

Environment & Infrastructure Solutions

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KEY MANITOBA PERSONNEL:

Harley Pankratz, P.Eng.	-	Vice President Southern Alberta, Manitoba, Saskatchewan
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Trevor Gluck, P. Eng.	-	Manager Technical Services
Brad Wiebe, P. Eng.	-	Senior Associate Geotechnical Engineer
Patrick Campbell	-	Senior Associate Environmental Scientist

OVERVIEW

Wood Environment & Infrastructure Solutions' core competencies are in environmental remediation, environmental sciences, permitting & compliance services, public infrastructure, geotechnical & materials, and facility operations.

We employ permanent staff in each region of Canada, including hydrogeologists, environmental, geological, civil, and geotechnical engineers, and environmental scientists and technician/technologist support personnel. Each of our regional teams is supported by local Wood offices and national Wood professional practice networks.

The proven ability to attract and retain highly educated trained and dedicated professional staff enables Wood to meet the diverse needs of clients and face the challenges of a developing world quickly and effectively, regardless of project complexity or size. We draw on our corporate strength and ability to bring together multi-disciplinary teams from a number of technical specialties and geographic office locations.

Wood is a global leader in the delivery of project, engineering and technical services to energy and industrial markets. We operate in more than 60 countries, employing around 55,000 people, with revenues of around \$10 billion. We provide performance-driven solutions throughout the asset life cycle, from concept to decommissioning across a

broad range of industrial markets, including the upstream, midstream and downstream oil & gas, power & process, environment and infrastructure, clean energy, mining, nuclear, and general industrial sectors. We strive to be the best technical services company to work with, work for and invest in.

Manitoba - Average of 45 personnel
Canada - Average of 1930 personnel
U.S.A. - Average of 4242 personnel

DESCRIPTION OF WORK

Within Manitoba, Wood E&IS offers the following professional consulting services:

Environmental Sciences: environmental impact studies and assessment; natural resource management; flood studies and mapping; GIS and environmental mapping; hydrogeology and hydrology; aquatic ecology; ecological risk assessment; emergency planning; industrial hygiene; environmental noise and vibration services.

Permitting & Compliance Services: permitting strategy and implementation; permit document preparation and submittals; emission identification and assessment; regulatory compliance reporting; environmental, health and safety (EHS) compliance audits; expert testimony; air quality permitting.

Geotechnical Engineering - foundation design; geotechnical testing, analysis, modelling; ground improvement studies and design; geotechnical stability; dams, levees and reservoirs; tailings dams design and assurance; construction engineering and inspections; seepage analysis; earth structure design; liner systems; instrumentation.

Mining - tailings facility design; environmental baseline monitoring; tailings handling and placement; dams; dykes; seepage modelling; risk assessment; thermal studies; geotechnical studies for surface facilities; hydrogeological modelling and contaminant transport.

Environmental Management Plans - corporate environmental education programs; systems analysis and development; regulatory compliance.

Environmental Site Assessments and Remediation - transactional due diligence; environmental site investigations; environmental data management; remedial design; environmental remedial services; facility decommissioning services; brownfield site redevelopment; regulatory permit application and negotiation; risk assessment; modelling studies.

Materials Engineering - pavement structure design; aggregate studies; Portland cement concrete evaluations, asphaltic concrete mix designs; Portland cement concrete mix designs; failure investigations; quality control/quality assurance programs; construction monitoring; air void analysis of hardened Portland Cement concrete; flatness testing.

Hazardous Building Materials Assessment & Abatement – Assessments of hazardous building materials as well as supervision and project management of abatement activities.

Water Resources – Water resources, water/wastewater treatment, stormwater management, industrial water, risk/response/recovery, climate, resilience and sustainability.

Laboratory and Field Testing - soils; asphalt cement; asphaltic concrete; Portland cement; Portland cement concrete; soil cement; aggregates; building materials.

In addition, Wood has access to a much broader range of services through the extensive resources of other offices.