



**McKENNA
GEOTECHNICAL**

**2020
RESUME**

GORD McKENNA PHD, PENG, PGEOL

GEOTECHNICAL ENGINEER AND LANDFORM DESIGNER



Gord McKenna is a geotechnical engineer specializing in tailings and mine waste management, landform design, and mine reclamation. He has 33 years of experience as a geotechnical engineer at a large oil sands mine and as a consulting engineer for mines in Canada, the United States, and abroad. Gord serves on several geotechnical review boards and expert panels and has co-authored over 100 papers and book chapters. Gord is an adjunct professor at the University of Alberta and Chair of the Landform Design Institute.

EDUCATION

- BSc Geological Engineering, University of British Columbia (1987)
- PhD Geotechnical Engineering, University of Alberta (2002)

EXPERIENCE

- 2019 – Present. Founder, Landform Design Institute
- 2019 – Present. Adjunct Professor, Department of Civil and Environmental Engineering, U of Alberta
- 2017 – Present. Geotechnical Engineer and Landform Designer, McKenna Geotechnical Inc
- 2014 – 2018. Adjunct Professor, Department of Renewable Resources, University of Alberta
- 2007 – 2017. Principal Geotechnical Engineer, BGC Engineering Inc
- 2004 – 2007. Senior Geotechnical Engineer, Norwest Corporation
- 2004 – 2009. Adjunct Professor, Department of Civil and Geological Engineering, U of Saskatchewan
- 1987 – 2004. Geotechnical Engineer, Syncrude Canada.

AFFILIATIONS

- Engineers and Geoscientists BC (PEng, PGeo)
- Engineers Yukon (PEng)
- Association of Professional Engineers and Geoscientists of Alberta (PEng, PGeol)
- Association of Professional Engineers and Geoscientists of Saskatchewan (PEng, PGeo)
- Professional Engineers Ontario (PEng)
- Canadian Dam Association
- Canadian Geotechnical Society
- Canadian Institute of Mining
- Canadian Land Reclamation Association
- Landform Design Institute

LANDFORM DESIGN

Building on oil sands experience and his 2002 PhD thesis in landform design, Gord has led design teams in the development of mine closure plans, landform and watershed designs, and technical guidance documents for end pit lakes, wetlands, covers and landforms. In Alberta, his efforts led to the first (and only) successful relinquishment of an oil sands landform to the Crown.

Gord has led the design and construction of 23 large mining landform projects totaling 4400 hectares (44 km²), including 37 wetlands and 101 km of watercourses. Nine of these projects were instrumented watersheds for reclamation research, each fostering several post-graduate degrees. The information acquired from the design, construction, operation, and research has been synthesized and communicated to practitioners and regulators as part of novel tech-transfer programs. Design, construction, and review projects include:

- Agnico Eagle Kittilä NP3 Tailings (Finland) 2020 – 48 ha
- CNRL Albion MRM ETF-SEA External Tailings Facility 2018 – 1420 ha
- CNRL Albion MRM Southwest Dump 2019 – 302 ha
- CNRL Albion NE Dump / Dump 2C 2018 – 298 ha
- Detour Gold Cover Field Trial 2018 – 10 ha
- Diavik PKC Facility (ext. review only) – 205 ha
- Faro Rose Creek Tailings 2016 – 212 ha
- Faro Waste Rock Dump 2016 – 350 ha
- Suncor MD2 Dump 2009 – 34 ha
- Suncor Nikanotee Fen and Watershed 2012 – 35 ha
- Suncor Pond 1 / Wapisiw Lookout 2010 – 225 ha
- Suncor Pond 5 and Pond 6 2011 – 1168 ha
- Syncrude Composite Tailings Prototype 2009 – 80 ha
- Syncrude Mildred Lake Settling Basin East Toe Berm 1999 – 182 ha
- Syncrude MLSB Coke Watershed 2001 – 11 ha
- Syncrude S4 Dump / Gateway Hill 2004 – 104 ha
- Syncrude S5 Dump 2001 – 74 ha
- Syncrude Sandhill Fen and Watershed 2012 – 52 ha
- Syncrude South Bison Hills Dump 2002 – 100 ha
- Syncrude SWSS Cell 32 2000 – 39 ha
- Syncrude W1/W2 Dumps 2004 – 244 ha
- Teck Coal Elkview Tailings – 159 ha.



Gord has helped lead several breakthroughs in mine closure planning and landform design, including the use of formal goal-setting, design checklists, and GIS tools. He worked with other practitioners to devise various communication techniques that have become routine in oil sands closure planning, such as project design topographic surfaces, constraint maps, and landform design risk assessments. Gord's main messages are to work collaboratively with stakeholders, clearly define and obtain agreement on measurable goals, and work toward creating landforms that will be reclaimed reliably and efficiently and returned to users as quickly as practical. Gord is the founder and chair of the Landform Design Institute (*landformdesign.com*).

GEOTECHNICAL INVESTIGATIONS AND DESIGNS

Gord carries out geotechnical site investigations and designs for a variety of mining foundations, dumps, dams, and borrow. Many of these site investigations involve characterizing large mine waste facilities for landform design. Major design / construction projects have included highwall dragline mining (1987-1991), refinery foundation designs (1991-1994), sulphur block burial (2002-2004), development of grouted piezometer technology (1991-1995), Questa Rockpile investigation and geotechnical risk assessment (2004-2007), Wolverine Tailings Dam design (2004-2006), Galore Creek Tailings Dam design (2007-2009), Suncor Pond 1 (2008-2010), Coal Valley waste rock dumps (2013-2014), and Kittilä NP3 tailings site investigation (2019-).

SCREENING AND ECONOMICS STUDIES

Gord has worked on more than a dozen screening studies for tailings, mining, and reclamation projects. Major projects include oil sands tailings technology evaluations, tailings capping projects, as well as mine waste rock physical / chemical stabilization projects. Gord uses holistic life-cycle design, simple and transparent decision analysis tools, simplified economics, and management / regulatory / stakeholder involvement to help teams make their best decisions. He often designs and facilitates engineering risk assessments for mining landforms.

TAILINGS R&D

Gord has been involved in oil sands tailings research and development for over 25 years in dozens of projects ranging from bench scale, through piloting, prototyping, commercialization, operation, closure, and reclamation. Example projects include commercialization of Syncrude composite tailings, development of soft tailings capping technologies, and new reclamation techniques. Most of this work happens in the field, dealing with real-life conditions in large pilots and in start-ups. Recent work has focused on international capping and reclamation techniques and production of a 300-page design guide. Gord is a recognized expert in soft tailings characterization, stabilization, and capping.

SUPPORT FOR REGULATORS AND LOCAL COMMUNITIES

Close collaboration of mines, regulators, and local communities is key to sustainable mining. Gord has provided expert advice to regulators and local communities (including First Nations communities) on numerous mining projects in Western Canada.

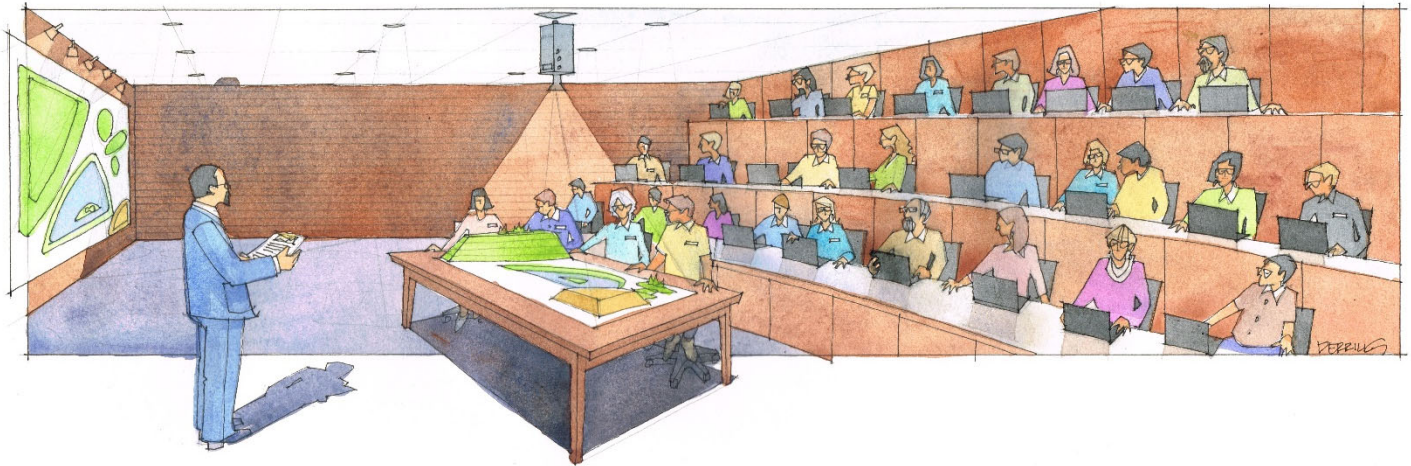
SUPPORT FOR ACADEMIC INSTITUTIONS AND STUDENTS

Gord has undertaken research at several universities, and is currently an Adjunct Professor at the University of Alberta. He is closely involved with the U of A Land Reclamation International Graduate School, has helped co-supervise several graduate students, participated in many mentorship programs, and supports professors with their research by sharing his mining geotechnique experience. He's been involved in several novel non-conventional laboratory research programs, applying soil mechanics to unusual geo and non-geo materials.

REVIEW BOARDS AND EXPERT PANELS

Gord has sat on a number of review panels, guiding operations and landform design for large dams and dumps as well as advising colleagues on research and development programs. Belonging to such panels has given Gord a chance to collaborate with experts from many other disciplines. This experience includes:

- CEMA Landform Design Checklist Working Group – 2003-2004
- Questa Rockpile Weathering ADTI Panel – 2006-2009
- Albion InPit Dyke Design and Construction Internal BGC review board – 2008-2012
- Suncor Pond 5 Coke capping review team – 2008-2010
- CEMA End Pit Lakes Guidance Document – 2010-2012
- CTMC Oil Sands Tailings Roadmap – 2010-2012
- Strategic Advisory Panel on Selenium Management – 2010-2011
- MEND Cold Regions Cover System Design Technical Guidance Document – 2011-2012
- U of Alberta Land Reclamation International Graduate School Management Board – 2012-2016
- CEMA Guidelines for Wetlands Establishment on Reclaimed Oil Sands Leases – 2012-2014
- Delicensing of Oil Sands Tailings Dams: Technical Guidance Document – 2012-2014
- Syncrude Base Mine Lake R&D Review Panel – 2012-2014
- Syncrude EIP Landform Design Review Team – 2012-2014
- Canadian Natural Albion Sands Mine Geotechnical Advisory Panel – 2013-present
- Council of Canadian Academies Expert Panel on the Potential for New and Emerging Technologies to Reduce the Environmental Impacts of Oil Sands Development – 2013-2015
- INAP Cover Systems Guidance Document – 2014-2017
- CanAus / North Coal Water Management Advisory Team – 2015-2018
- Suncor PASS Technology Development Review Team – 2015-2018
- Shell Canada Tailings Technology Development review – 2015-2017
- Teck Highland Valley Copper Tailings Review Board – 2018-present
- Silvertip Tailings Review Board – 2018-present
- COSIA Deep Deposit Design Guide – 2018-present
- Teck Coal tailings facility decommissioning team – 2019-present
- Oil sands closure client risk expert panel – 2019-present
- Landform Design Institute Board of Directors – 2019-present.



SHORT COURSES

Gord leads short courses for up to 80 people, often at international conferences, sometimes at a mine sites, and even once wholly in the field. The courses focus on practical, hands-on learning and provide participants with the tools and case histories they need to complete landform designs and closure plans. Over the past 20 years, Gord has hosted over three dozen courses and workshops, including:

- Successful reclamation – CIM Calgary '99 – Calgary 1999
- Landform design checklist – CEMA – Fort McMurray 2003
- Geostatistics for hydraulic conductivity – Syncrude Canada – Fort McMurray 2004
- Landform design for oil sands tailings – Canadian Geotechnical Society – Calgary 2006
- Landform design – Tailings and Mine Waste '08 – Vail 2008
- Oil sands geotechnique – BGC Engineering – Vancouver 2008
- Landform design – Tailings and Mine Waste '09 – Banff 2009
- Landform design for oil sands – Syncrude Canada – Fort McMurray 2010
- Oil sands geotechnique – BGC Engineering – Vancouver 2010
- Landform design – Tailings and Mine Waste '11 – Vancouver 2011
- Landform design – BGC Engineering – Vancouver 2012
- Oil sands geotechnique – BGC Engineering – Kamloops 2012
- Landform design – ICARD 2012 – Ottawa 2012
- Sustainable Mining Now – Mine Closure '12 – Brisbane 2012
- Landform design and closure planning – University of Alberta Mining Engineering – Edmonton 2013
- Landform design – University of Alberta, LRIGS – Edmonton 2013
- Landform design and covers – CLRA '13 – Whitehorse 2013
- Landform design and cover – Tailings and Mine Waste '13 – Banff 2013
- Landform design for oil sands – oil sands company client course – Calgary 2013
- Mine closure seminar – BGC Engineering – Santiago 2013
- Oil sands geotechnique – BGC Engineering – Vancouver 2014

- Landform design and closure planning – University of Alberta Mining Engineering – Edmonton 2014
- Landform design and covers – Cold Regions Cover Systems and Mine Closure – Whistler 2014
- Landform design for oil sands – oil sands company client course – Calgary 2014
- Hot topics in oil sands tailings management – Oil Sands Tailings Conference – Lake Louise 2014
- Landform design and closure planning – University of Alberta Mining Engineering – Edmonton 2015
- Landform design for northern mines – Northern Latitudes Mining Reclamation – Juneau 2015
- Landform design for oil sands – oil sands company client course – Calgary 2016
- Landform design and closure planning – University of Alberta Mining Engineering – Edmonton 2016
- Landform design and land use – Fort McMurray First Nation #468 – Anzac 2017 (outdoor workshop)
- Landform design and closure planning — University of Alberta Mining Engineering — Edmonton 2018
- Landform design and closure planning – Detour Gold – Timmins 2018
- Landform design for oil sands – oil sands company client course – Calgary 2018
- Landform design – international mining client – Dominican Republic 2019
- Landform design and closure planning — University of Alberta Mining Engineering — Edmonton 2019
- Landform design for sustainable mining – BC Mine Reclamation Symposium – Kimberley 2019
- Landform design for sustainable mining – University of Alberta – December 2019
- Landform design for sustainable mining – UBC Mining Department – March 2020

Gord regularly provides lectures to graduate and undergraduate university classes at BCIT, UBC, and U of A. More recently, Gord has been providing podcasts and video lectures in landform design.



CLIENTS

- Alberta Energy Regulator (Edmonton AB)
- Alberta Environment and Sustainable Resource Development (Edmonton AB)
- Alberta Innovates – Tech Futures (Edmonton AB)
- Agnico Eagle Kittilä Mine (Finland)
- Barkerville Gold (Wells BC)
- Barrick Gold Pueblo Viejo Mine (Dominican Republic)
- BC Hydro Site C (Fort St. John BC)
- BC Ministry of Energy, Mines and Petroleum Resources (Victoria BC)
- BGC Engineering Inc (Vancouver BC)
- BHP Potash (Jansen SK)
- BP Yerington Mine (Yerington NV)
- Canadian Dam Association (Toronto ON)
- Canadian Oil Sands Innovation Alliance (Calgary AB)
- Coeur d'Alene Basin Remediation Program (Idaho)
- Coeur Silvertip Mine (Northern BC)
- CNRL Council of Canadian Academies (Ottawa ON)
- CNRL Albion Muskeg River Mine, Jack Pine Mine, Horizon Mine (Fort McMurray, AB)
- Coal Valley Mine (Hinton AB)
- CRE Stantec (Anzac AB)
- Cumulative Environmental Management Association (Fort McMurray AB)
- Detour Gold Mine (Cochrane ON)
- Diavik Diamond Mines (Yellowknife NT)
- El Volcan Gold (Ojo de Agua, Chile)
- Golder Associates (Calgary AB)
- Graymont (Richmond BC)
- Hatch (Brisbane Australia)
- ICMM Global Tailings Initiative (London UK)
- Imperial Oil Kearl (Fort McMurray, AB)
- Indigenous and Northern Affairs Canada (Ottawa ON)
- Integral Ecology Group (Duncan BC)
- Livingstone Landowners Group (Pincher Creek AB)
- Lorax Environmental (Vancouver BC)
- Lundin Neves-Corvo Mine (Portugal)
- Lundin Zinkgruvan Mine (Sweden)
- Millennium EMS (Calgary AB)
- NewGold New Afton Mine (Kamloops BC)
- Nlaka'pamux Nation Tribal Council (Lytton BC)
- North Coal (Sparwood BC)
- Norwest Corporation (Vancouver BC)
- NovaGold Galore Creek (Smithers BC)
- Okane Consultants (Saskatoon SK)
- Petrocan Fort Hills UTS (Fort McMurray AB)
- Pimenta de Avila Consultoria (Brazil)
- PT Agincourt Martabe Gold Mine (Sumatra)
- Rio Tinto / Ranger Uranium Mine (Australia)
- Society for Mining, Metallurgy & Exploration (SME Englewood CO)
- Springbank Community Association (Springbank AB)
- Stantec (Calgary AB)
- Suncor Energy Tar Island, Steepbank, and Millennium Oil Sands Mines (Fort McMurray AB)
- Swanson Environmental (Ferne BC)
- Swedish Engineering Company (SWECO, Sweden)
- Syncrude Canada Mildred Lake, Aurora North, Aurora South, and MLX Oil Sands Mines (Fort McMurray AB)
- Synenco Energy Northern Lights Oil Sands Project (Fort McMurray AB)
- Taseko Gibraltar Mine (Likely BC)
- Teck Coal Fording River, Greenhills, Line Creek, Elkview, Castle Mtn, and Coal Mountain mines (Sparwood BC)
- Teck Coal Cardinal River and Cheviot mines (Hinton AB)
- Teck Frontier Oil Sands Project (Fort McMurray AB)
- Teck Highland Valley Copper (Kamloops BC)
- Thurber Engineering (Calgary AB)
- Total E&P Joslyn Ck Oil Sands (Fort McMurray AB)
- Tsilhqot'in National Government (Williams Lake BC)
- UTS Fort Hills (Fort McMurray AB)
- Vale Xavier Iron Ore (Brazil)
- Western Can Coal Wolverine Mine (Tumbler Ridge BC)
- WHA Engineering (Calgary AB)
- YG / INAC Faro Mine (Faro YK)



PUBLICATIONS

- Abbott RM and McKenna GT. 2012. Sustainable mining now. turning ideas and ideals into reality. Mine Closure 2012. Brisbane. Australian Centre for Geomechanics. p771-781.
- Ansah-Sam M, Hachey L, McKenna G, and Mooder B. 2016. The DBM approach for setting engineering design criteria for an oil sands mine closure plan. Fifth International Oil Sands Tailings Conference, December 4-7. Lake Louise.
- Ansah-Sam M, McGreevy J, and McKenna G. 2019. Processes for the closure design of greenfield and brownfield overburden dump sites. Tailings and Mine Waste Conference. Nov 17-20. Vancouver. 16pp.
- Aubertin M and McKenna G. 2016. Tailings Disposal Challenges and Prospects for Oil Sands Mining Operations. Geo-Chicago 2016: Geotechnics for Sustainable Energy. Aug 14-18. Chicago. p359-371.
- Barbour S and McKenna G. 2010. Engineering for Wetland Reclamation, Reclamation and Restoration of Boreal Peatland and Forest Ecosystems: Toward a Sustainable Future. Edmonton. March 25-27. Paper 3-6. BGC Engineering Inc. 2010. Oil Sands Tailings Technology Review. OSRIN Report No. TR-1. BGC Engineering Inc. Vancouver. 136pp.
- BGC Engineering Inc. 2010. Review of Reclamation Options for Oil Sands Tailings Substrates. OSRIN Report No. TR-2. BGC Engineering. Vancouver. 59pp.
- Cassie J and McKenna G. 2016. Mine closure planning, design, and implementation: from hand-waving to reality. Planning for Closure 2016: First International Congress on Planning for Closure of Mining Operations. Santiago, Chile. November 20-22. Gecamin. Santiago. 9pp.
- CEMA. 2005. Landscape Design Checklist, Revised RSDS Government Regulator Version. May 2005. Cumulative Environmental Management Association CEMA-RWG Landscape Design Subgroup. 8pp.
- CEMA. 2012. Oil Sands End Pit Lakes Guidance Document. Cumulative Environmental Management Association. Fort McMurray. 494pp.
- CEMA. 2014. Guidelines for Wetland Establishment on Reclaimed Oil Sands Leases (3rd Edition). Cumulative Environmental Management Association. Fort McMurray. 436pp.
- Chow R, McKenna G, Win SMK, and Journault J. 2013. Recovery of Bitumen from Oil Sands Tailings Streams and Deposits: Potential Opportunities and Benefits. Consultant's report for Alberta Innovates, Energy and Environment Solutions (AI-EES) and the Canadian Oil Sands Innovation Alliance (COSIA). Report dated Dec 18, 2013.
- Consortium of Tailings Management Consultants (CTMC). 2012. Oil Sands Tailings Technology Deployment Roadmap: Project Report – Volume 2, Component 1 Results. Consultants report to Alberta Innovates – Energy and Environment Solutions. June 22, 2012. 112pp.
- Council of Canadian Academies (CCA). 2015. Technological Prospects for Reducing the Environmental Footprint of Canadian Oil Sands: The Expert Panel on the Potential for New and Emerging Technologies to Reduce the Environmental Impacts of Oil Sands Development. Council of Canadian Academies. Ottawa. 254pp.
- Crossley C, Russell B, van Zyl D, and McKenna G. 2011. Developing an operation, maintenance, and surveillance manual for the post-closure management of tailings facilities. Mine Closure 2011 Conference. September 18-21. Lake Louise, Alberta, Canada. Australian Centre for Geomechanics. Perth. 10pp.
- Daly C, Atkinson J, Birkham T, Chapman D, Ciborowski J, McKenna G, O'Kane M, Price J, Rochefort L, and Russell B. 2010.
- Eaton BR, Fisher JT, McKenna GT, and Pollard J. 2014. An Ecological Framework for Wildlife Habitat Design for Oil Sands Mine Reclamation. OSRIN Report No. TR-67. Oil Sands Research and Information Network, U of Alberta. Edmonton. 83pp.



- Global Land Reclamation/Remediation 2000 and Beyond. Proceedings of the Canadian Land Reclamation Association 25th Annual Meeting, Edmonton, Alberta.
- Holden A, McKenna G, Fan X, and Biggar K. 2014. The potential impact of different types of tailings on water quality and quantity reporting to oil sands end pit lakes: a preliminary modeling exercise. International Oil Sands Tailings Conference (IOSTC 2014). December 7-10. Lake Louise, Canada. University of Alberta Geotechnical Centre. Edmonton.
- Holden A, Provost H, Pollard J, McKenna G, Wells PS. 2019. Evolution of landforms in reclaimed landscapes in the surface mineable Athabasca oil sands. Tailings and Mine Waste Conference. Nov 17-20. Vancouver. 16pp.
- Hyndman A, Sawatsky L, McKenna G, Vandenburg J. 2018. Fluid fine tailings processes: disposal, capping, and closure alternatives. International Oil Sands Tailings Conference. December 9-12. Edmonton, AB. 110pp.
- INAP. 2017. Global Cover Systems Design – Technical Guidance Document. International Network for Acid Prevention. Consultant's report by Okane Consultants. Saskatoon. 216pp.
- Jakubick AT and McKenna GT. 2001. Stabilization of soft tailings. practice and experience. Eighth International Conference on Radioactive Waste Management and Environmental Management (ICEM'01). Brugge Belgium. American Society of Mechanical Engineers.
- Jakubick AT, McKenna GT, and Robertson AM. 2003. Stabilisation of tailings deposits: international experience. Sudbury 2003. Mining and the Environment. Sudbury.
- Keys MJ, Ducharme J, and McKenna G. 2000. Incorporating landscape design into closure planning at the Syncrude Mine Site.
- Keys MJ, McKenna G, Sawatsky L, and Van Meer T. 1995. Natural analogs for sustainable reclamation landscape design at Syncrude. Environmental Management for Mining. Saskatoon.
- Kostaschuk RA, Luternauer JL, McKenna GT, Moslow TF. 1992. Sediment transport in a submarine channel system, Fraser River delta Canada. Journal of Sedimentary Petrology. 62:273-282.
- Kostaschuk RA, Luternauer JL, McKenna GT, and Moslow TF. 1990. Morphology and sediment transport in a submarine channel system; Fraser River delta British Columbia. Geological Association of Canada – Mineralogical Association of Canada annual meeting. Program with abstracts Waterloo. 15:71.
- Kupper AG, Hurdall B, Morgenstern N, Sobkowicz J, Abeda W, Baldwin G, Cameron R, Eenkooren N, Grapel C, Martens S, McKenna G, Mihiretu Y, Mimura W, Parson K, Paz S, Petersen T, Small A, Tan S, Wog K, and Yazdanpanah S. 2013. De-licensing oil sands tailings dams – when is a dam no longer a dam? Tailings and Mine Waste '13. Proceedings of the Seventeenth International Conference on Tailings and Mine Waste November 3-6, Banff. University of Alberta Geotechnical Centre. Edmonton.
- List BR and McKenna GT. 1990. Shallow translational failures along thin Marine Clay layers at the Syncrude Canada Ltd open pit mine. 43rd Canadian Geotechnical Conference. Quebec City. Canadian Geotechnical Society.



- Liu Y and McKenna G. 1999. Applications of wickdrains in Syncrude composite tailings. 52nd Canadian Geotechnical Conference, Regina. Canadian Geotechnical Society.
- McGreevy J, McKenna G, An R, and Scordo E. 2013. Regional mine closure plans – the next improvement in closure planning. Tailings and Mine Waste 2013 Conference. Banff. Nov 3-6. University of Alberta Geotechnical Centre, Edmonton.
- McGreevy JTG, Mooder RB, and McKenna GT. 2016. Integrated planning for mine closure supported by the use of digital elevation model surfaces. Fifth Canadian Young Geotechnical Engineers and Geoscientists Conference. Whistler, BC. p47-48.
- McKee WN and McKenna GT. 1997. Closure planning. actions today to control cost and liability tomorrow. CIM District 5 Mining Conference. Fort McMurray. Canadian Institute of Mining. Paper 22.



- McKenna G and Cullen V. 2008. Landscape design for soft tailings deposit. Tailings and Mine Waste 08 Conference. Vail, Colorado.
- McKenna G and Dawson R. 1997. Landscape engineering for sustainable development. Geotechnical Society of Edmonton Third Annual Symposium. April 4. Edmonton. 12pp.
- McKenna G and Lewko R. 1995. 44 blockslides in the Athabasca Oil Sands. 48th Canadian Geotechnical Society Conference. Sep 25-27. Vancouver. p909-916.
- McKenna G, Biggar K, Win SMK, Journault J, Eaton T, Seago D, and Morgenstern N. 2010. Oil sands tailings sand hydraulic conductivity. 2nd International Oil Sands Tailings Conference. December 5-8. University of Alberta Geotechnical Centre. Edmonton p21-29.
- McKenna G, Dawson R, Hyndman A, LeSueur P and Sobkowicz J. 2012. The Oil Sands Tailings Roadmap and Action Plan — Oil Sands Tailings State of Practice Overview. International Oil Sands Tailings Symposium, Edmonton. University of Alberta Geotechnical Centre, Edmonton.
- McKenna G, Keys M, Van Meer T, Roy L. and Sawatsky. 2000. The impact of beaver dams on the design and construction of reclaimed mines sites. Proceedings of the 24th Annual British Columbia Mine and Reclamation Symposium, Williams Lake.
- McKenna G, Livingstone G, and Lord T. 1994. Advances in slope-monitoring instrumentation at Syncrude Canada Ltd. Geotechnical News 12:66-69.
- McKenna G, Mann V, Fisseha B, Beier N, and Olmedo N. 2016. The geotechnical vane strength of soft tailings compared to soft foods. Fifth International Oil Sands Tailings Conference, December 4-7. Lake Louise, Alberta. University of Alberta Geotechnical Group, Edmonton. 11pp.
- McKenna G, Mooder B, Burton B, and Jamieson A. 2016. Shear strength and density of oil sands fine tailings for reclamation to a boreal forest landscape. IOSTC International Oil Sands Tailings Conference. Lake Louise. Dec 4 to 7. University of Alberta Geotechnical Group. Edmonton.
- McKenna G, O’Kane M, and Qualizza C. 2011. Tools for bringing mine reclamation research to commercial implementation. Tailings and Mine Waste 2011 Conference. Vancouver. Nov 6-9. 11p
- McKenna G, Scordo E, Shuttleworth D, Straker J, Purdy B, and Buchko J. 2011. Aesthetics for mine closure. Mine Closure 2011 Conference. Lake Louise, Canada. Australian Centre for Geomechanics. Perth. 1:603-612.
- McKenna G, Straker J, and O’Kane M. 2016. Custodial transfer of reclaimed mines: barriers and opportunities. TRCR 40th Annual BC Mine Reclamation Symposium. Penticton, BC, Canada. Sept 2016. 12pp.
- McKenna G and Van Zyl D. 2020. Closure and reclamation of tailings facilities using landform design. ICMM Companion Document.
- McKenna G. 1987. Evidence of large-scale mass wasting on the Fraser River delta front at Sands Heads British Columbia. BSc These. Department of Applied Sciences. Geological Engineering Program. University of British Columbia, Vancouver.

- McKenna G. 1991. Grouted-in installation of piezometers in boreholes. 44th Canadian Geotechnical Society Conference. Calgary. Canadian Geotechnical Society. Paper 55. 12pp.
- McKenna G. 1995. Advances in slope-monitoring instrumentation at Syncrude — a follow up. Geot News v13.42-44.
- McKenna G. 1995. Grouted-in installation of piezometers in boreholes. Canadian Geotechnical Journal. 32:355-363. McKenna G. 1996. Concepts in lease-closure landscapes. CIM Bulletin 89:89-95.
- McKenna G. 1996. Planning geotechnical tests and investigations for analysis and presentation — Part 1. Geot News 14:37-45.
- McKenna G. 1997. Injecting science into geotechnical research field programs. Geotechnical News. 15:49-56. McKenna G. 1998. Celebrating 25 Years. Syncrude's Geotechnical Review Board. Geotechnical News. 16:34-41.
- McKenna G. 1998. Overview of the CT process (Syncrude Canada Ltd.). Terrestrial reclamation of challenging materials in the Oil Sands Industry. Proceedings of the TERRE workshop, Jan 29-30. University of Alberta Edmonton, AB.
- McKenna G. 1999. 1999 Soft Tailings Workshop. Canadian Institute of Mining. Edmonton.
- McKenna G. 1999. An era passes at Syncrude — farewell to Dragline No. 2 "Discovery". Geotechnical News. p37.
- McKenna G. 1999. Elements of successful reclamation. CIM Workshop, Calgary. 1v
- McKenna G. 2004. Geoenvironmental characterization of a large sulphur block at Syncrude: results from 2003 field investigation. Syncrude Canada Ltd. for University of Calgary, Department of Chemistry, Alberta Sulphur Research Ltd.
- McKenna G. 2006. Rules of thumb for geotechnical instrumentation costs. Geotechnical News.
- McKenna G. 2008. Landscape design for oil sands tailings. International Oil Sands Tailings Conference, Edmonton. Dec 7-10.
- McKenna G. 2009. Exploring Closing options: taking a life-cycle approach to planning to achieve optimal reclamation. Best Practices in Tailings Management and Reclamation. Sep 17-18, Calgary. Canadian Institute.
- McKenna G. 2012. Sustainable mining and landform design. David C Seg0 Symposium. April 26-27. U of Alberta. Edmonton.
- McKenna G., An R, Scordo E, and McGreevy J. 2013. Toward effective closure planning: From progressive reclamation to sustainable mining. Tailings and Mine Waste '13. Proceedings of the Seventeenth International Conference on Tailings and Mine Waste, November 3-6, Banff. University of Alberta Geotechnical Center, Edmonton. p615-625.
- McKenna GT and Kostaschuk RA. 1990. Submarine slope failures at the mouth of the Fraser River British Columbia. Geological Association of Canada – Mineralogical Association of Canada. Waterloo. Geological Association of Canada.
- McKenna GT and List BR. 1990. Impact of Upper McMurray Formation Marine Oil Sands on dragline mining at the Syncrude Canada Ltd open pit mine. Second International Symposium on Mine Planning. Calgary. Balkema. p363-371.
- McKenna GT and Luternauer JL. 1987. First documented large failure at the Fraser River delta front British Columbia. – Current Research. Geological Survey of Canada 87-1a:919-924.
- McKenna GT and Shelbourn MB. 1995. Instrumentation of an advancing mine slope in the Athabasca Oil Sands. International Symposium on Mine Planning. Calgary.
- McKenna G and Van Zyl D. 2020. Closure and reclamation. Chapter VIII Management of Tailings: Past Present, and Future. Towards Zero Harm: A Compendium of Papers Prepared for the Global Tailings Review. London: Global Tailings Review. <https://globaltailingsreview.org/>.



McKenna GT, Ducharme J, and Keys MJ. 2000. Landscape design. a new planning and assessment framework for mine reclamation. 24th Annual BC Mine Reclamation Symposium. Williams Lake. British Columbia Ministry of Mines. Abstract.

McKenna GT, Keys MJ, van Meer T, Roy L, and Sawatsky L. 2000. The impact of beaver dams on the design and construction of reclaimed mine sites. 24th Annual BC Mine Reclamation Symposium. Williams Lake. British Columbia Ministry of Mines. Abstract.

McKenna GT, Luternauer JJ, and Kostaschuk RA. 1992. Large-scale mass-wasting events on the Fraser River delta front near Sand Heads British Columbia. Canadian Geotechnical Journal. 29:151-156.

McKenna GT, Luternauer JL, and Kostaschuk RA. 1990. Submarine landslides at the mouth of the Fraser River Canada. Fifth Circum-Pacific Energy and Mineral Resources Conference; Volume 74. AAPG Bulletin. American Association of Petroleum Geologists. Tulsa. 74:989.

McKenna GT. 1997. Planning geotechnical tests and investigations for analysis and presentation— part 2. Geot News 15:40-44.

McKenna GT. 2002. Landscape engineering and sustainable mine reclamation. PhD Thesis. Department of Civil and Environmental Engineering. University of Alberta. Edmonton. 660pp.

McKenna GT. 2005. Erroneous readings from a vibrating wire piezometer with a broken signal wire. Geotechnical News 23:35-36.

McKenna GT. 2005. Posting security for reclamation obligations. Offsetting Environmental Clean-Up Costs and Liabilities. Vancouver. Canadian Institute.

McKenna GT. 2006. How to build your own instrumentation quad. Geotechnical News.

McKenna GT. 2007. Celebrating 50 issues of Geotechnical Instrumentation News. Geotechnical News.

McKenna GT. 2009. Techniques for creating mining landforms with natural appearance. Tailings and Mine Waste 2009 Conference. Banff. University of Alberta Geotechnical Centre, Edmonton.

MEND. 2012. Cold Regions Cover System Design Technical Guidance Document. MEND Report 1.61.5c. Consultant's report prepared by O'Kane Consultants for Mine Environment Neutral Drainage Program. July 2012. 177pp.

Novel wetland reclamation design: The Suncor pilot fen and Wapisiw wetland. 37th Annual Aquatic Toxicity Workshop October 3-6. Toronto. Fisheries and Oceans Canada.

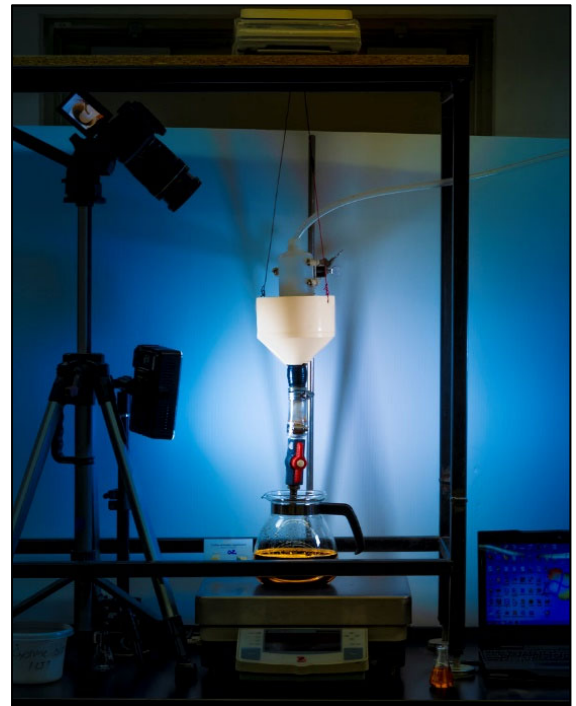
Oil Sands Tailings Dam Committee. 2014. De-licensing of oil sands tailings dams. Technical guidance document. March 2014. Oil Sands Research and Information Network (OSRIN). University of Alberta, Edmonton. 46pp.

Pollard J, McKenna GT, Fair J, Daly C, Wytrykush C, and Clark J. 2012. Design aspects of two fen wetlands constructed for reclamation research in the Athabasca oil sands. Mine Closure 2012 Symposium. Brisbane. Australian Centre for Geomechanics. p815-829.

Pollard J and McKenna G. 2018. Design of landform elements for mine reclamation. BC Mine Reclamation Symposium. Williams Lake. 9pp.

Pollock GW, McRoberts EC, Livingstone G, McKenna GT, Matthews JG, and Nelson JD. 2000. Consolidation behaviour and modelling of oil sands composite tailings in the Syncrude CT Prototype. Tailings and Mine Waste 7:p121-130.

Powter CB, Biggar KW, Silva MJ, McKenna GT, and Scordo EB. 2010. Review of oil sands tailings technology options. Tailings and Mine Waste '10. Proceedings of the 14th International Conference on Tailings and Mine Waste October 17-20, 2010. Vail, Colorado. CRC Press London UK. p381-391.



- Rains RB and McKenna GT. 1995. Fluvial geomorphology of natural rivers and creeks and its impact on lease-closure designs at Syncrude Canada Ltd. 7th Annual Canadian Dam Safety Conference. Banff. Canadian Dam Safety Association (Canadian Dam Association). p279-293.
- Russell B, McKenna G, Leblanc M, Wells PS, and Anderson HB. 2010. Design and construction of the reclamation surface for the first oil sands tailings pond. Mine Closure 2010, Vina del Mar, Chile. 13pp.
- Sawatsky L, McKenna G, Keys, MJ, and Long D. Towards minimising the long-term liability of reclaimed mine sites. *Book chapter in* Haigh MJ. 2000. Reclaimed land: erosion control, soils, and ecology. Balkema. Rotterdam. p21-36.
- Singhal RK and McKenna GT. 1998. Environmental management in tailings and solid waste disposal at oil sands mines. Environment and Innovation in Mining and Mineral Technology Symposium. University of Concepcion, Chile.
- Smith W, Olauson E, Set J, Schoonmaker A, Nik R, Freeman G, and McKenna G. 2018. Evaluation of strength enhancement and dewatering technologies on a soft oil sands deposit. International Oil Sands Tailings Conference (IOSTC 2018). University of Alberta Geotechnical Centre. Edmonton.
- Strategic Advisory Panel on Selenium Management. 2010. The Way Forward: Strategic Plan for the Management of Selenium at Teck Coal Operations. Swanson Environmental Strategies Ltd. Calgary. 233pp.
- Strategic Advisory Panel on Selenium Management. 2012. Alternative Futures: collective action to manage selenium in the Elk and McLeod Watersheds. Swanson Environmental Strategies Ltd. Calgary. 80pp.
- Swanson S, Abbott R, Funk W, Kirk L, McKenna G, Ohlendorf H, and Sandy T. 2011. Building stakeholder engagement in sustainable solutions- the strategic Advisory Panel on Selenium Management. Mine Closure 2011 Symposium. Lake Louise, Canada. Australian Centre for Geomechanics. 2:189-196.
- Wytrykush C, Vitt DH, McKenna G, and Vassov R. 2012. Designing landscapes to support peatland development on soft tailings deposits: Syncrude Canada Ltd.'s Sandhill Fen Research Watershed initiative. Restoration and reclamation of boreal ecosystems: Attaining sustainable development. Cambridge University Press New York New York. p161-178.



Gord at the reclaimed (and relinquished) Syncrude Gateway Hill / S4 Dump in 2017.

PERSONAL

In his personal life, Gord has pursued a lifelong joy of photography, possesses his private pilot's license, reads voraciously on topics ranging from geography to how-to manuals, and travels widely. Photography is one of Gord's most cherished activities and dovetails well with mine engineering. Panorama photography is his specialty, and he posts many photos on social media and his Flickr site. While the mechanics are straightforward, creating a photo that is memorable and artistic is the challenge. You will often find Gord out before dawn, waiting for the light. Gord has had a passion for flying ever since his first flight in a DC3 in the 1960s, which was complemented by three summers flying in helicopters in Labrador in the 1980s. He was hooked on flying after experiencing a flight across the country in 2009 from Vancouver to St Pierre et Miquelon at 2000 feet in a Cessna 182. He obtained his private pilot's license at Pacific Flying Club at CZBB a few years ago and went on to purchase a Piper Warrior (C-GWDG) and recently returned from a 6200 km round trip Vancouver to Dawson City YT. Gord and his wife Yvonne, who together enjoy traveling widely, live near Vancouver, Canada and have two grown sons.

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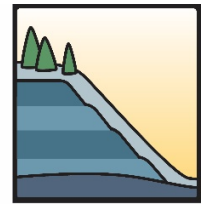
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