

M.S. Petroleum Engineering, University of Alaska Fairbanks, 2000 GPA 4.0
M.S. Engineering Management, University of Alaska Anchorage, 1992 GPA 4.0
B.S. Mechanical Engineering, Texas A&M University, 1982 GPA 3.6

MICHAEL D. DUNN
*Petroleum Engineer/
Economic Evaluation*

Mr. Dunn has over 27 years of well rounded petroleum engineering and economic evaluation experience over a broad range of basins and project types. His experience includes assignments as an engineer and evaluation analyst with a major oil company, as a senior manager with a start-up drilling contractor, as an independent consultant, and as a senior subsurface manager with a large Independent. Mr. Dunn has published a number of technical papers and is considered an industry expert in designing optimal development plans of complex fields. Mr. Dunn has a proven track record of implementing solutions to unique challenges while employing a comprehensive approach to project management. His experience includes the full breadth and depth of exploration and development projects including exploration evaluations, development plans, cost analyses, reservoir studies, production optimizations, facility expansion evaluations, and construction management. Mr. Dunn recognizes the importance of cost-effective approaches, while honoring the technical and organizational complexities of major projects.

PROFESSIONAL EXPERIENCE

'08-present, Petroleum Engineer - Hydrate Test Well, North Slope Borough

Petrotechnical Resources of Alaska, Anchorage, AK

Worked with DOE and technical stakeholders to design the data acquisition program for a hydrate test well at East Barrow Field, North Slope Borough, Alaska. Directed the reservoir simulation work to establish optimal well locations and well type to produce and observe methane hydrates. Reviewed all previous work at Mallik, Hot Ice, and Mt. Elbert to determine how wells were to be drilled, cored, logged, and evaluated. Lead author of several reports to update government and academia stakeholders.

'08-present, Manager - Engineering and Development

Brooks Range Petroleum Corporation (on contract through PRA), Anchorage, AK

Assumed all reservoir, completion, and facility engineering functions in support of an oil discovery north of Prudhoe Bay. Selected a FEED contractor and formulated a design basis for a 3-phase process facility. Designed a comprehensive, Excel-based economic model to represent the field, its elements, and its uncertainties. Evaluated multiple subsurface depletion schemes and surface processing and transportation options. Wrote a comprehensive development plan to communicate the details, costs, and economics of the development to investors and permitting agencies. Also performed all cost estimating and economic evaluation functions necessary to support a multi-year, multi-block exploration program.

2004-2007, Manager - Engineering and Development

Pioneer Natural Resources Alaska Inc., Anchorage

Responsible for leading all subsurface engineering and economic evaluation efforts in Alaska. During this span, Pioneer became just the third production operator, and first Independent to operate on the North Slope of Alaska. Was instrumental in defining and leading a robust probabilistic approach to estimating the value of various development options and delivering an optimal plan in terms of value, risk, and schedule. Supervised a staff of senior reservoir and production engineers and several contract engineers to evaluate opportunities and reduce development and operating costs. Also led all engineering and evaluation efforts in support of an aggressive exploration drilling program on the North Slope.

2002-2004, Vice President

New Tech Engineering (Houston-based consulting firm), Anchorage

Established an office in Alaska to deliver engineering, economic evaluation, and consulting services. Within a span of 18 months delivered solutions to a dozen different client companies. Worked with the client to define the scope, deliverables, and schedule. Most projects involved research and evaluation of rate, costs, and schedule implications of various development options, which led to a recommended approach to an exploration or development project. Other projects included drilling and facility cost studies, reservoir analyses, rig design advice, facility sharing evaluations, exploration strategies, and cost reduction tactics.

2000-2002, Operations Manager/Vice President

Phoenix Alaska Technology, (sub/o Nissho Iwai), Texas, Alaska

Led all engineering, construction, and pre-commissioning efforts to engineer, specify, and construct an automated land rig for work on the North Slope of Alaska. Wrote engineering and functional specifications, issued RFPs, and developed the overall engineering plan. Moved to Texas and oversaw all onsite engineering and construction efforts including structural, electrical, mechanical, hydraulics, and rig fabrication. As Vice President, served as point of contact with Tokyo investors, hired crewmembers, developed start-up strategy, and developed a hiring plan.

1997-2000, Staff Development Planning Engineer

Kuparuk Engineering, ARCO Alaska, Inc., Anchorage

Proposed and evaluated field depletion plans designed to optimize oil, water, and gas throughput from the second largest oilfield in North America. Led a team of reservoir, facility, and production engineers to map the fluid handling processes and implement a series of facility projects and operational tactics designed to optimize this extremely complex system. Developed methodologies for calculating the value of marginal production by combining the fundamentals of waterflood/EOR theory, reservoir performance, production hydraulics, gas/oil/water handling processes, and facility management. Documented with two SPE papers.

1995-1997, Reservoir Surveillance Engineer

Kuparuk Operations, ARCO Alaska, Inc., North Slope

Maximized production from 50+ wells at three Kuparuk drillsites producing in excess of 20,000 bopd. Used production data and geologic information to adjust flood volumes and pattern geometries to maximize recovery within facility constraints. Proposed and designed a miscible gas EOR flood. Worked closely with the development geologist to better define the stratigraphy and develop the optimal infill-drilling program. Performed pattern simulations to determine optimal well spacing and well configuration. The methodology and depletion strategy served as a model for surrounding drillsites.

1994-1995, Production and Well Work Engineer

Kuparuk Operations, ARCO Alaska, Inc., North Slope

On-site engineer responsible for planning and implementing well work operations at the Kuparuk field. Designed and implemented all types of non-rig wellwork including acid and frac jobs, coiled tubing wellwork, profile modifications, and general wireline procedures designed to stimulate production, control water/gas flow, and repair wells. Designed/implemented the first underbalanced coiled tubing drillout in Alaska.

1991-1994, Senior Exploration Engineer

New Ventures Engineering, ARCO Alaska, Inc., Anchorage

Evaluated all types of exploration opportunities including farm-ins, farm-outs, lease sales, and drilling decisions for prospects in Cook Inlet, Alaska Interior, and the North Slope. Applied fundamentals of geology, probability/statistics, drilling costs, facility design, economics, and reservoir engineering to predict minimum economic sizes and the value of exploration prospects. Performed preliminary reservoir appraisals, flow tested successful wells, and designed first pass development plans. Helped develop initial development plan for the Alpine Field.

1988-1991, Senior Drilling Engineer/Drilling Supervisor

Prudhoe Drilling, ARCO Alaska, Inc., Anchorage

Planned, budgeted, implemented, and managed drilling, completion, and workover programs on the North Slope of Alaska. Duties included logistical preparations, rig evaluation and selection, directional planning, casing design, drilling fluid selection, drilling optimization, cement design, troubleshooting, and day-to-day oversight. Supervised on-site operations at the Prudhoe Bay and Kuparuk fields on several half-year assignments.

1982-1988, Drilling Engineer, Drilling Supervisor, Project Engineer, Systems Analyst

Gulf Coast Drilling, ARCO Oil & Gas Co., Houston

Performed the duties of a Gulf Coast drilling engineer including rig evaluations, well planning, casing design and day-to-day performance monitoring. In addition to office duties, supervised well-site operations including drilling, completion, and stimulation activities. Implemented the well plan, optimized drilling performance, supervised contract and service company personnel, enforced proper safety/environmental procedures, and monitored costs. Jobs varied from offshore operations in the Gulf of Mexico (floaters, platforms, jack-ups), to deep, high-pressure gas wells in South Texas. As a Project Engineer in the drilling department wrote drilling software and studied a number of leveraging issues relative to operational effectiveness in the Gulf Coast Region. Developed ARCO's drilling database system, one of the first in the industry. Wrote several software programs including input screens and drilling optimization programs (Fortran).

Selected Publications

Useful Techniques for Evaluating Facility Expansion Projects. SPE Paper 83497. Primary Author.
Presented at the SPE Western Regional Meeting, Long Beach, May 2003.

A Systematic Method to Estimate the Value of an Exploration Well SPE Paper 76735. Primary Author.
Presented at the SPE Western Regional Meeting, Anchorage, May 2002.

Simulation Based Dimensionless Type Curves for Predicting Waterflood Recovery SPE Paper 68839. Primary Author.
Presented at the SPE Western Regional Meeting, Bakersfield, March 2001.

Gas Management in a Large, Complex, Miscibly Flooded Oil Field SPE Paper 59413. Primary Author.
Presented at the SPE Asia Pacific Conference in Yokohama Japan, April 2000.

A Method to Estimate the Value of Well Log Information SPE Paper 24672. Sole Author.
Presented at SPE Annual Conference in Washington D.C., October 1992.