David Brunkow, PE

Construction Lead

David has extensive experience working with design management and production strategies for wastewater, water reuse, and water treatment facilities design, construction and commissioning. He is skilled at communicating technical issues to people with varying technical backgrounds. David's diverse construction experience provides insight into design and construction practices and problem resolution.

Years' Experience	▪ 38 years with CH2M/Jacobs
Key skills | Areas of expertise	▪ Best practices with uninterrupted operation ▪ Development of construction sequences and commissioning plans ▪ Field Problem Solving ▪ Membrane bioreactor process, process mechanical design, aeration basins, chemical feed systems, process blowers, pump stations ▪ Secondary clarifiers ▪ Headworks ▪ SCADA field application
Education | Qualifications	▪ MS, Environmental Engineering ▪ BS, Civil Engineering
Registrations | Certifications	▪ Professional Engineer: OR (No. 14012), WA (No. 34918)
Professional Development	▪ *Water Environment Federation*
Community Involvement	▪ *Oaks Park Community Boathouse and Oregon Rowing Unlimited Juniors*

Representative project experience:

Design Team Site Representative During Construction, CBWTP STEP, BES, Portland, OR, September 2021 -Present. David is responsible for supporting the CM team by answering questions that arise in the field, discussing problems that develop during construction or that the CM team anticipates will develop and providing a technical connection between field activities and the design team and BES engineering as the construction is executed. He has participated heavily in the planning and execution of commissioning of equipment and systems as part of GMP 1. During construction, other issues are identified by BES, contractor and the CM and often Dave is the first line of contact to discuss with the design team when working out a path to resolution. He shares this full-time position with another colleague at Jacobs, Randy Mueller, who was the TUSI lead during the design phase. David is typically on site for part of three days a week and anticipates continuing that involvement thru startup of the SOFA/SOLO complex in mid-2026.

Senior Technical Consultant-Liquids, CBWTP STEP, BES, Portland, OR, November 2019-Present. STEP includes the design of two new 145-foot-diameter secondary clarifiers, along with a combination of projects in proximity or operationally connected, including a completely new biosolids co-thickening and dewatering facility and biosolids storage and loading facility. The project includes demolition of aging facilities, modifications to remote boilers, replacement of the medium voltage system, design of non-process facilities, and ground improvements for new facilities. David is responsible for aiding teams working on electrical upgrade, designing the new clarifiers and RAS pump station, rehabilitating major tunnel, and designing and installing mixed liquor pumps. He is also involved with overall project quality control and will assist the project in the field during construction.

Facility Lead Engineer for Design and Design Team Representative for Field Construction, Testing & Startup, Southwest Water Reclamation Facility, City of Henderson, NV, September 2004 -April 2011 . This project was an 8 mgd, expandable to 15 mgd, greenfield scalping plant to produce reuse water from municipal sewage. Unit processes included headworks with fine screening, bioreactors, immersed membranes, UV, chemical systems and odor control. Projectcost was approximately $110 million. Facility lead responsible for design of bioreactors, membranes and blower building. Assisted with development of a wholistic project approach to commissioning with the contract required creation of a startup group that had specific contract requirements of the GC and met from the beginning of the project. David was onsite for duration of construction supporting the third -party CM as the Design Team Representative and prepared the commissioning plan and executed process startup.

Lead Process Engineer and Assistant Membrane Facility Lead, Spokane Riverside Wastewater Treatment Plant Next Level Treatment (NLT) Ultra Low Phosphorus Tertiary Treatment, City of Spokane, WA, April 2012 -2022 . This plant tertiary train has a treatment capacity of 75 mgd with design effluent phosphorus levels in the 0.018 mg/l range. This was the largest ultra-low P tertiary membrane plant in North America when commissioning was completed in spring of 2021. Project includes pre-treatment with fine screening, chemical addition, flash mixing and flocculation, cartridge membrane filtration. Approximate project cost is $140 million. David was involved with early alternative evaluation to select the process best predicted to achieve the ultra-low phosphorus effluent standards. Along with colleagues, he developed the membrane procurement document, assisted with conducting a yearlong pilot between vendors and selected the vendor to design around. He was the design lead for pretreatment, and assistant facility lead for the membrane facility. This project was delivered as a CM/GC. David continued as a process lead for construction and commissioning thru completion.

Digester Facility Design Manager, Biosolids Project Southeast WPCF, San Francisco Public Utilities Commission, CA, November 2015-Present . This project is a complete overhaul of the solids handling facilities at this plant. It is a $1.3 billion program. The facility that David lead is an Anaerobic Digester complex with five 1.6 mg post-stressed silo type digesters. Unit processes include draft tube mixing and cooling of THP processes sludge prior to digestion. This project is being delivered as a CM/GC project. David was the design manager for 500 drawing, $3.9 million design fee for the Anaerobic Digesters portion of the project. David was responsible for design team coordination which includes three subcontracting firms, coordination with two other prime firms and a Jacobs design team located in 5 different geographies. He continues in his role supporting the project during the construction phase.