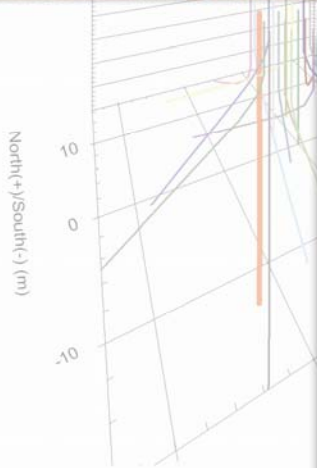


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# Signa Engineering Corp.



**EXPERT WITNESS TESTIMONY:  
EXPERIENCE AND CASE HISTORIES**





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PROJECT MANAGEMENT

## **Expert Witness Testimony: Experience and Case Histories**

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## **I.) INTRODUCTION**

Since 1995, the team at Sigma Engineering Corp. has provided expert witness testimony and litigation support for dozens of legal cases pertaining to incidents within the oil and gas industry.

Sigma's engineering staff routinely analyzes critical well designs to identify and mitigate potentially hazardous drilling factors, such as high temperature, high-pressured formations, sour gasses, hostile environments and dangers due to remote locations. This analytical experience allows them to evaluate catastrophic failures to determine what went wrong, why it happened, and who (or what) is at fault.

Sigma has provided expert witness services, high-level computer graphics and other demonstrative evidence across the region for cases involving the most problematic of oilfield concepts, including:

- Accident Investigations
- Injury and Equipment Damage Liability
- Blowout Preventer Mishaps
- Bottom Hole Assembly failures
- Casing Crew Accidents
- Patent Design Disputes
- Environmental Liability
- Breach of Contract
- Oil Lease Property Rules
- Intellectual Property Theft



Sigma engineers have experience in all aspects of upstream oil and gas procedures, including Managed Pressure Drilling (MPD), Horizontal Drilling, UnderBalanced Drilling (UBD), Rig Safety, Plugging and Abandonment, Reservoir Analysis, Production Engineering, Drilling Engineering and Operations, Environmental Engineering and Site Assessment, Economic Analysis and more.

Our litigation support history includes:

- Computer Animation and Document Imaging
- Designing Charts, Graphs & Timelines
- 2D and 3D Technical Illustrations
- Video / Photography
- Courtroom Graphic Assistance
- Unique Courtroom Presentation Methods
- Accident Recreation



## **II.) SELECTED CASE HISTORIES**

### **Patent Infringement**

- Signa reviewed the case of dispute over who was the true inventor of a drilling process after a patent was issued for that technique.
- Signa reviewed extensive information on two companies' multilateral drilling processes to determine if the patent had been infringed upon. The engineering staff did extensive multilateral application studies and worked with an economist on economic projections (10-year span) to determine how significant a monetary setback the patent holder would have suffered.
- Signa engineers were asked to answer technical questions in a patent case involving the alleged use of numerous patented well-treatment services by another company. The engineering team had to analyze well treatment service records to determine if the patent had been infringed upon.
- Signa engineers were asked to utilize their special expertise and knowledge in the subject matter of rotating blowout preventer equipment in a patent infringement case.

### **Personal Injury**

- Signa investigated a case in which a failure in a BOP stack element occurred during UnderBalanced Drilling. This resulted in a blowout, causing extensive property damage and injuries to the crew.
- Signa investigated a well blowout that occurred while workers were trying to come out of a hole to make a bit change, when the well kicked. Workers tried to put the Kelly back on but were unsuccessful. When the well kicked, well was blowing sand, rocks and gas up through the crown and eventually ignited. A BOP installed on the well was not shut in. Plaintiff claimed foot injuries.
- Signa reviewed the case of a roughneck (drilling rig worker) injured while changing the rubber element on a rotating blowout preventer.
- Signa investigated a case regarding an occurrence of casing falling out of position during makeup, which injured a member of the casing crew. The drill rig derrick was allegedly not centered over the hole, making the handling of casing hazardous.

### **Property Damage**

- Signa engineers were asked to utilize their experience in oilfield drilling and knowledge of wellsite equipment to testify what had caused a blowout and subsequent destruction of an oil well. Testimony involved clarifying drilling fluids, drillstring depth, describing downhole equipment and elaborating on alleged destructive elements that caused the fire.
- Signa engineers were asked to review a well in Webb County, Texas, for possible product liability in regards to a 10,000 psi Shaffer blowout preventer that two pipe rams had reportedly failed in while trying to control a flowing oil & gas well.



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- Signa investigated a case in which an oil and gas operator had initiated turnkey drilling of a well. During the operation, a section of the bottom hole assembly (drilling jars) failed, allegedly causing a loss of money (profit) for the turnkey contractor.
- Signa graphic designers illustrated a case involving an accident at a wellsite by producing graphic illustrations needed for a basic education and introduction of the pertinent equipment and terms in the case.

**Health, Safety & Environmental**

- Signa investigated a groundwater and soil contamination case on a site where oil & gas operations were located. Signa's engineers and litigation staff combined knowledge of petroleum engineering, geology, environmental science and geo-hydrology to resolve the case.
- Signa investigated a case regarding a defendant's right to dump waste material in specified area.



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**III.) CLIENT LIST**

**Adams and Reese LLP**

**Atlas Tubular**

**AIG Claim Services, Inc.**

**Alpine Oil Services**

**Baker & Hostetler LLP**

**Bayko, Gibson, Carnegie & Hagan LLP**

**Boswell & Hallmark**

**Carr & Storm, L.L.P.**

**Cokinos, Bosien & Young**

**Culbreth & Munn**

**Crutsinger & Booth**

**DiCecco, Fant & Burman, L.L.P.**

**Fibich & Garth, P.C.**

**Fitzgerald, Gartner & Follis**

**Fleming, Hovenkamp & Grayson**

**Guste, Barnett & Shusan**

**Marathon Oil**

**McGlinchey Stafford**

**Meyer, Orlando & Evans, P.C.**

**Royston, Razor, Vickery & Williams LLP**

**Rush Johnson Associates**

**Schopf & Weiss**

**Small, Craig & Werkenthin**

**Steinburg, Carwile & Herzik**

**Stevenson & Ammons, LLC**

**Thelen Reid & Priest LLP**

**Tom L. Pettiette**

**Vinson & Elkins, LLP**



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**IV.) BIOGRAPHICAL DATA**

*Charles R. "Rick" Stone, P.E.*

*George H. Medley, P.E.*

*Dennis D. Moore, P.E.*

***Please see following pages for bios.***



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FIELD OPERATIONS

**SIGMA ENGINEERING CORP.**



## **CHARLES R. "RICK" STONE, P.E.**

**CHAIRMAN / CEO**

**BIOGRAPHICAL DATA**

### **SUMMARY**

***Thirty-plus years experience in Oil and Gas Operations***

***Domestic & International / Onshore & Offshore***

Recognized pioneer in Managed Pressure Drilling, horizontal, UnderBalanced Drilling, and the application of project management techniques to unconventional drilling. Presented with the *SPE Drilling Engineer of the Year Award for 2003*, the Society of Petroleum Engineers' most prestigious drilling honor.

### **EXPERIENCE**

- |                            |                                |                |
|----------------------------|--------------------------------|----------------|
| • Chairman / CEO           | Sigma Engineering Corp.        | 1992 – Present |
| • President & Partner      | PetraTex Resources             | 1990 – 1992    |
| • Senior Drilling Engineer | Oryx Energy Company            | 1988 – 1990    |
| • Drilling Engineer        | Sun Exploration and Production | 1984 – 1988    |
| • Production Engineer      | Sun Exploration and Production | 1981 – 1984    |
| • Mechanical Engineer      | Sun Exploration and Production | 1979 – 1981    |

### **PROFESSIONAL LICENSE & EDUCATION**

- Registered Professional Engineer - Texas No. 62319
- B.S., Mechanical Engineering, Texas A&M University, College Station, Texas - 1979

### **PROFESSIONAL MEMBERSHIPS**

- Member, Society of Petroleum Engineers
- Member, IADC and UB Advisor–IADC Wellcap Committee, Chairman – IADC MPD Subcommittee
- Member/Speaker, AADE–Houston/Dallas
- Well Control Committee Member, Drilling Engineering Association
- Charter Member, Horizontal Drilling Engineers Association

### **SELECTED PUBLICATIONS & PRESENTATIONS**

- Co-author, *Blending technologies: MPD, casing drilling can eliminate intermediate casing string*, Drilling Contractor, pp. 55-57, May/June 2006.
- Co-author, *The benefits of light annular mudcap drilling in naturally fractured formations*, Offshore, pp. 30-33, July 2004.
- Co-author, *Closed Hole Circulation Drilling: Case Study of Drilling a High-Pressure Fractured Reservoir – Tengiz Field, Tengiz, Republic of Kazakhstan*, SPE #79850, presented at the 2003 SPE/IADC Drilling Conference, Amsterdam, Netherlands, February 19-21.
- *Blowout Preventer Testing for Underbalanced Drilling*, presented at the 1997 SPE Permian Basin Horizontal Conference, Midland, Texas.
- *New Applications for Underbalanced Drilling Equipment*, SPE #37679, presented at the 1997 SPE Conference, Amsterdam, The Netherlands.
- *Potential for Horizontal Drilling in the Illinois Basin*, Presented at 1996 IOGA Conference, Evanston, Indiana.
- SPE Distinguished Lecturer, *Horizontal Underbalanced Drilling*, 1993-1994.
- *History and Development of Underbalanced Drilling in the USA*, presented at the 1988 World Oil/Gulf Publishing Sponsored Forum, San Antonio, Texas.





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**SIGNA ENGINEERING CORP.**



**GEORGE H. MEDLEY, JR., P.E.**  
**EXECUTIVE VICE PRESIDENT**

**BIOGRAPHICAL DATA**

**SUMMARY**

***Twenty-eight plus years experience in Oil and Gas Operations and R&D  
Domestic & International / Onshore & Offshore***

- Drilling, completion and production engineering and project management including extensive geographic and geologic exposure.
- Extensive drilling operations experience with both development and exploration wells, including underbalanced and horizontal applications.
- Management of major R&D projects for the U.S. DOE, the Gas Research Institute, and the Drilling Engineering Association.
- Developed and presented UnderBalanced Operations (UBO) Schools in the United States, Canada, Mexico, Venezuela, Colombia, Argentina, China, Scotland, Germany and Kazakhstan.

**PROFESSIONAL LICENSES**

- Registered Professional Engineer - Texas No. 50273 & Colorado No. 24526

**EXPERIENCE**

- |  |                                   |                |
|--|-----------------------------------|----------------|
| • Executive Vice President                 | Sigma Engineering Corp            | 2002 – Present |
| • Sr. Vice Pres. Engr. Research & Training | Sigma Engineering Corp.           | 2000 – 2002    |
| • Manager Engineering Training             | Sigma Engineering Corp.           | 1998 – 2000    |
| • Senior Drilling Engineer                 | Maurer Engineering Inc.           | 1994 – 1998    |
| • Senior Staff Drilling Engineer           | Exxon Co., USA, Midland / Houston | 1987 – 1994    |
| • Exploration / Drilling Engineer Liaison  | Exxon Co., USA, Denver            | 1985 – 1987    |
| • Supervising Drilling Engineer            | Exxon Co., USA, Midland           | 1982 – 1985    |
| • Drilling Engineer                        | Exxon Co., USA, Midland           | 1981 – 1982    |
| • Reservoir / Production Engineer          | Exxon Co., USA, Midland           | 1977 – 1981    |

**SELECTED PUBLICATIONS & PRESENTATIONS**

- “Understanding MPD Complexity Levels,” Hart’s E&P, pp. 41-43, October 2008.
- “Simplifying MPD – Lessons Learned,” SPE/IADC 113689, presented at the 2008 IADC/SPE Managed Pressure Drilling and Underbalanced Operations Conference and Exhibition, Abu Dhabi, UAE, January 28-29.
- “Air Drilling in the Presence of Hydrocarbons: A Time for Pause,” IADC/SPE 108357, presented at the 2007 IADC/SPE Managed Pressure Drilling and Underbalanced Operations Conference and Exhibition, Galveston, Texas, March 28-29.
- “Light Annular Mudcap Drilling – A Well Control Technique for Naturally Fractured Formations,” SPE 77352, presented at the 2002 SPE Annual Technical Conference held in San Antonio, TX, 29 September – 2 October.

**SOCIETY MEMBERSHIP**

- Society of Petroleum Engineers

**EDUCATION**

- B.S., Civil Engineering (*Summa Cum Laude*), Texas A&M University, College Station, Texas - 1977