



# Harold E. McGowen III, PE

Founder · President · CEO of Navidad Energy Advisors

16421 FM 344 W., Bullard, TX 75757 · 903.714.8911

· [hmcgowen@052pe.com](mailto:hmcgowen@052pe.com) · [www.navidadenergy.com](http://www.navidadenergy.com)

## Areas of Expertise

- Petroleum Engineering
- Completion Engineering
- Drilling Operations and Engineering
- Big Data Engineering Analysis
- Economic Analysis
- Horizontal Drilling
- Hydraulic Fracturing
- Mechanical Engineering
- Natural Gas Processing
- Oil & Gas Engineering
- Oil & Gas Well Integrity
- Oil & Gas Field Infrastructure
- Oil Field Metallurgy
- Downhole Oil Tools
- Oil & Gas Patent Analysis
- Pipelines and Gathering Systems
- Artificial Lift Systems
- Oil & Gas Environmental Issues

## Summary of Technical Capabilities

- Registered professional engineer with over thirty years of experience
- Expertise in project management, drilling engineering, completion design and diagnosis, production engineering, artificial lift, and reservoir evaluation
- Skilled in the application of information technology to petroleum engineering, project management, and forensic analysis of large data sets

## Employment Summary

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|------------|---|
| 2013–Pres. | CEO, Navidad Energy Advisors & Navidad Operating Company, LLC           |
| 2003–2015  | President and CEO, Navidad Resources, LLC and NRI, Inc.                 |
| 2001–2003  | President, .052 Petroleum Engineers, Tyler, Texas                       |
| 1997–2001  | Senior VP of Engineering Services, Signa Engineering Corp., Houston, TX |
| 1992–1997  | President, NaviData Systems, Inc., Kingwood, TX                         |
| 1988–1992  | Engineering Manager, Trinity Resources, Inc., Houston, TX Petroleum     |
| 1984–1988  | Engineer, Union Pacific Resources Company, Houston, TX                  |
| 1982–1983  | Engineering Technician, GEO-Vann, Inc., Katy, TX                        |

## Accreditations

Registered Professional Engineer (PE) in the State of Texas, since 1989

## Awards

Texas Ind. Producers and Royalty Owners – Top 15 Best CEOs - Med. Size Producer  
Aggie 100 -Fastest Growing Aggie Run Comp- #1 2012, #4 2013, #3 2014

## Memberships

Society of Petroleum Engineers (SPE), Since 1984

## Education

**Bachelors of Science Degree in Mechanical Engineering, 1982**

- Texas A&M University, College Station, Texas

## Publications

- "Case Study: Using Managed Pressure Drilling and Oil Based Mud to Efficiently Drill an Extremely Thick and Highly Fractured Carbonate Sequence Under an Extremely Thick and Highly Sensitive Laminated Shale", SPE/IADC-173021, 2015
- "Effective Methods of Engineering Outsourcing", SPE 84436, presented at SPE Technical Conference and Exhibition in Denver, Co., October 2003
- "Applicability of Underbalanced Drilling to Multilateral Junctions", Presented at IADC UBO Technology Conference, Houston, Texas, August 2000 (with George Medley)

## Harold E. McGowen III, PE Litigation Support Resume – 04/11/2019

I have provided consulting services to assist in litigation related to downhole tools, underbalanced drilling technology, horizontal drilling, squeeze cementing, hydraulic fracturing, and various patent disputes, among other matters. To the best of my recollection at this time, I have served in the role of litigation consultant and/or expert witness on the following cases.

### Expert Witness Cases

**Halliburton/Sperry/NRG vs. Baker Oil Tools** –I was an expert witness case in the matter of Halliburton/Sperry/NRG vs. Baker Oil Tools (1998-2001) related to a patent for a TAML Level IV Multilateral Junction (McNair and Bangert 1994). I opined on matters such as prior art, comparison with other similar patents, and the future value that could be realized from the technology derived from the patent. Martin Detloff was the attorney I worked with on this matter.

The case is filed under Natural Reserves Group, Inc. (“NRG”) v. Baker Hughes, in the 333rd District Court of Texas, with Judge Halbach presiding. Halliburton purchased Sperry which had purchased a patent license from NRG. It was a theft of trade secrets case. I worked with litigators (Marty Detloff being one) and a patent attorney. The parties had agreed to a bench trial with no appeal. I worked on both infringement issues and estimating damages. I compared various patents that were presented as prior art with the subject patent using engineering drawings that I created that illustrated each step in the process of utilizing the various downhole tools described in the patents. I testified in front of a judge on these differences between the patents and the functionality of each patent relative to the NRG patent. In addition, I prepared a complex damages model projecting the future value of the NRG technology.

#### Air-Liquide

Prior to 2002, I provided consulting regarding a patent for the use of a membrane unit to extract nitrogen from the air on the fly for use in underbalanced drilling operations. I also provided an expert report in this matter.

#### Halliburton vs. BJ Hughes

Circa 2002 I was retained as an expert for a hydraulic fracturing fluids patent case involving a relatively new fluid system developed originally for use in the Wattenberg field of Colorado. The patent involved a low polymer loading Carboxymethyl-guar (CMG) which was thought to be superior to carboxymethyl hydroxypropyl-guar (CMHPG). I examined prior art in the literature and patents and provided an opinion on the materiality of the prior art. I also examined the results of over 2,000 hydraulic re-fracturing jobs performed in the field to determine the relative benefit of the use of the new CMG product versus the older CMHPG product.

**Halliburton vs Weatherford, Baker, et al** - Between 2002 and 2003 I was engaged by Halliburton’s counsel as an expert on a composite bridge plug patent case e.g. (Vargus, Hushbeck et al. 2001). Activities included research on competing products and patents, examination of the tools, comparison of similarities, and analysis of the relative benefits of each design. This bridge plug technology is employed in hydraulic fracturing and squeeze cementing and is the same composite downhole tool technology used to construct the cement retainers used in squeeze cementing. Studied documents related to composite materials, composite packers, bridge plugs, wrote a report, and testified via two depositions. Booth, Albanesi, and Schroeder LLC was the law firm I worked with on this matter.

**Navidad Resources, LLC vs. Signa Engineering Corp.** – In 2014 I testified as a fact witness and as an expert witness for several days as part of an arbitration hearing regarding a lawsuit filed by Navidad Resources, LLC (Plaintiff) against Signa Engineering Corp. regarding damages incurred by Navidad during a squeeze cementing operation managed by Signa’s well-site supervisor. In addition to case materials, I studied casing failure methods, squeeze cementing operations, composite cement retainers, cast-iron cement retainers, and related technologies. I was President and CEO of Navidad Resources, LLC at the time. I worked with Charles Sartain with Gray Reed & McGraw, P.C. on this matter. Wrote an expert opinion and gave testimony at deposition and at arbitration.

**Viceroy Petroleum vs. Tadlock Pipe & Rentals** – In 2015 I was an expert witness for Defendant in matter of Viceroy Petroleum vs. Tadlock Pipe & Rentals related to a damages estimate generated by the Plaintiff’s expert. Prepared expert reports regarding the accuracy and validity of the reservoir simulation calculations generated for a unique naturally fractured carbonate reservoir stimulated with a low-viscosity carrier fluid hydraulic fracturing treatment. Examined inputs to the hydraulic fracturing modeling software as well as the assumptions behind the software model chosen for the analysis itself. I was deposed on February 9, 2015. Compared and contrasted the damages projected to the actual results achieved in the field. Damages projected from frac model were effectively dropped from the case. I also worked with Charles Sartain with Gray Reed & McGraw, P.C. on this matter. Case settled.

**Oracle vs. EPI** - Expert witness for matter of Oracle vs. EPI related to damages involving and incorrectly performed squeeze cementing job (2015). Wrote an expert opinion and gave testimony at deposition.

**Bagley Minerals, L.P. v. Brammer Petroleum, Inc. (Cause No. 2013-457)**

Worked as expert witness on case related to expiration of a mineral lease and the definition of “operations” under the lease(s). Engaged by Michael E. Starr with Coghlan Crowson LLP, Attorneys for Plaintiff. Prepared expert report and was deposed. Case Settled.

**Baker Hughes Inc. and Baker Hughes Oilfield Operations, Inc., Petitioners Vs. Packers Plus Energy Services Inc., Patent Owner**

I was engaged by counsel for the owner of U.S. Patent No. 7,861,774 (Packers Plus) to provide engineering consulting and expert witness services on a case involving downhole tools used in hydraulic fracturing of horizontal wells (2017-2018). Baker Hughes Inc., et al. were the Defendants. Engaged by Brad Caldwell of Caldwell Cassidy Curry P.C., Attorneys for Plaintiff. I provided expert reports and testimony at deposition related to this case and for the IPR initiated by Baker-Hughes before the Patent Trial and Appeal Board of the U.S. Patent and Trademark Office.

**Origin Production Group, LLC v. EOG Resources, Inc.**

Retained as expert witness related to hydraulic stage fracturing of one well that allegedly damaged another well (2017-2018). I submitted a report and the case ultimately settled. I was engaged by Douglas A. Daniels. Of Daniels & Tredennick, LLP, Attorneys for Plaintiff.

**Cause No. 2016-35945, LEAM Drilling Systems, LLC vs. ERDOS Miller, Inc. et al.**

Worked as litigation consultant (with potential to become an expert witness) on a trade secret case involving downhole tools used in directional and horizontal drilling. Case Settled. Cause No. 2016-35945, LEAM Drilling Systems, LLC vs. ERDOS Miller, Inc. et al.

**Cause No. 15-00282; Jay & Melissa Gribble vs. Aruba Petroleum, Inc. et al.**

I served as an expert witness on a case related to expiration of a mineral lease and the definition of “operations” under the leases (2017-2018). I submitted a report. I was engaged by Neil Burger with

Carrington, Coleman, Sloman, & Blumenthal LLP, Attorneys for Plaintiff (Gribbles). Settlement under negotiation at this time.

#### **Inter Partes Review of U.S. Patent No. 7,775,278**

Worked for Schlumberger versus Halliburton on dispute related to '278 Patent (Degradable Material Assisted Diversion) (2018). Worked on both Inter Partes Review of U.S. Patent No. 7,775,278 before patent office and arbitration between the parties on the same matter at the same time. I worked with Christopher Ricciuti, Senior Associate at Oblon, McClelland, Maier & Neustadt, LLP on the IPR and Thomas W. Davison with Alston & Bird LLP on the arbitration. Settled in 2018.

#### **Inter Partes Review of U.S. Patent No. 6,604,921**

The counsel for the Plaintiff retained my services to opine on certain issues relating to patent infringement by the Defendant vis a vis Schlumberger's patent for "Optimized Liner Thickness for Positive Displacement Drilling Motors," U.S. Patent No. 6,604, 921. Have submitted reports. In progress.

#### **Oil and Gas Operator Trade Secrets Case**

Currently working as expert witness on case related to an unauthorized transfer of trade secrets by former employees of an oil and gas operating company. Litigants are to be held confidential at this time. I have submitted a lengthy report and have given deposition testimony once at this time.

#### **Oil and Gas Operator vs. Service Company**

Currently working an expert witness on a case involving an allegedly negligent action by a service company contractor that resulted in the loss of a wellbore and subsequent sidetrack. The technical side of the case deals with the interaction between the hydrostatic pressure generated by the drilling fluids in the wellbore versus the forces that result in wellbore instability. I have submitted a report and given testimony via deposition. In progress.

### **Testimony before Regulatory Agencies**

Testified before the Texas Railroad Commission on two separate occasions as a petroleum engineering expert related to changing field rules (circa 2012-2014).

Testified before the Oklahoma Conservation Commission regarding drainage and well density issues.

### **Other Cases**

There may be other cases I have worked on or been involved with over the years but cannot recall at this time. I reserve the right to update this list of cases.