

## Joshua L. Berryhill, PE

Enprotec / Hibbs & Todd, Inc.

### PROFESSIONAL EXPERIENCE

Mr. Berryhill has over 18 years of experience in the design, operation and analysis of water and wastewater treatment systems. He has experience in the piloting, design, construction and operation of water treatment plants, including reverse osmosis systems for groundwater and seawater, chemical feed systems, sedimentation, microfiltration, dual- and tri-media filtration, clear wells and plant water and high service pumping systems. He also has experience in the design, construction and operation of wastewater treatment plants, including pump stations, preliminary screening, , grit removal and flow equalization systems, extended aeration basins, activated sludge aeration basins, biological nutrient removal systems, sequencing batch reactors, membrane bioreactors, clarification, tertiary filtration, chemical and UV disinfection, anaerobic and aerobic digestion systems, plant water and reuse systems.

Mr. Berryhill's experience also includes the development of master plans for single- and multiple-plant systems and the condition assessment or process efficiency analysis of various water and wastewater treatment plants. He also has experience in the development of preliminary engineering plans, facility plans and environmental information documents as required for various local, state and federal funding agency programs. His funding experience includes coordinating with the Texas Water Development Board (TWDB), the Environmental Protection Agency (EPA), the North American Development Bank (NADBank), the United States Department of Agriculture (USDA) and the Rural Development (RD) program, the Community Development Block Grant (CDBG) program and the Border Environment Cooperation Commission (BECC).

Mr. Berryhill also has extensive experience in the development of permit amendment and renewal applications for the Texas Commission on Environmental Quality (TCEQ). He has completed the application process for both municipal and industrial entities and for water and wastewater treatment systems.

### PROJECT EXPERIENCE

#### WASTEWATER

- **0.6 MGD Wastewater Treatment Plant Improvements, City of Eastland:** Mr. Berryhill provided technical oversight and design for WWTP improvements that included a reduction in permitted flows; conversion to a Sequencing Batch Reactor (SBR) system; converting the old oxidation ditch basin into a flow equalization basin to reduce peak flows through the plant; a hydraulic study; replacement of the mechanical screen; upgrade of the existing solids dewatering system with a new mechanical dewatering system; replacement of the UV disinfection system with a chlorine disinfection system; and, replacement of the Oak Hollow Lift Station and collection system improvements. The project was funded through the Texas Water Development Board (TWDB) Clean Water State Revolving Fund (CWSRF).



#### EDUCATION

Bachelor of Science, Environmental Engineering  
Texas Tech University, 2005

Master of Science, Environmental Engineering  
Texas Tech University, 2005

#### REGISTRATIONS

Licensed Professional Engineer,  
Texas #100323

#### PROFESSIONAL/CIVIC ORGANIZATIONS

American Membrane Technology Association

American Water Works Association

Water Environment Federation

South Central Membrane Association

Texas Society of Professional Engineers, Abilene Chapter, President

Texas American Waterworks Association

Water Environment Association of Texas

#### CERTIFICATIONS/EDUCATION

eHT Leadership Development Program

Wastewater Process and Product Application Seminar, Aqua Aerobics, Rockford, IL

MBR Process Intensification, WEAT Eckenfelder Lecture Series, 2021

- **3.5 MGD Phase II Wastewater Treatment Facility Project, Town of Pecos City:** Mr. Berryhill provided design and permitting for a new 3.5 MGD MBR facility in West Texas, with start of construction anticipated in late 2021 or early 2022 (dependent upon completion of environmental clearance with TWDB). The project included flow equalization, BNR and MBR processes, though since the facility has not been advertised for construction yet, the MBR system has not yet been procured.
- **3.0 MGD MBR Northwest Water Reclamation Plant, City of Lubbock:** Mr. Berryhill provided technical design support to Plummer for the design of a new 3.0 MGD MBR WWTP, to be constructed in northwest Lubbock. The project included flow equalization, Carousel BNR and flat sheet MBR processes.
- **1.75 MGD MBR Wastewater Treatment Plant, Sienna South:** Mr. Berryhill provided technical design support to Costello Engineering for the design of a new 1.75 MGD MBR WWTP, to be constructed near Missouri City. The project included flow equalization, BNR and flat sheet MBR processes.
- **5.0 MGD MBR Wastewater Treatment Plant, Trophy Club Municipal Utility District:** Mr. Berryhill was hired by the general contractor to troubleshoot the first Kubota-integrated MBR WWTP facility, when the facility as designed and constructed could not meet performance testing requirements in the contract. Mr. Berryhill provided technical design and commissioning support to CPY, Webber and Kubota to efficiently resolve the project issues to obtain the intended performance results, which allowed successful closeout of the project. The project included BNR and flat sheet MBR processes.
- **3.0 MGD Phase I Wastewater System Improvements Project, City of Granbury:** Mr. Berryhill provided design, permitting, CMAR support, commissioning and operator training for 3.0 MGD of MBR capacity added in the City of Granbury, including upgrade of the City's existing 2 MGD South WWTP facility, and parallel design and construction of a new 1 MGD East satellite WWTP facility at the same time. The project included flow equalization, BNR and "Flex MBR" hollow fiber processes.
- **0.2 MGD MBR Wastewater Treatment Plant, City of Midland:** Mr. Berryhill was hired by the City of Midland to troubleshoot their MBR WWTP facility, which had only been functional approximately 30% of the first 4 years of operation. Mr. Berryhill provided troubleshooting and technical design and operator training to the City to obtain consistent operation of their MBR facility. The project included a flat sheet MBR process.
- **Hamby Water Reclamation Facility and Indirect Reuse Project, City of Abilene:** Mr. Berryhill provided design for what is now the largest MBR facility in Texas. The improvements were implemented, as well as incorporation of membrane bioreactor (MBR) technology, followed by utilization of RO, ozone and biologically active contactor (BAC) filtration systems to support the City's need to implement indirect potable reuse. As well as completing design and construction administration services, Mr. Berryhill is working with facility operators on a bi-monthly basis to implement systems operation and optimization training sessions prior to completion of the facility improvements. The design and construction of this \$82 million project was completed in less than 12 months.

## CERTIFICATIONS/EDUCATION (CONT.)

MBR Case Studies, AMTA-SCMA  
Technology Transfer Workshop, 2021

Tapping in MBR, WEFTEC, 2018

Tapping into MBR-The Hamby WRF  
Indirect Potable Reuse Project,  
WateReuse Symposium, 2018

Tap into MBR, AMTA Membrane  
Technology Conference, 2018

Treatment Processes for Corrosive  
Water, Central West Texas Regional  
School, 2018

Is It Time for MBR, Texas Water, 2018

Membrane Troubleshooting and  
Replacement at BRPUA SWTP, SCMA  
Training Workshop, 2018

A Tale of Two Waters, Texas Water,  
2017

SWATS Guide to a Membrane  
Filtration System Open Platform  
Retrofit, Texas Water, 2016

Lessons Learned from a Decade of  
Experience of Membrane Filtration in  
Texas, SCMA Conference, 2014

Is it Time for MBR - A Comparison  
of MBR vs. Traditional Wastewater  
Treatment Technologies, SCMA  
Conference, 2014

Upgrading to Add Biological Nutrient  
Removal: The Denton Creek Regional  
Wastewater System Experience,  
Texas Water 2010, Corpus Christi

## PROFESSIONAL ENDEAVORS

Enprotec / Hibbs & Todd, Inc.  
Vice President and Technical Director  
Abilene, Texas  
2010 - present

Alan Plummer Associates, Inc.  
Project Engineer  
Fort Worth, Texas  
2008 - 2010

### Professional Endeavors (Cont.)

Brownsville Public Utilities Board  
Senior Engineering Coordinator  
Brownsville, Texas  
2007

Half Associates, Inc.  
Graduate Engineer  
McAllen, Texas  
2004 - 2007

- **Wastewater Treatment Plant Expansion, City of Glen Rose:** Mr. Berryhill provided technical design for this \$8.37 million project. Having exceeded the service life for treatment units, Mr. Berryhill designed a new 1.0 MGD treatment facility. The new WWTP facility was funded under the TWDB's EDAP program, which required the completion of a facility engineering plan to complete the planning process, and is a more significant effort than what is required for typical TWDB-CWSRF projects. Because of the City's requirements for Type I reuse capability, improved system redundancy, implementation of an automated SCADA system, and the flexibility to meet nutrient limits in the future, the City and eHT focused on process alternatives incorporating either CAS, MLE, BNR, SBR, or MBR technologies in order to meet the City's project goals. After completing a detailed evaluation of each process option, an SBR system was selected by the City, supported via the use of an MLE process for energy recovery and tertiary filtration to meet Type I reuse goals. The new WWTP includes a mechanical bar screen, grit removal system, an influent wastewater pump station, a secondary MLE-SBR process designed for enhanced energy recovery, tertiary filtration using cloth disc filters, chlorine disinfection, aerobic solids storage and mechanical solids dewatering.
- **AJ Brown Wastewater Treatment Plant Improvements, City of Huntsville:** Mr. Berryhill was the Technical Director for improvements to the City's AJ Brown WWTP including pretreatment, secondary treatment, post-treatment, solids handling, electrical, SCADA and support systems, as well as a secondary treatment process. The project is an estimated \$20.5 million and will improve the consistency of plant performance.
- **0.4 MGD Wastewater Treatment Plant, City of Cisco:** Mr. Berryhill was the Project Manager for planning, design, permitting, project management, construction management and inspection and O&M services for the project, which included flow equalization, BNR and "Flex MBR" hollow fiber MBR processes and the replacement of the main lift station that transports raw sewage to the wastewater treatment plant (WWTP). The project incorporated a screening system to the main lift station; replaced the Humble Town sanitary sewer lift station that was in violation; included construction of a new mechanical WWTP to support sending reclaimed water to Lake Bernie to augment raw water inflows into Lake Cisco; and, constructed a new reuse pump station and transmission line from the new WWTP to Lake Bernie.
- **50,000 gpd MBR Wastewater Treatment Plant, Kubota KTC:** Mr. Berryhill provided technical design support for the design of a new 50,000 gpd MBR WWTP, which was constructed in the City of Grapevine. Kubota Tractor Corporation (KTC) relocated its North American headquarters to the DFW area and requested eHT's assistance to integrate an MBR-based non-potable reuse (NPR) program at their new facility. The project included flow equalization, BNR and flat sheet MBR processes.

## WATER

- **Hargesheimer Water Treatment Plant Rehabilitation, City of Abilene:** Mr. Berryhill assisted with the design and construction management of water treatment plant improvements, including enhancements to the filtration system and chemical feed systems. He evaluated brine waste disposal options for handling RO brine wastes at the plant and assisted with RO system design modifications during expansion.
- **Surface Water and Treatment System Facility Master Plan, Brazos Regional PUA:** Mr. Berryhill assisted with the evaluation of this facility including an extensive evaluation of the performance and condition of existing treatment processes and equipment at the water treatment facility. Key areas of focus for Mr. Berryhill included troubleshooting and optimizing the existing 7.5 MGD UF and RO systems at the SWATS facility, which is one of the first advanced water treatment facilities in the State of Texas.
- **Radionuclide Reduction Project, City of Brady:** Mr. Berryhill provided project management, application assistance, water quality analysis, facility condition, capacity and performance assessments of the existing WTP facility, transmission system and well production sites, full-scale and pilot-scale testing and process design for the project funded through the TWDB EDAP and DWSRF programs and included evaluation of both non-regenerable IX and HMO radionuclide reduction technologies, restoration of the City's existing membrane filtration and RO desalination WTP facility, with the goal of ultimately installing a new 3 MGD IX or HMO based (designed for both options with procurement planned in 2018) radionuclide reduction treatment system at the City's existing WTP site, as well as improvements to the City's existing desalination facility to allow for balanced use of surface water and/or groundwater to meet daily water demands while balancing resources. The project also included new elevated storage tank improvements, clearwell improvements, well production, storage and transmission improvements, and the construction of a new SCADA control system designed to support both current water needs while being expandable in the future to incorporate wastewater, electrical, and gas SCADA requirements. The project addressed TCEQ violations for Combined Radium and Gross Alpha Particles and included the approach of both pilot-scale and full-scale pilot testing approaches to reduce overall implementation costs for the City, including coordination with the City of San Angelo to utilize San Angelo's pilot data for potential use of an IX based radionuclide reduction technology.