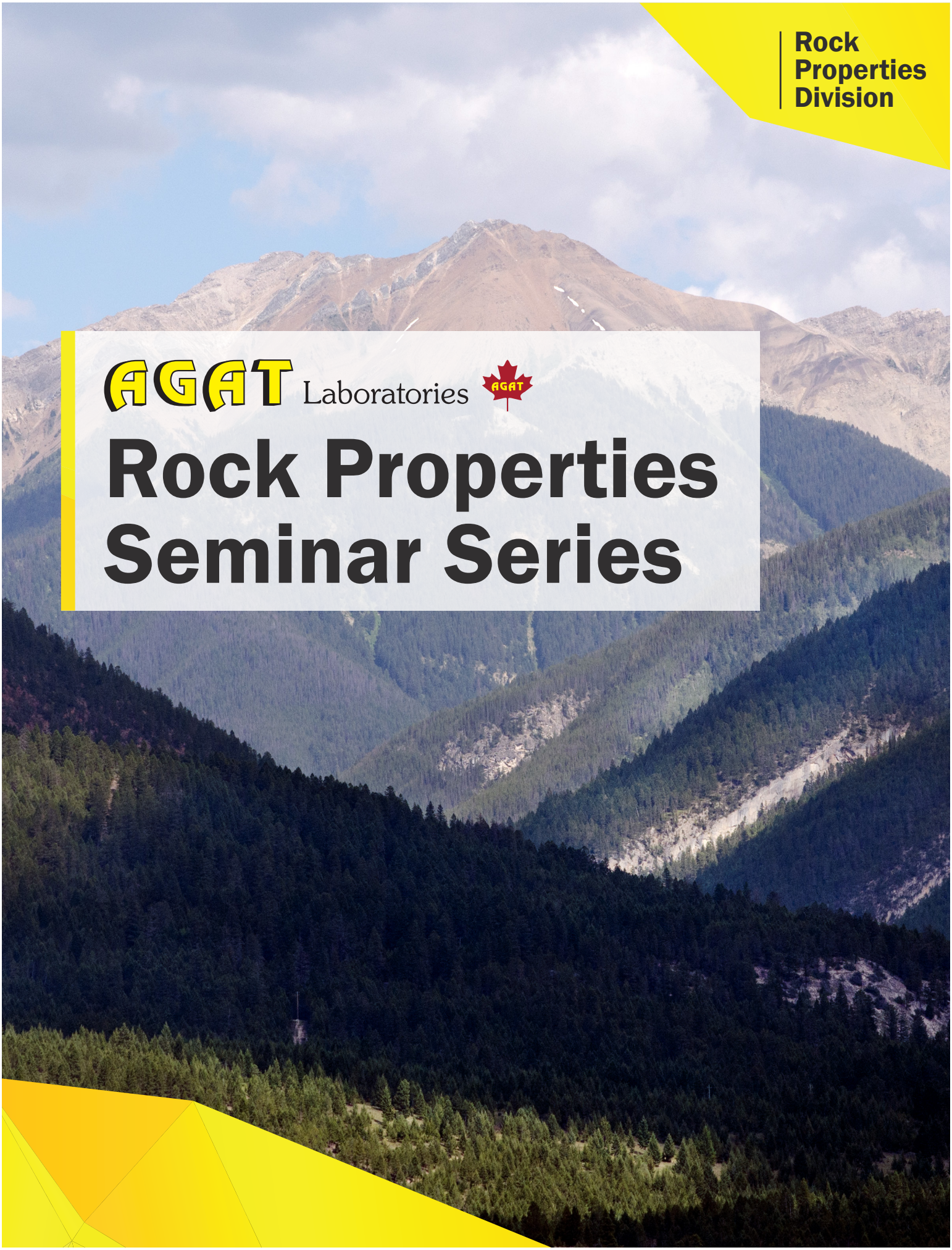


Rock Properties Division

AGAT Laboratories

Rock Properties Seminar Series

Who We Are

AGAT Laboratories is a highly specialized, Canadian-based company that provides laboratory services worldwide. With over 40 years of experience, locations coast to coast and 1,200 employees Canada-wide, AGAT Laboratories is the most geographically and technically diversified commercial testing laboratory in Canada. Committed to local communities, AGAT Laboratories aims to maintain our mission statement to deliver “Service Beyond Analysis”.

Our laboratory operations offer full-service solutions for a wide range of industries, including Mining, Environmental, Energy, Industrial, Transportation, Agriculture and Food, Forensic Science, and the Life Sciences sectors.

AGAT Laboratories’ network of laboratory facilities and depots provides extensive geographic coverage in Canada.

We are proud to set high standards in the laboratory industry with our mandate to provide timely, accurate and defensible solutions for our clients’ analytical needs with services ranging from basic testing to extremely complex technical projects.

When you choose AGAT Laboratories, you will experience “Service Beyond Analysis”. We provide quality data and unsurpassed service through our client-focused approach to accomplish and deliver on your specific needs. We understand the importance of providing accurate and timely results with consistently great service. Our methodologies, operating procedures and instrumentation are selected to provide suitable analytical techniques to produce the most precise and accurate analytical results possible. Our cutting-edge technical expertise and innovations enable us to provide you with service excellence.

Our Accreditation

AGAT Laboratories employs top quality assurance professionals who strive to improve the overall quality of service that we provide. Our Quality Assurance department monitors the operations of the company and ensures compliance with internationally recognized standards, policies and procedures.

AGAT Laboratories is accredited for specific tests as listed in the laboratory’s current scope of accreditation by the following organizations:

The Standards Council of Canada (SCC)

The Canadian Association for Laboratory Accreditation (CALA)

SAI Global

ISO/IEC 17025:2017

ISO 9001:2015

APEGA Certificate (Calgary)

Proudly Canadian

We are proud to be a Canadian-based business. AGAT Laboratories continues to invest in our company and the interests of Canada’s communities. Our management team values and fosters continued development, diversification and innovation in science and technology which enables us to continually support and invest in local communities.

Corporate Overview

The AGAT Overview

AGAT Laboratories' operations encompass 12 scientific divisions to offer full-service solutions to multiple industry types within the Environmental, Energy, Mining, Industrial, Transportation, Agri-Food and Life Sciences sectors.

Seminar Level: Beginner to Intermediate, 60 minutes

Core Analysis

Sample Preservation and Canister Desorption in the Field

It all starts with proper sampling techniques and preservation. If you don't start off on the right foot and apply the proper protocols and methodologies, it can have a significant impact on your final results. In this talk, we will focus on the various sample preservation services available and their applications in the field.

Seminar Level: Beginner to Intermediate, 30 minutes

Routine Core and Geology: An Introduction and Overview

This seminar provides you with an overview of the process of a conventional core from field preservation through the various tests performed on a core. A step-by-step overview of the work flow will be presented and we'll talk about the various testing suites available and best practices for a successful core analysis program.

Seminar Level: Beginner to Intermediate, 60 minutes

Unconventional Core Analysis: An Introduction and Overview

The seminar provides you with an overview of the process of an unconventional core from field preservation right through to the lab. Learn about the detailed step-by-step work flow associated with obtaining the best and most accurate results for an "unconventional" core. We'll be looking at how an "unconventional" core is handled differently from the routine conventional cores we are most familiar with. We'll talk about the various testing suites available and best practices for a successful core analysis program.

Seminar Level: Beginner to Intermediate, 60 minutes

Fundamentals of Permeability Measurements

In this talk, we will review the various permeability tests such as Pulse Decay Permeability, Pressure Decay Permeability, and Steady-State Permeability. What is the difference between them and when should you use each method?

Seminar Level: Beginner to Intermediate, 30 minutes

Porosity in Unconventional Reservoirs

In this talk, we will discuss the current methodologies for measuring porosity and the adapted methods specific to evaluating unconventional reservoirs. We'll also take a look at case studies related to porosity measurements, the potential sources of error and the overall impact to your bottom line. The presentation is designed to provide guidance in understanding porosity measurements on both new and archive core.

Seminar Level: Intermediate, 60 minutes

Fundamentals of Source Rock Analysis (SRA)

What makes a good source rock? Exploration in source rocks first starts with understanding the maturity, organic content and hydrocarbon potential. Source rock analysis provides one of the most prolific datasets we have access to in Canada. To use this resource effectively, we need to understand the details of what goes into analyzing a sample and understand how to interpret the output. This seminar walks through the process of sample prep, analysis, data interpretation and potential pitfalls to be aware of.

Seminar Level: Beginner to Intermediate, 60 minutes

Understanding Permeability of Tight Rocks

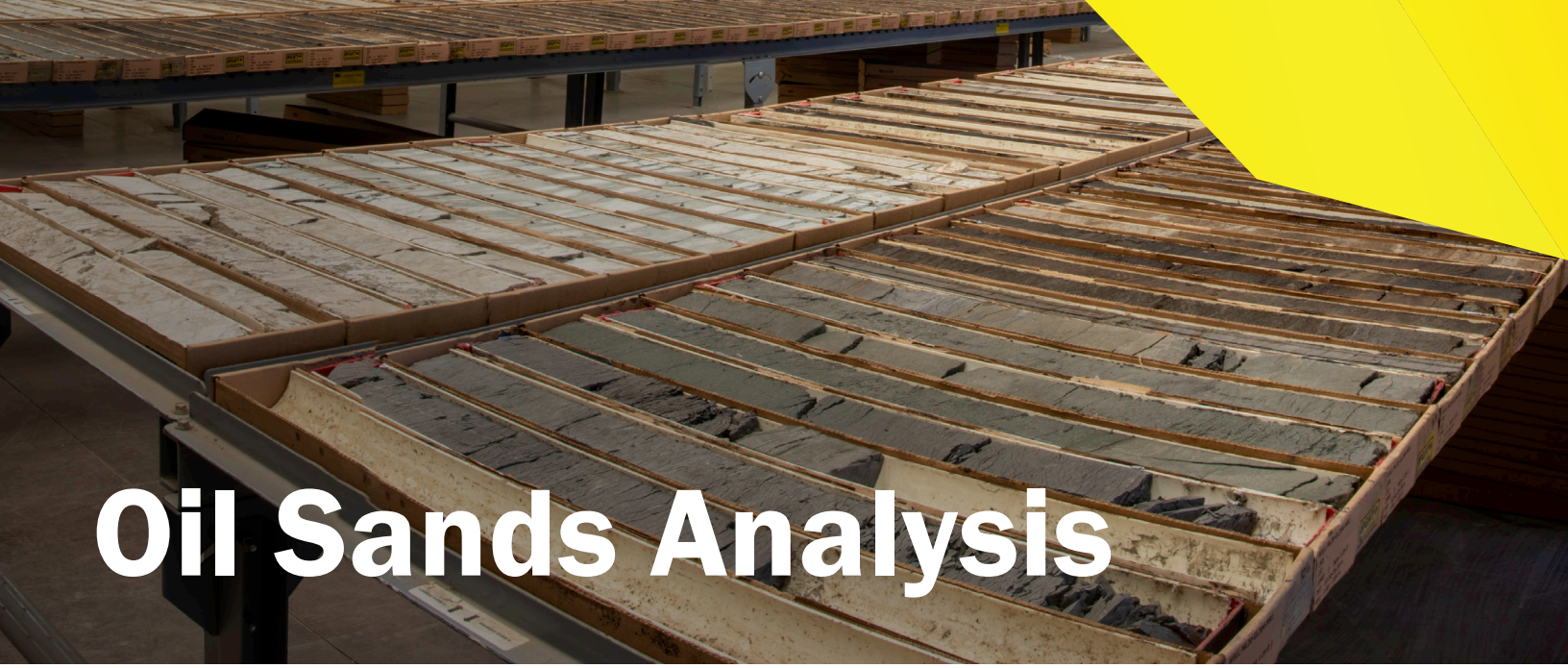
This talks offers an overview of the different techniques for permeability measurements of tight formations. We will discuss the nature of permeability determined with different techniques and the pressure- and stress-dependence of permeability of unconventional reservoirs.

Seminar Level: Intermediate, 60 minutes

The Value of Drill Cuttings

How many times have you needed to take a core and have been told “no” due to drilling costs, capital constraints, or a lack of understanding by budget decision-makers? Coring and core analysis is one of the most valuable things you can do but can be the hardest to justify. However, if you are drilling you do have another option in drill cuttings. Cuttings are a valuable resource which can be inexpensively analyzed to improve geological understanding of formations and provide information in geographic regions where there is little to no core available. In this talk, we will look at the data that drill cuttings can provide such as: target optimization and geosteering, mineralogical, geochemical and mechanical reservoir characterization (TOC, Tmax, XRF, XRD, etc.), identifying pathways to formation damage petrological properties and petrophysical properties for log calibration.

Seminar Level: Beginner to Intermediate, 90 minutes



Oil Sands Analysis

Oil Sands: An Introduction & Overview

Oil Sands exploration and development is a key area of focus for many companies. This seminar provides you with an overview of the process involved with an Oil Sands core from the field, right through to the lab. Learn how your core sample is processed and the work flow of a typical Oil Sands Core including core handling, gamma ray, core photography, porosity, permeability, water saturations and soluble ion analyses. This seminar includes an overview of the Core Imaging Software (CIS) available to clients to aid with depth correction and core imaging.

Seminar Level: Beginner to Intermediate, 60 minutes

Steam Chamber Core Analysis

An active or post-steam thermal reservoir can be an appealing but challenging target for drilling a core; providing insights into reservoir performance and optimization. This talk provides an overview of how to get the most out of a core taken into an active or post-steam thermal reservoir. Topics include a partial walkthrough of a steam chamber core, handling and analysis strategy, possible mineralogical changes induced by production conditions, fluid saturation testing, hydrocarbon chemistry analysis, biomarker analysis, comparison with pre-development cores, and scaling and other formation damage risks.

Seminar Level: Intermediate, 60 to 90 minutes

Soluble Ions Analysis in Oil Sands Core

This talk was delivered at GeoConvention 2015. Soluble ions, as measured from core samples, are often used by Oil Sands mining operations to better understand the chemistry of pore fluids that will end up going through their processing facilities. This presentation reviews the approach and outputs of Soluble Ion (SI) analysis and provides details on method optimization experiments that were carried out at AGAT.

Seminar Level: Beginner to Intermediate, 30 minutes

Fundamentals of Tailings Analysis

This talk is an introduction to tailings analysis. Topics to include subsampling techniques, Dean Stark extraction, various particle size options, clay determination by Methylene Blue Index, XRD, QEMScan. Atterberg limits and water chemistry will also be discussed.

Seminar Level: Beginner to Intermediate, 60 minutes

SAPD (Absolute Permeability Measurements on Restored Unconsolidated Core)

The objective of this presentation is to provide information on absolute permeability measurements on restored unconsolidated core samples. We will discuss core preparation, flow through cleaning, porosity and permeability, and absolute liquid permeability measurements on unconsolidated plug samples (from oilsands formations). We also explain the importance of maintaining the pore structure at net overburden pressure throughout the testing process in order ato achieve representative permeability and porosity measurements for statistical modeling.

Seminar Level: Beginner to Intermediate, 60 to 90 minutes

Geosciences

Core Logging and ACES

This talk is an overview of AGAT's oil sand core handling processes and details how large volumes of core data is effectively managed using our ACES system. Included in the talk are detail on core logging (depth correction, geologic description, sampling, data display, etc.), V-Shale from image analysis, custom report generation for clients and new features under development.

Seminar Level: Beginner, 60 minutes

Introduction to QEMSCAN

Automated mineralogy and high resolution imagining are brought together with the use of QEMScan technology. An overview of SEM and QEMSCAN functionalities are discussed to show the benefit of high resolution data in your exploration and development workflow.

Seminar Level: Beginner to Intermediate, 60 minutes

Introduction to Particle Size Distribution (PSD) Analysis

Particle Size Distribution (PSD) Analysis is a critical step in building understanding of tailings materials, oilsands reservoirs, mineral liberation, soils, and other unconsolidated sediments. There is a range of methods for PSD testing, including sieving, laser diffraction, hydrometer, optical microscopy, Scanning Electron Microscopy (SEM), and QEMSCAN. This talk aims to review these methods and their advantages and limitations, in the context of various use cases or a specific application.

Seminar Level: Beginner to Intermediate, 60 minutes

XRF and Its Applications in Geoscience

X-ray fluorescence is a well established analytical technique with applications in agriculture, environmental monitoring, and mining exploration. In recent years, the application has been adopted to oil and gas exploration with a focus on drilling and completion optimization. With the ability to provide high throughput, XRF is suitable for geosteering but also to identify mineralogical or mechanical variability along horizontal wellbores. For exploration purposes, XRF provides a unique dataset that provides insight on depositional setting, redox conditions and sequence boundaries. Here, we will focus on fundamentals of the technique and investigate direct and indirect data applications.

Seminar Level: Intermediate, 90 minutes

Reservoir Characterization

Introduction to Special Core Analysis (SCAL)

An overview of Special Core Analysis. Topics include Absolute Permeability, Relative Permeability, Capillary Pressure, Wettability, Electrical Properties, and Permeability Regain studies.

Seminar Level: Beginner to Intermediate, 60 minutes

PVT Studies for Reservoir Fluids

Overview of PVT workflow, from sampling to quality-controlled data, for gas condensates, volatile oils, black oils, and heavy oils. Special topics can include gas injection EOR studies, solvent-oil equilibration rates, or asphaltene precipitation curves.

Seminar Level: Beginner to Intermediate, 60 minutes

PVT in Unconventionals

A discussion of the challenges of PVT testing in low permeability reservoirs and methods for obtaining reliable data.

Seminar Level: Beginner to Advanced, 60 minutes

MICP for Tight Rocks

An overview of mercury injection capillary pressures (MICP) tests to characterize the pore network of tight rocks. Dicussion will include permeability predictions and systematic corrections required for MICP data.

Seminar Level: Beginner to Advanced, 60 minutes

Asphaltene Precipitation Studies

The precipitation of asphaltenes can lead to reduced well productivity or plugged-off surface equipment. The presentation will provide an overview of the methods for determining the onset of asphaltene precipitation in a PVT laboratory from changes in pressure and temperature, or through the addition of solvent.

Seminar Level: Intermediate, 30 minutes

Rock-Fluid Interaction Studies and Implications of Frac Water Composition and Use of Friction Reducers and Surfactants

In unconventional hydrocarbon exploration, rock-fluid interactions are the most critical process during drilling, completion and production. This seminar will look at the fundamentals of rock-fluid interactions including laboratory investigations and problem-solution cases.

Seminar Level: Intermediate, 60 minutes

Geomechanics

Geomechanical Analysis: An Introduction and Overview

This course covers the fundamentals of geomechanics testing in the lab. We'll review basic test types, data outputs and definitions which will give a high-level understanding of the geomechanical testing process.

Seminar Level: Beginner, 60 minutes

Geomechanical Analysis: Laboratory Testing for SAGD producers

This course covers geomechanical testing in the lab with a specific view on SAGD production. We'll review the various steps involved in this testing from field services, sample preservation, screening samples via CT Scanning, mechanical testing, and integrated reporting.

Seminar Level: Beginner to Intermediate, 60 minutes

Geomechanical Analysis: Laboratory Testing for unconventional reservoirs

This course covers geomechanical testing in the lab with a specific focus on unconventional reservoirs. We'll review the various steps involved in this testing from field services, sample preservation, screening samples via CT Scanning, mechanical testing, and integrated reporting.

Seminar Level: Beginner to Intermediate, 60 minutes

Specialty Series

Introduction to Formation Damage

This is an overview of formation damage processes, with a focus on mechanical, chemical, and thermal mechanisms. We will also discuss how controlled lab experiments can help prevent these production issues or optimize well treatments.

Seminar Level: Beginner to Intermediate, 60 minutes

Reservoir Quality and Formation Sensitivity Studies

This seminar provides a discussion of reservoir quality analysis along with the methods used to evaluate formation sensitivity. Laboratory tools such as XRD, TS petrology, SEM petrology, QEMSCAN and XRF are key assessments techniques. This seminar can be tailored to a target formation or situation (e.g. EOR, SAGD, Caprock), or kept general.

Seminar Level: Intermediate, 60 minutes

Formation Damage in Unconventional Reservoirs: Examples from the Montney and Duvernay Formations

Intro to Formation Damage

- Mechanical Mechanisms (e.g. fines migration, solids invasion)
- Chemical Mechanisms (e.g. organic and inorganic precipitation, clay swelling)
- Biological Mechanisms (e.g. sulfate reducing bacteria, corrosion)
- Thermal Mechanisms (e.g. mineral transformation, wettability alteration)

Formation Sensitivity and Reservoir Quality

- Review
- Analysis
- Methods and Instrumentation
- Geological Analysis in Support of Formation Damage Studies

Case Studies of the Montney and Duvernay

- Hydraulic Fracturing and Water Management
- The Montney and Duvernay Formation (from a mineralogy and elemental composition perspective)
- Water Compositions (Water sources – fresh versus produced waters)
- Laboratory Data – Solids and Fluids
- Laboratory Dissolution Experiments
- Scaling Modeling (Scaling index, Stability of Carbonates)

Seminar Level: Intermediate to Advanced, 120 minutes to half-day workshop

The Duvernay East Shale Basin

The discussion will focus on the depositional setting and basin stratigraphy. Direct comparisons are made between the West and East Shale Basins to show the impact of flow restrictions and circulation in the Devonian. Examples from core studies will be highlighted to show the variations in porosity, permeability, mineralogy, organic matter composition. We will explore the overall maturity and stratigraphic details which provide insight into the matrix and diagenetic makings of these rocks.

Seminar Level: Beginner to Intermediate, 60 minutes

Permeability of the Montney Formation in the Western Canada Sedimentary Basin: Insights from Different Laboratory Measurements

A review of the various permeability methods and their applications to the Montney Formation.

Seminar Level: Intermediate, 60 minutes

Chemostratigraphic Correlations Across the Alberta Montney Formation

XRF profiles of >20 cores in the Montney Formation allow us to develop a regional correlation of the data and provides contemporary depositional packages. The data will be outlined and correlation proxies discussed which will provide new insights into the Triassic deposits.

Seminar Level: Beginner to Intermediate, 60 minutes

Stress-Dependence of Porosity and Permeability of Tight Rocks of the Montney Formation: New Insights from Holistic Interpretations of MICP Data

For tight and shale rocks, due to their low permeability and friability, the permeability is strongly dependent on confining stress. Gas permeability of these microporous rocks strongly depends on pore pressure. A review of permeability of tight formations will be presented and engineering applications will be discussed.

Seminar Level: Intermediate, 60 minutes

Disposal Wells, Fluid-Rock Investigations and Determining Physical and Chemical Changes During Injection

Disposal wells often get little attention unless they require high maintenance and frequent clean-ups. Here we look at rock-fluid interactions and disposal well plugging due to scaling. We also look at metrics and the influence of pressure build-ups and mechanical property differences under the influence of injection loads.

Seminar Level: Intermediate to Advanced, 60 minutes

An Integrated Approach to Determine the Hydrocarbon Compositions and PVT Properties of Unconventional Gas Condensate Reservoirs

An introduction will be given to fluid sampling for unconventional reservoirs and an integrated approach to characterize native reservoir fluids will be presented and discussed.

Seminar Level: Beginner to Intermediate, 60 minutes

Graphite Exploration and Petrology

Discussion of the geological development of graphitic carbon with example localities, analytical approaches for assay and deposit quality assessment (Total Graphitic Carbon, XRD, Thin Section Petrology).

Seminar Level: Intermediate, 60 minutes

Core Planning an Overview of Coring Methods, Recoveries and Preservation

This presentation provides insights into the complexities of planning a coring program, the decisions to be made, and the factors that influence the choices.

Seminar Level: Beginner to Advanced, 90 minutes to half-day workshop

Case Studies

Duvernay Geochemical Regional Studies

A review of the Fox Creek, Rimbey and Valleyview studies. Overview of exploration geochemistry (XRD & source rock) used to map out liquids rich sweet spots and highlight variations in mineralogy.

Seminar Level: Intermediate, 60 minutes

Montney Geomechanical Study Overview

An overview of the Alberta Montney and chemo stratigraphic analysis that was used in breaking out individual Montney units. The study combines the use of XRD, XRF, SRA and rock properties testing to differentiate zones within the Montney.

Seminar Level: Intermediate, 60 minutes

Muskwa Geochemical Regional Studies

A review of the Hambury and Rainbow/Zama studies. Overview of exploration geochemistry (XRD & source rock) used to map out liquids rich sweet spots and highlight variations in mineralogy.

Seminar Level: Intermediate, 60 minutes

Field Trips & Workshops

(Charges Apply)

Unconventionals in the Rockies

This one-day course explores examples of unconventional formations in outcrop. At the outcrop we will look at the stratigraphy and tie together analytical methods used to evaluate these rocks and the practical application in exploration, completion and production.

Seminar Level: Beginner to Intermediate, 1 day

Unconventional Petroleum Reservoirs: Insights from Paleozoic-Mesozoic Mudstone Sequences in Utah, Western Unites States

Explore unconventional mudstone characteristics and architecture in the context of sequence stratigraphy: A geological journey through the Book Cliffs, Arches, and Capitol Reef National Parks.

Seminar Level: Intermediate, 5 to 7 days

An Introduction to the Application of Biomarkers in Petroleum Exploration

In this course, you will discover what biomarkers are and what they can be used for, and hence are able to know when they can solve a problem for your given situation.

Seminar Level: Intermediate, 1 day

Presented by **Dr. Martin Fowler** Ph.D., Organic Chemistry, Applied Petroleum Technology (APT)

For additional information regarding these field trips and workshops, please reach out to your AGAT Business Development Representative.

Xiaojun (Albert) Cui, Ph.D., P.Geol.

Senior Technical Advisor, Reservoir Characterization
Calgary, Alberta

Education

Bachelor of Science, Geology, China University of Geosciences, Wuhan, China, 1994

Master of Science, Geodynamics and Tectonophysics, Beijing University, China, 1997

Doctor of Philosophy, Geological Sciences, University of Missouri – Columbia, US, 2002

Summary of Qualifications

Albert Cui currently works as Senior Technical Advisor in Reservoir Characterization at AGAT Laboratories. Albert Cui received his B.Sc. in geology in 2004 from China University of Geoscience in Wuhan, MSc in tectonophysics & geodynamics from Beijing University in 1997, and PhD in geological sciences from the University of Missouri – Columbia in 2002. Albert is author and co-author of over 35 highly cited publications on permeability measurements, shale evaluations, enhanced recovery of coal-seam gas and geological CO2 sequestrations, reactive transport phenomena in porous media, water-rock interactions and tectonics in journals such as JGR, BCPG, SPEJ, AAPGB, Fuel, IJCG, Geofluids, JMG, GSAB, Tectonophysics and Acta Geotech, and in SPE and ARMA conference proceedings.

Career Highlights

Albert Cui has over 20 years of academic and industry experience in measurements of rock properties for natural resource exploitations and using analytical and numerical techniques to investigate and understand wide-range phenomena for fundamental researches & practical applications. Albert developed coupled finite element models to study reactive transport of heat, CO2 and oxygen isotope in hydrothermal systems during his Ph.D. study. During his post-doctoral research fellowship at UBC, Albert developed 2D multi-component reservoir simulators to investigate primary and enhanced recoveries of methane from coal seams and sequestrations of CO2 and acid gas, established stress-dependent permeability models for coal seam reservoirs, and advanced first-ever the methodologies for permeability measurement of tight rocks with consideration of gas adsorption effects. At Trican Geological Solutions, Albert pioneered the integration of well-stimulation microseismic data into commercial reservoir simulators in 2009 to optimize BC Montney wells, developed EOS-based PVT models for hydrocarbon in place modeling, designed and implemented hardware and software for steady-state and transient methods for permeability measurements, constructed algorithms to model mineralogical compositions and mechanical properties based on elemental XRF data, established geomechanical model for wellbore stability analysis, and actively involved in special core analyses, PVT tests & EOS-based modeling and special studies. Albert has also actively served as technical reviewer for JNGSE, SPE, and other peer-reviewed journals, and received “Outstanding Service” Awards in 2015 & 2016 for SPE REE as a Technical Editor.

Primary Areas of Expertise

- Routine & Special Core Analyses
- Petrophysics
- PVT & EOS-based Modeling
- Analyses & Simulations of Coupled THM & Transport Phenomena in Porous Media
- Aqueous Geochemistry

Contact

Albert Cui, Ph.D., P.Geol.
Senior Technical Advisor, Reservoir Characterization
Calgary, AB
T: 403-299-2184
E: xcui@agatlabs.com

Brent Nassichuk, MSc, PGeo

Director, Energy Division

Calgary, Alberta

Education

M.Sc. Geology, University of British Columbia; Vancouver, BC, 2000

B.Sc. Geology, University of British Columbia; Vancouver, BC, 1997

Summary of Qualifications

Brent Nassichuk has been in the geological services sector for over 20 years which spans time within both the oil and gas and mining sectors as well as academia. Brent started his industry career with CBM Solutions in 2000, a company which was then acquired in 2007 by Trican Well Service. Brent has held the positions of Technical Manager and Director of Geological Services with CBM Solutions and Trican Well Service. In February 2018, the Trican geological division was acquired by AGAT Laboratories where Brent now oversees the Energy Division operations as Director. Prior to working with Trican and AGAT, Brent completed Bachelors and Masters Degrees at the University of British Columbia. During his graduate studies, Brent focused his research on rock properties and reservoir characterization of the Montney Formation in Northeast British Columbia. While at UBC, Brent was employed as a research and laboratory assistant. Brent is currently responsible for all oversight of geological and petroleum operations within AGAT Laboratories including analytical, technical, quality and safety programs. Between his Bachelors and Masters studies, Brent also spent time working in the hard rock mining industry focused on Pb, Zn and Ag exploration. Brent is an active member of the Association of Professional Engineers and Geoscientists of Alberta.

Career Highlights

Brent has over 20 years of industry and academic experience in reservoir evaluations, routine and special core analysis, sedimentology and organic geochemistry. Brent has been involved in the development of testing procedures and protocols specific to tight and ultra-tight formations. Brent has authored and co-authored numerous technical papers, conference presentations, industry courses and technical reports. Brent is involved in client interaction and quality control for all geological and petroleum projects within AGAT.

Primary Areas of Expertise

- Leadership, client services and project management
- Core analysis, organic geochemistry
- Sedimentology
- Project and financial management

Contact

Brent Nassichuk, MSc, PGeo
Director, Energy Division
Calgary, AB
T: 403-735-2733
C: 403-703-1908
E: nassichuk@agatlabs.com

Cory Twemlow B.Sc.

Operations Manager – Advanced Core and Materials Testing
Calgary, Alberta

Education

Bachelor of Science - Chemistry, University of Calgary; Alberta, 2001

Summary of Qualifications

With over 20 years' experience in the oil and gas service sector, Cory holds a Bachelor of Science, Chemistry degree from the University of Calgary and is a registered Chemist with the Association of the Chemical Profession of Alberta. Cory came to AGAT as a Lab Manager in February 2018 as part of AGAT's acquisition of Trican Geological Solutions. In the short time Cory has been with AGAT, we have seen him dramatically increase our capabilities and capacities for core analyses in unconventional reservoirs. With the recent incorporation of Geology, Routine Core, Unconventional Core analyses, Cory's responsibilities have grown to include development of the Rock Properties Group where he leads a team of geologists, geoscientists and chemists who study and evaluate tight rock and unconventional reservoirs, as well as all aspects of advanced core and materials testing. Under Cory's guidance, the team's research and development have led to a number of major technical advancements in the world of core analysis. Going forward, Cory is looking at new areas of testing for the group that will advance their knowledge and expertise in oil and gas, mining, geotechnical and materials testing.

Prior to joining AGAT, Cory worked as a Team Lead Chemist for Norwest Laboratories. Shortly after, Cory joined the CBM Solutions team in 2002 which was then incorporated into Trican Well Service in 2007. In his roles with CBM Solutions and Trican, Cory managed all aspects of testing and reporting for coalbed methane, shale gas and shale oil analyses. Cory has been closely involved with developing and implementing new testing procedures which greatly improved the accuracy, delivery time and efficiency within the oil and gas industry.

Career Highlights

Cory's positive leadership style, analytical knowledge and close ties to the industry have been a tremendous asset to AGAT. The attributes that Cory brings every day have helped to place AGAT as a leader in the core analysis industry and has allowed us to continue to grow our business..

Primary Areas of Expertise

- Unconventional and conventional core analysis
- Client relations and project management
- Research and development of new methodologies

Contact

Cory Twemlow
Operations Manager – Advanced Core and Materials Testing
Calgary, AB
T: 587-391-2542
C: 403-437-2110
E: twemlow@agatlabs.com

Darcy Brabant

Manager of Oil Sands
Calgary, Alberta

Experience

36 years of industry experience

34 years with AGAT Laboratories

Summary of Qualifications

Darcy is currently the Manager of Oilsands/ Routine of AGAT Laboratories. He has 34 years of experience with AGAT Laboratories and has held various managerial positions within the department. His analytical experience includes all aspects of conventional core and Mining/In-situ OilSands analysis, SCAL, PVT analysis, x-radiography and photography. Darcy has worked with geologists and engineers to design analytical programs to ensure all of their routine core and geology, SCAL and PVT data objectives are met.

Career Highlights

Darcy Brabant designed and managed AGAT Laboratories' wet chemistry and digital imaging departments. He designed and worked to implement and manage our Routine Core Analysis Laboratory in Fort St. John, British Columbia. Darcy has also worked on four major contracts for PEMEX in Villahermosa Mexico and was responsible for the design, set-up and management of AGAT Laboratories Core Analysis laboratory in this area. He has worked closely with both in-situ groups such as the Suncor,Nexen,MEG Husky Imperial Cold Lake and CNRL Thermal group, as well as mining groups such as IOL Kearl, Suncor, Forthills CNRL Horizon, Suncor Millennium, and Shell Albian Sands.

Primary Areas of Expertise

- Laboratory design
- Laboratory Management
- Technical support to clients, and staff
- Research and development
- Knowledgeable and skilled in all oil sands and conventional core testing procedures and analyses
- Extensive expertise in quality assurance and control for all oil sands operations

Contact

Darcy Brabant
Manager of Oil Sands
Calgary, AB
T: 403-299-2115
E: brabant@agatlabs.com

Graham Spray

Technical Advisor
Calgary, Alberta

Education

Master of Science, Geology (by thesis; focus on tectonic geology), University of Calgary, 2009

Bachelor of Science, Geology (Hons by thesis), University of New Brunswick, 2005

Summary of Qualifications

Graham is currently AGAT's Manager of Geosciences, responsible for the quality, completeness, and efficacy of geoscience work undertaken at AGAT Laboratories. He has a master's in structural geology from the University of Calgary and has several years of experience in various resource plays and with various corporations, including both mining and in-situ oilsands projects, working extensively with drill core. He has also worked as a university instructor in mineralogy and petrology, and has significant experience in mineral exploration, running field exploration programs and working as Senior Project Geologist at an underground gold mine.

Career Highlights

Graham joined AGAT in 2013, bringing a diverse geoscience background including technical knowledge and practical experience. He worked with AGAT's expert programming team, developing the ACES software for geological core description and logging. Graham then built a team of geologists to apply this software to describe core for large oilsands projects. In 2014 he took on the role of Manager of Geosciences, and has since then focused on ensuring the quality and effectiveness of geology work within AGAT. He coordinates R&D work within AGAT, and frequently presents at conferences. Graham enjoys working with clients to understand the goals of their analytical projects, and recommending the most efficient and effective methods to meet those goals.

Primary Areas of Expertise

- Core logging and program management
- Geological analysis – petrology, SEM, XRD, QEMSCAN, microprobe
- Structural geology, metamorphic petrology
- Oilsands sedimentology and analysis
- Mineral exploration and mining
- Laboratory-based geoscientific analysis

Contact

Graham Spray
Technical Advisor
Calgary, AB
T: 587-391-2550
C: 403-710-0461
E: spray@agatlabs.com

Jason Tucker, B.Sc

Team Lead, Rock Mechanics
Calgary, Alberta

Education

Bachelor of Science, Geophysics, University of Calgary, 2012

Summary of Qualifications

Jason Tucker is currently the Team Lead of the rock mechanic division at AGAT Laboratories (previously Trican Geological Solutions). Jason works on a broad range of projects from heavy oil caprock to geotechnical testing. Jason graduated from the University of Calgary in 2012 with a Bachelor of Science in geophysics.

Career Highlights

Jason has overseen thousands of tests in the rock mechanics division, including but not limited to, Triaxial, Brazilian, Uniaxial and Direct Shear tests on a range of materials that include everything from unconventional shales to well consolidated soil samples. He has also developed a custom suite of software for interpretation of rock mechanics data, helped in developing a QC/QA program and is constantly in contact with clients regarding there testing needs.

Primary Areas of Expertise

- Rock Mechanics Testing
- Data Analysis
- Quality assurance and Quality control of core data
- Client relation

Contact

Jason Tucker, B.Sc
Team Lead, Rock Mechanics
Calgary, AB
T: 587-391-2454
C: 403-399-6205
E: tucker@agatlabs.com

Jordan Wilson

Manager, Reservoir Characterization
Calgary, Alberta

Education

M.Sc. Chemistry, University of Calgary; Calgary, AB, 2012.

B.Sc. Chemistry, McGill University; Montreal, QC, 2008.

Summary of Qualifications

Jordan Wilson is a Manager at AGAT Laboratories, where Jordan manages a team of Project Engineers, Geologists, and Laboratory Professionals in the Reservoir Characterization division.

Jordan has worked with large oil & gas producers across the Western Canadian Sedimentary Basin, including Suncor, CNRL, and Shell, and presented at 7 oil and gas industry conferences, among other distinctions in the field. Jordan helps Engineers and Geologists obtain useful and reliable reservoir data to improve reservoir simulations, optimize hydrocarbon recovery, evaluate new technologies, and troubleshoot formation damage processes.

Career Highlights

Jordan has worked on projects that have covered a broad spectrum of the oil & gas industry; in oilsands, conventional, and tight rock formations. Jordan's diverse technical knowledge and experience is essential when working with clients to design testing programs to help understand reservoir behavior and performance.

Throughout Jordan's career at AGAT Laboratories, the Reservoir Characterization team has worked on a number of exciting projects, including determining solvent return in ES-SAGD production, studying mineralogical transformations during the SAGD process, evaluating the compatibility of disposal water with a formation to optimize subsurface disposal parameters, and developing a regional Equation of State model in the BC Montney to help determine optimal drilling locations.

Primary Areas of Expertise

- Client services and project management
- Strong technical knowledge of Special Core and PVT
- Designing studies and experiments for customized client projects

Contact

Jordan Wilson
Manager, Reservoir Characterization
Calgary, AB
T: 403-299-2132
C: 403-975-1657
E: jordanwilson@agatlabs.com

Lisa Neville, Ph.D., CD

Director of Technical Sciences

Calgary, Alberta

Education

Post-Doctoral Fellowship, Geological Survey of Canada, Calgary, AB, 2014 - 2017

Ph.D. Earth Science, Carleton University, Ottawa, ON, 2010 - 2014

M.Sc. Earth Science, Brock University, St. Catharines, ON, 2007 - 2009

B.Sc. Honours, Biological Sciences and Earth Sciences, Brock University, ON, 2003 - 2007

Summary of Qualifications

Throughout her career she has researched and worked in the fields of earth and environmental science, geology and biology. She has completed an NSERC post-doctoral fellowship with the Geological Survey of Canada, a Ph.D. in Earth Sciences from Carleton University, a M.Sc. in Earth Sciences and a B.Sc. Honours double major in Earth Sciences and Biology from Brock University.

For her post-doc, Lisa transitioned into oil and gas exploration, working as a biostratigrapher characterizing oil and gas potential in arctic formations. The research focuses on hydrocarbon generation, chronostratigraphic refinement, and the history of the Arctic Ocean and it's marine to marginal marine sediments. This work led to the identification of a late Paleocene interval with extremely high potential. The work also changed a theory regarding the development of the Eocene Arctic Ocean environmental conditions which has significant implications on future exploration of this time interval.

Lisa's Ph.D. research was conducted for the Geological Survey of Canada and was part of a federal program aimed at identifying whether or not by-products of the oil sands operation were impacting natural environments. The program identified that natural climate changes are a significant driver of changes in the environment. Lisa's master's research was conducted and funded by Albertan oil producers and investigated a means of monitoring benthic ecological health in tailings ponds by specifically investigating the response of microorganisms to the by-products of oil sands extraction.

Career Highlights

Lisa currently holds the position of Director of Technical Science at AGAT Laboratories. Following her Post-Doc and prior to joining AGAT Lisa worked as an invasive species researcher for Fisheries and Oceans Canada and most recently as a Senior Environmental Scientist at Enviro-Verse Ltd. While in this role, Lisa traveled to China as a member of the Alberta Trade Missions and established business opportunities with Chinese companies.

Lisa has authored and co-authored over 20 scientific publications, presented at over 50 international conferences, as well as contributed to industry courses and technical reports.

Primary Areas of Expertise

- Micropaleontology
- Limnology
- Sedimentology

Contact

Lisa Neville, Ph.D., CD
Director of Technical Sciences
Calgary, AB
T: 403-736-2057
C: 403-919-0506
E: neville@agatlabs.com

Nik Minions P.Geo.

Laboratory Manager – Advanced Core and Materials Testing
Calgary, Alberta

Education

Bachelor of Science – Geology, University of Calgary, 2007

Summary of Qualifications

With 11 years of experience in the oil and gas service industry, Nik holds a Bachelor of Science degree in Geology from the University of Calgary, and is a member of the Association of Professional Engineers and Geoscientists of Alberta (APEGA).

In 2008, Nik started his career with Trican Geological Solutions and spent much of his early days working in the field onsite through parts of Western Canada and the United States, and as far away as the United Kingdom.

Nik's superior laboratory skills and analytical testing have been instrumental in helping our team meet client demand and increasing volumes of work over the years. In 2012, Nik was promoted to Assistant Lab Manager and promoted again in 2018 to Lab Manager. In this role, Nik has been a key leader, responsible for streamlining processes and procedures while providing guidance and support to the team. His extensive experience and understanding of laboratory operations, combined with his commitment, drive, and ability to lead with passion, provides Nik with the foresight and ability to manage change, and continually develop and streamline analytical methods to address the needs of our clients.

Career Highlights

Nik has a wide range of field experiences; processing and analyzing cores from North Eastern British Columbia, to Fort McMurray oilsands, Powder River Basin Coals to onshore gas shale exploration in England. Along his career path, Nik has led many teams of geologists, geophysicists and chemists in various geological projects.

Primary Areas of Expertise

- Unconventional and conventional core analysis
- Field to laboratory analysis and quality control
- Training and mentoring

Contact

Nik Minions
Laboratory Manager – Advanced Core and Materials Testing
Calgary, AB
T: 587-391-2547
C: 403-542-5651
E: minions@agatlabs.com

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