

WE VALUE COLLABORATION BECAUSE WE BELIEVE THAT INFORMATION SHARED MAKES US MORE INFORMED AND BETTER ABLE TO CARRY OUT OUR CLIENTS' VISION. WE ARE STRONG ADVOCATES FOR SCIENCE, AND WORK DILIGENTLY TO ENSURE THAT WE CONTINUOUSLY PROVIDE THE NECESSARY TOOLS FOR SUCCESS. WE DON'T BELIEVE THERE'S ANYTHING EASY ABOUT UNDERSTANDING GEOLOGY AND THE DIFFICULTIES EXPLORING FOR OIL & GAS. THAT'S WHY WE HAND PICK OUR EXCEPTIONALLY TALENTED GEOLOGISTS AND GEO-SCIENTISTS TO OUTPERFORM AND GIVE YOU THE INFORMATION YOU NEED.

WE BELIEVE IN DOING EXCEPTIONAL WORK. IT'S WHO WE ARE AND WHO WE'VE BEEN SINCE 1978 WHEN WE STARTED OUT AS A SMALL, CALGARY BASED GEOLOGICAL WELLSITE COMPANY. SINCE THEN, WE'VE TAKEN OUR EXPERTISE ALL OVER THE WORLD AND CREATED OUR OWN GEOLOGIC LAB & ANALYTICS FACILITY. WE CONTINUE TO STRIVE TO PROVIDE MORE FOR OUR CLIENTS.

YOU DON'T HAVE TO SETTLE FOR GOOD ENOUGH... LET PRO GEO DO WHAT WE DO BEST.



PRO GEO CONSULTANTS

ABOUT US

Pro Geo Consultants was founded in 1978 in Calgary, Canada and has managed over 12,000 wellsite operations in over 20 countries over the past 40 years. Pro Geo has a strong focus on quality personnel, clear communication and diversified experience in our core service business units.

Geological Services

- Geological Wellsite Supervision cuttings analysis, mudlogging, gas chromatography, petrophysical log analysis and quality control, core and casing point selection, core processing, core evaluation, real time XRF acquisition, data acquisition compilation and interpretation, well presentations and personnel training and supervision.
- Sample Collection & Processing mud, core, chip, cuttings, isojars, isotubes.
- Geosteering (and horizontal supervision) real time decisions and borehole position corrections using geological and geophysical downhole measurements to ensure optimal wellbore placement while drilling, from wellsite or remotely.
- Operations Geology & Project Management
 well planning, data management, contractor
 evaluation & supervision, wireline log evaluation.
 subsurface & drilling risk identification, manifests &
 data documentation, geophysics, petrophysics,
 reservoir engineering, drilling & engineering
 consultants, disposal well assessments.



Laboratory & Analytics

- Core and Sample Analysis including full petrography, SEM, XRD and mobile and bench XRF.
- Enhanced Reservoir Studies including source rock geochemistry, biostratigraphy and ichnological analysis.
- **Data Integration** including reservoir characterization and integrated sequence stratigraphy.
- Exploration & Development Support including regional studies, evaluations, mapping, play generation, petrophysics, basin analysis, reporting and follow-up.



PRO GEO PROJECT EXPERIENCE

HIGHLIGHTS

Pro Geo Consultants geologists have worked in over 20 countries including Canada, United States of America, Oman, Ecuador, Venezuela, French Guiana, United Kingdom & the North Sea, Albania, Turkey, Syria, Iraq, Kurdistan, Qatar, Iran, Saudi Arabia, Bahrain, Yemen, Pakistan, Egypt, Libya, Sudan, Thailand and New Zealand.

CANADA

Long-term Projects

- 10-rig development drilling program for Tourmaline
 Oil Corp. since its inception in 2008 with over 500 wells
 drilled to date. Over 1,000 wells combined total with
 Berkley Petroleum, Duvernay Oil Corp and Tourmaline,
 who all share the same management team, with up to 20
 Pro Geo wellsite consultants contracted at any given time.
- Over 1,400 wells with Renaissance Energy from their inception in 1982 until their sale to Husky Energy in 2000, with up to 17 Pro Geo wellsite geologists contracted at any given time.
- More than 250 wells for **Penn West** from 2001 to 2015 including Cardium, Montney and Slave Point formations.
- From 1996 to 2015 with Canadian Natural Resources (CNRL), almost 300 wells across BC and Alberta in a variety of formations, ranging from heavy oil and shallow gas to deep basin Montney wells.
- Almost 400 wells for Encana from 2003 to 2013, with more than 100 deep basin gas wells in NE BC and more than 100 shallow gas wells in central Alberta.
- More than 800 Petro-Canada wells over 25 years across BC, AB, SK and NWT, with more than 500 stratigraphic and cored wells in the oilsands from 1997 to 2001.
- Montney development program with Shell from 2009 to 2016 with close to 300 wells in NE BC and NW Alberta.

Geosteering Projects

- Over 100 wells geosteered for EOG between 2011
 2014 at Wapiti, Joffre, Horn River, Waskada and Pierson.
- Exploratory pool well in Ontario for Grandview Energy in 2013.
- 4 wells geosteered for Velvet in 2018 to date at Gordondale & Bezanson.

Shale Projects

- Over 900 Montney and Duvernay wells to date for Tourmaline, Berkley, Duvernay, Talisman, Painted Pony, CNRL, Compton, Conoco, Husky, Penn West, Trident, Velvet, Raging River (Baytex), Progress, Petro-Canada and Shell.
- 9 Utica & Lorraine shale wells from 2008-2010 for Talisman in Quebec.

Offshore & Deepwater

- Supervised the only offshore arctic well in Canada in last 25 years with Devon Canada.
- Beaufort Sea project and East Coast Offshore projects with Esso.

Arctic Exploration

 Canadian arctic exploration programs over 23 years and more than 100 wells with Chevron, Devon, Petro-Canada and Esso including 4 rigs with Petro-Canada and 67 wells with Esso Resources at Norman Wells, NWT and Yukon Territory.

Coal Bed Methane (CBM) & Shallow Gas Projects

 Over 1,000 CBM and shallow gas wells for Trident,
 Devon, CNRL, Nexen and Encana in a variety of formations including the Mannville and Horseshoe Canyon.

Oilsands Stratigraphic Wells, SAGD & Thermal Programs

 Over 1,000 wells to date for Petro-Canada, Chevron, Amoco, Devon, Total E&P, Paramount, KNOC, Petrobank and Devon in the Dover, Birch, Lewis, Hangingstone, McMurray, Germain, Leismer and Liege areas.

Heavy Oil Projects

- Over 400 wells in Cold Lake and Lloydminster areas including Esso Cold Lake project.
- Over 100 wells for Pengrowth at Lindbergh from 2007 to 2014.

LAB & ANALYTICS PROJECTS

- Numerous studies examining core and thousands of thin-sections, SEM, XRF and XRD samples.
- Some of the industry's most active plays including the Wilrich, Notikewan, Falher, Cardium, Duvernay, Charlie Lake and Montney formations.
- Petrography, elemental, mineralogy, clay content, porosity, pore-throat geometry and TOC investigations.
- Exploration and development work for Tourmaline, Ikkuma, Altura, Corridor, Perpetual, Raging River (Baytex), NuVista and Coco Liso (Gold - Ecuador), among others.
- Academic research projects in association with University of Calgary and Mount Royal University.

USA

- Geological Wellsite Supervision on a 5-state directional and horizontal drilling program with Talisman/Fortuna between April 2008 and January 2015 in Louisiana, Wyoming, North Dakota, Utah and Montana.
- Projects in west Kansas, Denver basin and Appalachian overthrust.

ECUADOR

 Geological Wellsite Supervision on a 10-well directional and horizontal multi-well pad drilling program with Pacalta, City Investing Company (Ecuador government), AEC (Alberta Energy Company – Now Encana) and Rio Alto International Inc. from Sept 1998 to December 2001.

OMAN

- Over 100 wells of Geological Wellsite Supervision experience in wells up to 6,500m.
- Vertical, deviated, horizontal and geosteering wells in sandstone (Natih, Shuaiba, Kharaib and Khuff groups), carbonate (Akhdar, Alkhalata, Haushi, Misfar and Haima groups) and basement formations.
- Supervision of LWD, Mudlogging, Well Testing, Wireline Logging and Coring operations.

QATAR

- Over 20 wells of Geological Wellsite Supervision experience in vertical, deviated and horizontal wells.
- Geosteering through thin, complex carbonate reservoir.
- Prepare and plan well prognosis, well path and supervise service teams (LWD, DD, ML etc.)
- Core barrel 100% recovery in problematic reservoir zone.
- Training of junior geologists and petroleum engineers.

PRO GEO MANAGEMENT

BIOS

Robert (Bob) Earle, P.Geol. PRESIDENT

Bob Earle is a professional geologist with 40 years of geoscience experience. After graduating with a BSc. in Geology from the University of Calgary in 1978 and completing four summers working across Canada in mineral exploration, he began research into uranium in black shales and phosphates at the University of Calgary. In 1984, following five years as a Wellsite Geologist throughout western Canada and the arctic, a partnership was formed and Bob became President of Pro Geo Consultants, a leading geological consulting company. Always seeking new and innovative means to understand petroleum geology, he created a geological Lab and Analytic facility in 2014 to better characterize petroleum reservoirs using leading edge technology and analytics. Bob is a long-time member and sponsor of the Canadian Society of Petroleum Geologists (CSPG) and a professional member of the Association of Professional Engineers and Geoscientists (APEGA) of Alberta, Canada.

Scott Thain, P.Geol. OPERATIONS MANAGER

Scott Thain is a professional geologist with over 15 years of experience in both wellsite geology and in operations management for Pro Geo. Scott graduated from the University of Regina with a B.Sc. (Honours) in Geology and is a member of the Canadian Society of Petroleum Geologists (CSPG) and a professional member of the Association of Professional Engineers and Geoscientists (APEGA) of Alberta, Canada.

Timothy Hagan, P.Geol. OPERATIONS MANAGER

Tim Hagan is a professional geologist over 20 years of experience in both wellsite geology and in operations management for Pro Geo. Tim holds a Masters of Science (Geoscience) from the University of Waterloo (1997) and has been published in numerous papers with the American Association of Petroleum Geologists (AAPG) as well as the Journal of Sedimentary Research. After 3 years as a wellsite geologist with Pro Geo, Tim joined the team at Renaissance Energy as an Exploration Geologist until their sale to Husky Energy, at which point he rejoined Pro Geo as Operations Manager. Tim is a professional member of the Association of Professional Engineers and Geoscientists (APEGA) of Alberta, Canada.

James Ablett, B.Sc. Geol. BUSINESS DEVELOPMENT

James Ablett joined Pro Geo after over a decade in business development in the oil and gas industry. James received his B.Sc. in Geology from the University of Calgary before working with Weatherford as a logging engineer in western Canada, U.S.A., Mexico, the Middle East and North Africa. James returned to Canada and used his strong technical skills and customer driven focus to provide solutions with Halliburton for oil and gas companies, ranging from junior start-ups to well established multi-nationals. James served as President of the Canadian Well Logging Society (CWLS) and is a member of the Canadian Society of Petroleum Geologists (CSPG).

PRO GEO LAB & ANALYTICS

KEY PERSONNEL

Amjed Cheema, PhD

Senior Geoscientist / R&D. with 30 years of diversified experience. Amjed's prime expertise was developed in sedimentology with a strong background in wellsite geology, petrography, XRD, XRF and electron microscopy. His experience includes development of depositional and diagenetic models using microfacies, sedimentology, geochemistry, well log interpretation and data integration.

EDUCATION

2011 Ph.D. (Carbonate Sedimentology; University of Erlangen-Nürnberg, Germany)

Jamil Azfal, PhD

Senior Geoscientist / Explorationist with over 20 years of diversified experience working with international E&P companies (OMV and Saudi Aramco) and R&D/Service companies (HDIP and IPC). Jamil has participated in more than 50 technical/soft-skill courses and seminars at national and international levels with over 10 published papers.

EDUCATION

2007 Ph.D. (Stratigraphy; Punjab University, Lahore and BGR, Germany)

Jean-Yves Chatellier, PhD, MBA

Senior Geoscientist with 30 years of experience in multidisciplinary integration of geology, geophysics, geochemistry and engineering. Jean-Yves brings international expertise from Shell, PDVSA, Talisman and

Nexen. He has taught courses for the SPE and AAPG and published over 180 abstracts and papers. Jean-Yves is co-chair of the AAPG Research Committee and his expertise covers exploration and production in tight sand and shale reservoirs.

EDUCATION

1984 Ph.D. (Tectonics, University Paris VI)

Ahmed Khan, PhD

Senior Geoscientist / R&D with over 35 years of diversified experience on laboratory research projects Ahmed was a lecturer and Head of Earth Sciences at University of Sargodha (2002-2008). Ahmed has presented his research in numerous conferences and workshops and has published more than 15 research papers in international journals.

EDUCATION

1997 Ph.D. (Stratigraphy; Peshawar University, Post-doctorate Potsdam University, Germany)

Mirza Shahbaz, M.Sc. GIT

Geoscientist/Sedimentologist with over 10 years of diversified experience on laboratory research projects throughout the WCSB in Canada including thin-section petrography, digital image processing & interpretation, drill cuttings analysis under microscope, XRD, XRF, SEM, facies analysis, particle size distribution and TOC studies.

EDUCATION

2004 M.Sc. (Sedimentology/Reservoir Characterization; Punjab University, Lahore)



