

## **Anomalies – Pioneering Women in Petroleum Geology: 1917 to 2017**

Robbie Gries gave this presentation, organized by Deborah Deal of JeffCo Innovators' Workshop, at the Golden City Hall on June 14 to publicize her new book. Ms. Gries is a former Director of the Colorado Oil and Gas Association (COGA), the first female President of AAPG and the founder and President of Priority Oil and Gas, LLC. She received her MS from the University of Texas in Austin. She was interviewed by Colorado Public Radio (CPR) on July 27. The interview, an excerpt from her book and a slideshow is available from CPR [here](#). Her book is available on [Amazon](#) for \$50 where it has received five star reviews.

Editorial review on Amazon:

“Definition of Anomaly: A departure from the expected or normal; A geologic feature that is different from the general surrounding and is often of potential economic value. *Anomalies – Pioneering Women in Petroleum Geology: 1917 - 2017* is a celebration of individual courage, tenacity, and professionalism as well as a timely reminder of our past, when male-dominated professions excluded women. The social structure outside this profession amplified the struggle for equality: the inability to vote, the dictate that women should not work outside the home when married, the pervasive practice of lower pay for equal work, the paucity of advancement opportunities, and the lack of recognition in companies and associations. Surprisingly, it spans a stretch of time virtually equal to the time span that men were finally being valued as petroleum geologists. The timeframe began with the period prior to WWI when even a male geologist was looked upon with disdain as having no useful purpose in the search for oil. As geologists gained acceptance, war intervened, creating a vacuum into which the female geology graduate stepped up to the challenge. The women described in *Anomalies* took the steppingstones necessary to gain respect and become leaders in their chosen field. They are celebrated herein. “

Ms. Gries mentioned that the first woman hired as a petroleum geologist was in 1917 and that year also marks the birth of the AAPG. She discussed the careers of several early female petroleum geologists and pointed out that women have made seminal contributions in the fields of micropaleontology and reflection seismology.



**Observers in their Ford Model T Touring Car after initial development at Damon Mound oil field in Texas during the 1920s.**

The first woman petroleum geologist to graduate from the University of Colorado was in 1916, the first woman from the Colorado School of Mines was in 1920 and the first woman from Colorado State University was in 1966. That woman was Robbie Gries.



Reba Masterson was one of the early female petroleum geologists. She was born in Galveston and survived the 1900 hurricane which killed her mother. She enrolled in the University of Texas at the age of 26 to study geology, but left after two years to go to Colorado where she enrolled at CU. She graduated after 3 years at the age of 34, but while a student did scouting and geology work in 5 states. Reba took part in the Damon Mound Oil Field development in 1915 and was party to a law suite with H.L. Hunt, after which she started carrying a pistol. During the Depression Reba Masterson opened a lodge in Nederland which contained a tungsten mine where she employed her nephews to mine the ore. At the time of her death in 1969 she owned oil and gas properties in

20 Texas counties.

Dolly Radler Hall (1907-1995), an Oklahoma University geology graduate was hired by Sydney Powers of Amerada Oil in Tulsa in 1922, who was a proponent of hiring women. Dolly Hall became Acting Chief Geologist for that company and had 100 employees reporting to her. She was responsible for the first oil discovery using the technique of reflection seismic and was the first female AAPG honorary member.

Julia Gardner (1882-1960) a graduate of Bryn Mawr with a PhD from John Hopkins worked for the USGS in Washington, DC. She became an expert in mapping stratigraphy using mollusks along the Atlantic coast. Her career was interrupted by time spent as a nurse in WW1, but returned to the field in 1919 mapping the Tertiary stratigraphy from Maryland to Mexico. Sydney Powers and other oil companies regularly sent her samples for analysis. After WW1, Julia Gardner helped with the reconstruction of Japan.

Esther Richards Applin (1892-1964), Alvar Ellisor (1892-1972) and Hedwig Kniker (1891-1985) were hired by oil companies to set up paleontology labs. They lived together in Houston. Based on their work, Esther Applin published a seminal paper on the use of foraminifera for correlation in 1923. By 1928 there were 300 micro paleontologists working worldwide which increased exploration success dramatically.

Robbie Gries also gave tribute to recent female geoscientists. These included Vicki Cowart , a Mines graduate who became the first female State Geologist and Susan Morrice who established the first commercial oil production in the country of Belize.