

Lance G. Loken, PSC, CEI, CAI, CMI

Senior Geologist and Soil Scientist



RELEVANT PROFESSIONAL EXPERIENCE

Mr. Lance G. Loken is President of Western Plains Consulting, Inc. (WPC), and is responsible for its management and technical operations. His technical responsibilities and expertise are in regulatory compliance and permitting, soils/geology, wetlands, environmental and subsurface assessments, Brownfield projects, NEPA driven studies and related permitting, FERC-regulated transmission projects, storage tank issues, spill response, landfills, stormwater runoff, and a variety hazardous materials issues including agricultural chemicals and industrial chemicals. Mr. Loken is also a Professional Soil Classifier registered with the North Dakota Board of Soil Classifiers. Additionally, Mr. Loken meets the requirements of an Environmental Professional as defined in CFR312.10(b) in the EPA's All Appropriate Inquiry standard. Mr. Loken is also Certified Asbestos Inspector in the State of North Dakota.

Mr. Loken has been involved in the environmental field since 1986 and has developed extensive experience in: conducting and managing complex environmental assessments and remediation projects; siting, impact assessments and permit application preparation; expert in litigation cases for studies, deposition and court testimony (including for the US Department of Justice); emergency and incident response, including crude oil, crude oil emulsions, and salt-water releases for the oil industry; underground storage tank projects; wetlands delineation, modeling, restoration, functional assessment, permitting, and mitigation monitoring; Order 1 and Order 2 soil surveying; landfill and mineland permitting; asbestos inspections; stormwater runoff training and permitting; and groundwater monitoring and modeling projects. He has years of experience in monitoring well design and installation, logging of borings and interpreting results. He is versed in state and federal environmental rules and guidelines and has established liaisons with state and federal regulatory authorities.

His project experience includes complex subsurface groundwater assessments, remediation projects, various types of environmental assessments - including ASTM-sponsored training for Phase I Environmental Assessments for ASTM Standard Practice 1527-05, training related to OSHA's 1910.120 for HAZWOPER, stormwater permitting and worker safety training, clay borrow area studies, ground water monitoring studies, and various landfill and waste facility services. His background includes the study of wetlands soil genesis and soil characteristics, which included salt movement between recharge, flowthrough, and discharge wetlands; as well as identification and classification of wetlands. Mr. Loken has extensive experience with municipal, inert and special use landfills in the State of North Dakota as well as mineland and energy-related siting and permitting projects. He has been involved in the development, design and permitting or closure of several landfill facilities, and has performed sampling, surveying, monitoring and studies at several others. Mr. Loken has also led an effort, following NEPA guidelines established by the USDA-RUS, for the siting of a new college campus on a tribal reservation in North Dakota.

Prior to founding WPC, Mr. Loken was a co-founder of High Plains Consortium, Inc. (HPC). Prior to co-founding HPC, Mr. Loken was an Environmental Scientist and Project Manager with a national environmental company. His projects included a multi-million dollar train derailment cleanup that released diesel fuel and several thousand gallons of anhydrous ammonia; managing and working on the Downtown Mandan Diesel Fuel Remediation Project working for the ND Dept. of Health for five (5) years; leading the subsurface/groundwater assessment of a 30,000+ gallon gasoline release in Garrison, North Dakota; responding to a variety of crude oil/crude oil emulsion/salt-water releases from tank batteries and pipeline releases in western North Dakota and Montana; agri-

chemical and hazardous material assessments and remediation; soil surveying; asbestos surveys; and indoor air quality assessments.

KEY PROJECTS

• **Senior Project Manager** for releases in the oil patch in western North Dakota, Northwestern South Dakota, and Eastern Montana. The releases have varied from small (less than 10 barrels) to large releases of crude oil, crude oil emulsions, and salt-water from tank batteries, drilling sites, and pipeline breaches. These projects have varied from overseeing and directing clean-up activities, and assisting with disposal of impacted soils to subsurface and groundwater monitoring projects on larger releases in sensitive areas. Some of these projects have required groundwater and soil remediation activities and systems. These projects have including communication with the clients and regulatory agencies in North Dakota and Montana, as well as federal agencies, including the USDA-Forest Service and the US Army Corps of Engineers. Many of these projects are ongoing.

• **Senior Project Manager/Geologist** for a Phase II Environmental Subsurface Groundwater Assessment related to a release of 30,000+ gallons of gasoline from a gasoline station in central North Dakota. This project was complicated by several beds underlying the Site, including a 6 foot+ coal bed that was the major receptor of the release. The release has moved out over 2,000 feet and has impacted a private water well, in less than two (2) months of the release occurring. Western Plains has completed 32 borings, numerous groundwater and vapor monitoring wells, and has completed the initial assessment of the release, documenting the known boundaries of the release, and areas where further assessment appears to be warranted.

• **Emission Factor Committee Member - Bakken Volatile Organic Compounds Task Force.** WPC was retained by a crude oil production company to have Mr. Loken represent their firm on the Bakken VOC Task Force - Emission Factor Committee (EFC) in 2010 and 2011. The VOC Task force was formed by the North Dakota Petroleum Council to address the high VOC's that could potentially be released during crude oil production operations in the Bakken and Three-Forks formations in western North Dakota. The concern was raised when the North Dakota Department of Health (NDDH) and the US EPA stated that there may be need to regulate the VOC emissions. The Task Force created three committees, including the EFC, to address the concern and propose an achievable emission factor for the VOC's, as well as a committee that dealt with the available engineering controls to achieve the emission factor. The third committee was a Consent Decree committee who worked to develop proposed language for consideration for the NDDH. Over a period of several months the EFC worked with the oil production companies working in the Bakken and Three-Forks formations and compiled all available monitoring results and prepared an achievable emission factor. The various committees made their presentations to the NDDH, who used the data from all three committees to develop the new emission controls for VOC's in the oil patch of North Dakota. This ultimately led to new NDDH rules and regulations in the spring of 2011 regarding VOC emissions for crude oil production in western North Dakota.

• **Project Manager** for Wetlands Delineations Project for the East End Emergency Outlet from East Devils Lake to the Tolna Coulee in North-central North Dakota. Mr. Loken, Mr. Norm Prochnow, Registered Professional Soil Classifier, Mr. Pat Schuett, Natural Resource Specialist/Botanist, and Mr. Brian O'Gorman, Soil Scientist of WPC, Inc. traversed the entire proposed route and delineated wetlands in, and along, the proposed corridor according to the 1987 Corps of Engineers Wetland Delineation Manual and the USDA-NRCS Wetland Indicator Criteria. The report for this project was completed in August 2011.

• **Project Manager** for Wetlands Delineations Project for the Keystone Crude Oil Pipeline project from the Canadian Border south across North Dakota. WPC, Inc. personnel traversed key sections of the proposed route and delineate wetlands in, and along, the proposed corridor according to the 1987 Corps of Engineers Wetland



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Delineation Manual and the USDA-NRCS Wetland Indicator Criteria. This project covers the State of North Dakota from the Canadian Border in the north to the South Dakota Border in the south. WPC coordinated with the international environmental firm overseeing the project for the Canadian owners, and worked in the field with their representatives, land agents, and land surveyors on this long and complex project.

- **Project Manager** for baseline Soil Evaluation projects on over 20 proposed oil pad drilling locations, access roads and crude oil pipelines in the oil producing areas of the Badlands in Western North Dakota. These projects were completed to assess the soils, and provide information that will be critical for the topsoil and subsoil management when the oil pads, roads and pipelines are constructed, and for future reclamation efforts when the locations are closed.

- **Senior Project Manager** to North Dakota Department of Health for EPA-funded Brownfield Contract at a vacated metal-working/foundry site in north-central North Dakota. Responsibilities included contract management, preparation of Quality Assurance Project Plan and Sampling Analysis Plan for the Site, coordination with the NDDH, on-Site sampling of soils and foundry sand stockpiles for heavy metals, subcontractor coordination with woman-owned analytical EPA and NDDH-certified laboratory, overall project management and report preparation.

- **Senior Project Manager** to North Dakota Department of Health for EPA-funded Brownfield Contract at vacated site in north-east North Dakota. Responsibilities included contract management, preparation of Quality Assurance Project Plan and Sampling Analysis Plan for the Site, coordination with the NDDH, on-Site sampling of soils, subcontractor coordination with woman-owned analytical EPA and NDDH-certified laboratory, overall project management and report preparation.

- **Senior Project Manager** for series of Phase I Environmental Assessments evaluating relocation of an airport in southwestern North Dakota for an engineering firm. Funding was from the Federal Aviation Administration. WPC conducted a Phase I on the current airport, and on three (3) alternative locations near the local community. These projects were conducted as part of the overall siting project for the potential new airport location. Once a final selection was made, WPC was retained to perform a Wetlands Delineation Project at the Site, which was submitted to the Corps of Engineers and the FAA.

- **Client Liaison and Senior Project Manager** to North Dakota Department of Health for EPA-funded Leaking Underground Storage Tank (LUST) Trust Fund Contract awarded to WPC. Responsibilities include contract management, task order preparation, budgets, scheduling, subcontracts preparation and management, field geology, monitoring well design/installation/development, monitoring well abandonments, underground storage tank removals, overall project management and report preparation.

- **Incident Commander** for numerous responses related to spills, leaks, releases and accident sites. Has managed and overseen various cleanups of chemical releases from train derailments, mineral oil releases from electrical substations, jet fuel spills, printers ink releases, vehicle accidents, including semi-tractor trailer rollovers, where fluids from vehicles were lost, clandestine dumping of chemicals, ag-chemical releases, chemicals discovered as a result of fires, intentional vandalism, meth-lab explosions, and load-shifts from transportation vehicles resulting in chemical releases. Has coordinated with public agency and department representatives on logistics of cleanups, overseen and directed actual cleanups, arranged for proper disposal of waste materials (both hazardous and non-hazardous), served as liaison with regulatory agencies, and provided reports on incident that led to site closure in all instances.

- **Project Manager** for City of Bismarck Household Hazardous Waste Collection projects. Worked with City of Bismarck Public Works Department by assisting with media campaign, logistics of collection days, served as Site



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Safety Officer, retained and coordinated various subcontractors (including hazardous waste transportation and disposal), oversaw on-Site incident responses for small spills, and reported results to the City.

- **Project Manager** for Indoor Radon surveys of several federal office buildings in Bismarck, including reconnaissance of Site, provided input on evaluation of air handling equipment, collected samples and reported results.

- **Project Manager** for hundreds of Phase I Environmental Assessments at WPC, including a 10+ mile corridor along a federal highway through a major city in North Dakota for the engineering firm working for the North Dakota Department of Transportation.

- **Expert Witness** for a variety of clients, including the US Department of Justice on wetland projects, landowner impacted by releases from a local lagoon, and for asbestos services for a school district in North Dakota.

- **Former Co-Project Manager** for large-scale Soil Vapor Extraction/Air Sparging Project. While at HPC Mr. Loken was President of the firm and the company was retained by the NDDH to evaluate technologies for addressing impacts to the North Downtown Area of Mandan, North Dakota, which was adversely impacted by a diesel fuel release ranging from 1 to 2 million gallons of released product from an adjacent railroad facility. Worked closely with the NDDH in selecting the chosen technology (SVE/AS); assisted in the development of specifications; worked with engineering contractors; retained horizontal drilling firm and related design firm; acquired appropriate site access agreements; negotiated with City of Mandan for planned disruptions; arranged for subcontract management; assisted with development and teaching of site specific training program; presented, and assisted in planning, public meetings; coordinated with other Co-Project Manager on horizontal well drilling activities; worked with design team on operational equipment specification; directed purchasing of necessary equipment; worked with building contractor directly on planning of operations building; oversaw building contractor for actual construction; assisted in building layout and placement of operations equipment; oversaw potential receptor monitoring program; served as Site Specific Safety Officer; assisted with Task Order preparation; assisted with and oversaw billing and invoicing system and liaison to NDDH, City of Mandan and Morton County, as well as federal congressional offices. The project has culminated in a successful system that is effectively removing soil vapors from the impacted area at, and beyond, design specifications.

- **Project Manager** for environmental siting of Sitting Bull College's new campus. Project included coordination with Project Engineering firm, which was preparing Preliminary Engineering Report, Sitting Bull College Staff, and liaisons with federal and tribal officials. Project culminated in a NEPA Environmental Report, following USDA-RUS guidelines, which was successfully completed and accepted by USDA-RUS and allowed federal funding to be triggered for the project. The project included evaluations of standard NEPA concerns, including environmental justice, soils, wetlands, geology, threatened and endangered species, socio-economic considerations, noise, cultural concerns and others. The evaluation of direct, indirect and cumulative impacts led to a Finding of No Significant Impact related to the proposed development. This project was completed on-time and under budget.

- **Project Manager** for environmental siting of the Lakewood Development Project in Mandan, North Dakota following NEPA guidelines from the US Army Corps of Engineers related to siting projects along the Missouri River. The planned development, which is under construction, was for a large housing development along the Missouri River. The development was designed with lakes in the center of the development. The developer's goal was to conduct the NEPA project in an effort to receive the required Clean Water Act permits which would allow the lakes to be physically connected to the Missouri River, allowing for navigation of small water craft by future homeowners from the lakes, into the Missouri River proper. The site was evaluated for threatened and endangered species concerns, soils, groundwater, wetlands, surface waters and other environmental concerns from a direct,



indirect and cumulative impact to the various environments. Mr. Loken also coordinated with the Project Engineer, who was completing the development plan for the site and also required engineering reports requested by the Corps of Engineers.

- **Project Manager** for Soils Evaluation Project along the Peterson Coulee Emergency Outlet from Devils Lake to the Sheyenne River in North-central North Dakota. Mr. Loken and Mr. Prochnow of WPC, Inc. traversed portions of the route and collected described soils and collected soil samples. A separate vendor was collecting VERIS data along the route. Western Plains prepared a report to the NDSWC, correlating the VERIS data with the laboratory results of the soil samples and the soil descriptions with a goal to identify areas of potential concern should the Outlet ever release waters through the liners to surrounding farm lands. This project documented the baseline conditions of farm lands along the Outlet and can be used for comparison to changing conditions during the operation of the Outlet.

- **Project Manager** for Wetlands Delineations Project for the Peterson Coulee Emergency Outlet from Devils Lake to the Sheyenne River in North-central North Dakota. Mr. Loken, Mr. Prochnow, and Mr. Kramer (retired), of WPC, Inc. traversed the entire proposed route and delineated wetlands in, and along, the proposed corridor according to the 1987 Corps of Engineers Wetland Delineation Manual and the USDA-NRCS Wetland Indicator Criteria. The report for this project has been completed and has assisted the NDSWC in negotiations with the US Fish and Wildlife Service, specifically on lands where the FWS maintains wetland easements. WPC was on-site, as needed, during the construction activities to assist with wetlands avoidance.

- **Project Manager for Wetland Delineation/Mitigation and Permit Application/Monitoring** at a large-scale agricultural/poultry production facility. Performed complex field assessments involving environmental impacts, functional assessment of wetlands using the Hydrogeomorphic Model - as developed by the US Government, and habitat evaluation, prepared permit applications and surveys; addressed regulatory requirements; developed and presented habitat assessments and mitigation plans; negotiated and coordinated efforts with federal and state regulators; coordinated and oversaw team of professionals and subcontractors; and provided construction oversight. Issues included impacted wetlands, groundwater conditions, improper waste disposal, runoff control, and correcting existing deficiencies in methods, facilities and regulatory compliance. WPC assisted the client in obtaining release of Site from federal jurisdiction.

- **Project Manager/Trainer/Speaker** for: 1) various OSHA 1910.120 HAZWOPER Refresher events; 2) training conducted for the North Dakota Safety Council related to the National Pollution Discharge Elimination System (NPDES) for construction sites, industrial sites, mine sites and oil refineries related to permitting and stormwater management; 3) HAZCOM and HAZWOPER training for the US Postal Service's regional centers in North and South Dakota; 4) Training for the City of Bismarck's Municipal Waste Facility for HAZCOM, HAZWOPER, and OSHA First Responder 8-hour training for staff to assist in recognizing hazards in the waste stream and working with a waste compactor - training done annually; 5) public speaker related to environmental assessment, asbestos, lead-based paint, and related environmental topics for different groups, including Banks, Kiwanas Clubs, Rotary Clubs, realty groups, as well as others.

- **Senior Project Manager** for Wetlands Delineation in ten-mile siting project. Identified and mapped exclusionary areas within the selected corridor, followed by field survey and Wetland Delineation report for the designated route.

- **Senior Project Manager/Soil Scientist** for Environmental Assessment of farmlands impacted by salinity factors. Release(s) from local municipal sewage lagoon evaluated for potential impact on local soil and water resources. Performed budgeting, field assessment and sampling, laboratory subcontracting, report preparation, and overall project management. Provided services as an expert witness in litigation involving extent and impact of lagoon releases.



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- **Project Manager/Soil Scientist** for Soils Permitting of more than 12,000 acres for surface coal minelands. Conducted mapping and sampling and prepared the permit applications and maps for submittal to the North Dakota Public Service Commission. All applications were successful, with an unusually low rate of completeness and technical deficiencies.
- **Project Manager** for groundwater monitoring of a publicly-owned Subtitle D landfill. Contracted laboratory services. Performed groundwater monitoring according to permit requirements, developed water table contour map and reported results to clients.
- **Project Manager** for fourteen municipal and inert solid waste facility permitting and closure projects in North Dakota. Responsibilities included budgeting, staff coordination, field activities, research and preparation of the Operation, Closure, Post-closure, and Health/Safety Plans for the facilities.
- **Project Manager/Geologist** for Limited Phase II Environmental Assessment at a US Department of Energy facility that had experienced a documented di-electric coolant fluid release that was suspected of containing hazardous materials (PCBs). Performed subcontracting to drilling firm and laboratory, oversaw soil boring and directed groundwater monitoring well placement. Logged soils, developed and sampled wells, compiled results and reported to client.
- **Project Manager** for site investigation, cleanup and remediation of an anhydrous ammonia, sodium sulfate salt, and diesel fuel spill as a results of a train derailment in North Dakota. Responsible for construction management, field investigations and operations, staff coordination, groundwater monitoring activities, soil reclamation, project management, and reporting to regulatory agencies for this \$1.5 million project. During Mr. Loken's involvement with the project, over four million gallons of groundwater was recovered and over 24,000 cubic yards of contaminated soil was reclaimed. The soil was reclaimed by landfarming on agricultural fields at agronomic rates. The groundwater was irrigated at agronomic rates onto adjacent farm fields using a traveling-gun irrigation system.
- **Geologist and/or Project Manager** for scores of underground storage tank projects. Responsibilities included excavation observations, subsurface soil and groundwater assessments, groundwater monitoring and sampling, monitoring well placement, subsurface soil and geological identifications, and site remediation management. Currently directing ongoing remediation and groundwater monitoring projects at sites in North Dakota.
- **Project Manager**, coordinating and conducting hundreds of Phase I Environmental Site Assessments involving pre-purchase and property transfer site assessments; more than 100 Subsurface Soil and Groundwater Assessments; and management of over 200 monitoring well installations in North Dakota.
- **Geologist** responsible for subsoil and geological characterization for hydrogeological assessments at two coal-fired power plants ash disposal sites in central North Dakota. Was responsible for geologic interpretations, monitoring well placement and construction, monitoring well development, monitoring and sampling, and reporting of activities.
- **Soil Scientist** for an environmental assessment of a DDT and Thimet agricultural chemical spill in North Dakota. Responsible for testing and evaluation of spill site and design of an acceptable handling method meeting applicable hazardous material regulations.

EMPLOYMENT EXPERIENCE

- WPC, Inc., Senior Geologist/Soil Scientist and President, 2004 -
- HPC, Inc., Senior Geologist/Soil Scientist and President/COO, 1993-2004
- Braun Intertec Corp., Project Manager/Environmental Sci./Geologist/Industrial Hygienist Technician, 1989-1992
- USDA-Soil Conservation Service, Soil Conservationist/Soil Scientist, 1987-1989



- Dept. of Soil Science, North Dakota State University, Graduate Research Assistant, 1985 -1987

EDUCATION AND CERTIFICATIONS

- North Dakota State University, M.S., Soil Science (Studies in Wetland Soils Genesis)
- North Dakota State University, B.S., Earth Science
- Professional Soil Classifier #68, North Dakota Board of Registration for Professional Soil Classifiers, active
- North Dakota Department of Health Asbestos Inspection Certificate (#5554), current
- OSHA 1910.120 Hazardous Materials 40-Hour Certificate (since 1990), current
- Certified Environmental Investigator, Environmental Assessment Association, current
- Certified Mold Investigator, Environmental Assessment Association, current
- Certified Monitoring Well Contractor, North Dakota Board of Water Well Contractors, inactive

SPECIALIZED TRAINING

- Asbestos Building Inspector Course, UND Environmental Training Institute, 2014
- Wetland Delineation Workshop, NDDOT, USDA-NRCS, and USACE Sponsored, 2014
- BNSF Contractor Orientation Safety Training, 2014/2015
- OSHA 501 10-Hour Training, current
- Phase I Environmental Assessment Training by ASTM for ASTM Standard Practice 1527-05, 2007
- Lead Inspector, Initial under EPA 40 CFR 745, 2002, inactive
- Lead Risk Assessor, Initial under EPA 40 CFR 745, 2002, inactive
- Livestock Waste Management and Utilization Workshop, USDA-NRCS, NDSU-Extension, and the NDDH, 2000
- The Hydrogeomorphic Approach to Assessment of Wetland Function in Temporary and Seasonal Pothole Wetlands, USDA-NRCS, 1999
- Hazardous Waste Generator Compliance Seminar, ND Dept. of Health, 1997
- Inert Waste Landfill Operator Training, ND State Dept. of Health and Consolidated Laboratories, 1993
- Hazardous Waste Management, Depts. of Chemical & Civil Engineering, Univ. of Missouri - Columbia, 1991

PUBLICATIONS

- Loken, L.G. and J.L. Richardson. 1992. *Development of salinity in wetland catchments*. p. 141-150. Proceedings of the North Dakota Water Quality Symp., Bismarck, ND.
- Loken, L.G. 1991. *Wetland soil characteristics of basins in closed groundwater catchment systems*. M.S. Thesis. Soil Sci. Dept., North Dakota State University, Fargo, ND.

AFFILIATIONS

- Past-President, Member, Professional Soil Classifiers Association of North Dakota
- Past Director - National Board (2004-2012)/National Chair of Environmental Assessment Committee (Current)/Member, Environmental Information Association
- Past-President (Current), Member, North Dakota Chapter of the Soil and Water Conservation Society
- Member, Tribal Environmental Science Department Advisory Board, United Tribes Technical College
- Member, North Dakota Solid Waste & Recycling Association, Past Director - Board, 2006 to 2010
- Member, ASTM, Member E-50 Committee, Member of National E1527 Task Group updating the ASTM Phase I Standard to E1527-13
- Member, North Dakota Petroleum Council, Member - Bakken VOC Task Force - Emission Factor Committee, Member - Safety Committee
- Member, North Dakota Geological Society
- Director, High Plains Business Opportunities Association
- Member, Environmental Assessment Association

