



Jonathan Contreras

PE, MSMME

Director of Engineering and Laboratory Services

Department

Engineering Services

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Locations

Seattle, WA

Portland, OR

San Francisco, CA

Los Angeles, CA

Biography

Jonathan Contreras is a metallurgical and materials engineer specializing in failure analysis and forensic engineering investigations involving structures, components, and devices. He is a valued member of the Engineering team at YA Group, where he supports complex loss investigations involving fires, explosions, and equipment failures.

Jonathan brings a strong background in accredited third-party laboratory testing and OEM failure analysis, experience that uniquely positions him to support large and technically challenging investigations. His expertise includes fractographic examination, corrosion assessment, mechanical behavior of materials, microstructural evaluation, and materials characterization.

Earlier in his career, Jonathan provided technical analysis and litigation support to law firms, insurance carriers, and industrial clients. His work included evaluating losses related to personal injury, product safety and liability, fire investigation, electrical arc analysis, and hot-particle ignition associated with wildland fires. His ability to translate highly technical findings into clear, actionable conclusions has made him a trusted resource across multiple industries.

Credentials

- PE | Professional Engineer
- MSMME

Representative Consulting Assignments

- Arcing of High-kV Electrical Conductors | Wildland Fires | Metallurgical characterization, hot-particle modeling and litigation support for state agencies conducting cost-recovery investigations.
- Dry Cargo & Tanker Vessels | Explosions | Metallurgical characterization and analysis of components involved in fuel oil leaks and explosions in engine rooms.
- Fractional Horsepower Motors | Fires | Metallurgical characterization and litigation support for subrogation losses involving fractional horsepower motors in bathroom and ceiling exhaust fans.

Professional Experience

- 2026 - Current | Director of Engineering and Laboratory Services | YA Group
- 2022 - 2025 | Senior Metallurgical + Materials Engineer | Jensen Hughes
- 2022 - 2022 | Senior Metallurgical Engineer | Anamet (A division of Acuren Inspection, Inc.)
- 2016 - 2022 | Senior Metallurgical Engineer | RTI Laboratories
- 2014 - 2016 | Metallurgical Engineer/Failure Analyst | The Babcock & Wilcox Company

- 2011 - 2014 | Metallurgical Engineer/Failure Analysis/Asst. Manager
| Colorado Metallurgical Services

Area of Practice

- Construction Defect Reviews
- Damage Assessment
- Non-Destructive Testing
- Heavy Trucking
- Marine Structures

Publications and Presentations

- Lewis, K., Carlos Contreras, J., Ensminger, E. et al. "Experimental Determination of Temperatures Achieved by Hot, Particles Produced from Electrical Arcing". Journal of Failure Analysis and Prevention, 25, 1181-1192 (2025).
- Contreras, J.C.; Natividad, S. L.; Stafford, S. W. "Failure Analysis Case Study on a Fractured Tailwheel Fork," Journal of Failure Analysis and Prevention, ASM International, 2011, DOI 10.1007/s11668-011-9466-8.,
- Contreras, J.C. Experimental Determination of Temperatures Achieved by Hot Particles Produced from, Electrical Arcing. International Materials, Application & Technologies Conference and Exposition - IMAT, 2024, Cleveland, OH, October 3, 2024.
- Contreras, J.C., Way, P.T. Metallurgical Matters: The Debate Over Hot Particles and Their Projectiles. The, National Wildland Fire Conference, Monterey, CA, April 2024

Education

- The University of Texas at El Paso - Master of Science - Metallurgical and Materials Engineering - El Paso - Texas
- The University of Texas at El Paso - Bachelor of Science - Metallurgical and Materials Engineering - El Paso - Texas

Training Courses

- IAAI Expert Witness Courtroom Testimony, Oregon State Chapter 31 of IAAI
- Failure and Fracture Analysis, West Michigan Chapter of ASM International
- Scanning Electron Microscopy, Hooke College of Applied Sciences
- Metallurgical Failures in Fossil Fired Boilers by Dr. David N. French

Affiliations

- Member, ASM International, 2014 - Current Reviewer, The Journal of Failure Analysis and Prevention, 2025 - Current

Licenses

- 2035 - California - Professional Metallurgical Engineer
- 620106824 - Michigan - Professional Engineer
- 032747 - Nevada - Professional Metallurgical Engineer
- 22024076 - Washington - Professional Metallurgical and Materials Engineer