Baker & O’Brien’s services to the legal community and its clients have included: (a) asset valuations; (b) accident investigations of process plant accidents and incidences to determine cause and liability; (c) property damage and business interruption insurance losses; (d) contract disputes involving engineering, construction, and operations of process plants and pipelines; (e) product quality issues in the transportation, storage, and processing of hydrocarbons; and (f) assessments of procedures and safe practices employed in operations. Our clients in the legal community include some of the world’s largest law firms.

In performing dispute resolution work, our consultants have advised legal teams on a wide range of technical and economic issues across the hydrocarbon processing industries. This has often included discovery requests and preparation of deposition questions. We have performed damage calculations, standard of care analyses, and normal industry practice analyses for our clients. Our analyses and conclusions have been presented at court proceedings where our expert testimony has been relied upon by judges, juries, and arbitrators.
RELATED EXPERIENCE

- **Air Emissions Dispute**
  Reviewed air emissions data and categorized events; provided understanding and analysis to air events with respect to process equipment and refinery and chemical plant operations.

- **Ammonia Manufacturing Litigation**
  Assisted a major equipment supplier in defending allegations that its equipment was the cause of a multi-million dollar business interruption claim. Assisted in discovery, evaluated operating records, estimated business interruption losses due to a power outage, and provided expert testimony.

- **Ammonia Plant Insurance Dispute**
  Assisted in a claims dispute between a major ammonia manufacturer and claims adjusters. Evaluated claims involving construction defects and warranty work amounting to $3 million. Assisted in documenting claim, inspected plant, evaluated project records, and reviewed maintenance records.

- **Ammonia/Urea Plant**
  Worked in support of client and its attorneys to investigate the cause of a reactor failure and defense against claims by OSHA and third parties. Effort required extensive knowledge and analysis of process equipment and operating practices.

- **Application of Superfund Tax to Gas Processors**
  Reviewed legislation relating to the Superfund Tax and its applicability to natural gas processors who produce natural gasoline at their facilities. Compared natural gas processing with crude oil processing in order to show whether the Superfund Tax was intended to be levied on gas processors.

- **Asbestos Exposure Litigation**
  Assisted a manufacturer of industrial equipment in defending personal injury claims related to asbestos exposure. Assisted in discovery, assessed the likelihood and degree of employee exposure to asbestos during maintenance activities, and reviewed equipment specifications, project histories, and maintenance records for various power generation units. Provided opinions regarding the potential for personal injury due to asbestos exposure in the course of normal work activities.

- **Benzene Exposure**
  Assessed possibility of employee exposures to benzene during prior refinery operations. Reviewed plant operating history and emissions records and provided preliminary opinions regarding potential benzene exposure to plaintiffs.

- **Business Interruption Damages Claim by Concrete Supplier**
  Evaluated the business interruption claim by a concrete products producer and marketer against an oil refiner for damages allegedly incurred as a result of an incident at the client's refinery. The engagement included vetting and analysis of the plaintiff's claim, advising the attorneys regarding discovery requests, and the development of alternative damage claim estimates.

- **Business Interruption**
Performed an analysis of the schedule delay and financial impact from chemical plant downtime due to a major equipment fabrication error.

- **Caustic Soda Contract Dispute**
  Reviewed caustic soda plant expansion and the ability of supplier to deliver the required volume of caustic soda under contract. Advised on the reasonableness of the expansion construction schedule based on review of environmental permits, public data, and internal documents on construction activities.

- **Chemical Plant Accident Investigation**
  Investigated an accident at a polyethylene production and storage facility. Reviewed equipment design, inspection and repair history, training of personnel, industry practices, and standards of care.

- **Chemical Plant Insurance Claim Support**
  Provided comprehensive technical and accounting support for a property damage claim settlement and analysis for a chemical manufacturing plant that was damaged during Hurricane Ike. Work included review and vetting of all repair cost estimates and invoiced repair invoices, as well as analysis of claimed damages discovered and submitted post-recovery. Assistance was also provided to the client during final claim settlement negotiations.

- **Class Action Environmental Litigation**
  Provided assistance in evaluating environmental issues which led to a neighborhood lawsuit. Reviewed plant operating and emissions history and provided preliminary opinions regarding the potential for future impact on local community.

- **Cogeneration Plant Property Tax Dispute**
  Assisted municipality in developing preliminary value estimates for cogeneration facility under appeal. Work focused primarily on income approach values based on various forward pricing scenarios.

- **Commercial Contract Litigation**
  Assisted in a claim related to a force majeure incident related to the recommissioning of a facility after a hurricane. Examined conformance with standard industry protocols and applicable laws, standards, and regulations. Assessed whether the facility operator acted in a reasonably prudent manner with respect to the commercial and technical issues necessary to safely restart the facility as soon as possible.

- **Condensate Feedstock Contract Dispute**
  Assisted in a claim between: (1) a European refiner and ultimate condensate supplier, and (2) an intermediary company, concerning allegations that the intermediary company was prevented from obtaining condensate supplies for sale to the refiner. Studied the potential availability and quality of condensates in the producing region and elsewhere. Identified potentially suitable condensates for the refinery. Based on forecasts of oil and petroleum product prices, prepared an estimate of potential economic damages. Described how term feedstock contracts for condensate are typically concluded. Testified at an arbitration in London.

- **Construction Dispute - Gas Plant**
  Provided expert reports and testimony regarding project management issues, alleged defects, and liquidated damages for international arbitration between owner and contractor. The project involved an offshore platform, an undersea
pipeline, an onshore pipeline, an onshore cryogenic gas processing plant, and a sales gas pipeline.

- **Construction Dispute - Petrochemicals Plant**
  Prepared a confidential "Cold Eyes Review" assessment concerning a contemplated claim between an owner and a contractor of a grassroots petrochemical facility. Reviewed draft claims, researched evidence, and interviewed key personnel in order to produce an independent view of the claim.

- **Construction Dispute Litigation - Gas Plant**
  Assisted in a litigated dispute between Owner-Operator and Engineering & Construction Contractor over whether a cryogenic gas plant, as engineered, procured, and constructed, met the stipulated contractual performance guarantees; prepared expert witness rebuttal report with respect to relevant issues.

- **Contamination at Bulk Petroleum Storage Facility**
  Evaluated the potential long-term contamination at a bulk storage facility resulting from the sediment contained in incoming hydrocarbons.

- **Contract Dispute Resolution**
  Evaluated inter-company petrochemical stream transfers and cost allocations pursuant to the mutually agreeable resolution of a contractual dispute between entities engaged in multiple across-the-fence feedstock and product exchanges.

- **Contractual Dispute**
  Performed a due diligence of owner allegations and contractor claims pertaining to a Lump Sum-Turn Key contract termination. Reviewed documents, schedules, witness statements, and expert reports to advise counsel on implications of contracting strategy and contract management following award.

- **Contractual Dispute - Property Tax**
  Prepared an analysis of property taxes relative to refining complexity for a number of refineries in a particular region, using public information, for hearings with a district appraisal board.

- **Cost Allocation Report**
  Following a refinery fire incident and rebuild, performed an analysis of all elements of the repair costs, and produced a report for insurers that assessed and allocated repairs into three categories: identical replacement, functional replacement, and upgrade.

- **Crude Oil Contamination Dispute**
  Represented refining company defendant that claimed damages caused by crude with high metals content that were allegedly caused by a sour crude producer that injected high-metals crude into an ultra-sweet crude gathering pipeline. Case settled prior to deposition and trial.

- **Crude Oil Metering Dispute**
  Investigated alleged tampering with crude oil Automatic Custody Transfer volume and quality measuring devices. Reviewed common carrier pipeline tariffs, inspected site, and analyzed measurement data.

- **Crude Oil Processing Contract Dispute**
Served as expert witness on behalf of an international oil trading company, with a crude oil processing contract to supply oil to an independent refining company, that alleged that the refiner misappropriated products to its own account. Analyzed the refinery production and product disposition under each processing deal over a period of three years and calculated the trader's damages under the misappropriation. Prepared a detailed damages claim for insurance purposes and defended the claim at trial in State of New York.

**Crude Oil Quality Dispute**
Acted as expert witness in a dispute between a major oil company and a small crude oil supplier that allegedly delivered "dumbbell" crude into the oil company's common carrier pipeline system. Prepared a report covering standard industry pipeline practices, crude oil quality acceptance, crude oil trading, and refining values of various crude oils. Calculated damages incurred as a result of the poor quality crude oil delivered and the impact on refiners receiving crude from the pipeline.

**Crude Oil Royalty Litigation**
Assisted in a lawsuit between an oil company and a royalty owner of oil company's crude oil production for alleged underpayment. Work included identification of the various markets for this crude oil to establish whether its value in these markets was consistent with the price received.

**Crude Oil Sludge Accumulation**
Following a claim concerning sludge accumulation in crude oil storage tanks over a twenty-year period, advised as to the creation of sludge in crude oil tanks, its accumulation, the ways to prevent or control it, and the conventional ways of dealing with it.

**Damages from Steam Turbine Failure**
Assisted electric cooperative in determining economic damages resulting from failures associated with a new steam turbine that was provided and installed by a turbine manufacturer at a power generation facility. Conducted independent assessment of economic losses suffered by electric cooperative as a result of both short-term and long-term performance shortfalls and outages.

**Defective Product Lawsuit**
Provided an expert report on behalf of a pressure safety relief device manufacturer in defense of a claim that a device did not operate as designed in a reactor overpressure incident.

**Defend Wastewater Treater Air Emissions**
Requested to provide expert witness opinion of industrial standard of care for wastewater treater operations. Issue concerned volatile organic compound (VOC) emissions from a wastewater treater feed tank.

**Delayed Coker Fire Investigation**
Assisted client in investigating the cause of a coker hydrocarbon release and fire, which resulted in multiple fatalities. Visited refinery and reviewed procedures and events preceding the incident to identify potential areas of causation and liability. Operating experience and knowledge of technical and safety issues and of industry and management practices helped the client in addressing specific claims issues.
- Dust Collection System Risk Assessment
  Performed a quantitative risk assessment on a dust collection system associated with the multifolder process at a large paper products manufacturing facility. Purpose was to determine if OSHA stipulations were appropriate.

- Economic Damages from Power Loss
  Determined economic damages resulting from extensive power loss due to a circuit breaker failure at three large complex refining and petrochemical facilities owned by three major energy companies.

- Economic Damages Litigation - Plant Explosion
  Retained concerning claims of design errors and failures in project management, following explosions and fires at a petrochemical plant. Conducted in-depth reviews of engineering, procurement, and construction agreements; process technology and design basis; construction records; owner's operating procedures; and actual operating history since start-up of the plant. Evaluated operating system provided against prevailing industry standards and examined potential for equipment failure.

- Economic Damages Litigation - Plant Fire
  Following furnace damage and rebuild, worked on behalf of insurer/defendant to assess property damage costs and ensure that normal maintenance/scheduled turnaround/betterment costs were accounted for separately. Similarly, business interruption costs were compiled with reference to market situation and plaintiff's ability to mitigate by using product volumes that were available from inventory.

- Ethylene Oxide Plant Explosion
  Analyzed the reasons for an explosion in an ethylene oxide purification distillation tower that resulted in property damage estimated at $100 million. Reviewed procedures and practices in response to OSHA allegations.

- Evaluation of Refinery Competitive Environment
  Helped in the defense of a major oil company against the Federal Trade Commission's (FTC's) claims regarding the anti-competitive nature of the company's proposed acquisition of a West Coast-based refining and marketing company. Prepared a detailed report analyzing the West Coast refining industry. Assessed the competitive position of each West Coast refinery processing Alaskan crude oil and how they might respond to changes in crude oil prices and/or availability.

- Expert Consulting Services
  Provided expert consulting services concerning a personal injury incident that involved a weld failure and a release of hydrocarbons.

- Fair Market Valuation of Refinery for Ad Valorem Tax
  Fair market valuation of a major US Gulf Coast refinery for the local appraisal district. Provided a critique of the valuation methodology used by the refinery as basis for lawsuit seeking reduced ad valorem taxes.

- Force Majeure Dispute
  Provided expert report relating to a claimed force majeure event, due to defects in critical equipment that was required to be installed during a turnaround. The correction to the defects then resulted in the late delivery of the equipment
that extended a petrochemical plant turnaround.

- **Litigation - Fuels Terminal Operations Assessment**
  Performed expert advice on fuels terminal operations that focused on the practices and procedures with an emphasis on the filling of product tanks.

- **Gas Measurement Dispute**
  Performed a preliminary audit of natural gas measurement discrepancies between an unregulated gathering system and an interstate pipeline. Identified periods that meters were out of service and utilized system balance to estimate deliveries.

- **Gas Pipeline Rupture Dispute**
  Performed an independent assessment of the costs incurred, including the lost natural gas inventory, on a ruptured interstate gas transmission line for which the owner requested a multi-million dollar damage reimbursement. A report was prepared for mediation which resulted in a negotiated settlement.

- **Gas Well Incident**
  Prepared expert report on behalf of client versus OSHA. Matter involved failure of a pipe carrying natural gas that injured one contractor. OSHA cited client for failure to provided a safe means of pressure relief for vessel (in-line heater) and piping.

- **Gas Well Production Dispute**
  Reviewed gas well production (meter readings) and pipeline pressure history to determine if gas was delivered into gathering system when the system was not being monitored and the local injection compressor was not operating.

- **Gasoline Contamination Dispute**
  Provided expert report on refinery practices concerning caustic carryover in FCC gasoline mercaptan treaters. Class action plaintiffs, consisting of retail station owners, alleged underground storage tank damage due to gasoline contamination.

- **Gasoline Spill Litigation**
  Assisted a contractor in defending allegations that its work contributed to a gasoline spill from a retail gas station that contaminated the well water of 130 homes. Assisted in discovery, evaluated the mechanical integrity of equipment, disproved unique theories of causation, inspected site, and attended destructive testing procedures.

- **Heliport Pipeline Leak**
  Prepared expert rejoinder report on leakage from fuel storage, pipeline, and loading system located at a heliport and marine dock.

- **HF Alkylation Incident**
  Investigated facts related to pump casing rupture where hydrofluoric acid was released. Reviewed refinery operations, training, and safety practices. Advised attorneys on generally accepted industry engineering practices and standards regarding design, operation, and maintenance of hydrofluoric acid alkylation unit.

- **Historical Refinery Waste Generation**
Provided expert report on the probable types and amounts of wastes produced by a refinery during its 50-plus year operating life. Study was part of litigation involving assignment of responsibility for an EPA superfund site.

**Hurricane Rita Claim**
A petrochemicals company experienced a loss of steam supply and subsequent unscheduled shutdown resulting in production losses and major damage to the facility. The steam supplier attributed the steam outage to boiler damage caused by Hurricane Rita, which made landfall several months earlier. Assisted the insurers by investigating the link between Hurricane Rita and steam supplier boiler outages.

**Incident Analysis - Petrochemicals**
Performed an investigation analysis following fire and explosion incidents at a major Gulf Coast manufacturing facility. The engagement entailed development of the sequence of events, root cause analysis, assessment of the decision to rebuild, and reconstruction monitoring. An independent project schedule and cost estimate for the plant reconstruction was developed.

**Industrial Incident**
Investigated cause of dust cloud deflagration at a Vitamin E production facility. Assessed that bulk solids handling procedures were modified without considering the original safety design basis for the equipment. Developed expert opinions on causation.

**Insurance Arbitration**
Investigated the circumstances surrounding an oil spill at a Gulf Coast refinery following a hurricane. Work activity centered around whether the refiner acted as a "prudent operator" before and after the hurricane and whether the owner was entitled to a claim for damages based on an insurance policy's pollution exclusion clause. Prepared a written report for submission into evidence in an international arbitration.

**Insurance Litigation of Refinery Environmental Contamination**
Provided expert witness testimony and analysis in the litigation of insurance coverage for previous environmental contamination of petroleum refineries located on the East Coast, West Coast, and Midwest. Evaluated both liability and damage claims based on the legal interpretation of multiple insurance contracts for each site.

**Interstate Pipeline Inspection Practices**
Provided expert testimony on inspection and maintenance practices for interstate petroleum products pipelines. Issues included reasonable depth of additional overfill and width of maintenance right-of-way.

**Investigate Refinery Heater Explosion**
Performed root cause analysis of an explosion at a refinery heater and identified contributing factors. Performed a review of safe operating procedures, including shutdown and start-up of heaters. Provided expert testimony.

**Investigation of Gas Processing Plant Incident**
Assisted a major oil company in the investigation of an explosion and fire with resulting failure of natural gas supply from onshore crude oil, condensate, and natural gas processing facilities located near the Bass Strait of Australia. Reviewed facility design, operating, and maintenance standards and prepared expert testimony for use by a Royal
Commission formed by the State of Victoria.

- **Investigation of LPG Pipeline Rupture**
  Reviewed operating practices and safety considerations of liquefied petroleum gas pipeline that was shut-in at a river crossing.

- **Ion-Exchange Resin Plant**
  Performed market study and competitive analysis of an ion-exchange resin plant on behalf of a major government agency bank. Study evaluated the financing of an ion-exchange resin manufacturer in the context of possible sale of the plant.

- **Isobutanol Valuation Study**
  In order to assess the potential value of isobutanol as a gasoline blending component, performed simulations of refinery operations at a select group of West Coast refineries to calculate isobutanol value relative to blending ethanol into gasoline.

- **Jet Fuel Contamination Dispute**
  Following product quality issues in major interstate product pipeline movements, reviewed product injection practices and analyses at pipeline injection point. Evaluated analyses at various points along the pipeline to assess possibility of quality degradation.

- **Jet Fuel Underpayment Claim**
  Assessed jet fuel supply contracts to the Defense Energy Supply Center to see if an overpayment claim was justified.

- **Litigation - MTBE**
  Assisted in defense of oil companies charged with supplying gasoline containing the additive MTBE, which was alleged to have contaminated water supplies. Baker & O'Brien was involved in reviewing and analyzing refinery supply, pipeline distribution, and retail marketing of gasoline in the area subject to the dispute.

- **Litigation - Wastewater Treating**
  Provided expert consulting support for a refinery wastewater treating environmental criminal matter. The work required previous experience with and a solid understanding of the plant processes and equipment which are used in treating industrial wastewater.

- **Litigation - MTBE**
  Prepared expert testimony on the issue that MTBE use in reformulated gasoline (RFG) was the result of a federal mandate to use oxygenates in RFG. The legal result was to consolidate several state MTBE cases into federal court. Several other studies performed, including the ability to use other oxygenates and the costs of ethanol logistics.

- **LPG Pipeline Specifications**
  Evaluated pipeline tariffs, product specifications, connection agreements, and liquefied petroleum gas sales agreements, including the determination of fractionator feedstock and product economics, for the export of liquefied petroleum gas to northern Mexico from fractionation facilities in West Texas.

- **M&A Dispute**
Evaluated the foreseeability of project cost overruns that negatively impacted the economics of the acquisition of an EPC Firm.

**Marine Cargo Contamination**
Investigated causes for contamination of a cargo of gasoline delivered by ship to Ecuador. Work included review of contract requirements, gasoline blending practices, surveyor procedures, and issues related to laboratory testing of gasoline.

**Marine Cargo Contamination**
Investigated possible causes for poor quality heavy fuel oil transported by barge. Work included review of fuel oil blending practices, product specifications, blend stock incompatibility issues, and quantification of economic damages.

**Market Value of Natural Gas**
Determined the reasonableness of royalty payments for natural gas by comparing available arm's-length contracts, pricing, and actual costs of gathering, compressing, and processing the gas.

**Natural Gas Royalty Dispute**
On behalf of several producing companies, demonstrated the reasonableness of royalty payments for natural gas by comparing available arm's-length contracts, pricing, and actual costs of gathering, compressing, and processing the gas.

**Natural Gas Royalty Litigation**
Evaluated the design and historical capital costs of a natural gas pipeline system in western Oklahoma. Reviewed system material balances and operator's natural gas measurement practices.

**Natural Gas Tax Dispute**
Following the imposition of a new oil and gas taxation regime, a dispute arose regarding the contractual right of local natural gas producers to "pass through" incremental taxes to their customers. Served as expert witness in front of an international arbitration tribunal established to decide the issue. Key work involved the development of a fair mechanism to allocate recovery and distribution costs between "jointly" produced hydrocarbons, including oil, condensate, natural gas, and natural gas liquids. Prepared and defended specific proposal in the arbitration proceedings.

**Nitroparaffins Litigation**
Assisted in a dispute between an operator and an EPC firm concerning allegations that the process design contributed to an explosion at a nitroparaffins manufacturing plant. Assisted in discovery, evaluated design issues, and provided expert testimony.

**Offshore Pipeline Failure**
Conducted a review of flange failures on a large subsea crude pipeline off the coast of Southern California. The review included original construction specifications, maintenance, inspection, and operation of the pipeline. Also reviewed were the failed component repair plans and execution. Recommendations included: a) complete metallurgical flange analysis; b) preparation of an efficient repair and execution schedule for comparison and analysis.
of business interruption claim; and c) complete subsea modeling of the pipeline for the purpose of failure mode and
time to failure predictions.

- **Offshore Platform Design**
  Assessed design of elevated platform and ladders on a jack-up oil derrick which was under construction. Compared
design to industry standards.

- **Oil Refining Crude Supply Dispute**
  Provided engineering and project management consulting services for litigated dispute between two large oil
  companies concerning an acidic crude oil supply agreement (high TAN crude, high acid crude). Prepared expert
  report.

- **Paraxylene (PX) Contract Dispute**
  On behalf of a major international buyer of paraxylene, prepared an expert analysis concerning damages claimed by a
  large US based supplier. Analysis included a detailed evaluation of supplier's paraxylene manufacturing economics.

- **PVC Plant Litigation**
  Assisted a major manufacturer of PVC resins with defending claims that an explosion was due to a poor process
design that failed to meet government regulations and engineering standards. Assisted in discovery, inspected the
  plant, evaluated procedures and work methods, reviewed applicable standards, and reviewed operating records.

- **Propane Product Quality Dispute**
  Investigated the design and operation of a natural gas liquid fractionation, storage, and loading facility located on the
  Red Sea to determine potential causes of alleged hydrogen sulfide contamination of propane cargoes.

- **Polyurethane Foam Litigation**
  Assisted in claims concerning polyurethane foam system products that were alleged to be defective or unfit for their
  intended use. Assisted in discovery, observed and reviewed work environment and work methods, evaluated
  manufacturing records, reviewed warranty claims, and prepared trial exhibits.

- **Pulp and Paper Mill Incident**
  Analyzed processing operations and engineering design in a pulp and paper mill to determine sequence of events and
  possible causes of incident.

- **Refinery and Chemical Plant Feedstock Valuations**
  Identified and developed the financial impact due to the non-compliance with interplant agreements for feedstock and
  product transfers between a refinery and an adjacent chemical plant. Potential claims exceeded $25 million.

- **Salt Water Disposal Tank Explosion**
  Investigated the cause and origin of a storage tank explosion at an oil and gas salt water disposal facility in Colorado.
  Conducted site investigation and facility/equipment inspections, evaluated system design and operation, and conducted
  witness interviews. Determined cause of explosion and worked with company management to evaluate existing
  policies and procedures for potential areas of improvement.

- **Refinery Finance Litigation**
Economic damages were claimed by the sponsors of a refinery project in Russia due to a failure to obtain funding from a financial institution. Examined claim basis, economic assumptions relied on for the project feasibility study, and actual financial results that would have been realized if the refinery had been built. Provided testimony concerning the relationship between industry margins and the losses incurred by the project sponsors.

**Power Plant Construction Dispute**
Provided expert report and oral testimony on roles and responsibilities of: (1) an EPC contractor under a Lump Sum-Turn Key contract, (2) of owners in awarding and managing such projects, and (3) of the capabilities of owner’s and contractor’s project management teams. The $100 million project involved provision of EPC services to retrofit selective catalytic reduction equipment to existing power generation units, as mandated by the regulatory authorities.

**Refinery Business Interruption**
Prepared detailed analyses of property damage, business interruption, and demurrage claims resulting from a vessel colliding into a refinery dock.

**Refinery Valuation Study**
On behalf of an oil trading group, provided an opinion as to the fair market value of a large European refinery that changed ownership during the 1980s. Client, who previously held an interest in the refinery, filed arbitration proceedings against its former partner, claiming that the refinery was sold for well below market value. Prepared several reports that were submitted as evidence in international arbitration proceedings in Swiss court.

**Underground Storage Tanks Claim**
Assisted client in defending an allegation that Underground Storage Tanks (USTs) at a retail outlet had released gasoline vapors, resulting in contamination of groundwater with MTBE. Assignment included review of procedures for delivery of gasoline from tankers to UST, review of equipment and fittings used in UST, review of hydrogeological data regarding groundwater and contamination plumes, review of the design of vapor recovery systems, and calculations of vapor composition and amounts released. Prepared report to document findings and testified in deposition.

**Power Plant Construction Dispute**
Provided advice on a construction dispute between owner and contractor regarding a project to upgrade and modify a power plant in the Caribbean, which had alleged defects related to the boiler heat recovery section, the desalination plant, seawater cooling piping, and instrumentation.

**Piping Subcontractor Claim Evaluation**
Evaluated the claims by a piping subcontractor for additional quantities of materials due to owner caused delay and disruption on a specialty chemical plant project.

**Reciprocating Compressor Accident**
Reviewed details of non-fatal accident involving a restart of skid-mounted gas compression machinery at a producing well. Upon investigation of the facts, prepared report detailing the proximate cause of the incident.

**Pipeline Contamination Dispute**
Assisted in a claim involving an alleged y-grade/NGL pipeline contamination from a gas processing facility. Examined
the following key areas to evaluate the claim: pipeline hydraulics, laboratory records, chronology of pipeline sample data, reasonableness of claimed expenses, gas processing facility operation, and records.

- **Pipeline Quality Bank Dispute**
  Assisted in a dispute involving crude oil quality bank payments demanded by a pipeline consortium transporting a company’s oil through Central Asia. Studied the quality bank calculation procedure in order to demonstrate if the methodology described in the tariff had been properly applied. Provided examples of methodologies used in other quality banks. Prepared alternative quality bank calculations based on correct application of the methodology. Testified at an arbitration in London.

- **Tank Truck Explosion Investigation**
  Investigated the potential causes and sources of ignition for an explosion that destroyed a road tanker, used to haul raw natural gas liquids from a gas treating plant, that was in a repair shop for the replacement of a pressure relief valve.

- **Petroleum Refinery Dispute**
  Provided overview of turnaround practices and industry standards utilized in the United States and Europe. Evaluated decisions and practices utilized at the subject refinery to determine if those decisions were in compliance with standard practices and whether a decision to optimize the turnaround execution date was a factor in a plant incident.

- **Refinery Valuation Dispute**
  Assisted in a dispute between minority shareholders and company management concerning claims that certain refinery assets were improperly valued when the group's ownership interests were purchased by the company's management. Prepared a detailed valuation of the refinery assets in question and showed how their location, processing capability, and access to feedstocks contributed to their value relative to the competition. Prepared an expert report and testified in Federal Court.

- **Refinery Business Interruption**
  Determined the economic damages suffered by a refiner as a result of multiple incidents which eventually led to reduced feed to the refinery. Project required the analysis of all refining units, including their actual and planned operations and maintenance. Alternative utilizations of feedstock and supply of products were also investigated.

- **Pressure Vessel Failure**
  Investigated the cause of a hydrocarbon release resulting from the brittle fracture of a pressure vessel during start-up at a petrochemical plant. Incident involved multiple injuries and deaths and extensive property damage. Issues studied include ethylene plant design, operating practices and procedures, start-up operations, instrumentation, and safety training.

- **Poly Olefins Plant Explosion**
  Assisted attorneys and company in preparation for litigation and negotiation with government agencies while investigating the cause of an explosion which caused the death of over 20 people. Assisted risk management in preparing and negotiating property damage and business interruption claims in excess of $1.3 billion.
Refinery Fair Market Value Dispute

On behalf of one of the interested parties in a bankrupt oil refinery, conducted a technical and economic evaluation of the facility to determine if the plant was economically viable and had value as a "going concern." Study was submitted into evidence before an international arbitration tribunal established to determine the ultimate disposition of the facility.

Refinery Construction Dispute

Engaged by an Engineering & Construction (E&C) firm to defend it against claims that its poor performance resulted in significant cost increases and schedule delays in the construction of a resid catalytic cracking unit at an Australian refinery. Case centered around whether the prime contractor had fulfilled all of its obligations under the sub-contract and had taken all agreed steps to contain identified potential cost overruns and other factors impacting the schedule. Prepared an expert report on the project and provided evidence at international arbitration.

Pipeline Contractual Dispute

Assisted in a claim between a major U.S. energy provider and project promoters concerning claims that the energy provider defrauded project promoters when it proceeded with the construction of an international natural gas pipeline. Submitted report outlining the differences between energy provider's project and the promoters' project.

Polybutylene Pipe Litigation

Assisted municipal water districts in asserting claims for tens of millions of dollars in damages resulting from defective polybutylene pipe. Assisted in discovery, evaluated research and development records, reviewed state-of-the-art issues, and provided expert testimony.

Polypropylene Manufacturing

Assisted in establishment of insurance claims for property damage and business interruption in connection with a reactor incident during construction of the production facility.

Refinery Construction Dispute

Assisted law firm representing Russian refiner in dispute with U.S. engineering firm that provided a refinery for a location in Russia. Ascertained construction status of units and reviewed issues in dispute regarding design basis, scope of work, and costs for a modular refinery constructed in the U.S.

Polyethylene Production

Assisted client and their attorneys in the on-site investigation of a major explosion and fire at a high-density polyethylene (HDPE) facility. Work required extensive knowledge of process, technology, and equipment.

Power Plant Contractual Dispute

Acted as expert witness in a contractual dispute over the construction of a gas-fired power plant. Issues concerned the conceptual development of the project and the various ownership rights outlined in the original contract for development.

MTBE Litigation

Prepared declaration of gasoline distribution issues in northern California, including rebuttal of other experts’ analyses of gasoline distribution.
Arbitration - Refinery Valuation
In support of an international arbitration, developed an economic model to assess the value of a fuels refinery. Submitted an expert report and provided testimony.

Refinery Force Majeure Claims
Prepared expert reports and testified in an international arbitration involving multiple product supply disputes between a refinery and an adjacent chemical plant. Reviewed force majeure claims related to catalytic cracking technology, product supply contracts, and utility supply interruptions.

Asphalt Refinery Valuation
Concerning an owner's capability and obligation to pay a prior arbitration award, determined a retrospective fair market value of an asphalt refinery and provided testimony regarding the estimated value of the refinery assets.

Project Cost Overrun Dispute
For a large sour condensate stripper facility, evaluated a significant project cost increase over the original estimate, taking into account work scope changes, market escalation, the accuracy of the original estimate, and the impact of project delays. An assessment was made of the reasonableness in each category and the likelihood of success with respect to cost recovery via litigation proceedings from a technical standpoint. The project was designed and constructed during a period of rapidly escalating labor and material costs.

Gas Processing Metallurgy Replacement
Evaluated the reasonableness of a large project's cost to replace the piping with a different metallurgy for a high-pressure, high-temperature sour gas reinjection facility in Central Asia. Also opined on the industry knowledge of the proper metallurgy at the time of construction of the original facility.

Fall Protection Evaluation
Investigated circumstances concerning the injury to a person who fell from a loading dock. Provided opinions regarding general safety requirements, industry practices, and fall protection requirements for this type of activity.

Misappropriation of Trade Secrets
Using chemical engineering expertise, process design background, and experience in operations and manufacturing, provided an opinion on the likelihood of another firm's ability to produce the same pharmaceutical chemical with comparable quality and value as the original product without utilizing trade secrets learned from the intellectual property owner.

Gasoline Pricing Dispute
Analyzed gasoline price anomalies that developed after a major hurricane made landfall on the U.S. Gulf Coast. Provided technical support for the use of Gulf Coast spot market pricing as the basis for gasoline sales contracts.

Crane Accident Claim Analysis
Analyzed business interruption and property damage insurance claim by a refinery operator resulting from a crane accident. This included analysis of the cost to repair the physical damage from the accident, the impact to schedule and cost of a process unit turnaround that was in progress at the time of the accident, and valuation of lost production
due to the accident.

- **Gas Plant Emergency Shutdown Design Analysis**
  To determine whether a system complied with key requirements, reviewed design of cryogenic gas plant emergency shutdown system in connection with a fire event to assess conformance with API RP 521 (Guide for Pressure Relieving and Depressuring Systems). Provided affidavit of merit pursuant to Texas Civil Practice Section 150.002.

- **Refinery Lost Profits Claim**
  Developed an opinion of reasonable lost profits, in excess of $100 million, resulting from a crude oil supply force majeure and refinery downtime after a fire. Reviewed testimony and refinery linear program files.

- **MTBE Litigation**
  Supported joint defendants in litigation involving alleged MTBE contamination in groundwater. Analyzed gasoline supply issues to central Illinois over the period 1980 to 2006. Case settled prior to report issuance.

- **Tennessee Gasoline and Ethanol Blending**
  Provided an expert report and expert testimony on the production and distribution of ethanol and gasoline, particularly branded gasoline, in the state of Tennessee. Provided a refiner perspective of the impact of the Renewable Fuel Standard on gasoline blending, distribution, and marketing operations.

- **Oil Field Pipe Dispute-Insurance Claim**
  Reviewed a claim involving an insurance dispute relating to proper preservation of drilling pipe in a storage yard following a hurricane.

- **Refinery Construction Dispute**
  Evaluated dispute between a mechanical subcontractor and owner on a refinery expansion project in the Middle East. Evaluated issues related to delay and disruption caused by material delivery delays.

- **Refinery Contractor Indemnification Dispute**
  Provided expert opinion concerning an indemnification dispute between a refiner and contractor, as well as the standard of care and practice in the industry concerning the design and construction of a piping relief system. Also opined on the refinery owner’s responsibilities concerning the acceptance and maintenance of completed piping systems.

- **Gas Producer Contractual Dispute**
  Provided expert report and testified in federal bankruptcy court concerning disposal costs of produced salt water, reasonableness of a farm-out joint venture agreement, costs of capital, and salvage value of production equipment.

- **Refinery Explosion, Subrogation of Insurance Claim**
  Assisted in a subrogation of insurance claim of an explosion in an oil refinery alkylation plant. Reviewed insurance property damage costs for justification and reasonableness to determine value of subrogation claim.

- **MTBE Litigation**
  Provided expert report that evaluated and discussed the issues concerning why MTBE was chosen over ethanol to the federal oxygenate requirements in the early 1990s. Also included was a discussion of how gasoline was supplied to
the local region in California over the 1990s and early 2000s.

- **Wellhead Value - Natural Gas**
  Provided opinion with respect to effect of capital recovery of production facility costs on wellhead value of natural gas.

- **Project Development Dispute**
  Prepared an expert report and delivered a deposition and testimony at jury trial in a dispute involving a project development claim. The dispute focused on the value and likelihood of successful completion for two projects in the early stages of development: a natural gas salt dome storage facility and a petroleum products terminal.

- **Offshore Oil Lease Development Dispute**
  Provided an assessment and expert report that determined estimates of the economic value for an undeveloped oil block in offshore Sierra Leone. The analysis synthesized an FPSO development approach and various scenarios of reserve volumes, development timelines, and oil prices to arrive at an indicative value for lease development.

- **Dust Explosion Capability Testing**
  Provided assistance in testing of explosiveness of resin dust during the operation of hand tools in a confined space. Dust test results were videotaped and used for litigation support.

- **Dispute Support - Groundwater Contamination**
  Provided expert witness support regarding a groundwater contamination claim at a closed refinery. Provided opinions regarding the standards of care and operation of the former refinery. Prepared a written expert report.

- **Biodiesel Plant Construction Dispute**
  Evaluated engineering and construction practices in a dispute between an owner and EPC contractor due to cost overruns. Issues included engineering and project management practices which required rework, and construction practices which created safety and operability issues. Cost estimates were prepared for correcting the deficiencies.

- **Production Sharing Dispute**
  Reviewed amended field development plan with respect to a PSA dispute between government and operator consortium over a proposed multi-billion dollar increase in projected final costs. Prepared expert report, reply report, and provided oral testimony to Permanent Court of Arbitration, as specified in PSA dispute resolution proceeding.

- **Chlorine Contract Dispute**
  In a lawsuit involving a long-term chlorine supply contract, provided litigation support relating to a series of force majeure events. Analyzed the chlorine producers options to mitigate the loss of contracted sales volumes.

- **Horizontal Drilling Property Damage**
  Reviewed damage to private property (farmland) allegedly caused during the installation of an underground pipeline. A portion of the pipeline was installed using the technique of horizontal directional drilling (HDD).

- **Natural Gas Gathering Fee Dispute**
  Reviewed natural gas contracts to opine on whether addition of a gas gathering fee was consistent with typical commercial experience on intrastate pipelines.

- **Hurricane Damage Insurance Dispute**
Assessed the impact of a gulf coast hurricane to a refinery and its impact on turnarounds being executed at coker and FCC feed hydrodesulphurization units. Support included investigating failures incurred to a coker flare and coker heater, their relationship to the hurricane, and subsequent shutdowns of process units.

- **Refinery Risk Assessment**
  In support of questions relating to company stock valuation, assessed the technical and commercial risks inherent in several refineries owned by a U.S. refining company.

- **Settlement Hearing**
  Testified on behalf of an independent producer as to the fairness of a proposed natural gas processing agreement in the Fort Worth Basin.

- **Supply Contract Dispute**
  Assisted in breach of contract claims regarding a helium supply agreement from a large natural gas processing/treating complex. Analyzed historical operation and performance of processing and extraction facilities, including sources and composition of gas supplies, plant shutdowns, and plant turndown capabilities. Reviewed plant performance, including operating costs, efficiencies, and operating modes to support defendant's plant operations.

- **Terminal Operations**
  Provided litigation support assistance and expert opinion for case involving historic Standard of Care issues with petroleum product terminals.

- **Trans-Alaskan Pipeline (TAPS) Quality Bank**
  Provided expert testimony before extended hearings of both the Federal Energy Regulatory Commission (2004) and the Alaskan Public Utilities Commission (2007) with respect to the methodology used to value various Alaskan crude oil streams entering TAPS. Issues included how to calculate the refining values of such crude oils in U.S. West Coast refineries and how changes in the indicated market values of crude oils should be handled from a retrospective basis.

- **Pipeline Operating Dispute**
  Assisted in a dispute between an owner and an operator of a recently-constructed crude oil pipeline. Prepared an expert report concerning: (1) the facilities that should have been provided as part of the capital project to construct the pipeline; (2) the equipment necessary to operate and maintain the pipeline; and (3) whether defects found during the early operating period were the result of improper equipment design specifications and construction, or improper operation and maintenance. Testified at arbitration in London.

- **Marine Accident Investigation**
  Investigated causes for contamination of a cargo of residual fuel aboard a barge that exploded and sank.

- **Upstream Process Equipment: Intellectual Property Infringement**
  In support of a dispute between a technology owner and a manufacturer, provided an opinion on the likelihood of another firm’s ability to produce the same equipment with comparable features as the original product without utilizing trade secrets learned from the intellectual property owner.

- **Gasification Process: Unauthorized Use of Proprietary Trade Secrets**
In support of a dispute between a technology owner and a start-up company, provided an opinion regarding the extent to which start-up company may have been reliant on confidential and proprietary trade secrets, know-how, and other specific process information. In developing an opinion, we reviewed all pertinent technical information including experimental results and plant data, design details, and drawings from each party. Our engineering and design experience provided the background needed to understand if proprietary information had been incorporated in a new design.

**Acetic Acid Process: Intellectual Property Infringement**
Using chemical engineering expertise, process design background, and experience in operations and manufacturing, provided an opinion on the likelihood of another firm’s ability to produce the same organic acids with comparable quality and value as the original product without utilizing trade secrets learned from the intellectual property owner.

**Accident Liability**
Assisted in a personal injury claim following an incident in a coker unit. Examined refinery conformance with the latest available industry technology, regulations, standards, and practices.