

TECHNICAL SPECIALTIES

Mr. Hillebrenner is a Professional Engineer and Certified Professional in Erosion and Sediment Control with over fifteen years of experience in civil and environmental engineering, remediation, environmental compliance, land use/redevelopment consulting and water resource design within the commercial, industrial, residential, and public sectors. This experience includes numerous site assessments, inspections, reports and design alternatives to improve environmental safety measures for private and public clients. Mr. Hillebrenner provides support to many of the firm's practice areas including: Site Assessment & Remediation (Industrial, Brownfields, and Petroleum), Environmental Compliance, Engineered Natural Systems (ENS), Insurance and Litigation.

CREDENTIALS

Licensed Professional Engineer

Illinois (062.061879), Indiana (PE11200094), Iowa (22008), Florida (69887), Kentucky (28459), Missouri (2012007655), Texas (110619), Wisconsin (42236-6), Minnesota (50011), Nebraska (E-15309), Kansas (PE24005), Oklahoma (29472), Utah (10283480-2202)

Certified Professional in Erosion & Sediment Control
40-hr. OSHA Health & Safety Training (HAZWOPER)
Certified Project Manager - Illinois Capital Dev. Board
B.S. in Civil Engineering, Bradley University

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers (ASCE)
Chemical Industry Council of Illinois (CICI)
Calumet Area Industrial Commission (CAIC)
Chicago Wilderness Corporate Council (CWCC)
Illinois Manufacturing Association (IMA)
International Council of Shopping Centers (ICSC)
National Brownfields Association (NBA)

SPEAKING ENGAGEMENTS

PCB's in Stormwater. Environmental Management Learning Summit. Midwest Energy Association (MEA). Minneapolis, MN. September 13, 2012.

Alternatives to Phosphorus Treatment in Food Processing Wastewaters, Midwest Food Processing Conference, Milwaukee, WI. December 4, 2013.

Wastewater Treatment with Constructed Wetlands and Natural Media. Chemical Industry Council of Illinois (CICI). Countryside, IL. October 20, 2015.

Saving Money Through Sustainable Remediation. Roux Webinar (Live). Oak Brook, IL. August 20, 2018.

Development, Design, Construction, and Management Trends in Retail & Mixed-Use. RE Journals 9th Annual Retail & Mixed-Use Summit. Chicago, IL. September 7, 2018.

Passive Stormwater Treatment Technologies. Storm Water Solutions (SWS) Conference & Exhibition. Tinley Park, IL. November 14, 2018.

Storm Water Controls: Improving Cap Performance at a Closed Industrial Landfill. Storm Water Solutions (SWS) Conference & Exhibition. Tinley Park, IL. November 14, 2018.

Sustainable Industrial Stormwater. Chemical Industry Council of Illinois (CICI). Countryside, IL. November 28, 2018.

Industrial Construction, Design and Technology Trends (Moderator). Bisnow Midwest Industrial & Logistics Summit. Chicago, IL. June 4, 2019.

PFAS: It's Use in Manufacturing and Future Liabilities. Illinois Manufacturing Association (IMA) Environmental Conference. Oak Forest, IL. November 20, 2019.

KEY PROJECTS

Remediation

- Project Manager and Principal Engineer for the closure of three former Waste Management Units (WMUs) covering 10-acres at an adhesives manufacturing facility in Central Illinois. Closure includes in-situ stabilization (ISS) of over 160,000 cubic yards of wastewater sediments utilizing Portland Cement and bed ash. The project included the installation of an engineered soil cap over stabilized materials as well as restoration of one of the lagoons to original conditions. The Site is located within the Illinois River floodplain and is surrounded by wetlands.
- Project Manager and Principal Engineer for the design and construction of a \$2.8 MM landfill cap in Iowa for a previously closed Waste Management Unit (WMU) documented ground water quality impacts due to a failing 9-acre landfill cap and leachate extraction system. The design included a geosynthetic cap system consisting of a geocomposite gas collection layer, a HDPE geomembrane, a geocomposite drainage layer, and a soil/vegetation cap layer. A stormwater conveyance system was design to intercept precipitation and prevent migration into the landfill, reducing the overall leachate head which was impacting groundwater quality.
- Project Manager and Engineer for site remediation and closure activities of a legacy wood preserving facility involving creosote impacted soil, surface water, and groundwater. Closure of the site included the management of a Corrective Action Management Unit (CAMU). The facility is located in central Texas and is regulated under an Administrative Order of Consent (AOC) with USEPA Region 6.
- Principal Engineer for the investigation and remediation of a 400-acre former alumina refinery in Texas. In addition, the project includes closure of a 30-acre Industrial Waste Management Unit (WMU). Work was conducted pursuant to the Texas Risk Reduction Program (TRRP) requirements, including preparation of an Affected

Property Assessment Report (APAR) and various Response Action Plans for various areas of concern. This included investigation of over 30 areas of concern, and completion of soil borings and monitoring wells throughout the facility, as well as assessment of offsite sediment and development of a Tier 2 ecological risk assessment.

- Principal Engineer for the design of an asphalt and HDPE cap at a former manufacturing facility in Detroit, MI. The cap is being installed as a remedial measure to eliminate direct contact exposure and ambient air exceedances due to subsurface CVOC impacts.
- Principal Engineer for the development and implementation of actions under a RCRA Corrective Agreed Order with the Indiana department of Environmental Management (IDEM) at an industrial facility in East Chicago, IN. The project includes corrective measures to remediate a Former Ponds Area including establishment of a containment zone, engineered soil/asphalt caps, and design/construction of a groundwater treatment system.
- Project Manager and Engineer-of-Record for the design and construction of an ecological risk mitigation project at a former landfill located northeast of Indianapolis, IN. The project is part of an approved State-Cleanup Program and involved capping of an existing pond with a direct ecological risk exposure pathway due to contaminated groundwater at the site.
- Principal for the investigation and remediation of a chlorinated solvent plume for a sucker rod manufacturing plant in Oklahoma. The site is enrolled in a cleanup program with Oklahoma DEQ. Full scale remediation will include enhanced thermal treatment within the source area and injection of amendments in the mid-plume and at the leading edge of the plume.
- Principal Engineer for the site remediation and closure activities associated with an elementary mercury release from a broken well pump seal. Project involved groundwater pumping, treatment and encapsulation of well bottom using concrete at a depth of 2,400 feet bgs. Additional remediation of surrounding soils was conducted to meet regulatory cleanup criteria.
- Principal Engineer for the preparation and implementation of a Remediation Work Plan (RWP) to address CVOC contamination in soil, groundwater and indoor air at an active 9-acre strip mall in Indianapolis, IN under the Indiana Voluntary Remediation Program.
- Principal Engineer for a site investigation, ISCR pilot tests, Remediation Work Plan, Focused Source Area Removal and post-remedy monitoring at a former fabrication/machine shop in Moorseville,

IN under the Indiana Voluntary Remediation Program.

- Project Manager and Senior Engineer for oil spill response and site remediation activities at a plastics manufacturing plant in the Ohio. The project involved remedial response activities, environmental compliance management and regulatory reporting.
- Engineer-of-Record for remediation of a former landfill located northeast of Indianapolis, IN. The project is part of an approved State-Cleanup Program and involves chlorinated solvent remediation and landfill operation and maintenance activities.
- Principal Engineer responsible for conducting reviews for a site in Indianapolis, IN with tetrachloroethene (PCE) groundwater impacts. The client entered into the Voluntary Remediation Agreement (VRA) with the Indiana Department of Environmental Management (IDEM) for the purpose of addressing impacted media and mitigating potential exposure risks. The pilot testing included the assessment of an enhanced reductive dechlorination (ERD) amendment to promote reduction of chlorinated solvents within the groundwater. Roux implemented a Remediation Work Plan (RWP) and the full-scale remedial action.
- Principal Engineer for the remediation of a heating oil release from two former USTs located within a basement vault at a medical facility in Northern Illinois. Thermally-enhanced steam extraction was selected as the final remedy to achieve site closure.

Facility Engineering

- Principal Engineer for the design and construction of a \$1.1 MM wastewater pH adjustment system capable of treating up to 600 GPM of combined storm, sanitary and process wastewater from a large phosphates-manufacturing facility. Responsible for oversight of engineering design of sanitary sewer system and treatment building, analytical data management, communication of results to client, management of sub-contractors and vendors, permitting, construction oversight, and system start-up.
- Project Manager and Lead Design Engineer for the replacement of five 11,500-gallon oil-water separators with new 25,000 gallon and 50,000-gallon oil-water separator systems for a leading utility provider. Construction involved the characterization and disposal of polychlorinated biphenyl (PCB) contaminated soils. The design/installation improved the existing 30-year-old stormwater treatment system in order to maintain water quality compliance with the Owner's NPDES permit requirements.
- Principal Engineer for the closure of a 2,000-acre former alumina refinery along the Gulf Coast of Texas. The project involves the remedial

investigation of soil, groundwater and marine environments at the site and development of an Affected Property Assessment Report (APAR) through the Texas Risk Reduction Program (TRRP) managed by the Texas Commission on Environmental Quality (TCEQ). Other aspects of the project include modification of facility NPDES Permits; design and construction management of a 450 GPM pH Adjustment, arsenic and solids management water treatment system; development of a stormwater model for the site; development of remediation work plans; and, development of site closure alternatives.

- Project Engineer for a storm sewer rehabilitation program (15,000 LF) in Maywood, IL for a leading utility provider utilizing Cast-in-Place-Piping (CIPP) and PVC piping. Project challenges included PCB site contamination and Health/Safety protocols.
- Project Manager and Principal Engineer for engineering design modifications to tank farms at two (2) petroleum terminals located in Hammond, IN (29 million gallons of storage) and Des Plaines, IL (21 million gallons of storage). Directed and managed the construction of field activities.
- Project Manager and Principal Engineer for engineering design a secondary containment pad for a bio-diesel offloading station at a petroleum terminal located in Hammond, IN.
- Principal Engineer for the design and installation of a closed loop recirculating cooling water system for a manufacturing test cell operation in Morton Grove, IL.
- Project Manager and Principal Engineer for process and potable water system analysis in Channahon, IL. The project involves detailed analysis of the groundwater sources, system infrastructure and treatment solutions. The final engineering design includes the installation of a mechanical sediment filter, booster pump and associated pumping.
- Project Manager and Principal Engineer for the design of a 400-gallon aboveground oil-water separation system for a plastic manufacturing facility's process water line in Mason, OH. The project involves the design and installation of the system.
- Principal Engineer for the design of a 300-gallon underground oil-water separation system for a transportation vehicle wash system in Rockford, IL.
- Project Manager and Lead Design Engineer for an industrial facility site rehabilitation project in Elk Grove Village, IL. Completed site rehabilitation plans for parking lot and stormwater management area. Stormwater management areas were designed in accordance with Metropolitan Water Reclamation District of Greater Chicago (MWRD-GC) ordinances. Provided permit coordination through Elk Grove Village.

- Senior Engineer for the conceptual design of a Class II Underground Injection Control Well (UICW) and infrastructure to manage extracted cavern water at a propane storage facility in Indiana. Full-scale design is expected to be implemented in 2013. The well will be permitted with the Indiana DNR.

Environmental Compliance

- Principal Engineer for over forty (50) SPCC Plans in Illinois, Indiana, Kentucky, Texas, Missouri, Minnesota, Ohio and Wisconsin to meet federal, state and local regulatory compliance requirements. These ground-sorting package/transportation facilities vary in size from one to one-hundred acres and included the largest ground-sorting package facility in the World located in Hodgkins, Illinois.
- Principal Engineer for the preparation of SPCC and SWPPP Plans for a rendering plant in Rockdale, Illinois.
- Principal Engineer for the preparation of an SPCC Plan for a petroleum distribution and air transportation facility in St. Paul, Minnesota.
- Principal Engineer for the preparation of SPCC Plans at chemical distribution and manufacturing plants in Joliet and Peru, Illinois.
- Project Manager for the completion of SWPPPs and/or BMP Plans for more than 200 ground-sorting package/transportation facilities throughout Illinois, Indiana, Wisconsin, Minnesota, Missouri, Iowa, Ohio, Kentucky and South Dakota to meet compliance with NPDES Industrial Stormwater permits. Responsible for evaluating and obtaining No Exposure Certifications for numerous facilities.
- Project Manager and Principal Engineer for a secondary containment evaluation and storm water assessment of tank farms at two (2) petroleum terminals located in Hammond, IN (29 million gallons of storage) and Des Plaines, IL (21 million gallons of storage).
- Principal Engineer for the review and management of air permits associated with refined coal operations at several facilities throughout Illinois and Wisconsin.
- Project Manager for numerous Notice of Violation cases throughout the Midwest associated with water quality (stormwater and wastewater), waste management, salt storage facilities, air pollution and compliance planning processes.
- Principal Engineer for the annual review of state regulated water quality criteria for twenty-four (24) industrial facilities within the State of Wisconsin. The review consisted of a determination for discharges associated with impaired waters and Total Maximum Daily Loads (TMDLs).
- Project Manager and Senior Engineer for thirty-two (32) UST Operation and Maintenance (O&M) Plans in Illinois to meet the requirements of Title 41 Part 176 of the Illinois Administrative Code (IAC).

These new requirements were implemented as part of the UST Operator Training Program implemented by the Office of the Illinois State Fire Marshall in 2012 as part of federal legislation required by the 2005 Energy Act.

- Project Manager and Lead Engineer for multiple environmental compliance projects for one of the nation's leading automotive component manufacturing companies. Completed site assessments and inspections of three (3) industrial facilities in Western Illinois for the completion of SPCC Plans, SWPPPs, and Greenhouse Gas Emissions Audits in accordance with State and Federal regulatory compliance laws.
- Principal Engineer responsible for managing and conducting Annual Site Compliance Inspections for NPDES Industrial Stormwater Permits at over forty (40) industrial facilities in Illinois for the 2012 through 2018 reporting periods.
- Principal Engineer for the development of short- and long-term salt storage management plans for a Fortune 100 client. The facility operates as a terminal services operation along a navigable waterway in Illinois.
- Project Manager for the design and implementation of over fifty (50) SWPPPs for construction activities throughout Illinois, Indiana, Iowa, Florida, Vermont and New York.
- Project Manager and Senior Engineer for SWPPP and SPCC Plans for a plastic molding company that utilizes HDPE/PET plastic pellet materials. Designed Best Management Practices (BMPs) for the plastic pellets and oil storage areas at the facility.

Engineered Natural Systems ENS

- Principal Engineer for the design of an Engineered Natural System (ENS) located at an active landfill Eastern Indiana. The system includes the design of a natural media filtration (NMF) cell, holding pond and lift stations for landfill leachate treatment. Primary constituents of concern are divalent metals and boron.
- Principal Engineer for the design of a phyto cap for a closed landfill in Clinton, Iowa. The overall design includes a Leachate Collection System, phyto cap, HDPE cap and stormwater enhancements.
- Project Engineer for design of a natural wastewater treatment solution for a 3,000-acre new industrial complex in Saudi Arabia. Roux Associates was tasked to design an Engineered Natural System (ENS®) to treat all wastewaters (sanitary, process and storm water) from construction through operation, incorporate transitioning through phases, and plan for future expansion of the facility and increased wastewater flow rates. The 23-acre ENS was designed to treat a total flow of 1.4 million gallons per day. The major system components include: dump station with five truck hookup ports to collect and convey sanitary wastewater during

construction of the facility; three primary sedimentation and anaerobic treatment tanks; one oil/water separator; six patented enhanced subsurface flow constructed treatment wetlands; two down flow disinfection filters; UV disinfection system; One treated water holding tank which conveys the treated water back to the facility for reuse within the refinery and as irrigation for landscaped areas; two infiltration basins; and six activated alumina treatment cells to remove fluoride from facility storm water runoff.

- Project Manager and Principal Engineer for the conceptual planning of an Engineered Natural System (ENS) near Minneapolis, MN. The conceptual plan for the ENS includes the design of a natural media filtration (NMF) cell for phosphorus treatment of process water at a nationally recognized food manufacturing facility. The project also involves the future planning and coordination for a sub-surface constructed treatment wetland (CTW) cell for BOD and TSS removal.
- Project Manager and Senior Engineer for the conceptual planning of an Engineered Natural System (ENS) near Joliet, IL. The conceptual plan for the ENS includes the design of a surface flow constructed treatment wetland (CTW), an enhanced sub-surface flow CTW, a natural media filter (NMF) cell and phytoplot. The phytoplot is planned for 100%water consumption of the facility's process water stream.

Real Estate, Land Use & Development

- Principal Engineer for a Brownfield Redevelopment Site located along the Chicago River in the West Loop. The redevelopment includes a new 52-story office tower and an overbuild structure of Metra and Amtrak rail lines. Project involved the excavation and closure of two USTs including geophysical surveys, soil sampling and waste characterization, and preparation of 20-day and 45-day LUST reports.
- Principal Engineer for a Brownfield Redevelopment Site located Oak Brook, IL to support a new \$500-million mixed used development. The project included asbestos and lead-based paint assessments, a Phase I Environmental Site Assessment and a Phase II Environmental Site Assessment. In addition, the project included the removal and closure of an abandoned 8,000 gallon heating oil tank identified during redevelopment activities.
- Principal Engineer for a Brownfield Redevelopment Site located in Chicago, IL. The redevelopment includes the revitalization of existing 18-acre commercial development into a new college prep high school campus. The site involves over \$3M in site remediation costs and was processed through the Illinois Site Remediation Program.
- Principal Engineer for a Brownfield Redevelopment Site located in Naperville, IL. The redevelopment includes the revitalization of existing 10-acre commercial development with CVOC soil and

groundwater impacts from a former dry cleaner operation. The site is being processed through the Illinois Site Remediation Program.

- Principal Engineer for a Brownfield Redevelopment Site located in Chicago, IL. The project included due diligence (Phase I and Phase II) activities to support the redevelopment of the former bleach product manufacturing facility into new commercial/industrial buildings. Site investigation include the evaluation of thirteen Areas of Interest throughout the 24-acre property. The next phase of the project is establishment of a soil management plan to handle characteristically hazard lead-impact soils which cover approximately 6-acres of the development space.
- Principal Engineer for the review of numerous Phase I Environmental Site Assessments in accordance with the USEPA All Appropriate Inquiry (AAI) Rule and ASTM 1527 standards and Limited Environmental Due Diligence Transaction Screens in accordance with ASTM 1528 standards.
- Principal Engineer for the review of numerous II Environmental Site Assessments to assist clients during the acquisition due diligence process.
- Project Manager for completion of zoning and land use approvals, site improvement plans, utility extension plans, septic field design, landscape design, SWPPPs and storm water management design for over 75 sites throughout Florida, Illinois, Vermont and New York.
- Project Manager and Senior Engineer for the development of a 5-acre parcel in Hoffman Estates, IL into 10 single-family home lots. The project involves the annexation of the property into the Metropolitan Water Reclamation District of Greater Chicago, annexation into Hoffman Estates, rezoning of the property, sanitary sewer extensions, roadway design and grading design.
- Project Manager for an 8+ acre development for a new 72,000 sq. ft. classroom facility in Elgin, IL. Completed design of new parking lot, underground stormwater detention and pedestrian facilities. Integrated stormwater system BMPs due to discharges to adjacent high-quality wetlands. Completed processing of Kane County Stormwater Management Permit Tabular Submittal.
- Project Manager and Lead Design Engineer for a 400-acre drainage study for the development of single-family, multi-family, commercial facilities and a golf course located along the Caloosahatchee River in North Fort Myers, FL. The design included an extensive network of rain gardens to provide stormwater storage and aesthetic value to the golf course while utilizing BMPs for water quality treatment of stormwater.
- Project Manager and Lead Design Engineer for a 200-acre, 395-unit single family and multi-family (high rise) residential subdivision located along the

Caloosahatchee River in Cape Coral, FL. An integrated network of conveyance swales, bioswales, rain gardens, level spreaders, and wet ponds were selected as BMPs in order to re-hydrate and enhance the adjacent wetland ecological preserve.

- Project Engineer for drainage design of a 397-acre revitalization project of an existing ski area/lodge and a new 46-lot residential subdivision in Snow Valley, VT. Designed ten wet ponds and associated conveyance systems to meet water quality and pretreatment standards. BMPs were implemented in the design including the use of media filtration. The design included the preservation of existing wetlands, protected bear habitats and historic trails.
- Drainage Design Engineer for a 56-acre development of a 7-unit single family residential subdivision in Ludlow, VT. Designed project to meet the State of Vermont Agency of Natural Resources Ordinances.
- Drainage Design Engineer for a 193-acre development for a 24-unit single family subdivision in Winhall, VT. Designed project to meet the Vermont Agency of Natural Resources Ordinance requirements including BMP utilization for stormwater credits.
- Project Manager for a 1-acre commercial retail project in Schaumburg, IL. Completed site design, utility design, parking lot layout, mass grading, stormwater management design, project team coordination, and engineering cost estimates.

Insurance and Litigation

- Expert witness for the analysis of property damage which allegedly occurred due to stormwater runoff in Glendale, WI.
- Lead Engineer for leak duration analyses for light crude oil pipeline releases in Manitoba, Canada and Marshall, MI for an insurance claim. The detailed duration analysis involves the calculation of various parameters and scenarios which comprised the releases.
- Senior Engineer responsible for conducting a cost evaluation for the remediation of an 8,500-foot tetrachloroethene (PCE) groundwater plume in Montana. The evaluation included the review of investigation, remediation and oversight costs submitted as part of an insurance claim.
- Senior Engineer responsible for completing a failure investigation summary report for a light crude pipeline release in Alberta, Canada as part of an insurance claim review. The release occurred within a river crossing. A pipeline girth weld failed and ruptured due to riverbed scouring which exposed the pipeline causing high cycle fatigue.