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Summary of Fildes' Litigation Scientific Investigations

ACTIONABLE INSIGHT FOR LITIGATORS, INSURERS, AND CORPORATE COUNSEL

- Dr. Fildes has used analytics to fuse discovery data with physical chemistry scientific principles and data from relevant literature-reported studies, especially ones from industry which publishes highly valuable data that is extremely relevant to product failures and accidents.
- Dr. Fildes has routinely done this in numerous cases that span relatively straightforward industrial accidents through incidents involving highly complex multidisciplinary issues with tens of million dollars of loss potential.
- The outcome of Dr. Fildes' investigations have helped to resolve everyone of his cases, often changing the nature and trajectory of the case, and often being resolved on the basis of his report without the need for a deposition.
- Dr. Fildes' approach typically allows him to support each conclusion by two or more semi-independent analyses, and also allows very straightforward reports with well supported specific conclusions (opinions), which provides compelling insight.
- See www,jfildes.com for explanatory case studies.

This content is based on Dr. Fildes' scientific experience, He is not an engineering or lawyer and does not practice engineering or the law.

Introduction

Dr. Fildes' litigation-related scientific consulting and investigations based on the fusion of analytics and physical chemistry encompass failures, accidents, and IP in all types (buildings, roadway, aviation medical, etc.) of materials, materials processing, chemical and industrial processes, thermodynamics and process heating equipment, chemical reactivity and kinetics, chemical compatibility, water treatment, and electrochemistry and corrosion.

Investigations

- Investigated several different issues related to possible FTC actions and potential recalls, including Li-ion battery electrochemistry and failures, overheating failures of crimp connectors, unexpected ignition of matches, and false alarms by carbon monoxide detectors in an incident that received much publicity.
- Investigated complex multidisciplinary scientific issues related to a several millions dollars of loss potential case involving the residuals produced by a water treatment process that involved applying analytics to determine exposure risk, modeling the treatment process chemistry to assess the adequacy of regulatory testing, and testing of the residual's physical properties to determine its potential for release to the environment. Settlement was initiated by the other side after submission of my report.
- Investigated complex multidisciplinary scientific issues related to a tens of millions

dollars of loss potential case involving the structural failure of a 100 foot long high temperature kiln, which involved modeling the thermodynamics of the kiln and the thermodynamics of the burners' dependence on the composition of the natural gas feed, modeling the composition changes of the natural gas as it transited the distribution system, and establishing the performance of the refractory brick at high temperatures. This case settled on the basis of my report without need for a deposition.

- Investigated complex multidisciplinary scientific issues related to a several millions dollars of loss potential case involving the aggregates and asphalt involved in failure of a road resurfacing material on tens of miles of roadway and of investigation of its installation process that involved applying experience with composite materials to establish the responsibility of various parties, data analytics and data modeling to establish the impact of the aggregate's gradation, analysis of patent literature to establish the chemical properties and compatibility of a proprietary asphalt binder, and application of chemical principles to establish the cause and origin of the failure. Was the only expert for the defense and I provided deposition and trial testimony with the jury finding for the defense.
- Investigated issues related to the volatility of lubricants. Provided deposition testimony. My report and depositions have resulted in the settlement of numerous related cases.
- Investigated complex multidisciplinary scientific issues related to a several millions dollars of loss potential case involving the the chemistry of the reprocessing of PCB containing transformer oil and the stress corrosion cracking of stainless-steel equipment used in the process. Provided deposition testimony for the defendant in a business to business dispute that led to the plaintiff asking to settle the matter.
- Investigated the chemistry, processing, and measurement of properties of spray polyurethane foam (SPF) relative to odors and flammability. Conducted extensive testing involving foam installation, chemistry, odor, and flammability, which was used in part relative to a class action.
- Investigated the expansion and contraction properties of an engineered wood building product, modeled the performance of the product under the prevailing conditions, and provided a report and presentation in a mediation.
- Investigated several cases involving determination of the cause of delamination of composite helicopter blades due to manufacturing issues and thermally induced damage to an adhesive from a repair procedure. Reviewed manufacturing logs and identified deviations from specified procedures, conducted field inspections, performed instrumented laboratory simulations of a repair procedure coupled with FEA thermal modeling, and provided deposition testimony.
- Investigated the cause of the failure of a composite glider wing. Conducted a complex inspection of the severely damaged wreckage and identified the cause of the failure.
- Investigated various corrosion incidents involving aircraft structures and brakes.
- Investigated issues related to the performance of aggregates, asphalt, and concrete used in a recreation facility floor. Provided deposition testimony.

- Investigated the chemistry of cleaning products, and their use and relationship to an accident. Provided deposition testimony.
- Investigated issues related to equipment failure in a steel process.
- Investigated issues relative to the failure of plumbing components.
- Provided deposition testimony on statistical methods and sampling required to meet the Daubert standard for expert witness testimony in a condo unit repair case. Served as a consulting expert on statistical sampling and analysis methods for a case involving mediation.
- Investigated patent infringement issues involving a medical respiration device. Determined the way the alleged infringing device operated, instrumented both devices, and performed sophisticated testing that clearly established the similarities and differences in an easy to understand and compelling manner.
- Served as a designated expert on a case involving a trade secret chemical formulation.
- Investigated the design process for determining if a steel beam saw conformed to specifications and acceptance criteria. Provided deposition testimony.
- Investigated the design process and determined why a carbon monoxide detector failed to alarm.

Bio for John Fildes, Ph.D.

Dr. Fildes is a doctoral scientist who has conceived, organized, and conducted $28 million of projects including R&D, litigation expert investigations, and collaborations involving Government labs, large defense companies, and leading universities.

Dr. Fildes was also CEO of an $18 million professional scientific/engineering consulting firm; president of a not-for-profit R&D institute; founder and leader of a $6 million scientific/ engineering consulting firm; leader of a $3.5 million startup product design firm; leader of a $10 million contract research lab at Northwestern University; a senior professional in the $4.5 billion Borg-Warner Corporation Research Center.

Product Failures Expertise

Friction; Abrasive Wear, Adhesive Wear, Testing, Friction Measurement, Wear Prevention, Lubricants, Oil Quality Monitoring, Solid Lubricants, Hard Protective Coatings, Decorative Coatings, Paint, Electroplated Coatings, Corrosion, Electrochemical Corrosion Measurement, Ice Prevention; Gas Sensors, Carbon Monoxide Detectors; Product Design Procedures.

Materials & Process Expertise

Composites for Aviation, Buildings and Civil Construction: Thermoset and Thermoplastic Resins and Adhesives, Resin Transfer Molding, Autoclaving, Impedance Spectroscopy; Use of Composite Materials and Spray Foams Made On-Site In Construction; Roadway Chip Sealing, Water Treatment; Intelligent Process Control.

Chemistry & Chem Processes Expertise

Prediction Of Materials Properties, Stability, And Compatibility; Chemical Exposure; Chemical Process Equipment Failures.