Integral is a national science and engineering firm providing innovative solutions and a wide range of services for the forest products industry.

We stay apprised of industry developments and regulatory issues affecting our clients, and regularly monitor and provide input on impending regulatory changes. Integral staff have successfully conducted more than 100 projects for the forest products industry, spanning water quality studies, stormwater and wastewater management, remediation and monitoring, air quality, permitting and regulatory compliance, Proposition 65 (Prop 65) determinations, risk assessment, and litigation support.

Water Resources and Modeling
Integral has extensive experience in addressing water management issues, including water resource evaluation and development. Our modeling expertise includes conceptual site modeling; groundwater and surface water modeling; chemical fate and transport analysis; and unsaturated-zone modeling.

Site Investigation and Remediation
Integral has effectively characterized and remediated soil, sediment, surface water, and groundwater for sites involving a broad array of contaminants, complex migration pathways, and risks to human and ecological receptors. We also provide state-of-the-science sediment remediation and monitoring services.

Permitting and Regulatory Compliance
Our regulatory specialists help clients comment on standards, negotiate and modify permit conditions, monitor performance, prepare for inspections, review reports, comment on new regulations, and ensure product compliance with health-based regulations and legislation, such as Prop 65. Our scientists also provide expert testimony in public hearings on regulatory rulemaking. In addition, we perform all aspects of stormwater management for National Pollutant Discharge Elimination System (NPDES) permit compliance. These services include conducting compliance inspections, providing guidance and training, and developing site-specific water quality criteria.

Risk Assessment
Integral scientists conduct human health and ecological risk assessments at contaminated sites across North America under a variety of federal and state regulatory programs. Our site-specific assessments provide for technically sound and cost-effective cleanup and management decisions. In addition, our technical approaches to natural resource damage assessments have supported cooperative and negotiated settlements. Integral also provides technical assistance to the forest products industry on water quality issues, such as fish consumption, that affect multiple states.
Services for Forest Products Industry

Litigation Support
Cost allocation for site remediation and restoration and questions about the timing and sources of releases often lead to legal disputes. Integral’s staff have successfully provided expert witness support—including forensic analysis—in support of litigation. Our litigation services include helping clients evaluate technical information, providing expert testimony, participating in mediation or settlement negotiations, and preparing effective mediation and trial exhibits.

Key Personnel
- Linda Baker, R.G., L.H.G.
- Alexis Clark, R.G., L.H.G.
- Edward Conti, C.E.G., C.H.G., P.G.
- Eron Dodak, R.G., L.H.G.
- Patrick Gwinn
- Matthew Hillyard, P.E.
- Lucinda Jacobs, Ph.D.
- Laura Jones
- Russell Keenan, Ph.D.
- David Livermore, R.G., L.H.G.
- William Locke, P.E.
- Chris Lyles
- Jennifer Sampson
- John Samuelian, Ph.D.
- Erik Strandhagen, GISP
- Randi Wexler

Selected Projects

Sediment Characterization, Dredging Permit Renewal, and Water Quality Services for a Forest Products Company, Washington
Integral conducted sediment sampling and testing for a forest products facility that included sampling to determine the suitability of dredged material for in-water disposal. Additional Integral services included permitting support and multiagency coordination for a 10-year maintenance dredging permit, which involved preparation of the necessary permit applications and a biological assessment. As part of this effort, Integral prepared a State Environmental Policy Act checklist, a mitigation plan, and a water quality monitoring plan.

Product Risk Assessment for Prop 65 Compliance, Maine
Integral provided toxicology, exposure assessment, and human health risk assessment services to a paper manufacturer with facilities in Maine and Wisconsin to verify its compliance with California’s Prop 65 rule. Services included estimating potential concentrations of Prop 65 compounds in manufactured consumer paper products and comparing compound-specific exposure levels with state-established risk levels. In addition, we assessed potential exposures to workers and consumers. Integral advised the client on targeted data gathering efforts and developed reference doses for Prop 65 chemicals, where necessary. Prop 65 compliance was demonstrated.

NPDES Permitting, SPCC Plans, and Stormwater Management for Sawmills and Other Forest Products Facilities, California
Integral engineers and scientists have supported development of spill prevention, control and countermeasure (SPCC) plans; performed NPDES permit negotiations and compliance activities; and provided stormwater compliance support for more than 25 sawmills and related forest products facilities throughout California.

Litigation Support, Expert Testimony, and Environmental Forensics, Active Wood Processing Facility, Arkansas
Integral prepared expert technical reports and provided expert testimony regarding alleged releases of dioxins, PAHs, and other chemicals from an active wood products facility. Our efforts included collecting attic dust and surface soil samples to characterize PAH and dioxin/furan concentrations and identify potential sources, reviewing analytical data quality and plaintiff expert reports, preparing court exhibits, and providing courtroom testimony. The case was tried in U.S. District Court in 2010 and the jury rendered a unanimous verdict in favor of Integral’s client.