

Qualifications Summary

- More than 30 years of experience including site closures, Remedial Investigation and Feasibility Studies, Environmental Restoration, engineering design and construction including groundwater treatment, soils biotreatment, transportable incineration of contaminated soils and Emergency Response.
- Provided concept engineering, developed cost estimates and provided expert witness services for the removal of thorium contaminated soil in and around Kress Creek in Warrenville, IL.
- Provided Project Management training to over 500 engineers and scientists. Developed and trained personnel in 22 hour, three day training session in the management of scope, schedule, budget, risk, quality, contract and procurement, human resources and communications.
- Conducted Remedial Investigations and Feasibility Studies.
- Providing Resource Conservation and Recovery Act (RCRA) compliance, regulatory negotiation, closures and consulting services.
- Conducting RCRA facility investigations (RFIs) and corrective measure studies (CMS).
- Concept design and engineering and geological services in the design of new landfills and the expansion of existing landfills.
- Experienced in Environmental Due Diligence, Phase I and II ESAs and Facility Deactivation Projects.
- Regulatory negotiations and expert witness testimony.

JOHN W. THORSEN, P.E.

Registration

Registered Professional Engineer (P.E.) in the States of Illinois, Indiana, Michigan & Wisconsin

Fields of Competence

- Providing Resource Conservation and Recovery Act (RCRA) compliance, regulatory negotiation, closures and consulting services.
- Conducting RCRA facility investigations (RFIs) and corrective measure studies (CMS).
- Environmental Restoration, engineering design and construction including groundwater treatment, soils biotreatment, transportable incineration of contaminated soils and Emergency Response.
- Soil and groundwater remediation.
- Concept design and engineering and geological services in the design of new landfills and the expansion and operation of existing landfills.
- Environmental Due Diligence, Phase I and II Environmental Site Assessments and Facility Deactivation Projects
- Emergency response services in environmental Protection and public safety

Credentials

M.S., Urban and Regional Planning, Southern Illinois University (1975)

B.S.E., Engineering, Purdue University (1972)

Employment History

2011 – Present	Autumnwood ESH Consultants
2005 – 2011	Matrix Environmental, Inc.
2003 – 2005	Tetra Tech, Inc.
1981 – 2003	Weston Solutions, Inc.
1974 – 1981	Wisconsin Department of Natural Resources

Key Projects

Landfill Engineering, ARF Landfill, Grayslake, Illinois. Provided all engineering and management consulting services in the operation of this 20-acre landfill. Services included design of a vertical and horizontal expansion of the landfill including leachate collection and treatment and landfill gas management; waste stream acceptance; the design and construction of a wheel wash to keep mud off the adjacent county highway; surveying to determine remaining available air space for waste disposal and acquisition of all state and local permits.

Landfill Engineering, Land & Lakes Landfill, Joliet, Illinois. Provided geological and hydrogeological services and concept and design engineering services to design and obtain an Illinois Permit to Construct a new 120-acre landfill for Land & Lakes, Inc. Services included the design of a totally enclosed concrete culvert to divert flow in a naturally occurring upland creek under the landfill using flows calculated for the one hundred year storm. The landfill base and leachate detection and collection system were designed above this culvert.

Solid and Hazardous Waste Management, Uranium Hexafluoride Manufacturer, Illinois. Prepared Part B permit application and obtained Part B permit for hazardous waste treatment, storage and disposal facility with five lagoons. Applied for and received the only exemption issued by from Region 5 EPA to the double lining standards for the lagoon after a field investigation showed that no leaking had occurred after ten years of operation as a single membrane-lined lagoon system constructed in clay subsoils.

Solid and Hazardous Waste Management, Aztec Catalyst, Elyria, Ohio. Prepared RCRA Part B permit Application and received Part B permit for hazardous waste storage and treatment at this chemical manufacturing facility. Planned and conducted an RFI and CMS to address wastes that has been buried on used property on the site. Arranged for the excavation and destruction of most of this waste in a preexisting on site incinerator. Designed, constructed and currently operating a groundwater extraction, treatment (15 gpm iron removal, packed tower aerator and granular activated carbon polishing) and reinjection facility to treat VOC contaminated groundwater. Currently seeking NPDES permit for a surface water discharge to speed up the rate of extraction and treatment that is currently limited by the reinjection wells' ability to accept water.

Dredging and Ecosystem Restoration of Butler Lake, Libertyville, Illinois, U.S. Army Corps of Engineers. Provided Construction Quality Management Program Services to the Bulter Lake Project. This is a Corps Quality Control program mandating submittal of shop drawings, product data samples, design data, test reports, certificates, manufacturer's instruction and/or operation and maintenance data, as appropriate for each aspect of a construction project. The Corps-approved submittal are then followed by Preparatory Meetings then Initial Meeting to assure the Corps that the Contractor has adequately planned, purchased the materials needed to execute, informed the employees of the works, including the hazards associated with it. This scope of work for QC was done for each activity associated with the Butler Lake Ecosystem Restoration Project which included Native Prairie Restoration, constructing a native Prairie Buffer, planting 3,520 linear feet of water willow, removing concrete from the shoreline, regrading the shoreline, stabilizing the shoreline with Geoweb, constructing eighteen riffles and constructing three fishing stations.

Remedial Investigations and Feasibility Studies, Illinois EPA Superfund Site, Illinois. Environmental restoration utilizing high-temperature thermal incineration of soil, debris, sludge and liquid with high concentrations of polychlorinated biphenyls (PCBs) and prepared design plans and specifications for capping of residual low concentration PCB contaminated soil. Performed remedial

Key Projects (Continued)

action including liquid removal, excavation, material handling, shredding and screening, on-site incineration of sludge, soil and drums and post-incineration ash stabilization followed by capping with a multi-media cover.

Remedial Investigations and Feasibility Studies and Construction, Landfill Superfund Sites. Conducted the RI/FS at the 80-acre Municipal Landfill No. 1 in Belvidere, Illinois. Conducted the RI/FS at the 80-acre Bragg Landfill in Marion, Indiana. Placed a RCRA landfill cover, a groundwater extraction and VOC treatment facility, a storm water control facility and a biological soil treatment facility at the DOE Mound Plant in Miamisburg, Ohio. Conducted the RI and the Cap design at the J&L Steel Landfill in Oakland, Michigan. Managed the cap construction at the Onalaska, Wisconsin Landfill No.1, the Lake Sandy Jo Landfill, a 40-acre landfill in Gary, Indiana, the Forest Waste Products Landfill in Genesee, Michigan and the Bowers Landfill in Circleville, Ohio.

EPA Region 5 Technical Assistance Team (1982 – 1984) and Superfund Technical Assistance and Response Team (200 – 2002), Chicago, Illinois. Served as the Region 5 Team Leader in the 1980s and as Assistant Team Leader in the 2000s providing Emergency Response and technical assistance to EPA Region 5. Personnel were rotated on and off 24 hour on call duty. We also provided rapid response and planning to remove hazardous materials where there was imminent danger to the public health or the environment and there was no responsible party available to remediate the situation in a timely manner.

Lagoon Maintenance and Management, Chicago Park District, Chicago, Illinois. Provided maintenance and management of electro-mechanical equipment associated with the park lagoons. This project included the spring deployment and fall retrieval of 8 fountains and two aspirating aerators. The deployment involved deploying it in the lagoon and coordinating with CPD electricians to provide power to the fountain. The retrieval included disconnecting the electrical service, power washing and storing it for the winter. Matrix also maintained 16 compressors that feed a total of 40 aerator stones. Maintenance included checking each compressor for vane wear and replacing the vanes and gaskets, if worn; repair of nonworking compressors; sinking floating air lines; unclogging clogged aerator stones and responding maintenance calls from CPD.

RCRA Compliance, Regulatory Negotiations and Facility Closure, Techalloy, Company, Inc., Union, Illinois; Perris, California; Northhampton, Massachusetts. Provided Resource Conservation and Recovery Act (RCRA) compliance, regulatory negotiation, closure and consulting services for stainless steel processing company. Closed RCRA treatment facility. Negotiated RCRA administrative consent order and conducted RCRA facility investigation (RFI) and corrective measures study (CMS) for volatile organic compound (VOC) plume in groundwater. Obtained National Pollutant Discharge Elimination System (NPDES) discharge permit, designed, constructed, started up and later expanded 300 gallon per minute groundwater extraction, packed tower aerator and tray aeration system with iron removal as a pretreatment process. Provided O&M consulting and trouble shooting services for this facility. Designed, constructed and started up soil vapor extraction facility to remove the source of the VOC contamination.

Environmental Impact Analysis, The United States Department of Energy, Mound Plant, Miamisburg, Ohio. Completed a detailed Environmental Assessment of the radiological and chemical impact of the operations at this 300-acre research and production laboratory for Department of Energy to facilitate the closure.

Key Projects (Continued)

Environmental Impact Analysis, Confidential Energy Client. Conducted Environmental Assessment and Wetlands Delineation for property being considered for the placement of a peaking gas fired power plant in McHenry County, Illinois. This information was required by Illinois Environmental Protection Agency to evaluate the placement of the facility on that property. All state permits and approvals were obtained.

Phase I and Phase II Environmental Site Assessments, Various Locations Throughout United States. Technical review and lead investigator for Phase I Environmental Site Assessments (ESAs) in accordance with American Society of Testing and Materials standards for numerous industrial, commercial, and agricultural sites. Project Manager for Phase II and Phase III ESAs consisting of lead paint and asbestos contamination at urban cellular antenna sites, subsurface investigation for underground storage tanks, landfill materials, and soil and groundwater contamination at various industrial and commercial sites.

Property Transaction Consulting Projects, Various Locations. Assisted property buyers and sellers with assessing environmental conditions and developing appropriate contract documents related to these conditions.

Phase I and II Environmental Site Evaluations, Coating Company Acquisition (20 Properties), Concurrent Phase I and II Environmental Site Evaluations. Senior engineer for Phase I and II ESAs of 20 operating coating facilities in 20 different states. Conducted fast track environmental audits as Phase I and, in consultation with the client, conducted limited Phase II investigations to understand the extent of the environmental contamination at the facility and to develop a cost estimate for environmental restoration. This was completed in 6 weeks. Developed strategy for client to negotiate the compensation for the environmental restoration as part of the acquisition deal.

Facility Deactivation Projects, Bell and Howell, Skokie, Illinois. Facility Deactivation projects have included the Bell and Howell facility in Skokie that included a 500,000 ft² building including offices, manufacturing, laboratories and building facilities with drums, lab chemical, asbestos and general production and waste materials.

Facility Deactivation Projects, GM Fisher Guide, Elyria, Ohio. The GM Fisher Guide facility in Elyria, OH was a 1,000,000 ft² that manufactured parts for GM. This facility included offices, manufacturing, wastewater treatment and waste disposal areas.

Environmental Health and Safety, Confidential Client. Has consulted with a long-term environmental client in providing health and safety consulting services in addition to the engineering and environmental services provided over the past 17 years. The Health & Safety Consulting Services are primarily to assure compliance with OSHA standards that has included program development, compliance auditing and training. Programs developed included Contingency Plans, Emergency Action Plans, Confined Space (Permit Required) Program, a Compressed Gas Management Plan, Lockout/Tagout and Electrical Safety Program, a Respiratory Protection Program, a Hazard Communication Program, a Bloodborne Pathogen Management Program, Personal Protective Equipment Program and a Hearing Conservation Program.

Remedial Investigations and Feasibility Studies, Plumbing Fixtures Manufacturing Facility, Wisconsin. Developed and negotiated the scope of the remedial investigation (RI)/feasibility study work plan for the RI with Wisconsin Department of Natural Resources and Environmental Protection

Key Projects (Continued)

Agency (EPA). Were successful in limiting the investigation to chemical compounds used at the facility in order to limit the scope and cost of the RI. Conducted Phase I RI to determine if there was any contaminant migration emanating from the on-site landfill that was primarily composed of foundry waste. Conducted Phase II RI to confirm extent of migration of contaminants from the landfill.

Soil and Groundwater Remediation, Medical Laboratory Facility, Des Plaines, Illinois. As part of the construction of a medical laboratory facility, the owner installed underground gasoline, diesel and waste solvent tanks for their use in operating their business. When removing the waste solvent tank the first time, they pumped 750 gallons of waste xylene from a 550-gallon tank. We worked with our client to determine the cause and extent of the problem. The cause was that the resin welds on the fiberglass-reinforced tank were soluble in xylene. All the tanks were made of the same material and the client was concerned that it would attack the gas and diesel tanks. Since it was a relatively small amount of xylene, we recommended that they pump the groundwater back and forth between observation ports at each of the 12 tanks in this tank farm. Cleaned up the contaminated groundwater problem to the regulatory standard for only \$10,000 over a 10-week period.

Soil and Groundwater Remediation, General Motors Fisher Guide Division, Elyria, Ohio. Provided General Motors with the consulting and construction services necessary to design the closure of three wastewater lagoons at the facility and design a secure landfill within the lagoon footprint to dispose of the sludges from the lagoons. This included a feasibility study, regulatory negotiations, permit acquisition, engineering design and the complex logistics of closing three lagoon and, at the same time, constructing a secure landfill in the lagoon footprint.

Regulatory Negotiations, Coatings Manufacturing Facility, Coffeyville, Kansas. Negotiated the reclassification of a 300,000 cubic yard Waste Pile to an Interim Status RCRA Landfill for an industrial coatings client in Kansas thereby saving the \$300 million it would have cost to transport and dispose of the waste pile and the transportation risk of hauling the materials to a licensed hazardous waste landfill. Closed the waste pile as a RCRA landfill for less than \$5 million.

Expert Witness Testimony, Chemical Manufacturing Client, West Chicago, Illinois. Served as expert witness for chemical company client in show-cause NRC hearing regarding the need to remediate radioactive contamination in a streambed and the adjacent floodplains. Strategy was to show risk vs. cost. NRC administrative judge ruled in favor of our client.

Expert Witness Testimony, Plastics Manufacturing Client, Lake, Bluff, Illinois. Served as expert witness for industrial client seeking reimbursement under the National Contingency Plan (NCP) from the prior owner for remedial actions to clean up the site prior to sale to a third party. At deposition, convinced attorneys for former owners that NCP was followed appropriately and that the owner had a viable claim against the former owner. This was settled out of court.