addressed from I/I standpoint.
- Compton stated the main overflow is on the 3B line in basin 3.
- Old stated when only pump station 4 pumps into the force main, it would have much head. Old will confirm it from the supplier.

D. 2020 SANITARY SEWER MANHOLE REHABILITATION

- Elhaj stated that Upchurch services are currently working on complete lining and reset manhole frames & covers, frame seal.



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E. WWTF MODIFICATION

- Verner stated that FA are currently working with George from Gulf States on the final pump sizing for common wet well.
- Holloway suggested to not use a T-valve for the common well.
- Old stated on the return sludge will be 18 MGD plus 25 percent, which will be 22 MGD.
- Verner stated that the aerators and clarifiers details are coming along.
- Verner stated that they will be working on the UV detail structural.
- Verner will start scheduling on site visit more frequently with Paul Holloway for yard piping (returns and waste piping) at WWTF.
- Verner stated that there will be a common junction box and all the returns sludge for each clarifier comes into, so we can gate them off before it turns and goes into the Pump station wet well.
- Verner stated by the next meeting FA should have yard pipe layout, all the influent structural, split box, turn sludge line, influent line, and clarifiers and return sludge Pump station.



WEST MEMPHIS UTILITY COMMISSION

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CAP MEETING (February 10, 2021)

Attendees Onsite:

- **WMUC-** Paul Holloway, AJ Elhaj, Denise Bosnick, Todd Pedersen, Ward Wimbish.
- **F&A-** Tim Verner, Nate Kendell
- **RJN-** Mac Compton

Project Members:

- **W.M.U.C.-** Todd Pedersen, Ward Wimbish, Paul Holloway, AJ Elhaj
- **F&A-** Tim Verner, Jeff Old
- **RJN-** Mac Compton, Stephen Jeffus, Colton Bryant

The Following Actions that were discussed:

A. Review Meeting Minutes

- Everyone agreed to last meeting notes, and no comments were made.

B. Pump Station Number 9 Modifications

- Elhaj stated that Landmark Construction has received the approved pump controls submittal on February 9, 2021.
- Verner stated that Landmark Construction has resubmitted the electrical Submittal and is being reviewed.
- Verner stated that Fisher Arnold has reviewed the crane hoist submittal and have been approved last week.

C. Common Force Main Extension & Pump Stations Refit

- Verner stated the plans are complete and are ready to be submit to the Department of Health. Verner requested that WMU to review the plans before the plans gets submit to the Health department.
- Verner stated that typical review time for the health department is 4 weeks.

D. 2020 SANITARY SEWER MANHOLE REHABILITATION

- Elhaj stated that Upchurch services have completed grout pipes, seal corbel, grout lower 18" and currently working on complete lining and reset manhole frames & covers.



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E. WWTF MODIFICATION

- Verner stated that FA are moving forward with (3) 110 LF Clarifiers and they have structural engineers work on that.
- Verner stated that FA have a structural engineer that is working the Influent channel modification; grid chamber and splitter box into the three ditches.
- Verner stated that FA have received the final report for geotechnology with fare scanning down in the ditch two weeks ago.
- Verner recommended the orbal discs system for the oxidization ditch because the primary advantage is construction time.
- Verner stated that the oxidization ditch will have 4 rotors per ditch, each have 35 to 40 plastic discs.
- West Memphis Utilities and Fisher Arnold agreed to move forward with the Orbal discs systems for the oxidization ditch.
- Verner stated there is two options for return sludge.
 - i. Option 1- Build common well from the clarifiers that will be 15' to 16' deep and have 3 to 4 pumps along with discharge valve. The maximum return sludge flow rate can be 8000 gpm at full design.
 - ii. Option 2- Build pump house and have the pumps 3' to 4' below grade, the pumps location to suction in compares to overflow elevation of the clarifier are couple feet below that, the suction that goes to the header that is feed from waste sludge line.
- Holloway suggested option 1 to build common well from the clarifiers for return sludge.
- Verner stated that FA will look into the common well for the return sludge.



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CAP MEETING (April 7, 2021)

Attendees Onsite:

- **WMUC-** Paul Holloway, AJ Elhaj, Denise Bosnick, Todd Pedersen, Ward Wimbish.
- **F&A-** Tim Verner, Jeff Old
- **RJN-** Mac Compton

Project Members:

- **W.M.U.C.-** Todd Pedersen, Ward Wimbish, Paul Holloway, AJ Elhaj
- **F&A-** Tim Verner, Jeff Old
- **RJN-** Mac Compton, Stephen Jeffus, Colton Bryant

The Following Actions that were discussed:

A. REVIEW MEETING MINUTES

- Everyone agreed to last meeting notes, and no comments were made.

B. PUMP STATION NUMBER 9 MODIFICATIONS

- Elhaj stated that Landmark construction have pulled out the bypass pumps on April 6, 2021 and existing pumps are back in service.
- Verner stated that Landmark construction has installed all valves for pump 3, will be working on the pump stands and installing the pump.
- Verner stated that the Electrician has mounted the pump controls and are now pulling wires.
- Verner stated that Landmark should have startup setup within 3 weeks.

C. COMMON FORCE MAIN EXTENSION & PUMP STATIONS

- Old stated that FA has the plans ready to be submitted to the health department for review.
- Old stated that Pump station 3 will have two Gorman Rupp pumps and Pump station 4 will have three flygt pumps.
- Old stated that FA will go back and verify the pipe encasement on the plans.
- Verner suggested a Mag-Meter for pump station 3 and 4.
- Holloway stated that the Mag-Meter will need to calibrated yearly.
- Pedersen stated FA and WMU will investigate Mag-Meter later.



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D. 2020 SANITARY SEWER MANHOLE REHABILITATION

- Elhaj stated that Upchurch services currently working on complete lining and reset manhole frames & covers, frame seal.
- Elhaj stated that Upchurch Services are scheduled to be complete by the end of May.

E. WWTF MODIFICATION

- Verner stated that FA has selected the pumps for the clarifiers.
- Verner stated that FA will start design on the UV System. The new UV System can handle 18 MGD and would cost \$325,000.
- Holloway suggested to that FA to look into the UV system by Trojan.
- Verner stated that FA will further investigate the UV system by Trojan.
- Verner stated that FA are 65% complete with Civil Drawings.
- Verner stated that FA will be complete within the next 30 to 45 days for Civil drawings. Not including control and electric drawings.
- Verner stated that the WWTF plans will be submitted to ADEQ this summer.



WEST MEMPHIS UTILITY COMMISSION

604 East Cooper

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West Memphis, AR 72301

CAP MEETING (May 7, 2021)

Attendees Onsite:

- **WMUC-** Paul Holloway, AJ Elhaj, Denise Bosnick, Todd Pedersen, Ward Wimbish.
- **F&A-** Tim Verner, Jeff Old
- **RJN-** Mac Compton

Project Members:

- **W.M.U.C.-** Todd Pedersen, Ward Wimbish, Paul Holloway, AJ Elhaj
- **F&A-** Tim Verner, Jeff Old
- **RJN-** Mac Compton, Stephen Jeffus, Colton Bryant

The Following Actions that were discussed:

A. REVIEW MEETING MINUTES

- Everyone agreed to last meeting notes, and no comments were made.

B. PUMP STATION NUMBER 9 MODIFICATIONS

- Elhaj stated that Landmark Construction are scheduled to do start up today for pump number 3 with George from Gulf States. Gulf states Engineering are getting all the wires tied into the controller and get pump 3 running.
- Elhaj stated once Landmark Construction gets pump 3 up and running, they will start turning pump one and two off and tie the wires into the new controller.
- Elhaj stated that Landmark Construction only left with the generator port and the crane hoist.

C. COMMON FORCE MAIN EXTENSION & PUMP STATIONS

- Old stated that FA has submitted the plans to the health department for review. The plans were submitted last Thursday (04/29/2021) by mail.
- Wimbish stated that he had asked Jim Smith from any old drawings that would show any utility easements or drainage easement. We need to identify if we have any easements before we advertise.

D. 2020 SANITARY SEWER MANHOLE REHABILITATION

- Elhaj stated that Upchurch services currently working on complete lining and reset manhole frames & covers, frame seal.
- Elhaj stated that Upchurch Services are scheduled to be complete by the end of June.



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E. WWTF MODIFICATION

- Verner stated that the previous CAP meeting, WMU requested FA to do pros and cons for Trojan UV system second option to ozone.
- Verner stated that FA reached out to Trojan and asked them to provide us Equipment cost, maintenance schedule and bulb replacement so we can look at the comparison to ozone. Verner stated that FA finally received the information that was requested from trojan.
- Verner stated the UV structure channel cost would be the same and capital estimated cost for ozone UV System is \$325,000. Ozone expected bulb replacement life is 13000 hours of operation time with the sumption that bulbs are kept clean. Each bulbs cost about 50 dollars apiece to replace.
- Verner stated the Trojan UV System Equipment cost estimated \$437,000 and expected bulb replacement life 8760 hours per bulbs hours of operation time and WMU will need to change 28 bulbs a year. The quote for one bulb was \$750 dollars.
- Verner stated FA will look into Gulf State UV system and look at the comparison.
- Verner stated that FA has started looking at space planning on the return sludge pump station that includes the number of pumps and where they are located and utilizing building for future motor control switch gear.
- Verner stated that will be mag-meter on RAS pipe and one on waste pipe.
- Verner stated that FA will start working on the electrical and control for the next 30 days.
- Verner stated that WWTF plans will be submitted to ADEQ on July of 2021.



WEST MEMPHIS UTILITY COMMISSION

604 East Cooper

Phone: 870-735-3355

West Memphis, AR 72301

CAP MEETING (June 16, 2021)

Attendees Onsite:

- **WMUC-** Paul Holloway, AJ Elhaj, Denise Bosnick, Todd Pedersen

Attendees Conference call:

- **F&A-** Jeff Old
- **RJN-** Mac Compton

Project Members:

- **W.M.U.C.-** Todd Pedersen, Ward Wimbish, Paul Holloway, AJ Elhaj
- **F&A-** Tim Verner, Jeff Old
- **RJN-** Mac Compton, Stephen Jeffus, Colton Bryant

The Following Actions that were discussed:

A. REVIEW MEETING MINUTES

- Everyone agreed to last meeting notes, and no comments were made.

B. PUMP STATION NUMBER 9 MODIFICATIONS

- Old stated that pump station # 9 crane hoist will be shipped out on June 23, 2021.
- Old stated that FA will schedule date to do inspections and punch list items for pump station 9.

C. COMMON FORCE MAIN EXTENSION & PUMP STATIONS

- Old stated that the health department has approved the plans. The plans were approved on June 4, 2021.
- Old suggested that WMU needs to identify all the easement before advertising.
- Pedersen stated that WMU will need to start advertising by the end of July.

D. 2020 SANITARY SEWER MANHOLE REHABILITATION

- Elhaj stated that Upchurch services are currently working on complete manhole lining and replacing manhole frames & covers, frame seals.
- Elhaj stated that Upchurch Services has contacted the manufacture about the manhole covers defect and the manufacture agreed to replace all 200 manhole covers. The new manhole will be shipped out in the next three weeks.
- Elhaj stated that Upchurch Services are scheduled to be complete by the end of July.



WEST MEMPHIS UTILITY COMMISSION

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West Memphis, AR 72301

E. WWTF MODIFICATION

- Old stated that FA will have the first review plans to WMU on June 30, 2021. WMU will have two weeks to review the plans.
- Old stated that the WWTF plans will be submitted to ADEQ by the end of July 2021.