

Ms. Luedke-Chan has over 30 years of experience in the oil and gas industry, specializing in production optimization, offtake strategy and petroleum engineering. She has worked with all functions to integrate activities with available infrastructure, resources and production sheltering opportunities. As a production engineer she worked as part of a multidisciplinary team maximizing production, reducing costs, and generating economic development opportunities in order to optimize field life, overall recovery and profitability. Her experience also includes ensuring integrity and availability of well stock and delivering on an offshore well intervention program. She has spent time in the field executing well interventions and has been involved in many special projects.

### **PROFESSIONAL EXPERIENCE**

#### **2017 - 2020: BP EXPLORATION**

**2019-2020:** Strategic Integration Advisor (Greater Prudhoe Bay, Alaska)

Advise and steer long-term offtake strategy and planning for the field. Work with multiple functions to align and integrate planned activities over the next 5-20 years.

**2019-2020:** PAVE (Pressure and Vaporization Enhancement) Project Team

Integrating a large capital project into the existing Prudhoe Bay facilities.

**2017-2019:** Field Optimization Engineer (Greater Prudhoe Bay, Alaska) (*see below for description*)

#### **2000 - 2017: PETROTECHNICAL RESOURCES OF ALASKA, LLC.**

**2014-2017:** Field Optimization Engineer (Greater Prudhoe Bay, Alaska)

Optimize daily production and manage production deferrals. Plan and manage sales pipeline and fieldwide shutdowns. Determine overall Implied Production Capacity (IPC) and advise and steer offtake strategy. Work with multiple functions to align production opportunities with available infrastructure, resources and shelter opportunities as well as coordinate and resolve major activity scheduling issues.

**2012-2014:** Lead Optimization Engineer (Greater Prudhoe Bay, Alaska)

Coach optimization engineers, guiding their performance across a variety of activities including production and injection system management, production optimization, planning and managing shutdowns, velocity management and debottlenecking. Develop and manage a set of core competencies for optimization engineering positions. Assist with succession management. Work long term planning and optimization opportunities and strategy.

**2006-2012:** Field Optimization Engineer (Greater Prudhoe Bay, Alaska)

Optimize production of multiple fields through 52 well pads (~1600 wells), 7 production facilities, 2 gas plants and 1 seawater plant. Reduce oil impacts caused by planned and unplanned events through ownership of the Production Impact Maintenance Planning Schedule – a high-level activity schedule including rotating equipment, separation trains, pipelines, etc. Increase production by optimizing based on facility, flowline and well constraints. Troubleshoot issues with major separations facilities and systems – gas lift, gas transit, produced water and oil transit lines. Identify bottlenecks and help determine benefits of projects to remove or bypass.

*Expert witness on production optimization concerns for BP in State of Alaska lawsuit 2010-2011.*

**2005-2006:** Production / Well Pad Engineer – Northwest Fault Block (Greater Prudhoe Bay, Alaska)

Manage decline in a mature waterflood, work well integrity issues, increase oil production through sidetracks, workovers, wellwork, injector conversions and innovative recovery methods (Brightwater, MIST, UZI).

*Temporary (6 month) fill-in for Wells Optimization Engineer (EOA) concurrent with pad engineering job.*

**2005:** Petroleum Engineer – Gravity Drainage – Put River (Greater Prudhoe Bay, Alaska)

Determine zonal isolation in old wellbores for development of a new horizon uphole.

**2004:** Petroleum Engineer – Orion and Polaris Viscous Oil Fields (Greater Prudhoe Bay, Alaska)

Compare various artificial lift methods using reservoir properties, well design criteria and facility constraints. Determine the most cost-effective method or combination for input into the overall facility design.

**2003-2004:** Production Engineer – Prudhoe Bay, Alaska

Map the water process from facility pumps to injection wells to convert separate injection systems for each facility to one combined produced water system and an expanded seawater system for the field. Implement an overall metering scheme with master meters and a new water accounting and allocation process.

**2000 – 2003:** Production / Well Pad Engineer – Eileen West End (Greater Prudhoe Bay, Alaska)

Design and implement a new water and EOR flood using a combination of surveillance, well interventions, non-rig and rig workovers, coil and rig sidetracks and new wells. Optimize production based on facility limitations and plan new facilities and debottlenecking projects where appropriate.

**2000:** Petroleum Engineer – Polaris Viscous Oil Field (Greater Prudhoe Bay, Alaska)

Provide input to the Polaris Area Injection Order regarding mechanical integrity issues and present to AOGCC.

### **1990 to 1999: BP EXPLORATION**

**1998 - 1999:** Wells Management Leader – Southern North Sea (SNS), UK.

Managed well services contracts, worked with depleted gas wells, established the SNS Well Examination Scheme under new regulations, transitioned to operatorship of two additional gas fields including resolution of outstanding well issues. Feasibility study of unsupported coiled tubing operations on small platforms.

**1993 - 1997:** Production / Well Pad Engineer - Prudhoe Bay, AK.

Led development teams that resulted in 14 sanctioned new well/sidetracks. Performed water shut-offs (15mbwd), saving ~\$1 million/year. Helped develop high angle wellbores for waterfloods. Pursued new, leveraging technologies, including gel water shut-offs, multilaterals, etc.

**1990 - 1993:** North Slope Production and Gas Lift Engineer – Endicott, AK.

Performed well surveillance and interventions in the field, including slickline, braided line, electric line and coiled tubing. Supervised rig completions, managed testing program and increased field from 5 gas lifted wells to ~40.

### **1988 to 1989: MOBIL EXPLORATION AND PRODUCTION**

**1989:** Reservoir Engineer (intern) – Denver, CO. Midway Sunset Field near Bakersfield, CA.

Competitor survey of a steam flooded heavy oil offset lease.

**1988:** Summer Field Technician III (Roustabout) – Bakersfield, CA.

### **1987: BUREAU OF LAND MANAGEMENT**

1987: Petroleum Engineering Co-op Student – Durango, CO. San Juan Basin.

Oversaw oil and gas concerns for government agencies and reservations, covering 7 formations.

### **TECHNICAL and ANALYTICAL SKILLS**

- Leading multidiscipline teams to delivery of sanctioned new well and sidetrack programs
- Identifying and planning well interventions and prioritizing them against other projects to maximize profitability
- Ensuring long term integrity and reliability of mature wells, at the lowest possible cost
- Coordinating a wide range of activities across the field with the goal of minimizing production impacts
- Production optimization in a waterflood including injection targets, gas lift and managing produced fluids
- Experience in both offshore and Arctic operations
- Ability to maximize value of a fully integrated multidisciplinary team
- Strong optimization and planning skills
- Mentoring and coaching other engineers
- Solid background in petroleum engineering
- Strong organizational and communication skills