

Herbert Pirela, PhD

Senior Project Manager

Dr. Pirela has over 23 years of experience in designing, conducting, and managing major environmental investigations and permitting projects. The major focus of his work has been on impact analyses for soils, reclamation, and geology, and includes environmental assessments under the National Environmental Act (NEPA) and other United States and international regulations. Herbert also has extensive experience with international standards and best practices, especially with the IFC Performance Standards and WBG EHS Guidelines, having lead and conducted multiple environmental and social and environmental and social impact assessments (ESIA) on behalf of International Development Finance Institutions.



Experience: 23 years' experience in the power, oil & gas, and mining sectors.

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Education

- Ph.D., Soil Chemist, Iowa State University, 1987

Professional Affiliations and Registrations

- American Society of Agronomy
- Society of Environmental Toxicology and Chemistry
- Soil Science Society of America
- Chevron ESHIA Qualified Facilitator

Languages

- English, native speaker
- Spanish, High proficiency (Spoken and written)

Fields of Competence

- Environmental Impact Assessment
- *National Environmental Policy Act* (NEPA) and state-equivalent NEPA compliance
- Project Permitting and Documentation
- Project Planning and Design to Address Soils and Geological Issues
- Stakeholder Engagement
- Cumulative Impact Assessment
- Soil Restoration/Revegetation Specially in Desert or Arid Environments
- Pipelines and Other Energy Industry Projects

Key Industry Sectors

- Power
- Mining
- Oil & gas

Honors and Awards

- Graduate Research Excellence Award, Iowa State University, 1987.

Key Projects

Coastal Pipeline West Virginia, Virginia, and North Carolina

For a 600 miles long interstate natural gas transmission pipeline that crosses West Virginia, Virginia, and North Carolina, and would serve multiple public utilities and their growing energy needs in Virginia and North Carolina. Herbert was the lead soil scientist in charge of the development comprehensive Rehabilitation and Restoration Plan for the project, including detailed plans to include pollinator plant and warm season grasses species in the restoration of the right-of-way in in piedmont and coastal plain areas in Virginia and North Carolina.

Pipeline, Alberta and Saskatchewan Canada, and Montana, South Dakota and Nebraska

TransCanada Keystone Pipeline, LP (TransCanada) is proposing the construction of a new pipeline approximately 1,980-mile, 36-inch and related facilities to transport crude oil from the Western Canadian Sedimentary Basin to the Texas Gulf Coast. The original Project application, submitted in 2008, was subjected to NEPA review and an FEIS was issued in August 2011. That project was found to not serve the national interest, and TransCanada submitted an application for a revised route in May 2012. That route follows the original corridor in Montana and South Dakota with a significant realignment in Nebraska, avoiding the ecologically sensitive Sand Hills area. For the revised route EIS, Herbert is the lead geologist/soil scientist that evaluated the impacts of the project on the geological and soil resources along the route and proposed appropriate mitigation and best management practices to avoid or minimize the impacts on these resources. Herbert worked closely with the Nebraska Department of Environment Quality and TransCanada to develop innovative soil erosion control measures that minimize the impacts to Fragile Soils in Northern South Dakota and Nebraska near the ecologically sensitive Sand Hills area

Kern River Expansion, California, Nevada, Utah, and Wyoming

For this fast-tracked, nearly 800-mile pipeline project, Herbert was lead soil scientist in the preparation of the complete FERC ER filing to Order 603 standards in less than five months. For the Phase 1 initial filing, he collected soil information for all four states traversed by the project, completed a detailed analysis of the project-related impacts on soil and topographic features, and prepared the soil resources report. In Phase 2, he conducted field surveys and developed comprehensive soil erosion and management control plans for the four States, including detailed plans for Dixie National Forest in Utah and Red Rock Canyon National Conservation Area and Spring Mountain National Recreation Area (Humbolt-Toiyabe National Forest) in Nevada. Requiring his extensive consultation with DOI's Bureau of Land Management, USFWS, and the California Department of Fish and Game, the plans included restoration and mitigation guidelines and strategies to minimize impacts through implementation of best management practices and site-specific restoration measures.

Alliance Pipeline North Dakota, Minnesota, Iowa, and Illinois

To support the preparation of a third party EIS for this 900-mile pipeline, Herbert identified data gaps and issued data requests, verified ER information, and prepared the soil resource affected environment and environmental consequences sections for the advanced preliminary draft EIS. He evaluated soil along the proposed route and determined best management practices to minimize erosion. He also characterized wildlife and plant communities and identified potential impacts on sensitive species and plant communities. He coordinated with biologists of federal and state agencies regarding impacts on riparian and stream habitat, developed mitigation measures, and evaluated alternative routes to minimize or avoid impacts. Herbert also conducted a noxious weed evaluation and addressed concerns of

farmers and state agencies concerning weed proliferation as a result of pipeline development. Duke Energy Gas Transmission subsidiary, Copiah Storage Project Copiah County, Mississippi For Copiah County Storage Company, he provided siting assistance and contributed to the preparation of the FERC ER for this high-productivity salt cavern natural gas storage/hub facility.

Improving the Transport Logistics and Competiveness of the Dr. Jules Sedney Port of Paramaribo, Suriname – IDB

ERM was contracted to perform an Environmental, Social, and Health & Safety (ESHS) review of the Dr. Jules Sedney Port in Paramaribo to assess the compliance status of existing Port operations, including the Environmental and Social Management System, against different criteria, standards, and regulatory requirements, such as, Surinamese laws and regulations, and applicable best management practices, international treaties and conventions such as ISO 14001:2015, the Basel Convention and Marine Pollution – MARPOL 73/78. Dr. Pirela served as project manager to conduct the ESHS review.

Saramacca Satellite Mine Project ESA, Rosebel Gold Mines (RGM) – IAMGOLD Corporation, Suriname

The Project consisted of two main components: an open pit mine and a private road for hauling mined mineralized material to the existing RGM mill for processing. Dr. Pirela served as the assistance Project Manager in the development of the ESIA to satisfy contractual obligations, national guidelines, and draft regulations as well as international and corporate standards for project development.

Gold Mine Tailings Storage Facility Expansion ESIA, Rosebel Gold Mines – IAMGOLD Corporation, Suriname

To maintain gold production levels, Rosebel Gold Mines investigated the feasibility of expanding its mines tailings storage facility. The expansion included the expansion of the existing tailings facility to the east by constructing seven additional dams, which raised

total vertical containment by 43 meters when the Project was completed. Dr. Pirela served as project manager and soils lead to conduct an environmental and impact assessment for the expansion of the gold mines existing tailings storage facilities in according to local and international guidelines.

Nassau Plateau Bauxite Mine ESHIA, Suriname Aluminum Company, Suriname

Manager and soil lead for the development of an ESHIA for new bauxite mine on the Nassau Plateau that evaluated the environmental and social impacts of the proposed new mine. Suralco, subsidiary of the international metals company Alcoa, conducted environmental and social studies that evaluated the feasibility of developing bauxite mine on the Nassau Plateau in eastern Suriname.

Lelydorp I Bauxite Mine ESIA, Suriname Aluminum Company, Suriname

In 1965, the Suriname Aluminum Company (Suralco) began operating the Paranam alumina refinery, located south of Paramaribo in northern Suriname. Historically, most of the Bauxite ore for the Paranam refinery had come from mines that were expected to be depleted. Suralco identified the Lelydorp I Bauxite deposits as a potential source of bauxite. Suralco engaged ERM to conduct the ESIA for this fast tracked Project. Dr. Pirela served as the Deputy Project Manager and soils lead for the Project.

Merian Gold Mine Project ESHIA, Newmont Mining Corporation, Suriname

Suriname Gold Company, LLC (Surgold) owns and operates the Merian Gold Project 30 Km to the north of the Nassau Mountains in eastern Suriname. Dr. Pirela led the soils impact assessment for the Environmental and Social Impact Assessment of a new gold mine in Suriname. The Project straddles the divide of two major watersheds and is located in the equatorial rain forest. The impact assessment included the assessment of the impacts of the mine pits and other infrastructure and proposed mitigation measures.