



SCOTT E. WOLVERTON, Vice President

SUMMARY OF QUALIFICATIONS

River City Engineering, Inc., Lawrence, Kansas, USA 1995-Present

Process Engineering Consultant for the Oil & Gas Industry providing design and technical support for gas and liquids processing/handling and oil production projects.

- Conoco Indonesia: Functioned as Team Lead for Hang Tuah Gas Quality Team. Responsibilities included evaluation of operating problems on an existing gas compression platform, evaluation of alternatives for rectification, and then fast track implementation of required modifications. Interfaced closely with vendors, operations, and construction personnel to coordinate and schedule facility shutdown and modification plans. When completed facility was restored to design operating capacity and met all gas specification requirements.
- Conoco Indonesia: Process engineering representative for Belanak project compression HAZOP. Detailed review of safety and operational aspects of multiple compression trains ranging from low pressure, reciprocating type VRU compression to high pressure centrifugal injection gas compression.
- Premier Oil Natuna Sea LTD. : Project support for 165 MMSCFD offshore Indonesian gas processing and compression platform through all phases of engineering.
 - Preliminary Engineering – In FEED (Front End Engineering Design) Contractor's offices provided process engineering support on behalf of Client in preparation of project design and bid package. Conducted overall design review and modification to generate optimum process configuration. Worked closely with Client engineers to insure design was properly reflected in PFDs and P&IDs. Reviewed Contractor developed specification data sheets and package functional specifications. Worked with Contractor to incorporate necessary modifications and clarifications.
 - Detailed Engineering – Acted as Lead Process Engineer on behalf of client in EPC Contractor's offices during project detailed engineering. Reviewed PFDs, P&IDs, Material and Energy Balances, Shutdown Logic Diagrams, Equipment Specification Data Sheets, Package Functional Specifications, Vendor Proposals, etc. Interfaced continuously with Contractor's personnel to insure that Client requirements, specifications, and design intent / philosophies were met. Participated in detailed project HAZOP as primary representative of the project team. Interfaced with Client's Operations group during HAZOP to make sure internal concerns, required modifications, and requests for information / details were addressed.
 - Construction: Phase 1 – Continued as Lead Process Engineer on behalf of Client in EPC Contractor's fabrication yard. Detailed review of equipment data and proposals, instrumentation, package and overall facility Cause and Effect Diagrams and operating / shutdown logic. Interfaced with Client Operations group regarding HAZOP implementation status and general design philosophies. Provided detailed support and assistance for a "problem" process package including meeting with Vendor in the fabrication shop to resolve design problems and determination of path forward to completion. Assisted with preliminary spot testing of facility control system in Vendor's shop.

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SUMMARY OF QUALIFICATIONS – (continued)

River City Engineering, Inc. – (continued)

- Construction: Phase 2 - Detailed testing of facility DCS in the fabrication yard. Generated punch lists for rectification by control system vendor. Redesigned control logic for non-functioning systems and conducted detailed testing to verify proper implementation. In addition conducted detailed equipment / package reviews while on site and generated punch lists for Contractor rectification.
- Premier Oil Natuna Sea LTD.: Detailed process design of Early Gas Production unit with capacity of 75 MMSCFD. System was skid mounted and installed on existing Indonesian offshore oil production platform for purposes of sales gas pipeline commissioning and achieving early gas sales while main gas production facility was being designed and fabricated. Developed PFDs, P&IDs, and all major equipment specification / data sheets. Provided process support as needed while skid was being constructed.
- Conoco Syria DezGas LTD.: Project support for grass roots Syrian gas plant comprised of two separate parallel gas processign facilities with a nominal combined capacity of 490 MMSCFD, liquids fractionation facilities with 60,000 BPD front end capacity, five outlying compressor stations and associated gathering system.
 - Preliminary Engineering - Support provided in FEED Contractor's offices on behalf of Client Performed detailed reviews of PFDs, P&IDs, equipment sizing and specification including fractionation towers and internals, and general verification that the overall design met the Clients specifications, design philosophies, and project goals. Conducted preliminary Process Hazards Analysis and general review of proposed facility safety instrumentation.
 - Construction – Provided project support in the field on behalf of the Client. Responsibilities included all aspects of process engineering support, detailed equipment inspection and review (including fractionation tower internals), generation of detailed equipment and system punch lists for EPCI Contractor rectification, coordination of multi-discipline teams for punch listing of systems and facilities, review and sign off on behalf of Client for completed systems.
 - Operation – Assisted with facility start up and operating / performance review. Conducted performance tests of facilities as required by contract on behalf of Client. Developed written performance test procedures and requirements. Analyzed all process data and generated detailed reports summarizing test results.
- Intec Engineering: Optimization study for 815 km, 425 MMSCFD pipeline between Argentina and Brazil. Determined most efficient and cost effective combination of pipeline size, internal coating, and size and location of intermediate compressor stations. Different gas flow rates were evaluated corresponding to initial build up and expected seasonal fluctuations in gas demand.
- Conoco NG&GP: Preliminary and detailed process engineering for 180,000 bbl propane cavern/terminal project. Design of all process facilities and systems, PFD and P&ID initial development, vendor bid evaluations, and general project coordination.

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SUMMARY OF QUALIFICATIONS – (continued)

River City Engineering, Inc. – (continued)

- CBE Inc: Provided bid evaluation and process selection assistance for 12.5 MMSCFD grass roots coal bed methane processing facility which included compression, amine treating, oxygen removal, and nitrogen rejection processes. Continued to provide detailed engineering and construction support and EPC contractor interface assistance on behalf of the client. Evaluated well productivity profiles and generated preliminary field development plans and gathering system modeling.
- Corinpet Oriente: Detailed process engineering and project coordination for 60 MMSCFD compressor station in Venezuela. Design and specification of major equipment items, general project coordination, interfacing with construction contractor and PDVSA personnel.
- Intec Engineering: Safety review and commissioning/start-up assistance for 50,000 bbl propane storage/distribution terminal in Paraguay. Development of required procedures, on site assistance and supervision, operator training.
- Conoco NG&GP: Debottlenecking study for a 100 MMSCFD compression, amine treating, dehydration, and oxygen removal facility which processed coal bed methane. Determined sequential modifications required to reach target capacity of 150 MMSCFD.
- Expansion and performance analysis/facility optimization studies for numerous gas processing plants.
- Detailed Process Hazards Analysis (PHA), and flare and relief studies for numerous gas processing, liquids handling and fractionation, and compression facilities.

PREVIOUS EXPERIENCE

Conoco, Inc., Ponca City, Oklahoma, USA 1990-1995

Staff Engineer providing process engineering services to upstream operations with the primary emphasis on gas processing. Work included conceptual through detailed engineering for projects, direct assistance to operations for facility optimization and troubleshooting, gas plant and liquids fractionation facilities capacity and debottlenecking studies, Process Hazards Analysis and SAFE Chart development.

Major Projects:

- **Dragon Trail Gas Plant:** Lead process engineer for gas processing facility expansion and liquids recovery enhancement project. Responsibilities included sizing and specification of all new process equipment, evaluation of existing equipment and systems for new process conditions, development of new process configuration, development of PFDs and P&IDs, operator training, and commissioning and start-up assistance.

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PREVIOUS EXPERIENCE – (continued)

Conoco, Inc. - (continued)

- Sterling Gas Plant: Engineering assistance for grass roots, 70 MMSCFD cryogenic gas plant. Responsibilities included sizing and specification of process equipment, flare system design, development of PFDs and P&IDs, start-up assistance, writing portions of the operating manual, and assistance with PSM compliance effort.
- Ford Geraldine NGL Recovery: Process engineering assistance for project involving the installation of a CO₂ removal membrane system at an existing 7 MMSCFD gas processing facility. Responsibilities included sizing and specification of process equipment, start-up assistance, and conducting performance tests and data analysis for verification of vendor guaranteed performance.
- Kharampur Field Development: Developed and optimized process configuration for oil field satellite and central production facilities. Sized main field flow lines and optimized hydraulics and pump/compressor energy requirements. Performed initial simulations to determine optimal configuration of gas plant to process 300 MMSCFD of associated gas.

EDUCATION

University of Kansas

Lawrence, Kansas

B.S. Chemical Engineering, 1986-1990

PROFESSIONAL MEMBERSHIPS

Engineer-In-Training (EIT/FE), Oklahoma
American Institute of Chemical Engineers

PUBLICATIONS

Pennybaker, K.A., and S.E. Wolverton, S.W. Chafin and T.R. Ruddy, "A Comparative Study of Propane Recovery Processes," Proceedings of the Seventy-Eighth GPA Annual Convention, Nashville, Tennessee, March 1-3, 1999.

Pennybaker, K.A., S.E. Wolverton, S.W. Chafin, T.R. Ruddy and C.W. Pritchard, "A Comparative Study of Ethane Recovery Processes," Proceedings of the Seventy-Ninth GPA Annual Convention, Atlanta, Georgia, March 13-15, 2000.