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PROFESSIONAL CERTIFICATION:

- Registered Geologist, Arizona #15664, since 1983
- Professional Member, Society for Mining, Metallurgy, & Exploration (SME), Qualified Person
- GEM Award, 2009 (Mining Engineering, 2010. v. 62, no. 2, p. 59)
- MSHA, HAZWOPER (not current),
- Community College teaching certificate, Substitute Teaching certificate

EDUCATION:

- Ph.D. (major = Economic Geology; minor = Engineering Geology), 1993, University of Arizona, Tucson: “Geochemical patterns of hydrothermal mineral deposits associated with calcalkalic and alkali-calcic igneous rocks as evaluated with neural networks”

RELEVANT EMPLOYMENT EXPERIENCE:

- Associate Senior Geologist, SRK Consulting, 2010 – present
- Curator, Arizona Mining and Mineral Museum, Phoenix, AZ, 2007-2010
- Senior Geologist, SRK Consulting, Tucson, AZ, 2003-2007
- Consulting Geologist, Jan Rasmussen Consulting, Austin, TX, 1997-2000; Sonoita, AZ 2001-2003, Tucson, AZ 2010-present
- Project Geologist, Woodward-Clyde Federal Services, Las Vegas, NV, 1994-1997

ENVIRONMENTAL EXPERIENCE:

- Wrote, as part of a team at SRK Consulting and Jan Rasmussen Consulting (8 years):
 - Environmental baseline, geology, hydrology, facilities, tailings, etc. sections of
 - Aquifer Protection Permits (APP), Mined Land Reclamation Plans (MLRP), Environmental Site Assessments (NEPA), Storm Water Pollution Prevention Plans (SWPPPs) and Environmental Impact Studies (EIS), Health and Safety Plans on San Manuel closure and current Pinto Valley and other mines
- Researched and wrote geology sections of permit application of Dept. of Energy for Nuclear Regulatory Commission on the Yucca Mountain radioactive waste management permit (for Woodward Clyde Federal Services in Las Vegas) – 4 years

ORE DEPOSIT EXPERTISE:

- **Sound technical reputation in the mining and energy industries:** Wrote over 14 books or open file reports on economic geology, regional geology, with numerous peer-reviewed articles and abstracts (most posted on www.janrasmussen.com/research)
- **Expert in metals, industrial minerals, and energy resources,** regional geology, geochemistry for numerous commodities - **metals** (copper, gold, molybdenum, lead-zinc-silver, tin, tungsten, platinum group elements, rare earth elements), **energy resources** (oil and gas, uranium, coal, geothermal), and **industrial minerals** (clay, gypsum, salt, cement, dolomite, limestone, silica sand, talc, graphite)

QUALIFIED PERSON EXPERIENCE:

- Wrote Canadian NI 43-101 reports on mines in Arizona, New Mexico, Alaska, South Dakota, and Canada (as Jan Rasmussen Consulting and as part of SRK Consulting team)

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- Researched and wrote geology sections of permit application of Dept. of Energy for Nuclear Regulatory Commission on the Yucca Mountain radioactive waste management permit (for Woodward Clyde Federal Services in Las Vegas)

PROJECT MANAGEMENT EXPERIENCE:

- **Curator, Arizona Mining and Mineral Museum, Phoenix, AZ, 2007-2010:** Managed 10 Tour Guides and 70 volunteers as Curator of the Arizona Mining and Mineral Museum in Phoenix, inspiring them to work as a team without monetary incentives

- **Consulting Geologist, Jan Rasmussen Consulting,** Austin, TX, 1997-2000; Sonoita, AZ 2001-2003; Tucson, AZ 2010-present; J.C. Wilt & Co., Tucson, AZ, 1980-1994

- **Project Geologist, Woodward-Clyde Federal Services, Las Vegas, NV, 1994-97:** Managed five university professors to research natural resources, without the ability to reward them or fire them, finishing the final report on time, unusual at Yucca Mtn. Project

- **Adjunct Professor** - Austin Community College, Texas (1999-2000); Cochise College, Sierra Vista, AZ (2001), and Pima Community College, Tucson, AZ (2002-1914)

- **Symposium Chairman, Arizona Geological Society,** Tucson, AZ, 1986; program 1994

- Developed project plans and schedules using project management software (on the DOE grant while at Woodward-Clyde and at SRK Consulting)

PERSONAL SKILLS:

• Strong communication skills:

- Prepared technical project documents, including writing, word processing, tables, spreadsheets, figures, and producing hard copy documents using MS Office Suite software, Photo Shop, and Adobe Acrobat Professional

- Wrote over 14 books or open file reports on economic geology, regional geology, and popular geology, as well as numerous peer-reviewed articles and abstracts

- Excellent teacher and public presenter: as Curator, Arizona Mining and Mineral Museum, Phoenix, AZ (www.MiningMineralMuseum.com); and adjunct faculty for onsite and online Physical, Historical, Environmental Geology classes at community colleges

• Computer skills:

- Expert in Microsoft Word, Excel, Publisher, Power Point;

- Have used Access, Adobe PDF, Adobe PhotoShop, Adobe Dreamweaver, Corel Word Perfect, Corel Draw, Corel Video Studio, Neural Networks, Global Mapper, and statistical software;

- Abundant experience with literature research using web-based searches, GeoRef, and other computerized databases

• Initiative:

- Obtained several clients for SRK Consulting to write Qualified Person Reports - Canadian NI-43-101 reports as a Registered Geologist in Arizona and SME Professional Geologist

- Obtained a research grant from New York State Energy Research and Development Association, researched oil and hydrothermal dolomite as part of a team, and wrote the final report

- Evaluated regulatory requirements and the political situation, wrote a proposal, and obtained a grant from U.S. Department of Energy for research on natural resources of the Nevada Test Site and Yucca Mountain vicinity (for Woodward-Clyde Federal Services (1994-1997))

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS:

- SME Certified Professional Member; Arizona Geological Society; Nevada Geological Society, Mining Foundation of the Southwest