

APPENDIX A

FREDERICK E. BECK

EDUCATION

Ph.D., Petroleum Engineering, Louisiana State University, Baton Rouge, La., 1986
M.S., Petroleum Engineering, Louisiana State University, Baton Rouge, La., 1984
B.S., Geology, Louisiana State University, Baton Rouge, La., 1981

PROFESSIONAL ACTIVITIES AND HONORS

Member, LSU Petroleum Engineering Industry Advisory Committee, since 1998, Chairman 2001

Member, Society of Petroleum Engineers, since 1981. SPE Distinguished Lecturer 1995-96. ATCE Drilling Program Committee 2009, 2010, 2011. HPHT Operations Reprint Committee, 2009-2010

Member, International Association of Drilling Contractors, 1997-2002, Program Committee, SPE/IADC Drilling Conference, 2000-2002

Exceptional Contribution Award, 1996, Arco Alaska, Inc., for development of short radius drilling techniques in Prudhoe Bay, Alaska.

Exceptional Contribution Award, 1994, Arco Alaska, Inc., for development of medium radius drilling techniques in Prudhoe Bay, Alaska.

Recipient, Outstanding Teaching Award, 1990, New Mexico Tech.

Member, American Association of Petroleum Geologists, 1980-90.

Recipient, Petroleum Engineering Department Award for Excellence in Teaching, 2010, 2011

EMPLOYMENT SUMMARY

Associate Professor and Stephen A. Holditch Faculty Fellow, Department of Petroleum Engineering, Texas A&M University, September 2009-present

Drilling Consultant, Brigham Oil and Gas, June 2011 – present

Vice President, Drilling /Operations, Gastar Exploration, LTD, April 2002-April 2011

- Responsible for drilling and completion engineering and operations supervision
- Performed engineering, planning, and operations supervision on
 - over 30 wells during this period, with depths from 13,000'-20,000', all wells HPHT.
 - horizontal wells at vertical depths greater than 13,000' and temperatures over 300°F.
 - vertical wells with depths from 16,500'-20,000' and temperatures in excess of 400° F and formation pressures in excess of 17,000 psi.
 - HTHP fracture stimulations
- Managed all related contracts for goods and services

Consultant, 1994-2006

- Provided expert witness consultation to law firms
- Developed Extended Reach and Horizontal Drilling Short Course, presented at the Chevron Training Center 1997-2006
- Edited and compiled Extended Reach and Horizontal Drilling Manual for the Chevron Drilling Training Alliance
- Developed Horizontal Drilling Short Course, presented through Murchison Drilling Schools worldwide, 1994-1997

Vice President, Nabors Drilling USA, Inc., June 1997 – February, 2002

- Managed all turnkey drilling operations in Nabors Drilling, USA
- Developed methods for successfully drilling depleted formations in geopressed sections
- Led NDUSA in safety performance for two years, with 1 year with no OSHA Recordable accidents
- Developed and implemented company wide well control project
- Developed and implemented company wide drilling policies
- Negotiated and managed third party performance contracts
- Provided engineering support for Nabors' footage contract drilling operations
- Performed general Staff Engineering services

Drilling Consultant, Nabors Alaska Drilling, Inc., March 1996-June 1997

- Provided contract rigsite supervision of BP Exploration North Slope rig operations.
- Provided drillstring design, engineering, and rigsite supervision for the world's first slimhole re-entry horizontal well to utilize drillpipe inside production tubing (now known as TTRD).
- Performed process review of Nabors' Rocky Mountain footage operations.
- Provided trouble shooting for Nabors Drilling, USA south Louisiana and southeast Texas turnkey wells.
- Solved severe drillstring failure problems in West Texas.

Drilling Engineer/Rig Supervisor, ARCO Alaska, Inc., 1990-1996

- Responsible for planning and supervision of rig operations.
- Lead engineer for horizontal wells in the Prudhoe Bay Unit
- Lead engineer for extended reach equity determination wells in the Pt. McIntyre development
- Extensive field supervisory experience includes
 - extended reach drilling
 - horizontal drilling - long, medium, and short radius, and multilateral wells
 - re-entry redrills - conventional and horizontal wells
 - workovers
 - completions, including multilateral horizontal, cemented horizontal, and drillpipe conveyed underbalanced perforating on horizontal wells.
 - hydraulic fracture stimulations
- Significant accomplishments include
 - designed the first medium radius horizontal well in Prudhoe Bay
 - supervised the first short radius horizontal well in Prudhoe Bay
 - planned and supervised the first horizontal well to execute a planned (47°) azimuth change
 - supervised operations for over two continuous years with no lost time accidents or spills
 - supervised drillpipe conveyed underbalanced perforation operations utilizing over 2000' of guns in a single run.

Assistant Professor, New Mexico Tech, Socorro, NM, 1987-1990

- Taught undergraduate and graduate courses covering drilling, well completions, logging, reservoir stimulation, reservoir engineering, and production engineering.
- Generated over \$130M of funded research projects in the areas of drilling fluids technology and waste remediation.

Consultant, ARCO Oil and Gas, Plano, Texas, 1988-1990

- Research in well control and drilling hydraulics.

Post Doctoral Researcher, Louisiana State University, Baton Rouge, La., 1987

- Well control research.

Teaching/ Research Assistant, Louisiana State University, Baton Rouge, La., 1981-1986

- Taught "Subsurface Geology for Petroleum Engineers".
- Conducted MMS funded research project on well control.

Reservoir Engineer, Tenneco Oil Co., Lafayette, La., 1983

- Correlated well log parameters to production rates for offshore gas wells.

Geologist, Louisiana Land and Exploration Co., New Orleans, La., 1981

- Subsurface mapping, prospect generation.

Engineering Technician, Meurer, Serafini, and Meurer, New Orleans, La., 1980

- Surveying of corehole locations in proposed lignite mine

PUBLICATIONS AND REPORTS

"Experimental and Theoretical Considerations for Diverter Evaluation and Design", by F.E. Beck, J.P. Langlinais, and A.T. Bourgoyne, Jr., SPE 15111, presented at the California Regional Meeting, Society of Petroleum Engineers, Oakland, CA, April 3-5, 1986. Accepted for publication in 1988 by the SPE.

"An Analysis of the Design Loads Placed on a Well by a Diverter System", by F.E. Beck, J.P. Langlinais, and A.T. Bourgoyne, Jr., SPE 16129, presented at the SPE/IADC Drilling Conference, New Orleans, LA., March 15-18, 1987. Accepted for publication in 1988 by the SPE.

"A Method for Determining the Feasibility of Dynamic Kill of Shallow Gas Flows", by W.L. Koederitz, F.E. Beck, J.P. Langlinais, and A.T. Bourgoyne, Jr., SPE 16691, presented at the 62nd Annual Technical Conference, Dallas, TX, September 27-30, 1987.

"A Method for Determination of Permeability, Skin, and Turbulence Factor from an Open-Flow Potential Test", by F.E. Beck and R.L. Lee, SPE 18270, presented at the 63rd Annual Technical Conference and Exhibition, Houston, TX, October 2-5, 1988.

"Reservoir and Geologic Study of Sulimar Queen Field, New Mexico", by T. Cowen, F. Beck, and J. McMillan, internal report, Petroleum Recovery Research Center, New Mexico Tech, Socorro, NM, 1989.

"Report of Thermal Spallation Drilling Progress", by F.E. Beck, R.E. Williams, and R.H. Potter, for Los Alamos National Labs, NM, 1989.

"Computer Simulation of a Reverse Circulation Well Control Procedure for Gas Kicks", by S. Miska, F.E. Beck, and B.S. Murugappan, SPE Drilling Engineering, December 1992. (SPE 21966), originally prepared for the SPE/IADC Drilling Conference, Amsterdam, March 11-14, 1991.

"Improved Performance of Prudhoe Bay Horizontal Completions", by F. E. Beck, T. Stagg, and G.R. Atol, presented at the World Oil 4th International Conference on Horizontal Well Technology, Houston, 1992.

"A Clarified Xanthan Drill-in Fluid for Prudhoe Bay Horizontal Wells", by F.E. Beck, J.W. Powell, and M. Zamora, SPE 25767, presented at the SPE/IADC Drilling Conference, Amsterdam, February 22-25, 1993.

"The Effect of Rheology on Rate of Penetration", by F.E. Beck, J.W. Powell, and M. Zamora, SPE 29368, presented at the SPE/IADC Drilling Conference, Amsterdam, March, 1995.

"Rheology Design to Optimize Rate of Penetration", by E.E. Maidla, A.J. Reay, F.E. Beck, and C.P. Tan, SPE 35062, presented at the SPE/IADC Drilling Conference, New Orleans, March, 1996.

"Finite Element Analysis Couples Casing and Cement Designs for HTHP Wells in East Texas", by James Heathman and F.E. Beck, SPE 98869, presented at the IADC/SPE Drilling Conference, Miami, FL, February 2006.

TESTIMONY PROVIDED IN PRIOR FOUR YEARS

Trail Enterprises, Inc. et al. v. The City of Houston, Texas, Cause No. 799234, in the County Court at Law No. 1 in Houston, Texas.