



# ETC Engineers & Architects, Inc.

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■ 1510 SOUTH BROADWAY, LITTLE ROCK, AR 72202 ■ PHONE 501-375-1786 ■ FAX 501-375-1277 ■

August 28, 2017

Mr. Layne Pemberton  
Enforcement Analyst  
ADEQ Office of Water Quality  
Enforcement Branch  
5301 Northshore Drive  
North Little Rock, AR 72118

Re: Permit #AR0020087  
Forrest City Levee Repair

Dear Mr. Pemberton,

In response to your email to Mayor Bryant and Mr. Murdock dated August 3, 2017, the Forrest City Water Utility has retained our services to address your comments regarding the above referenced project.

The levee repair project was undertaken by the Forrest City Water Utility (FCWU) in-house staff using their equipment and personnel. Materials were procured locally. The project was completed at the end of July 2017.

The project involved widening the levee top, repairing existing levee top and slopes to remove erosion related damages and install protective measure against future erosion. The expertise to do so currently exists within the City staff capabilities. The City did not engage a third party engineer or develop any construction drawings.

As part of my work scope, I reviewed all available documents. The document review consisted of reviewing the material hauling records for the project. Between May 4, 2017 and July 19, 2017 the FCWU staff has hauled 178 loads of select fill and 22,493.2 Tons of B-Stone from sources used by the Arkansas Department of Transportation (ADOT).

I made a field trip to visually inspect the finished project on August 22, 2017. During the field visit, I quizzed City staff about the methods and techniques used in reconstructing the levee top and reestablishing the levee slopes. I looked at the equipment and materials used. The levee top appears to provide a wide enough path that allows safe passage for any construction or service vehicles. The path is devoid of any ruts or gullies created by erosion. There were no

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■ e-mail: [etc@etcengineersinc.com](mailto:etc@etcengineersinc.com) ■

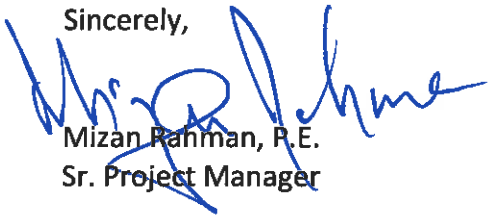


trees, bushes or plants on the upstream side of the levee. Downstream slope has large and small trees that needs to be maintained properly. The levee top is level and provides approximately 4 feet of freeboard, adequate to contain wave related rise. The staff has used conventional method of scarifying existing soil, adding select fill, compacting and adding B-stone on top of the fill for slope protection and erosion control. There was no compaction test.

Using the hauling record, I have determined that on an average 1.87 feet of select fill was placed over the entire upstream face of the dam and levee top. Similarly, a layer of 1.21 feet thick rock has been placed over the entire upstream face of the dam.

Based on my visual observation of the repair work, discussion with staff involved in the repair work and inspection of hauling record, I am of the opinion that the repair work has created a stable erosion resistant upstream surface to the levee and a stable adequately wide levee top capable of accommodating all service trucks safely. Therefore, I hereby certify that the repair project is complete. Please feel free to contact me if you have any questions. I can be reached at 501-375-1786.

Sincerely,



Mizan Rahman, P.E.  
Sr. Project Manager

CC: Mayor Larry Bryant  
Mr. Calvin Murdock

