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Brandon 2024: GAC–MAC–PEG Joint Annual Meeting Field Trips

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GAC-MAC: FIELD GUIDE SUMMARY

Brandon 2024: GAC–MAC–PEG Joint Annual Meeting Field Trips

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BRANDON 2024 FIELD TRIPS OVERVIEW

Are you ready for an unforgettable geological experience? Join us at the 2024 GAC-MAC annual meeting, partnered with the 10th International Symposium on Granitic Pegmatites (PEG), and hosted at beautiful Brandon University, at the heart of the continent. A plethora of exciting symposia, special sessions, and short courses are planned, along with six field trips led by experts from various organizations. Delegates can pick from one pre-conference, one syn-conference, and four post-conference field trips that range from day trips to multi-day geological adventures. Get ready to immerse yourself in central Canada geology and discover breathtaking landscapes in the company of colleagues and fellow enthusiasts!

Pre-Conference Field Trip

Participants will be led by Chris Couëslan on a four-day field trip exploring "*Stratigraphy, ore deposits, and metamorphism in the Thompson Nickel Belt, Manitoba*". Extensive outcrops of almost continuous Ospwagan Group stratigraphy will be examined at two open pit mines in the Thompson area (Fig. 1). Sulphidic horizons within the Ospwagan Group are interpreted as the source of sulphur for magmatic Ni-Cu ore systems, and are the ore horizons for the three largest mines that have operated in the Thompson Nickel Belt. Styles of mineralization were strongly controlled by ductile deformation during high-grade metamorphism, the effects of which will also be observed in outcrop. Time will be spent looking at styles of mineralization in drillcore from the Thompson mine area in the northern part of the belt, and from the past-producing Manibridge mine area in the south. An underground tour is being planned for the Thompson mine, which has been in continuous production since 1961. The field trip will depart from Winnipeg on the morning of May 16th and finish in Brandon on the evening of May 19th.

Syn-Conference Field Trip

A lunch and field trip sponsored by Cypher Environmental will discuss "*Better mine haul roads using environmentally responsible techonology*". Following a lunch and learn session at Brandon University, Todd Burns will lead an afternoon excursion to visit a haulage road in the Brandon area that is stabilized using clay-rich soil blended with organic catalysts and ordinary aggregate (Fig. 2). The electronic bonding of clay minerals combined with basic construction protocols results in roads that require very little maintenance and provide numerous environmental

Figure 1. Headframe and outcrops of Archean gneiss overlooking the past-producing Pipe II open pit mine near Thompson, Manitoba. Photo: C. Couëslan.

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Figure 2. Curries Landing haul road near Brandon, Manitoba after stabilization using clay-rich soil and organic catalysts. Photo: Cypher Environmental.

benefits including reduced dust production. This event will take place during the conference proceedings.

Post-Conference Field Trips

Attached to the 10th International Symposium on Granitic Pegmatites is an excursion visiting "*Pegmatites of the Cat Lake–Winnipeg River (MB) and Separation Rapids (ON) Pegmatite Fields*" that will be led by several field trip leaders from provincial surveys, academia, and industry. This four day field trip will explore the regional setting, emplacement controls, and mineralogy of lithium pegmatites in outcrops of the Cat Lake–Winnipeg River and Separation Rapids pegmatite fields of Manitoba and northwestern Ontario. Site visits are planned for the Eagle, FD no. 5, Big Mack, and Big Whopper pegmatites. In addition, a visit to the world-class Tanco pegmatite will include a tour of the spodumene mill and underground workings, and examination of drillcore (Fig. 3). A paragenetic sample suite of the Tanco pegmatite, collected by Petr Černý, will be viewed at the University of Manitoba. This field excursion will be a round trip that starts in Winnipeg on the morning of May 23rd and ends in Winnipeg the evening of May 26th.

A joint, one and a half day field trip by the Canadian Sedimentological Research Group, Paleontological Division of the GAC, and the Canadian Society of Vertebrate Paleontology investigating "*Life in the Western Interior Seaway: A field trip to the Cretaceous escarpment in Morden, Manitoba*", will be led by Ricardo Silva, Kirstin Brink, and Adolfo Cuetara. The excursion will focus on the globally significant sedimentary successions of the Upper Cretaceous in the Morden-Miami area of Southern Manitoba. In addition to discussion-filled stops exploring the Cretaceous formations, there will also be a visit and dining experience at the Canadian Fossil Discovery Center where examples of Campanian fossils including plesiosaurs, giant turtles, toothless sharks, flightless birds, plants, and 'Bruce' the mosasaur are on display (Fig. 4). Bruce, a *Tylosaurus Pembinesis* mosasaur, was found in 1974 and holds the Guinness World Record as the largest publicly displayed mosasaur. Along the way, participants will learn about the local indigenous and settler history of the area and take a brief look at Pleistocene–Holocene shoreline and lake deposits of Lake Agassiz. The trip will depart from Brandon on the afternoon of May 22nd and finish in Winnipeg the evening of the 23rd.

Figure 3. Underground mining operations at the Tanco Li-Cs-Ta mine, southeastern Manitoba. Photo: T. Martins.

Kyle Reid will lead participants on a four day exploration of the "*Volcanic stratigraphy, hydrothermal alteration and metamorphism associated with VMS deposits in the Flin Flon–Snow Lake mining camp*". The Flon Flon greenstone belt is one of the largest Paleoproterozoic volcanogenic massive sulphide (VMS) districts in the world. The excursion will begin by examining the stratigraphy of the Flin Flon arc assemblage, where the relatively low metamorphic grade has preserved volcanic textures and structures in rocks spatially associated with the Flin Flon ore bodies (Fig. 5). This will be followed by a day focussing on the volcanic stratigraphy of the Snow Lake arc assemblage and the syn-volcanic hydrothermal alteration systems that developed in association with the Chisel–Lalor VMS deposits, which were affected by middle amphibolite-facies metamorphic conditions during the ca 1.8 Ga Trans-Hudson orogeny. This excursion will depart from Brandon on the morning of May 23rd and end in Winnipeg the evening of May 26th.

A one day "*Field trip to PADCOM's potash mine and Gambler First Nation*" is jointly sponsored by the Manitoba Prospectors and Developers Association, Gambler First Nation, and the Potash and Agri Development Corporation of Manitoba (PADCOM). The excursion will be led by Michelle Nicolas and MaryAnn Mihychuk and will begin with a visit to Gambler First Nation, approximately 130 km northwest of Brandon. A

Figure 4. The Canadian Fossil Discovery Centre in Morden, Manitoba, is home to many marine fossils of the Upper Cretaceous including 'Bruce' the mosasaur. Photo: Canadian Fossil Discovery Centre.

Figure 5. Pillowed basalt of the Flin Flon arc assemblage near Flin Flon, Manitoba. Photo: C. Couëslan.

brief history of the First Nation will be followed by an outline of their businesses and relationship/partnership with PADCOM. A feast will be provided by Gambler First Nation before the trip continues to the first, and so far only, potash mine in Manitoba. The mine tour will focus on the polythermic selective solution process used by the operator, PADCOM, and will include a discussion of their partnership and revenue sharing agreements with Gambler First Nation. The field excursion will be a round trip out of Brandon on May 23rd.

We hope that there is something that appeals to everyone in the field trip listing for the 2024 GAC-MAC-PEG joint annual meeting! For full details on the technical program, travel, and accommodation information, please visit: *event.fourwaves.com/gacmac2024/*.

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DEPARTMENT OF GEOLOGY

AND

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INVITE YOU TO THE

GAC-MAC ANNUAL MEETING

AND

THE 10TH SYMPOSIUM ON GRANITIC PEGMATITES

Please join us for a full program of
- scientific presentations
- workshops and short courses
- field trips
- special events.

Brandon University, May 19-22 2024 - see you there!